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Becoming Part of the System

Navigating the network landscape of the public healthcare sector as a small innovative healthtech firm

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Abstract

This study explores how small innovative healthtech firms become embedded within the Swedish public healthcare system. While healthcare systems increasingly seek digital innovations to address rising demands and resource constraints, a gap remains in Sweden between digital innovation capabilities and their implementation in healthcare.

The study adopts an exploratory, abductive research approach guided by Business Network Theory and Institutional Theory, and uses a qualitative multi-method design. The research combines semi-structured interviews with documentary analysis to investigate how healthtech firms navigate interactions with public healthcare actors, institutional structures, and competing logics. The empirical context combines perspectives from both the public and private sectors to provide a comprehensive understanding of the Swedish public healthcare system as a market environment.

The findings show that embedding is not a linear market-entry process but a dynamic, relational process shaped by dependencies among actors, resources, and activities. Moreover, competing institutional logics relating to state, market, innovation and professionalism influence opportunities and constraints throughout the embedding process. The study identifies different pathways through which firms establish legitimacy and access, including collaboration with public healthcare providers, partnerships with established suppliers, and engagement with other market actors.

The thesis contributes to research on healthtech innovation by providing a processual understanding of how start-ups navigate complex healthcare networks and institutional environments. It also extends business network and institutional perspectives by illustrating how innovative firms actively adapt to and shape the structures surrounding them.

Keywords: *Healthtech, Public Healthcare, Business Networks, Institutional Logics, Innovation, Embedding Process, Swedish Healthcare System*

Sammanfattning

Denna studie undersöker hur mindre och innovativa företag inom healthtech blir en del av det svenska offentliga hälso- och sjukvårdssystemet. Samtidigt som vårdsystem i allt större utsträckning efterfrågar digitala innovationer för att möta ökande behov och resursbegränsningar, kvarstår ett glapp i Sverige mellan digital innovationskapacitet och implementeringen av dessa innovationer inom vården.

Studien har en explorativ och abduktiv ansats med stöd i Affärsnätverksteori och Institutionell teori, och bygger på en kvalitativ flerfallsdesign. Genom semistrukturerade intervjuer och dokumentanalys undersöks healthtech-företag relationer med offentliga vårdaktörer, institutionella strukturer och konkurrerande logiker. Empirin omfattar perspektiv från både offentlig och privat sektor för att skapa en bred förståelse av det offentliga hälso- och sjukvårdssystemet som marknadsmiljö.

Resultaten visar att etableringsprocessen är dynamisk och formas av relationer mellan aktörer, resurser och aktiviteter. Konkurrerande institutionella logiker påverkar samtidigt företagens möjligheter och begränsningar. Studien identifierar flera sätt att skapa legitimitet och marknadstillträde, bland annat genom samarbeten med offentliga vårdgivare, etablerade leverantörer och andra marknadsaktörer.

Studien bidrar till forskningen om healthtech-innovation genom att öka den processuella förståelsen för hur startups navigerar komplexa vårdnätverk och institutionella miljöer. Den utvecklar nätverks- och institutionella perspektiv i genom att visa hur innovativa företag aktivt anpassar sig till och påverkar de strukturer som omger dem.

Nyckelord: *Healthtech, offentlig hälso- och sjukvård, affärsnätverk, institutionella logiker, innovation, etableringsprocess, svenska hälso- och sjukvårdssystemet*

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Lund, May 2026

Frida Nilsson & Maja Åkerström

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1 Introduction

1.1 Background

1.1.1 Overview of Sweden's innovation and healthtech landscape

Sweden has a history of a robust education system, a skilled workforce, and a culture that supports entrepreneurship and innovation (Swedish Institute, 2025). Among EU Member States, Sweden ranks at the top of the innovation index (European Commission, 2025). Stockholm is today considered a leading hub for unicorns, with more unicorns per capita than New York, Los Angeles, and London. Sweden's first life sciences unicorn was Kry, founded in 2014 (Swedish Institute, 2025).

Sweden is known for being a country of innovation and entrepreneurship, with a strong collaboration between tech, academia, healthcare and industry. As of Sweden's position as world leading within life science, together with its digital competence, the country has been able to accelerate healthtech adoption, with the emergence of over 300 swedish innovation healthtech companies as of 2022. (Business Sweden, 2022)

Moreover, Sweden hosts more than 70 incubators, science parks, and testbeds that support life sciences startups. The five main life science clusters are located in Lund, Gothenburg, Linköping, Umeå, and Stockholm-Uppsala. (Business Sweden, 2025)

1.1.2 Healthtech as a term

Healthtech is typically used as an umbrella term encompassing medical technology, digital health, telemedicine, AI-enabled healthcare, diagnostics, wearable technologies, and software-driven healthcare platforms.

More specifically, medical start-ups (MedTech) are actors that sell new medical technologies and innovations, typically classified as either In Vitro Diagnostics (IVD) or Medical Devices (Kalinowska-Beszczyńska

and Prędkiewicz, 2024; Statista, 2024). IVD refers to technologies that provide essential health information from biological samples (Statista, 2024; European Commission, n.d.), while medical devices include a broad range of products intended for specific applications or medical specialities, such as Cardiology devices and Diagnostic Imaging Devices (Statista, 2024).

Digital health companies, on the other hand, provide digital technologies and services that support healthcare delivery. This field includes eHealth, mobile health (mHealth), big data, genomics, and artificial intelligence (World Health Organization (WHO), 2019). The term telemedicine relates more specifically to remote care provided using digital communication technologies (World Health Organization (WHO), 2010). Wearable health technologies are body-worn digital devices that collect and transmit health-related data (Friend et al., 2023), while digital health platforms are software-based systems that support healthcare delivery, communication, monitoring, and management through digital technologies (U.S. Food and Drug Administration (FDA), n.d.).

1.1.3 The Swedish healthcare system

The Swedish healthcare system provides universal healthcare coverage, is primarily publicly funded, and characterised by a high degree of decentralisation (Swedish Institute, 2025). The fundamental national objective is to ensure equitable access to good health and care for the population (Janlöv et al., 2023).

1.1.3.1 Governance structure and division of responsibilities

Responsibilities are shared across three governance levels within the decentralised model: national government, regions, and municipalities (Janlöv et al., 2023).

At the national level, the Ministry of Health and Social Affairs *(Socialdepartementet)* is responsible for setting broad health policy, legislation, and guidelines, as well as providing funding through grants to ensure good health, social

welfare, and high-quality healthcare and social services for the population (Swedish Institute, 2025; The Commonwealth Fund, n.d.).

At the regional level, the 21 regions form the core of the system, financing and providing most healthcare services, including primary care, outpatient specialist care, and hospital care. The regions have taxation rights and bear the primary responsibility for healthcare expenditures (Janlöv et al., 2023; The Commonwealth Fund, nd). Each region's council is a political body responsible for providing residents with high-quality healthcare (Swedish Institute, 2025).

Finally, the 290 municipalities provide long-term care and social care services, including elderly care, care for people with disabilities, and other social support services. (Janlöv et al., 2023; Swedish Institute, 2025)

This division of responsibilities creates a healthcare landscape where decision-making and implementation are distributed across multiple organisational levels and guided by both local priorities and national regulations (The Commonwealth Fund, n.d.). Regions and municipalities also exercise autonomy in healthcare administration and reimbursement design (Ludvigsson et al., 2025). In system-level analyses, it is emphasised that stronger collaboration and coordination across organisational boundaries are needed to enable more unified services and to improve the innovation process within and across regions (SKR, 2025; Myndigheten för vård- och omsorgsanalys, 2020).

1.1.3.2 Ethical principles and legal frameworks governing Swedish healthcare

Given the critical nature of healthcare services, the sector is regulated through ethical principles as well as national and EU legislation. The Swedish government and authorities decide on the legal and regulatory framework, including healthcare legislation, procurement regulations, patient rights, and supervisory mechanisms that defines the conditions under which healthcare is provided: legislation is passed by the Swedish parliament

(Riksdag) and policies proposed by the Government *(Regeringen)*. As previously stated in Section 1.1.3.1 (*Governance structure and division of responsibilities*) the Ministry of Health and Social Affairs, supported by national government agencies, is responsible for overall healthcare policy and high-level oversight. Key national authorities include the National Board of Health and Welfare *(Socialstyrelsen)*, the Swedish eHealth Agency *(E-hälsomyndigheten)*, the Health and Social Care Inspectorate *(IVO)*, and the Dental and Pharmaceutical Benefits Agency *(TLV)*. (Janlöv et al., 2023)

Decision making within the Swedish healthcare system is guided by an established ethical platform for healthcare prioritisation, built on three ranked principles: (i) the human dignity principle, everyone should have the same right to healthcare no matter which socioeconomic conditions you come from, (ii) the need-solidarity principle, resources should be allocated to those in the most need and solidarity requirements for those with reduced autonomy, (iii) the cost-efficiency principle, first applied when the two principles above is achieved one should strive for making the most cost-effective decisions (Government Prop. 1996/97:60). These principles create a strong foundation for healthcare decision-making, emphasising equality, fairness, and medical needs over traditional market-based considerations. Consequently, they constrain how new solutions are evaluated and prioritised, as economic efficiency cannot override ethical and medical considerations. (SFS, 2014)

The conditions under which healthcare providers and healthcare organisations operate in Sweden are defined by a core legal framework comprising three central pieces of legislation. The Health and Medical Services Act (Hälso- och sjukvårdslag (2017:30)) establishes the overall goal of healthcare, good health and care on equal terms, and sets requirements for good care, including quality, safety, integrity, and accessibility (Svensk författningssamling, 2017). The Patient Act (Patientlag (2014:821)) aims to clarify the patient's position and to promote the patient's integrity, freedom of choice, and participation (SFS, 2014). The Patient Safety Act (Patientsäkerhetslag (2010:659)) aims to ensure patient safety and sets requirements on providers to conduct patient

safety work (Svensk författningssamling, 2010). In addition to healthcare legislation governing quality and patient safety, healthcare providers must comply with regulations related to digital infrastructure, patient data management, and data protection. Particularly important are the EU General Data Protection Regulation (GDPR Regulation (EU) 2016/679) and the Swedish Patient Data Act (Patientdatalag 2008:355), which regulate the handling, sharing, and protection of personal health data.

Two additional legal pillars are particularly relevant to understand how external actors interact with public healthcare: (i) the Public Procurement Act (Lagen om offentlig upphandling 2016:1091), which governs how public actors should conduct its purchases and (ii) the Act on System of Choice (Lag om valfrihetssystem 2008:962), which states that freedom of establishment applies for all public and private healthcare providers who fulfill the requirements and that individuals can choose among these providers. (Janlöv et al., 2023)

Decision-making processes are therefore often considered complex and involve multiple actors, including the current government, administrative units, healthcare professionals, and regulatory authorities. (SKR, 2025)

1.1.3.3 Public procurement act

Public procurement is a statutory process aimed at ensuring that public funds are used as efficiently as possible through structured competition. The Public Procurement Act (LOU) governs how public Swedish healthcare organisations purchase solutions, requiring competitive tendering and equal treatment of suppliers. The laws are built on five principles that originate in EU law: non-discrimination, equal treatment, proportionality, mutual recognition and transparency. Non-discrimination means that suppliers should not be discriminated against based on nationality, while the principle of equal treatment requires that all suppliers be treated equally and be afforded the same opportunities. Proportionality refers to the fact that procurement requirements should be relevant and not more extensive than necessary.

Mutual recognition implies that certificates and qualifications from one EU member state should be recognised by others, and transparency requires procurement processes to be open, predictable, and clearly documented. (Konkurrensverket, 2024)

Procurement documents typically include requirements relating to the supplier and the subject matter of the procurement, as a basis for the evaluation of tenders and the award criteria. It is allowed to specify criteria to ensure that the tenderers possess sufficient capacity and resources. In procurements over a certain threshold, there are more detailed rules for how the specifications should be designed. In the health sector, specific thresholds apply. (Konkurrensverket, 2024)

The procurement must be advertised on a designated procurement platform. As a general rule, these procurement documents are not allowed to be changed after the procurement has been advertised, and the contracting authorities should opt for the offer that is most financially advantageous. Afterwards, a contract agreement is not allowed to be modified during its term without a new procurement procedure being carried out. (Konkurrensverket, 2024)

1.1.3.4 Digital infrastructure, patient data, and data protection

As mentioned in section Section 1.1.3.2 (*Ethical principles and legal frameworks governing Swedish healthcare*), healthcare providers, as well as external suppliers that process patient data on behalf of healthcare providers, are subject to the EU General Data Protection Regulation (GDPR Regulation (EU) 2016/679) and the Swedish Patient Data Act (Patientdatalag 2008:355) (European Union, 2016; Svensk författningssamling, 2008). The GDPR establish general principles for processing of personal data, including requirements regarding legal basis, purpose limitations, data minimisation and security (European Union, 2016), while the Patient Data Act complements GDPR by regulating how patient documents may be documented, accessed and shared within healthcare (Svensk författningssamling, 2008; Socialstyrelsen, 2026).

In addition to regulatory frameworks governing patient data, Sweden has adopted a national strategy for digitalisation in health and social care. The Swedish government and the Swedish Association of Local Authorities and Regions (SALAR) formulated Vision E-hälsa 2025, which aims to position Sweden as a leading country in the use of digitalisation and e-health. The strategy outlines goals related to individual participation, access to appropriate knowledge, secure information processing, and digital transformation in parallel with organisational development. (Janlöv et al., 2023)

Together, national digital infrastructures, emerging health data strategies, and data protection legislation define the formal conditions under which digital services, data-driven tools, and AI-based solutions may be developed, integrated, and used within Swedish public healthcare. (SKR, 2025; Janlöv et al., 2023; European Union, 2016)

1.1.3.5 The role of private healthcare in Sweden

The role of private providers in Swedish healthcare must be understood in relation to earlier reforms in the 1990s. At that time, several regions introduced a purchaser-provider split, meaning that regional authorities assumed the role of purchasers of care, while healthcare units acted as providers delivering services under contractual arrangements. Although healthcare remained publicly financed, these reforms introduced quasi-market mechanisms within the publicly financed system. This meant that contractual relationships and performance-based payment mechanisms became part of the governance structure, creating more market-like interactions between purchasers and providers. (Janlöv et al., 2023)

Within this institutional context, the number of private healthcare providers is increasing, especially in primary care. Since 2010, all regions have been required to allow patients to choose among accredited public or private primary care providers. Following the introduction of the Freedom of Choice Act (Lag om valfrihetssystem 2008:962), which opened the publicly funded

market to qualified private companies and organizations. (Janlöv et al., 2023)

Janlöv et al. (2023), explains how today, privately owned providers operate under contract with regional authorities and are reimbursed through the same funding mechanisms as publicly operated units. Regardless of ownership structure, providers are subject to the same legislation, regulatory requirements, and quality standards (Janlöv et al., 2023). Recent estimates suggest that around 46% of primary care centers are operated by private providers in Sweden (Ludvigsson et al., 2025).

1.2 Problematization

The environment of Sweden is considered supportive of innovation and a well-developed life sciences ecosystem have contributed to the emergence of numerous of healthtech start-ups (Business Sweden, 2022). At the same time, healthcare delivery in Sweden is characterised by decentralised governance, regionally organised service provision, extensive regulation, and increasing digitalisation (Janlöv et al., 2023; SKR, 2025). In system-level analyses, it is emphasised that stronger collaboration and coordination across organisational boundaries are needed to enable more unified services and to improve the innovation process within and across regions (SKR, 2025; Myndigheten för vård- och omsorgsanalys, 2020).

1.2.1 The increasing pressure on public health care

Although Sweden demonstrates exceptional health outcomes, supported by a well-funded and publicly financed healthcare system, it faces growing structural pressures (OECD and European Observatory on Health Systems and Policies, 2025). Ongoing global demographic shifts, including population growth and ageing, put pressure on healthcare systems to provide sufficient care (Kalinowska-Beszczyńska and Prędkiewicz, 2024). According to OECD and European Observatory on Health Systems and Policies (2025), system capacity is under strain due to increased waiting times, hospital bed shortages, workforce shortages, and the accumulation of patients awaiting

planned surgeries. For instance, the OECD data showed that in 2024, 3.9% of the population reported unmet medical needs, slightly above the EU average, with long waiting times, rather than cost, as the main driver. The National Board of Health and Welfare confirmed a shortfall of 2,230 hospital beds in 2024, not due to a lack of infrastructure but to insufficient nursing staff to operate existing beds (OECD and European Observatory on Health Systems and Policies, 2025). The issue also involves regional inequalities, particularly workforce shortages in rural areas (OECD and European Observatory on Health Systems and Policies, 2025; Ludvigsson et al., 2025). Ludvigsson et al. (2025) argue that the limitations in care coordination arise from siloed digital infrastructure and care governance, a limited hospital bed capacity per capita, and a reimbursement system that does not sufficiently incentivise coordination.

Concurrently, the Swedish Minister for Health, Elisabet Lann (KD), emphasized shortcomings in equality and governance within the current healthcare system and argued for increased state steering of healthcare (Prioriteringscentrum, 2025). In response, Anders Sylvan, a former physician and the former chief executive of Region Västerbotten and Region Gotland, has been appointed National Coordinator (TT, 2026). According to the government announcement reported by TT, Sylvan's mission is to review patient waiting times, identify structural obstacles, and propose measures that can rapidly increase the capacity of Swedish healthcare. The public statements made by the Minister for Health, together with the appointment of a National Coordinator specifically tasked with addressing waiting times, further illustrate that healthcare queues are a nationally recognised structural problem.

1.2.2 Start-ups' embedding processes in a regulated and decentralised healthcare system

Healthtech start-ups are important drivers of growth and innovation, contributing significantly to the development of new healthcare solutions

that advance public healthcare. In doing so, they help address numerous challenges that current healthcare systems face, and act as core contributors of innovation and economic growth within the healthcare sector (Kalinowska-Beszczyńska, and Prędkiewicz, 2024). With this background, the contribution of healthtech start-ups to healthcare development depends not only on their capacity for technical innovation but also on how new technologies are evaluated, adopted, and implemented within existing organisational and institutional structures (Greenhalgh et al., 2004).

Although Sweden is classified as an innovative leader, direct and indirect government support for business R&D is identified as one of the country's three most significant weaknesses (European Commission, 2025). Within Swedish public healthcare, decentralised decision-making, variation in reimbursement models and fragmented digital infrastructure further condition how new solutions are assessed and implemented (Janlöv et al., 2023; Ludvigsson et al., 2025). This indicates that high national innovation performance does not necessarily translate into smooth adoption within public healthcare, where regulatory, organisational, and institutional structures can delay or constrain implementation. Prior research further demonstrates that entrepreneurial action is shaped by regulatory responses and institutional constraints, creating dynamic complexity in which firms must continuously adapt their strategies (Mejtoft et al., 2022). Consequently, understanding startups' pathways into public healthcare requires attention to how relationships with regional authorities, healthcare professionals, and administrative actors evolve over time.

At the same time, these structural challenges have increasingly been recognised at the policy level. In recent policy documents, SKR emphasises the need for Sweden to strengthen national and EU-level capacity to share and utilise health data. This includes developing a coordinated regional and national infrastructure for health data. In addition, SKR highlights the need for a national strategy to enable broader use of AI-based decision support systems in healthcare. (SKR, 2025)

1.2.3 The academic gap in network and institutional studies on new ventures within healthtech

1.2.3.1 Processual understanding of start-up embedding in the Swedish public healthcare network environment

Research highlights the importance of understanding health governance as complex interorganizational networks, requiring dynamic and holistic approaches that account for interconnected relationships, power dynamics, and evolving contexts within health systems (Best et al., 2018). Although previous studies have examined entrepreneurial business formation within networks and in the Swedish MedTech sector, Bengtson et al. (2022) argue that further meta-analyses are needed to strengthen generalizability and comparability across contexts. Bengtson et al. (2022) also emphasise the importance of incorporating interviews with key actors and multiple data sources in order to capture the complexity of these processes. Moreover, Bengtson et al. (2022) point to the need for deeper investigation into how entrepreneurial actors interact with regulatory frameworks, and how regulatory responses generate dynamic complexity in highly regulated sectors.

This processual perspective is particularly important given that much of the existing literature on health technology implementation focuses primarily on early adoption at the individual level. Far less attention has been paid to how technologies move beyond initial uptake to become embedded and diffused across organisations within complex healthcare systems. (Greenhalgh et al., 2017)

In this regard, Kalinowska-Beszczyńska and Prędkiewicz (2024) call for further research on challenges within collaboration networks, the role of public actors in facilitating innovation, and strategies for managing growth and network development in healthtech start-ups. Kalinowska-Beszczyńska and Prędkiewicz (2024) further stress the need to examine how emerging medical technologies are evaluated, adopted, and integrated through

collaborative and co-creation practices.

Together, these studies underscore the need for a greater understanding of how start-ups become embedded within the Swedish public healthcare network environment.

1.2.3.2 Organizational responses to competing institutional logics

While research on institutional logics has examined the coexistence of competing logics, less is known about how organisations navigate and respond to institutional complexity (Thornton et al., 2012). However, Thornton et al. (2012) argue that there is still a need for greater understanding of how organisations actively shape the institutional complexity of their environments by influencing policy, regulation, and field-level norms. Relatedly, Goodrick and Reay (2011) emphasise the need for future research to examine how actors actively respond to and manage multiple institutional logics.

1.3 Objectives

1.3.1 Purpose

This study aims to examine how healthtech start-ups become embedded in the Swedish public healthcare system, including both initial entry and scaling, through interactions with networks of actors, resources, and activities. The study seeks to understand how relationships, dependencies, and institutional logics shape the pathways through which new ventures gain access, legitimacy, and integration within the market and institutional context of the Swedish public healthcare sector.

1.3.2 Research questions

To address the study's purpose, the following research questions are examined:

How do structural conditions in the Swedish public healthcare system shape the environment in which innovative healthtech firms seek to become embedded?

How do innovative healthtech companies navigate the process of becoming embedded in the Swedish public healthcare system?

How do competing institutional logics shape the embedding of innovative healthtech firms within the Swedish public healthcare system across different stages of the process?

1.3.3 Research contribution

This study contributes to research on healthtech startups by shifting the focus from technological performance to the process through which innovative companies become embedded within the Swedish public healthcare system. Rather than identifying what should be done to facilitate innovation, the study examines how embedding unfolds through relationships, resource combinations, and interaction with public healthcare actors. In doing so, the study responds to calls for a more processual understanding of how healthtech ventures navigate complex interorganizational healthcare environments and interact with regulatory and institutional structures.

Furthermore, the study contributes to business network theory and institutional research by analysing how innovative companies navigate dependencies and institutional perspectives. In doing so, the thesis will provide a process understanding of how innovative companies become part of a complex public system.

1.3.4 Delimitations and limitations

The study focuses on entry into the publicly financed healthcare system, while private healthcare is included only to the extent it relates to entry strategies. Moreover, the study emphasises regional-level embedding, referring to the processes through which healthtech innovations become integrated into healthcare services organised, financed, and delivered at the regional level. This includes hospitals, specialist care, primary care, and other regionally governed healthcare services. The findings primarily reflect the conditions for healthtech innovations and focus on the initial phases of embedding and scaling within the public healthcare system rather than mature-stage expansion. Furthermore, the analysis emphasises network processes and institutional factors involved in embedding, rather than technological performance or clinical effectiveness. The reason for this is that the report's scope would become too comprehensive.

The aim is to study multiple firms' experiences and not an individual firm in depth. The study does not differentiate between specific product categories or clinical domains but instead examines market entry as a process. This is a broad and comprehensive scope, as the aim is to explore the possibility of identifying underlying mechanisms, patterns, and interactions that shape market entry at a systemic level, rather than at the level of specific product categories. Moreover, entry processes are studied at a given point in time and do not aim to predict future development. No quantitative performance analysis is conducted, as the study does not aim to measure any rate of success or adoption.

Along with these delimitations, this research is subject to several limitations. The study is constrained by a cross-sectional design, thus relying on retrospective accounts rather than longitudinal observation. Additionally, sampling, actor coverage, and regional variation is not fully representative, which may constrain the extent to which the findings reflect the full range of perspectives and conditions across the Swedish healthcare system.

1.3.5 Target audience

The primary academic audience of the thesis includes researchers in business network theory, institutional theory, and healthcare innovation studies. In practice, the study may be of interest to healthtech entrepreneurs, regional healthcare decision-makers, innovation units within public healthcare, and policymakers seeking to strengthen the integration of innovation within decentralised healthcare systems.

1.4 Thesis outline

The thesis is structured as follows:

Chapter 1: Introduction
This chapter introduces the background and problem context of digital health innovation within the Swedish public healthcare system and presents the purpose of the study and the overall research contribution.

Chapter 2 Theoretical frameworks
This chapter presents theoretical perspectives and analytical frameworks for interpreting the empirical material, primarily drawing on business network theory and institutional theory.

Chapter 3: Methodology
This chapter explains the research design and methodological choices guiding the study.

Chapter 4: Results and analysis
This chapter presents empirical findings and examines how structural conditions, network dynamics, and institutional factors shape the market entry and embedding processes of healthtech start-ups.

Chapter 5: Discussion
This chapter discusses the findings in relation to previous research and the study's theoretical perspectives, while also reflecting on the broader implications of the results.

Chapter 6: Conclusion
This chapter summarises the study's main findings by answering the research questions and discussing how the study fulfills its purpose. It also highlights the study's limitations and suggests directions for future research.

2 Theoretical framework

2.1 Introduction to theoretical frameworks

The theoretical framework has been selected to provide analytical concepts that help structure and interpret the empirical material in line with the study's aim and research questions. To conceptualise this complex business environment, the literature study builds on established perspectives from industrial marketing and organisational studies.

The main theoretical lens is the *Business Network Theory* within the Industrial Marketing and Purchasing (IMP) tradition, which views the market as a network of connected relationships in which organisations are mutually affected by one another's actions and adaptations (Håkansson and Snehota, 1995; Håkansson and Ford, 2002). To structure the network, the Actors, Resources and Activities (ARA) framework is used to conceptualise the interrelated layers (Håkansson and Snehota, 1995). Building on this, Ford and Mouzas (2013) notion of interaction in network space and time adds a process perspective.

The framework is complemented by Institutional Logics, which highlight how norms, values, and legitimacy criteria influence organisational behaviour, particularly in contexts where nonmarket actors and formal rules matter Friedland and Alford (1991). Together, these perspectives enable an analysis that connects network interaction with institutional conditions:

(i) How actors relate and adapt

(ii) Why certain choices are constrained/justified

Finally, to operationalise the theoretical framework in the empirical analysis, the study applies complementary analytical tools, including PESTEL and Porter's Five Forces. These tools support the structuring of contextual, structural and relational conditions but remain subordinate to the main theoretical lens.

2.2 Business network theory

2.2.1 What is networking?

The Business Network theory, often associated with the Industrial Marketing and Purchasing (IMP) tradition, builds on traditional market-based, transaction-oriented ideas but conceptualises markets as networks of interconnected relationships rather than as collections of independent actors (Håkansson and Snehota, 1995). In contrast to the neoclassical economic view that emphasises competition, price mechanisms, and boundaries, business network theory emphasises interaction, adaptation, and the development of long-term relationships. Firms do not act in isolation; their actions are shaped by, and in turn shape, other actors. (Håkansson and Ford, 2002)

According to Håkansson and Ford (2002), the network is structured by a number of nodes connected by threads: the nodes represent business units, and the threads represent the results of investments by the business units to which they connect. The threads and units comprise resources, knowledge, and understanding, in various forms and power (Håkansson and Ford, 2002). A central assumption of business network theory is that no single actor controls the network. Outcomes emerge from the various nodes and threads, each with distinct goals, resources, and constraints. This makes networks complex and path-dependent as historical relationships and prior adaptations influence current and future possibilities. (Håkansson and Snehota, 1995; Håkansson and Ford, 2002)

2.2.2 Actors, resources and activities framework

To analyse the structure and dynamics of business networks, Håkansson and Snehota developed the Actors-Resources-Activities (ARA) framework (1995). The ARA-framework, developed within the Industrial Marketing and Purchasing (IMP) approach, conceptualises networks as comprising three interrelated layers: actors, resources, and activities. (Håkansson and Snehota, 1995)

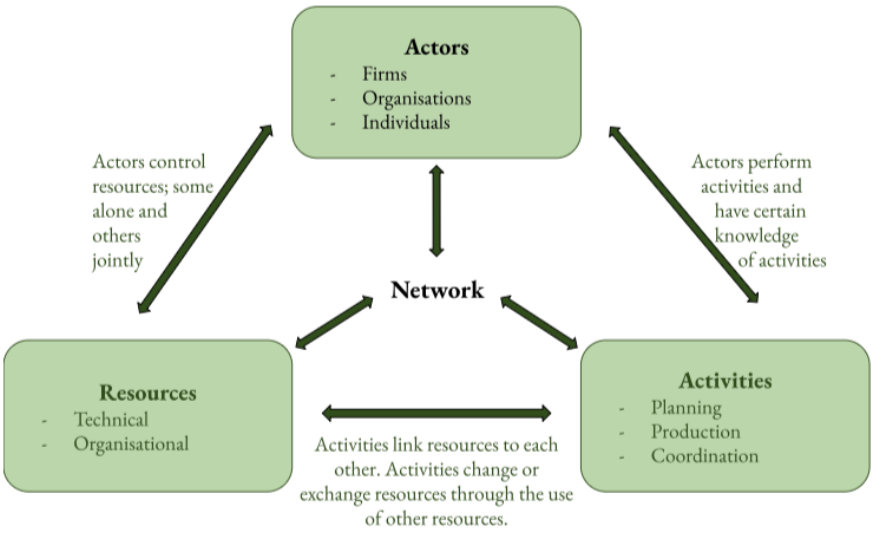

Figure 1: Illustration of the ARA-framework, adapted from Håkansson and Snehota (1995).

2.2.2.1 Actors

In business network theory, actors refer to organisations, organisational units, or individuals that interact with other actors in the network. Actors are not viewed as autonomous entities; their identities, roles, and capabilities are shaped through interaction and relationship development over time (Håkansson and Snehota, 1995).

2.2.2.2 Resources

Resources include both tangible and intangible elements such as technologies, data, infrastructure, competencies, and legitimacy. A key assumption in business network theory is that the value of resources depends on how they are combined with other resources rather than their specific attributes. Thus, the usefulness of a resource depends on its fit with existing structures in the network. As resources become connected and adapted to one another over time, they may become difficult to separate or reconfigure, leading to path dependence and lock-in effects. (Håkansson and Snehota, 1995; Håkansson and Waluszewski, 2002)

2.2.2.3 Activities

Activities are the processes and operations undertaken by actors within the network, such as production, coordination, development, and administrative tasks. These activities are interdependent across organisational boundaries, meaning that changes in one actor's activities often require adaptations by others. (Håkansson and Snehota, 1995)

Activities evolve through interaction and adjustment rather than top-down decision-making. Actors tend to specialise in specific activities over time, resulting in both efficiency and rigidity within established activity patterns. (Ford and Mouzas, 2013)

2.2.2.4 Networking in space and time

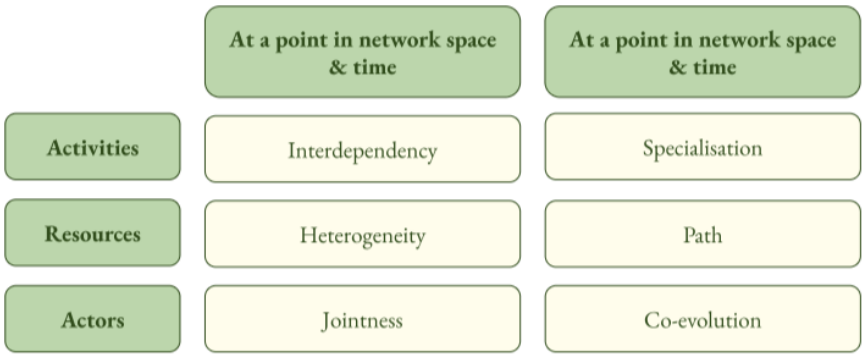

Figure 2: Business interaction in networks over time, adapted from Ford and Mouzas (2013).

While the ARA framework explains the structural components of business networks, Ford and Mouzas (2013) extend this perspective by addressing how interaction unfolds both at a specific point in time and over time. Ford and Mouzas (2013) argue that business interaction should be understood as taking place in network space and time, and relationships must be analysed both in their current configuration and in their relation to historical development.

At any given point in time, interaction in business networks is characterised by interdependencies among activities, as tasks and processes are connected across organisational boundaries. At the same time, resources are heterogeneous, and value derives from the combination of different types of resources. The actors are characterised by jointness, as outcomes are produced collectively through interaction rather than by the actions of a single organisation. (Ford and Mouzas, 2013)

Over time, these characteristics give rise to more dynamic patterns. Organisations tend to specialise in certain activities as a result of repeated interaction and adaptation. Resource combinations become path dependent, as earlier investments and adaptations shape what is possible in the future. Simultaneously, actors co-evolve by adjusting their strategies and capabilities

in response to changes in the network. (Ford and Mouzas, 2013)

By incorporating a temporal perspective, Ford and Mouzas (2013) highlight that network positions and relationships are dynamic and continuously shaped by past interactions while simultaneously influencing future developments. In other words, current decisions are constrained by historical adaptations, but they also help shape the network's future structure.

2.2.2.5 Levels of the network

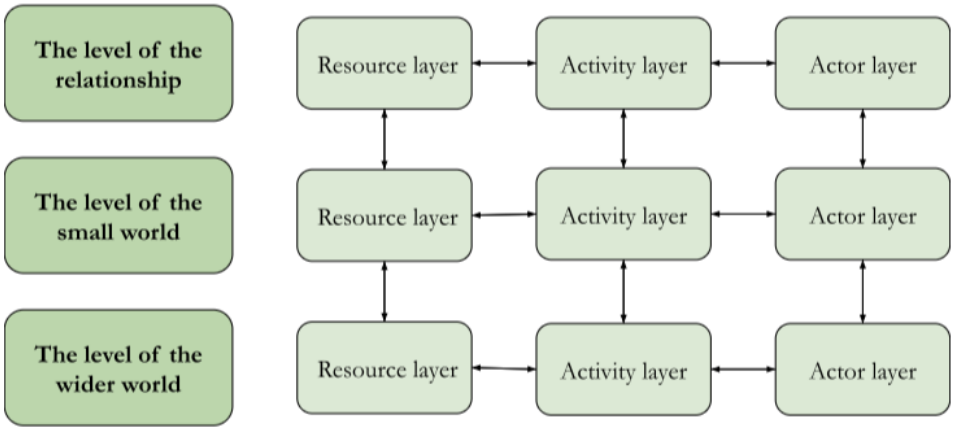

Figure 3: llustration of the interaction between the ARA layers across different levels of the network (Ford and Mouzas, 2013)

Building on the view in 2.2.2.4, Ford and Mouzas (2013) suggest that business interaction could be analysed at different levels of network embeddedness. As illustrated in Figure 3, they distinguish between the relationship level, which focuses on a purely dyadic relationship between two actors, the small world level, which refers to the immediate network of relationships where actors are directly connected through shared activities and resources and interact with each other on an ongoing basis, lastly, the level of the wider world, which refers to the broader network context in which the small world is embedded, where business actors are indirectly affected by changes in the wider network. (Ford and Mouzas, 2013)

The distinction among relationship, small-world, and wider-world levels also provides a structuring principle for the application of analytical tools in this study. Various analytical frameworks are employed to clarify the conditions operating at these distinct yet interconnected levels of network embeddedness. While the Business Network theory serves as the primary theoretical lens for understanding interaction, embeddedness, and interdependence, complementary analytical frameworks are used to structure the empirical analysis. These tools are not treated as independent theories but as instruments for examining power relations, dependencies, and structural conditions across different levels of the network.

2.2.3 Limitations and criticism

While business network theory offers a comprehensive account of interaction, adaptation, and relationship development, it has been noted that the framework is less explicit about how broader institutional structures, norms, and legitimacy criteria shape actor behaviour within networks (Thornton et al., 2012). Håkansson and Ford (2002) acknowledge that no single actor controls the network, but the framework does not systematically address how regulatory, political, or normative conditions at the macro-level constrain or enable network dynamics. Similarly, Ford and Mouzas (2013) emphasise the co-evolutionary and path-dependent nature of network processes, yet the mechanisms by which institutional logics influence these processes remain underexplored within the framework itself. It is in response to these analytical gaps that this study complements business network theory with an institutional logics perspective, Section 2.3 (*Institutional theory and institutional logics*).

2.2.4 PESTEL as a framework for the wide world analysis

The PESTEL framework identifies and analyses external factors that influence organisations or industries through six dimensions: *political, economic, social, technological, environmental,* and *legal*, explained further in *Table* 1. The framework helps identify critical contextual factors

and potential future scenarios that may affect organisational success or failure. Together, these dimensions define the external macro-environment. The macro environment refers to broad external factors that influence organisations and industries. (Johnson et al., 2017, p. 33–48).

Table 1: PESTEL elements and their explanations (Johnson et al., 2017, p. 33–48).

PESTEL elements	Concept
Politics	Identifying the role of the state and exposure to civil society organisations, to determine the risks and importance of the political factors
Economics	Analysing the economic factors, including exchange rates, interest rates, and fluctuating economic growth rates, through the economic cycle
Social	Examining changes within demographics and cultural attitudes that shape demand and supply, as well as the innovativeness and effectiveness of the organisation
Technology	Identify indicators of innovative activity to anticipate areas of rapid technology change and recognise technology leadership
Ecological	Understanding environmental issues such as pollution, waste, and climate change, and assessing how environmental regulations may result in additional costs or strategic opportunities
Legal	Studying changes and limitations in the legal environment, including regulatory and compliance requirements, and assessing how these can influence acquisitions, divestments, and internationalisation strategies

McDonagh et al. (2023) used the PESTEL framework to structure and systematically analyse the macro-level factors influencing the implementation of Advanced Practice Radiation Therapists (APRT) in the United States. The analysis was organised around the six PESTEL elements, identifying barriers and opportunities within each category that could relate to the U.S. radiation oncology context. They used each element to examine how regulatory structures, reimbursement models, workforce shortages, emerging technologies, demographic trends, and legal boundaries determine whether the APRT role can be implemented. In doing so, the authors could identify

conditions that, on a macro level, influence the feasibility of introducing a new professional role. (McDonagh et al., 2023)

In this study, PESTEL is primarily applied at the wider world level of the network, as it captures macro-level political, legal, economic and technological conditions that shape the broader institutional environment within which healthtech start-ups operate.

2.2.5 The five competitive forces as a framework for analysis of the small world

Porter's five forces framework consists of five competitive forces that together can be used to analyze an industry and its attractiveness, the forces being *extent of rivalry between competitors, threat of entry, threat of substitutes, power of buyers,* and *power of suppliers*, explained further in *Table* 2. If the forces have a significant presence within the industry, such as consisting of powerful buyers and suppliers with threats of substitutes, it is considered not attractive. (Johnson et al., 2017, pp. 64–73; Porter, 2008)

Table 2: Porter's five forces and their explanation (Johnson et al., 2017, p. 64–73).

Force	Explanation
Competitive rivalry	Is determined by competitor concentration and balance, industry growth rate, high fixed costs, high exit barriers, and low differentiation
Threat of entry	Some entry barriers are based on scale and experience, access to supply or distribution channels, expected retaliation, legislation or government action, and incumbency advantages
Threat of substitutes	Substitutes are products that offer the same or similar benefits. The price/performance ratio is a critical part of the substitution threat, and extra-industry effects that reduce industry attractiveness
Power of buyers	The buyer's power is expected when there is a concentration of buyers, low switching costs, and when the buyer is capable of supplying itself. When buyers are under economic pressure, and the impact on quality is low, buyer power also increases
Power of suppliers	Supplier power is more likely when there is a concentration of suppliers, high switching costs, supplier competition threat, and the product is differentiated

Pines (2006) used Porter's Five Forces model as a framework to examine the strategic position of emergency departments (EDs) within the U.S. healthcare system, mapping how each competitive force impacts bargaining power and sustainability. For example, supplier power is illustrated through the influence of pharmaceutical companies, device manufacturers, nurses, and specialist consultants, who can significantly affect costs and operations. In this case, buyer power is particularly strong, as governments, insurers, and managed care organizations largely determine reimbursement levels, often below cost. Together, the model deepens understanding of how structural market forces constrain ED autonomy and profitability, framing the ground conditions for strategic behaviour within the industry. (Pines, 2006)

Some industries may require an additional force to complement the traditional Five Forces framework: complementors. Complementors are actors whose products or services can enhance an industry's value by enabling cooperative relationships that make other offerings more attractive rather than competing with them. Complementors can increase the overall attractiveness of firms to customers and suppliers. This dynamic is closely related to network effects, whereby the adoption of a product or service by one user increases its value for other users. (Johnson et al., 2017, pp. 64–71; Porter, 2008)

From the Business Network Theory perspective, these competitive forces can be interpreted as expressions of power asymmetries and dependency structures among actors at the small-world level, shaping how relationships, resource combinations, and activity coordination evolve over time.

2.3 Institutional theory and institutional logics

2.3.1 Institutional theory

Institutional theory serves as a lens that can be applied at the individual and organisational level to understand how its behaviour and decisions within social, cultural and regulatory contexts are shaped by rules, norms and beliefs (Meyer and Rowan, 1977; Zucker, 1977). Instead of viewing

organisations as autonomous actors operating solely according to market principles, institutional theory emphasises how legitimacy, institutionalised practices, and shared understandings shape decisions and action (Scott, 2013). Thus, this theory broadens the explanation of an actor's choices by incorporating external pressures related to legitimacy and conformity (Meyer and Rowan, 1977; Zucker, 1977). According to institutional theory, behaviour is influenced by three key elements: regulative, normative, and cultural-cognitive (Scott, 2014). Institutional theory emphasises that while institutions shape behaviour, actors retain agency and can gradually influence and change these structures, and that institutions are dynamic (Thornton et al., 2012).

By applying institutional theory, it becomes possible to conceptualise field-level dynamics and understand how certain actions, structures, and practices come to be regarded as legitimate, rational, and appropriate within the given field (Suddaby, 2026). In the context of this thesis, institutional theory provides a valuable lens for understanding how different prevailing value systems affect the embedding of a healthtech firm within the public healthcare sector.

2.3.2 Institutional logics

Institutional logics is a specific perspective within institutional theory that explains how different cultural belief systems guide behaviour and organisational practices. The concept was introduced by Friedland and Alford (1991), who criticised earlier organisational research for treating organisations as isolated from the institutional context. Friedland and Alford (1991) argued that organisations cannot be understood when separated from the social institutions in which they are embedded. According to the framework, modern societies consist of multiple institutional orders, with the main ones being: market, state, corporation, profession, community, family, and religion (Thornton et al., 2012; Friedland and Alford, 1991). Each institutional order is associated with characteristic logics that are the

dominant ways of valuing, reasoning, and organising (Thornton et al., 2012; Thornton and Ocasio, 1999). While institutional orders are presented as analytically distinct, the enactment of institutional logics is dynamic in practice (Berg Johansen and Waldorff, 2015).

2.3.3 Institutional pluralism and complexity

Organisations must navigate and balance the logics associated with different institutional orders, such as the state, which emphasises legality, equity, security, and correctness, and the market, which prioritizes profit, performance, competition, effectiveness, and efficiency (Thomann et al., 2016). Balancing these competing logics can create divergent and sometimes contradictory demands on organisations (Marquis and Lounsbury, 2007). Thus, the institutional logics perspective highlights how multiple, sometimes competing, belief systems coexist within societies and shape organisational behaviour.

A central concern from an analytical perspective is therefore how logics relate, overlap, and conflict (Berg Johansen and Waldorff, 2015), and that organisational fields are often characterised by institutional pluralism, where multiple logics coexist, as claimed by Dunn and Jones (2010). If these multiple institutional logics compete, organisations face institutional complexity (Dunn and Jones, 2010). Prior research by Greenwood et al. (2011) concludes that such complexity can affect organisational structures, decision-making processes, and responses to change.

2.3.4 Organisational responses to competing logics

It is suggested that organisations may respond by prioritising one logic, selectively combining elements from multiple logics, or developing hybrid arrangements (Greenwood et al., 2011). Actors can reconcile and exploit multiple institutional logics (Friedland and Alford, 1991). As multiple institutional logics may coexist within organisational fields, institutional influence is not necessarily governed by a single dominant and deterministic

logic (Zilber, 2024). Rather, actors can use institutional logics as a toolkit, drawing on different logics to justify decisions, switching between logics when interacting with different stakeholders, and strategically using logics as resources (Thornton et al., 2012; Zilber, 2024). Following this reasoning, organizations may achieve legitimacy by adhering to the expectations of external actors who represent or promote a particular institutional logic. In doing so, they often gain access to important resources or financial support. (D'Aunno et al., 1991; Garrow and Hasenfeld, 2012)

For example, Schneiberg and Soule (2005), later extended by Schneiberg et al. (2008), compared cooperatives and corporations in the American insurance, dairy, and grain industries to show how they are based on different institutional logics (Thornton et al., 2012). Schneiberg et al. (2008) argue that cooperatives are not simply smaller versions of corporations. Corporations are guided by market and corporate logics, where economic activities are organised through competition, individual exchange, and hierarchical control. Cooperatives, in contrast, are guided by a community logic based on collective governance, mutual membership, and shared responsibility. Their legitimacy comes from solidarity and shared identity rather than profit and hierarchy. This comparison shows that cooperatives represent an alternative way of organising economic activity within capitalism, grounded in different sources of legitimacy, authority, and purpose. (Schneiberg et al., 2008)

2.3.5 Legitimacy

Institutional logics differ in their criteria of legitimacy, where what is considered legitimate under a given logic determines who holds authority and how decisions are justified (Thornton et al., 2012). Thornton and Ocasio (1999) demonstrate this in their study of the U.S. publishing industry, where a shift from professional to market logic altered the basis of legitimacy from editorial expertise to financial performance, thereby altering how power was realised within organisations.

There are different types of legitimacies that an organisation can obtain. A

broad and widely used definition describes legitimacy as *"a generalised perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions."* Legitimacy can be divided into three core types: pragmatic legitimacy, moral legitimacy, and cognitive legitimacy. These legitimacies coexist but are not arranged in a single dominant logic. (Suchman, 1995)

Pragmatic legitimacy is based on stakeholders' self-interest and is oftentimes described as purchasable, as organisations can actively invest resources to secure it. In contrast, moral legitimacy and cognitive legitimacy cannot be bought. Investments can, instead, increase perceptions of organisational fragmentation and reduced credibility. However, pragmatic and moral legitimacy share similarities, as both are established through public discussion, argumentation, and other discursive evaluations. Cognitive legitimation, however, can be undermined by arguing for it. Instead of arguing for cost-benefit appraisals or ethical judgements, cognitive legitimacy is grounded on implicit assumptions and unspoken beliefs that form how people interpret reality. (Suchman, 1995)

The different types of legitimacies differ in depth and stability, and can undermine one another, but may also reinforce one another. Periods of organisational change are particularly likely to generate tensions or conflicts between these forms of legitimacy. (Suchman, 1995)

2.3.6 Limitations and criticism

Despite an escalating use of the Institutional Logics perspective, there is still a lack of attention to analytical and theoretical challenges, as well as raising concerns of a lack of complexity. The institutional logistics focus is shown to be quite limited to understanding organisational tensions between logics, and less concerned with its social consequences (Berg Johansen and Waldorff, 2015). Zilber (2024) argues that the institutional logics perspective tends to study logics at the macro and meso levels, neglecting micro-level interactions, thereby treating logics as fixed and large-scale structures and overlooking how

individual interaction, negotiation, and inter-attention shape those logics.

3 Methodology

To structure the methodological choices, we use a layered methodology inspired by the Research Onion model. In this thesis, the Research Onion is used as a planning and reporting framework, helping ensure alignment among assumptions about knowledge and reality, the empirical material collected, and how analysis is conducted and presented. (Saunders, Lewis, and Thornhill, 2023)

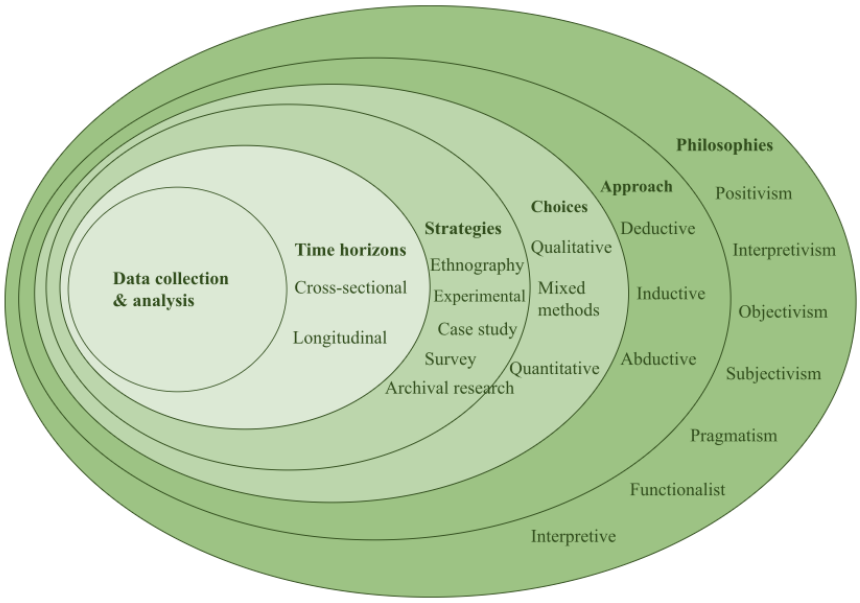

Figure 4: The research onion (Saunders et al., 2023).

3.1 Research philosophy

This thesis is grounded in a constructive-relativist ontology, meaning that reality is understood as socially constructed and shaped by the perspectives of different actors, rather than as a single objective phenomenon. In this study, how entry happens is not viewed as a fixed or universal process, but as something that varies depending on actors' roles, experiences, and institutional logics. In the context of Swedish healthcare, actors such as public buyers, clinicians, and healthtech firms operate under different

conditions and priorities, leading them to interpret key concepts, such as value, risk, and evidence, in different ways. These differing interpretations are not only descriptive but also actively influence how entry processes unfold, shaped by the perspectives of the different actors involved. (Saunders et al., 2023)

Epistemologically, the study adopts an interpretivist approach, focusing on understanding how these actors make sense of entry processes rather than attempting to measure them objectively. The aim is therefore to capture how stakeholders experience dependencies, constraints, and decision-making in practice. This also implies acknowledging that knowledge is co-created between the researcher and the empirical setting, and that choices regarding interviewees, questions, and analytical framing shape the insights generated. (Saunders et al., 2023)

At the same time, the study is guided by a pragmatic orientation. While grounded in theory, the ambition is also to produce insights useful to firms and decision-makers navigating processes of embedding within the Swedish healthcare system. This enables the study to combine theoretical depth with practical relevance. (Saunders et al., 2023)

3.2 Approach to theory development

The abductive logic is operationalised through systematic combining, a research approach developed by Dubois and Gadde (2002). Early outreach and mapping in the study indicated uneven accessibility for certain actor groups, primarily early-stage start-ups, and the academic documentation did not support a clear public-versus-private or product-to-product comparison. Instead, the project converged on a processual market-entry perspective by identifying critical moments in the entry journey, the actors who shape those moments, and the resources that make entry feasible. This type of iterative redirection is consistent with abductive qualitative research logics, in which empirical surprise becomes analytically informative and reshapes the study's focus rather than being treated only as a practical inconvenience. (Dubois

and Gadde, 2002)

Accordingly, the thesis adopts an abductive approach in which empirical material and theory are developed in tandem: initial theoretical expectations guide data collection, while emerging insights from interviews and documents continuously reorient the analytical framework. This aligns with systematic combining (Dubois and Gadde, 2002), in which research is not understood as a linear, stepwise process but rather as an interactive, evolving one.

The research process is characterised by the intertwined nature of its elements, in which problem formulation, data collection, and analysis develop simultaneously and influence one another. This reflects the fundamental premise that theory cannot be understood without empirical observation, and vice versa, making repeated direction and redirection essential for understanding the interactions between the empirical and theoretical worlds. Interactive matching allows the study to maintain theoretical grounding. (Dubois and Gadde, 2002)

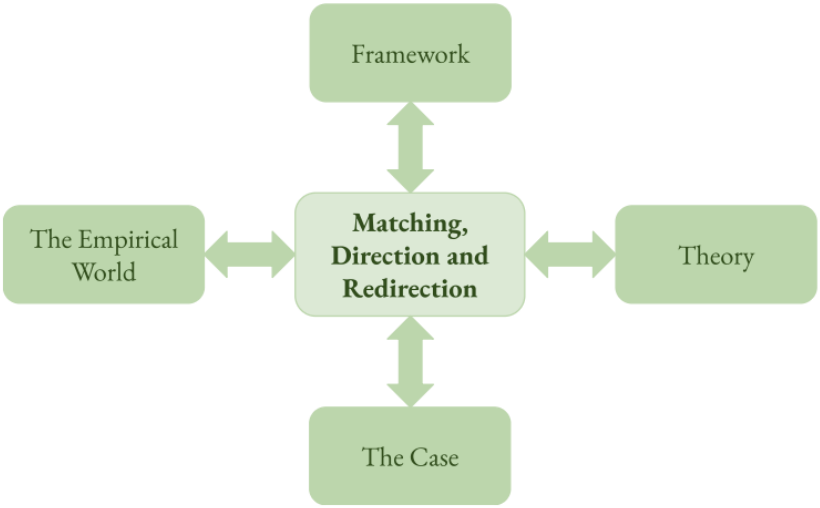

Figure 5: Illustration of Systematic Combining, adapted from Dubois and Gadde (2002).

3.3 Methodological choices

Given the research aim - understanding how and why - a qualitative research design was chosen. Qualitative research is particularly well-suited for exploring complex, context-dependent phenomena and for capturing the perspectives of different actors (Creswell and Creswell, 2023).

The thesis uses a qualitative, multi-method design that combines documentary sources and secondary sources with semi-structured interviews. Documentary and secondary sources provide structured insight into formal requirements, institutional arrangements, and broader contextual conditions shaping market entry. Interviews provide practice-based insight into how actors interpret and act within these structures. This combination aims to generate a contextual understanding of entry processes and support triangulation between formal and lived practice.

3.4 Research strategy

Given the nature of the phenomenon, namely healthtech firms' embeddedness within the Swedish healthcare system, this study adopts an exploratory research strategy, which is particularly well-suited to investigating unexplored areas. Exploratory research is particularly suitable when the boundaries of the research problem are not clearly established and where understanding needs to develop alongside the investigation (Saunders et al., 2023). This is also consistent with abductive research, where theory and empirical data are developed in parallel.

Although the study does not follow a strict case-study design, it adopts a case-informed and comparative perspective, focusing on the Swedish public healthcare system as the contextual setting while drawing on multiple firm-level experiences.

Rather than treating each company as a formal case, elements of multiple-case logic are used to enable analytical comparison across different entry ways. Case-based research can support theory development by identifying patterns

through similarities and contrasts across cases (Eisenhardt, 1989). In this study, this logic is applied in an exploratory manner to identify recurring barriers, critical actors, and variations in the unfolding of entry processes.

3.5 Time horizon

Data collection was conducted over a five-week period in March and April 2026. This relatively short and well-defined time frame supports classifying the study as cross-sectional, capturing the phenomenon within a temporal period, rather than a longitudinal study that follows developments over time. (Saunders et al., 2023)

While data collection is cross-sectional, the analysis is process-oriented, reconstructing entry as a sequence of critical moments, actors, and resource dependencies, rather than a single decision point. Through retrospective accounts from respondents, the study can still incorporate insights into processes that unfold over time.

3.6 Data collection

The study adopts an exploratory qualitative market study design, combining both secondary and primary data sources. Secondary scources were collected prior to the interviews and served a dual purpose: establishing a baseline understanding of the institutional landscape and informing the design of the interview guides. The primary data collection was thus shaped by insights from the secondary material, and the two data scources were subsequently integrated during the analysis. Figure 6 provides an overview of how the three phases of data collection relate to one another. Such multi-source designs are particularly appropriate when the aim is to clarify mechanisms, map processes, and develop context-sensitive explanations rather than test predefined hypotheses (Dubois and Gadde, 2002; Saunders et al., 2023). By integrating documentary sources with interview data, the study enables triangulation and a more comprehensive understanding of how innovative firms engage with the Swedish healthcare system (Bowen, 2009).

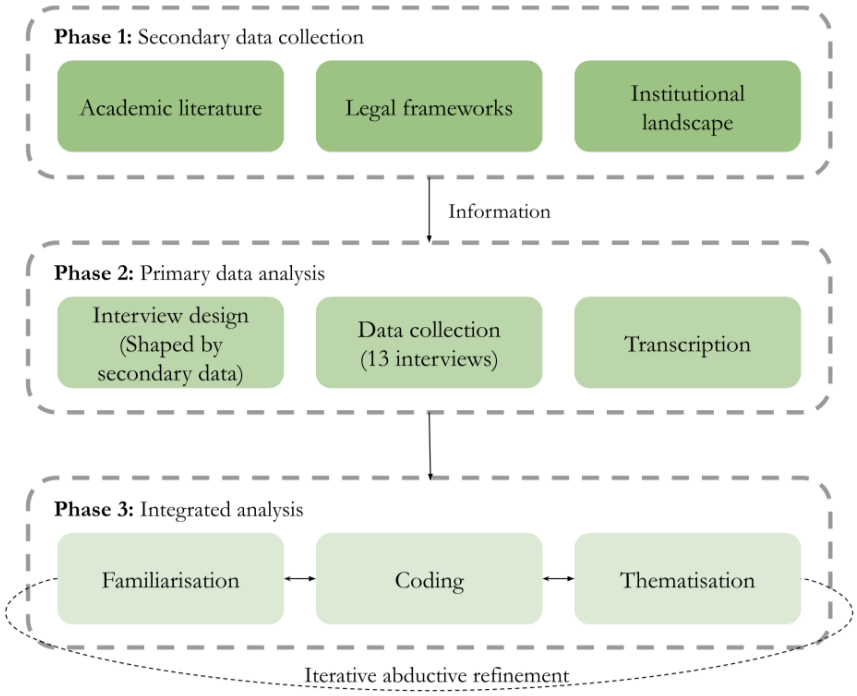

Figure 6: Overview of the data collection and analysis process. Secondary data (Phase 1) established a baseline understanding of institutional structures and informed the interview design in Phase 2 (Bowen, 2009). The initial codes derived from secondary sources were applied to the interview transcripts, resulting in the final codes and five overarching themes through iterative abductive refinement (Braun and Clarke, 2006; Dubois and Gadde, 2002).

3.6.1 Secondary sources

Secondary data was collected to (i) establish a baseline understanding of formal structures and rules, and (ii) serve as a contrast and triangulation against interview results. Systematic document analysis is appropriate when documents are treated as data in their own right, and the researcher is explicit about authenticity, credibility and what can be viewed as lived practise. (Bowen, 2009)

The literature search was conducted to identify relevant academic research on

healthtech, digitalisation, and innovation in healthcare systems. The search was primarily conducted in academic databases, such as Lund University's library database (FINN), using combinations of keywords related to the research topic.

Boolean operators (AND, OR) were used to combine keywords and broaden or narrow the search. For example, search strings included combinations such as:

(i) Swed AND MedTech OR Startups AND Digital health technology

(ii) Swed AND Healthcare innovation AND Implementation

The use of truncation, e.g., Swed to capture both Swedish and Sweden, enabled a broader inclusion of relevant studies. In addition to database searches, backwards and forward citation tracking was applied to identify frequently cited and influential articles.

Given the Swedish context, legal and regulatory documents were also relevant to the study. These sources were used to understand the regulatory landscape and to define the institutional entry conditions and boundaries surrounding procurement and choice-based systems. Such frameworks shape the feasible entry pathways available to market actors and influence how these pathways are understood and described in practice.

3.6.2 Primary data

Primary data was collected through semi-structured interviews with actors across the Swedish healthcare ecosystem. The interviews were approximately 30 to 45 minutes long. Interviews are particularly suitable for exploring complex processes, capturing lived experiences, and understanding how actors interpret their roles and interactions within a system (Kvale and Brinkmann, 2015; Saunders et al., 2023). The sampling and data collection process followed a structured approach inspired by qualitative research principles, ensuring alignment between the research aim, sampling logic, and

analytical strategy.

3.6.2.1 Sampling logic

The sampling of interviewees was guided by a structured qualitative sampling framework, drawing on Robinson (2014) four-point approach to interview-based research. This framework emphasises the importance of systematically defining the sample universe, determining sample size, selecting an appropriate sampling strategy, and identifying practical methods for sourcing participants.

In qualitative research, sampling is not aimed at statistical representativeness but at generating analytically relevant and information-rich cases (Patton, 2014). Consequently, the sampling logic in this study was closely aligned with the research purpose, understanding how different actors contribute and shape innovation in the Swedish healthcare market.

3.6.2.2 Sample universe

First, the sample universe was defined using inclusion and exclusion criteria, focusing on actors with direct or indirect involvement in the introduction, evaluation, or implementation of MedTech and digital healthcare solutions. This resulted in the identification of four key groups as follows:

A. Public sector representatives

B. Private healthcare providers

C. MedTech and digital health start-ups

D. Healthcare industry experts

Within Group A, respondents were drawn from three different Swedish regions, allowing the study to include perspectives from multiple regional healthcare contexts. Within Group B, respondents represented private healthcare providers, allowing the study to capture perspectives from actors involved in delivering care outside the public regional structure. Within

Group C, respondents represented MedTech and digital health start-ups, allowing the study to include perspectives from firms seeking to introduce and embed innovative solutions within the healthcare system. Within Group D, respondents represented healthcare industry experts, allowing the study to incorporate broader sectoral perspectives on the structural, organisational, and institutional conditions shaping healthtech integration. This categorisation reflects the multi-actor nature of the Swedish healthcare system, in which outcomes are shaped by interactions among different organisational and institutional actors. From a network perspective, these groups represent distinct but interdependent positions within the broader system, each contributing specific resources, knowledge, and decision-making authority. A total of 13 interviews were conducted, and an overview of the respondents is presented in *Table 3* below. To ensure confidentiality and protect the privacy of participants, all interviewees have been anonymised in the study.

By including multiple actor categories, the study captures variation in perspectives, which is central to qualitative research aimed at understanding complex systems (Bryman, 2016). It also allows for the identification of both converging and diverging views across the ecosystem.

Table 3: Overview of interview respondents.

Interviewee	Company	Role	Group
A1	Public healthcare region	Director of Health and Medical Services	A
A2	Public healthcare region	Innovation Coordinator	A
A3	Public healthcare region	Head of Service Agreements (Supplier Management & Procurement)	A
A4	University hospital	Chief AI Officer	A
A5	Public healthcare region	Head of Development Unit	A
B1	Private healthcare provider	VP of Operations	B
C1	Healthtech company	CEO & Co-founder	C
C2	Telehealth company	Senior Advisor	C
C3	Healthtech company	Head of Customer Success	C
C4	Medical imaging/AI company	Sales Director EMEA	C
C5	Medtech company	Head of Quality & Technology	C
D1	Life-science/innovation hub	VP	D
D2	Consulting/procurement firm	Interim Head of Procurement, Consultant	D

3.6.2.3 Sample strategy

The sample size was determined based on epistemological and practical considerations. Rather than aiming for a predetermined number of interviews, the study followed the principle of information power, meaning that sample adequacy was assessed in relation to the study's aim, sample specificity,

interview quality, and analytical strategy. (Robinson, 2014)

The sample size evolved iteratively throughout the data collection process. In line with qualitative research principles, participants were continuously recruited based on emerging insights and identified knowledge gaps in the empirical material. This means that additional respondents were sought when certain perspectives were underrepresented or when new themes required further exploration. As the study progressed, interviews were conducted until the empirical material was considered sufficiently rich to address the research question.

3.6.2.4 Sample sourcing

Sample sourcing was conducted through a combination of direct outreach and referral-based sampling. Participants were primarily contacted via platforms such as LinkedIn and email, targeting individuals in relevant roles within the sample universe. (Robinson, 2014)

In a few cases, interviewees referred to additional relevant participants, introducing an element of snowball sampling, which is commonly used in qualitative research to access specialised or hard-to-reach populations (Robinson, 2014; Bryman, 2016). This approach was particularly valuable in the healthcare context, where access to relevant interviewees can be limited.

The combination of purposive and snowball sampling allowed the researchers to both strategically select participants and expand the sample through existing networks, thereby increasing access to relevant expertise.

3.6.2.5 Structure of interviews

The interviews were conducted using a semi-structured format, which balances consistency and flexibility (Kvale and Brinkmann, 2015). An interview guide was developed to ensure key themes were consistently addressed while still allowing respondents to elaborate on topics they considered important.

Semi-structured interviews are particularly suitable in exploratory studies, as they enable the researcher to get deeper responses, ask follow-up questions, and explore unexpected themes that emerge during the interview. (Kvale and Brinkmann, 2015)

The structure of the interviews was shaped by the study's theoretical framework, including actors, resources, and activities, as well as by the understanding of formal structures and regulatory conditions established through the secondary data collection. However, the guide was adapted to the respondent's role, enabling role-specific insights while maintaining comparability across interviews. The interview guides are available in Appendices A, B, C, and D.

3.6.2.6 Interview execution

All interviews were conducted digitally via video conferencing tools, enabling access to respondents across different geographical locations. With the participants' consent, interviews were recorded and subsequently transcribed to ensure accuracy and ease systematic analysis.

Efforts were made to create an open, conversational interview environment that encouraged respondents to share detailed, reflective descriptions. Follow-up questions and probing techniques were used to clarify responses and deepen the discussion, which enhances the richness and quality of qualitative data (Kvale and Brinkmann, 2015).

At the same time, the researchers remained aware of their role in shaping the interaction, recognising that interview data is co-produced through the interaction between interviewer and interviewee (Bryman, 2016). This reflexive awareness is important for ensuring transparency and credibility in qualitative research.

3.7 Data analysis and thematisation

The empirical material was analysed using a thematic analysis approach, following the approach of Braun and Clarke (2006), which allowed patterns across both primary and secondary data to be identified and compared (Bryman, 2016). The analysis was conducted iteratively, moving back and forth between empirical observations and theoretical concepts in line with the study's abductive approach and the logic of systematic combining (Dubois and Gadde, 2002). The following subsection describes the analytical process in detail.

3.7.1 Familiarisation

The first step of the analysis involved reading all thirteen interview transcripts in full, alongside the secondary sources identified in Section 3.6.1, to establish familiarity with the material and develop an initial understanding of recurring topics and concerns. Primarily, notes were taken during this phase to identify potential patterns. In addition, this step ensured that the following steps were grounded in a comprehensive understanding of the empirical landscape.

3.7.2 Coding

In the second step, the material was coded systematically. First, the secondary sources were analysed individually to identify initial codes capturing key concepts. These codes were then compared and synthesised across sources into a consolidated set of 18 codes, informed both inductively by the data and deductively through our theoretical lens of Network Theory and Institutional Logics. These 18 codes were subsequently applied to the interview transcripts to assess their relevance and identify potential additions or modifications, which resulted in a final version of 28 codes. *Table 4* illustrates an example of emerging codes that together form a theme, where the final coding matrix is documented in Appendix E. The coding structure was used as an interpretive aid rather than an attempt to produce objective categorisation. This approach is consistent with the abductive logic of the study, where coding was guided

by theoretical awareness while remaining open to unanticipated empirical patterns (Dubois and Gadde, 2002).

Table 4: Illustrative example of coding and theme developed during the study, see Appendix E for complete scheme.

Data	Interviewee	Code	Theme
"It does not really matter much who governs nationally in healthcare matters; it is really the individual region that matters."	B1	Decentralised decision authority	Governance Fragmentation and Institutional Coordination
"We have GDPR, but then we also have 21 regions making different interpretations of GDPR. That is completely unreasonable."	C1	Interpretive fragmentation of legislation	
"We also struggle to get access to our own operations. It is not as if I can just go to a clinic and tell them that they have to do this. They decide for themselves."	A2	Internal access barriers	

3.7.3 Thematization

In the third step, the initial codes were iteratively compared across interviews and secondary sources grouped in broader thematic categories. This resulted in five overarching themes, each containing 4-10 codes:

(1) *Governance fragmentation and institutional coordination*, capturing the structural condition of Sweden's decentralised healthcare governance, including codes such as decentralised decision authority, misalignment between regulatory, procurement, and innovation logics and internal access barriers.

(2) *Formal compliance and market access mechanisms*, capturing how the regulatory and procurement landscape shapes and constrains the market entry process, including codes such as regulatory complexity, regulatory uncertainty and procurement as institutional bottlenecks.

(3) *Technical integration and infrastructural dependency*, capturing how existing technical systems, data governance requirements, and established

market positions create path-dependent dependencies that condition the possibilities for new entrants, including codes such as legacy system lock-in, data sovereignty and patient safety control and market dominance and incumbent advantage.

(4) *Relational navigation and legitimacy-building strategies*, capturing relationships, and validation processes through which innovators navigate or circumvent formal entry barriers, including codes such as pilot-based entry, indirect entry via intermediaries or partners and network-based entry.

(5) *Internal implementation and adoption capability*, capturing the organisational and cultural factors that shape whether validated solutions are ultimately adopted in clinical practice, including codes such as misalignment with clinical practice and user needs, organisational capacity constraints and organisational and cultural resistance to workflow change.

3.7.4 Trustworthiness

In qualitative research, the evaluation of methodological quality differs from positivist criteria of validity and reliability, as these are grounded in assumptions of an objective, measurable reality. Instead, this study adopts an interpretivist epistemology, in which knowledge is understood as socially constructed and co-produced through the interaction between researchers and participants (Bryman, 2016).

From this perspective, the aim is not to produce objective truths, but to develop contextually grounded and theoretically informed interpretations of social phenomena. Consequently, the quality of the research is assessed through the concept of trustworthiness, rather than traditional positivist criteria.

Trustworthiness is commonly evaluated through the dimension of credibility, transferability, dependability, and confirmability, as proposed by Guba and Lincoln (1986). This criterion reflects the interpretivist view that knowledge is context-dependent and shaped through interpretation, and therefore

requires transparency, reflexivity, and methodological consistency in the research process.

3.7.5 Credibility

Credibility refers to the confidence that can be placed in the findings in relation to the participants and the context in which the study was conducted (Guba and Lincoln, 1986).

To strengthen credibility, this study uses data triangulation by combining multiple sources, including interviews with different actor groups and secondary documents. This allows findings to be compared across perspectives and reduces the risk of relying on a single source (Bowen, 2009). The inclusion of multiple actor groups also helps capture variation in experience and interpretations of the same reality.

3.7.6 Transferability

Transferability concerns the extent to which findings are relevant in other contexts (Guba and Lincoln, 1986). This study contributes through analytical generalisation, presenting findings as patterns and mechanisms that may be applicable to different actors operating within the same market context.

The thesis intentionally does not make distinctions or comparisons between different product groups. Instead, it analyses market entry as a process shaped by relationships, power, and institutional rules. This design strengthens insights into barriers, thresholds, and entry pathways, but it limits the thesis's ability to draw conclusions about how these processes may differ across product types and services offered by MedTech and healthtech companies.

This implies a generalisation in which findings are presented as mechanisms and patterns that may transfer across product types seeking to enter the Swedish healthcare market, and all must operate in a regulated, procurement-driven setting. This approach is consistent with how qualitative

case- and process- oriented research contributes to knowledge.

3.7.7 Dependability

Dependability refers to the consistency and transparency of the research process (Guba and Lincoln, 1986). In qualitative research, this does not mean the study can be replicated; rather, it means the research process is clearly stated and logically structured.

In this study, dependability is supported through a transparent description of the research design, including the Research Onion framework, sampling logic, data collection procedures, and analytical approach (Saunders et al., 2023).

The iterative nature of the research process, including the abductive approach and systematic combining, has also been explicitly described. This allows readers to understand how the study evolved over time and how decisions were made throughout the process (Dubois and Gadde, 2002).

3.7.8 Confirmability

Confirmability concerns the extent to which the findings are grounded in the data rather than shaped by researcher bias (Guba and Lincoln, 1986).

Given the interpretivist approach, the study acknowledges that complete objectivity is not possible. Instead, the focus is on ensuring that interpretations are supported by empirical data and that the research process is transparent. To support confirmability, the study adopts a reflexive approach in which the researchers remain aware of their role in shaping both data collection and analysis.

3.8 Reflection

Finally, the thesis treats methodological reflexivity as an aspect of quality. Our initial assumptions were challenged by field realities such as access restraints. Consistent with abductive qualitative inquiry, these moments were used to

refine the research questions and analytical structure rather than to frame them as project failure. The methodological narrative, therefore, forms part of the result and interpretive conditions.

4 Results

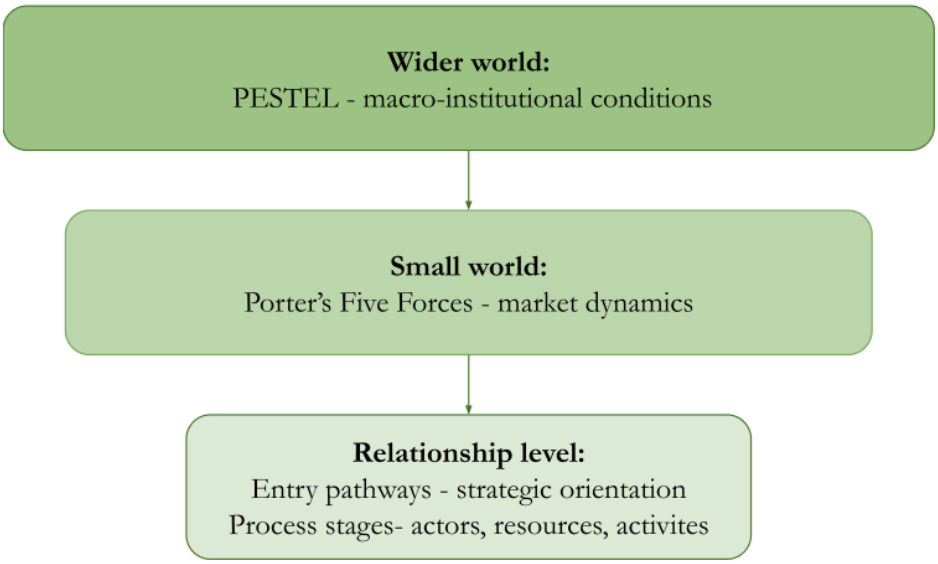

Figure 7: Analytical structure of the results chapter, based on the three network levels described by Ford and Mouzas (2013).

The results are organised in five sections. The first Section 4.1 (*Innovation and eHealth*), maps the empirical field by identifying the distinct types of solutions represented in the interview material and the varied terminology through which they are described in both industry and research. The remaining four sections are structured across three analytical levels, following Ford and Mouzas (2013) distinction between the wider world, the small world, and the relationship level (see Figure 7). Section 4.2 (*The conditions of the wider world*) examines macro-level structural conditions through a PESTEL framework. Section 4.3 (*The conditions of the small world*) analyses market-level competitive dynamics through a five forces analysis. Section 4.4 (*Market entry pathways*) and Section 4.5 (*Process stages*) zoom in to the relationship level, identifying two entry pathways and tracing how embedding unfolds across four process stages.

Despite the diversity of solution types and entry strategies represented

in the empirical material, a common structural condition runs across all analytical layers: the relationship between private actors and the Swedish public healthcare system. Prior research on this relationship has framed the challenges in different ways: Bengtson et al. (2022) describe it in terms of insidership, the process through which new actors must actively craft a position within an established network; (Wagrell and Baraldi, 2019) examine it through the joys and sorrows of public actors simultaneously functioning as development partners, financiers, and customers; Darwich et al. (2025) show how health technology assessment operates as a formal evidentiary gatekeeper; and Maack et al. (2025) analyse it as a field of competing institutional logics. What unites these perspectives is that the public sector is not simply a target market but a constitutive part of the environment within which digital health innovation is shaped, enabled, and constrained.

Throughout the analysis, the Network Theory and ARA Framework developed by Håkansson and Snehota (1995) is used as a primary analytical lens, examining how actors, resources, and activities are interdependent at each juncture of the embedding process. Institutional logics are incorporated where competing value systems become analytically relevant.

4.1 Innovation and eHealth

Companies that enter the sector do so from very different technological starting points, and the challenges they face are shaped both by the type of solution they offer and by the market conditions they encounter (Saarela et al., 2016; Bengtson et al., 2022). The empirical material in this study covers a range of digital health and medical technology solutions, reflecting the breadth of the sector and the diversity of entry strategies pursued by different actors. Rather than representing a single product category, the cases span several distinct types of innovation. Saarela et al. (2016) use the EU definition of eHealth covering digital tools and services for health, while treating mHealth as a related but distinct category focused on mobile and wireless technologies. Bengtson et al. (2022) speak of "digital primary

care" when describing video-based consultation platforms. Wagrell and Baraldi (2019) work within the MedTech category, referring to physical and software-based medical devices subject to clinical validation. Darwich et al. (2025) map the Swedish health technology assessment system as it applies to medical devices, a category with its own evidentiary and regulatory requirements that differ from those governing software-as-a-service or communication tools.

The interview material represents this range. The first category, digital care platforms, is represented by companies that have built app-based platforms for digital consultations with healthcare professionals, in some cases expanding into physical care centres to create pathways between digital and in-person care (VP of Operations, private healthcare provider, 2026). A related company operates a modular healthcare platform including electronic health records, enabling private providers to launch digital or "digiphysical" clinics (Head of Customer Success, healthtech company, 2026).

The second category involves infrastructure and interoperability solutions; middleware or integration layers that connect different systems rather than delivering care directly. This corresponds to what Elg et al. (2025) describe as digital infrastructure enabling new possibilities across the healthcare ecosystem. One company in the sample aims to create a middleware layer integrating electronic health record systems, so that healthtech companies need only integrate once rather than building separate connections to each system (CEO & Co-founder, healthtech company, 2026).

The third category involves contact management and workflow solutions for healthcare organisations. One company in the sample provides telephony and contact management systems that structure and route patient contacts across multiple channels, including callback scheduling, chat, video, and SMS (Senior Advisor, telehealth company, 2026).

The fourth category encompasses image-enhancement and diagnostic-support software embedded in medical devices. This sits closest to what the literature

classifies as MedTech in the formal regulatory sense, falling under clinical evidence requirements and health technology assessment (Darwich et al., 2025; Wagrell and Baraldi, 2019). One company develops AI-based image enhancement software integrated directly into imaging systems manufactured by major equipment suppliers (Sales Director EMEA, medical imaging/AI company, 2026). The sample also includes an established medical device manufacturer that develops both imaging hardware and increasingly AI-based diagnostic applications (Head of Quality & Technology, medtech company, 2026).

The fifth category includes AI-based administrative tools, such as transcription and documentation solutions that record clinical consultations and transfer content into medical records. While no single company in the sample represents this category exclusively, several respondents described it as a rapidly growing area where many new suppliers are entering the market (Chief AI Officer, university hospital, 2026; Head of Quality & Technology, medtech company, 2026).

These categories are not mutually exclusive; companies operate across boundaries, and the regulatory classification of a given solution mainly depends on its intended use rather than its underlying technology. This diversity is analytically significant because the structural conditions, entry pathways and institutional dynamics examined in the following sections affect these categories differently. The results and analysis that follow, therefore, examine conditions that apply across categories while noting where category-specific dynamics become relevant.

4.2 The conditions of the wider world

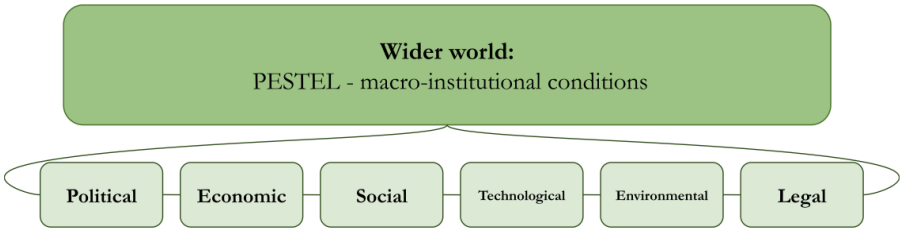

Figure 8: First step of the analytical structure of the results chapter, analysing the wider world (Ford and Mouzas, 2013; Johnson et al., 2017).

The PESTEL framework is used to systematically map the macro-level conditions that influence the feasibility of establishing digital innovations within Swedish public healthcare (Johnson et al., 2017). However, rather than treating PESTEL as a standalone analysis, the framework is applied in conjunction with business network theory. The factors identified through PESTEL correspond to what Ford and Mouzas (2013) describe as the wider world level of network embeddedness: the broad institutional, regulatory, and political context that shapes the conditions under which network interactions unfold, but which individual actors cannot directly control. The analysis presented, therefore, serves as a structured examination of the wider world conditions within which the relationship-level and small-world dynamics explored in Section 4.3 (*The conditions of the small world*) and Section 4.5 (*Process stages*) are embedded.

4.2.1 Decentralised governance and regional fragmentation in decision-making

Wagrell and Baraldi (2019) state that the Swedish public healthcare system is a complex organisational and decision-making structure. The Swedish healthcare system is influenced by political decisions, as reflected in the ongoing introduction of new governance models and reforms intended to address emerging healthcare priorities (Anell, 2020), including the rapid

digitalisation of the sector (Saarela et al., 2016). It is a highly regulated context, and thus inherently sensitive to political pressures, where legitimacy is especially important (Saarela et al., 2016; Bengtson et al., 2022).

The political landscape of Sweden has experienced significant changes in recent decades, with an increased number of political parties and a growing emphasis on sociocultural issues alongside traditional economic concerns. The 2022 regional elections led to shifts in power in most regions, often towards left-leaning coalitions. Some of the largest regions are governed by parties that oppose the national government. (European Observatory on Health Systems and Policies, 2023). However, Sweden demonstrates high levels of political and institutional stability (World Bank, 2024), with initiatives of long-term political support, such as the national vision to be world-leading in eHealth by 2025 (Ministry of Health and Social Affairs and Sveriges Kommuner och Regioner, 2016).

Thus, the coexistence of long-term national ambitions and shifting regional priorities reflects institutional complexity, in which actors must navigate multiple, sometimes conflicting logics when making decisions about innovation adoption (Dunn and Jones, 2010).

4.2.1.1 Polycentric governance and limited integration

As the health sector is decentralised, responsibility for delivery and organisation, and thus political power, lies within the autonomous regions rather than at the national level (Swedish Agency for Health Technology Assessment and Assessment of Social Services (SBU), nd). Previous research emphasises that, regardless of occasions where national-level stress alignment, local deployment strategies often vary, as autonomous actors have divergent priorities, incentives, and timelines (Saenyi, 2026). The decentralised governance is emphasised by the VP of Operations, private healthcare provider (2026), who argues: *"It does not really matter much who governs nationally in healthcare matters, it is really the individual region that matters."* Further noting:

> *"If it is more Moderately led, then there is often more support for the privatisation of healthcare and for the idea that private care can drive innovation. If it is a region where the Social Democrats are in power, then sometimes the view is that things were better when the regions ran everything themselves."*

This illustrates how regional actors operate with relative autonomy, leading to heterogeneous interpretations of both resource use and activity coordination across the network (Håkansson and Snehota, 1995). From an institutional perspective, this suggests that political ideology influences which institutional logic is prioritised (Friedland and Alford, 1991). Regions governed by political parties where the market is a more dominant order may view private actors as legitimate drivers of innovation, while regions dominated by more of a state order may evaluate such actors more cautiously through a state logic focused on public responsibility and control.

As with polycentric governance, digital transformation is implemented with different logics, mandates, and resource capacities across regions, contributing to challenges in coordination across the healthcare system (Marquis and Lounsbury, 2007). For instance, there are a variety of digital systems across Swedish healthcare providers, as providers are authorised to choose their own system (Maack et al., 2025). This flexibility in design and implementation is reflected in the notion that: *"Any system is permissible as long as it meets existing regulations"* (Maack et al., 2025). With this decentralised structure, parallel efforts across are common, leading to duplicated work and missed opportunities to leverage shared lessons as noted by the Chief AI Officer, university hospital (2026):

> *"But we also collaborate nationally, in terms of how we can benefit from each other's experiences. There is still a need here, because different regions are solving the same kinds of questions in parallel, and we spend a lot of energy on that. We will probably end up producing somewhat different solutions, which is beneficial in some cases, but perhaps unfortunate in others if*

we are not making better use of each other's lessons learned."

These parallel efforts indicate limited resource integration and weak activity linking across regions, leading to inefficiencies and reduced potential for collective learning within the network (Håkansson and Snehota, 1995).

4.2.1.2 Cross-regional collaboration and future shifts in governance

Nevertheless, there does exist collaboration across regions and with the national government, facilitated through agreements between SALAR and the government (European Observatory on Health Systems and Policies, 2023). The Director of Health and Medical Services, public healthcare region (2026) exemplifies this with initiatives where the regions and national agencies, such as the National Board of Health and Welfare *(Socialstyrelsen)* collaborate to develop guidelines and support the transition towards more localised and integrated care (Director of Health and Medical Services, public healthcare region, 2026; European Observatory on Health Systems and Policies, 2023). Such collaboration initiatives can be understood as attempts to strengthen activity links and resource sharing across actors, thereby partially counteracting fragmentation at the wider world level (Ford and Mouzas, 2013) .

With an ongoing debate on transferring the responsibilities of regions to the national level, future development indicates a more decisive role of national actors, through the Health and Care Inspectorate *(Inspektionen för vård och omsorg)* and the National Board of Health and Welfare. (European Observatory on Health Systems and Policies, 2023)

4.2.2 Financial constraints, cost pressures, and funding dependencies

According to European Observatory on Health Systems and Policies (2023) Sweden is has a robust GDP per capita growth, low public debt, and solid public finances, although emerging long-term spending pressures may constrain this outlook. However, Sweden is confronted by demographic changes in the form of an ageing population as stated in Section 1.2.1

(*The increasing pressure on public health care*) and an increase in chronic diseases, which together pose as challenging for the healthcare system (European Observatory on Health Systems and Policies, 2023). From an ARA perspective, financial conditions shape resource availability and thereby influence which actors can participate in the network and how activities are prioritised (Håkansson and Snehota, 1995). Institutionally, economic constraints reinforce a logic of efficiency and cost control (Friedland and Alford, 1991; Berg Johansen and Waldorff, 2015).

The Swedish healthcare system is primarily funded by taxes (European Observatory on Health Systems and Policies, 2023). Regions use income taxes supplemented by national government grants, while private financing plays a relatively minor role. In primary care, healthcare providers are paid a fixed amount per patient, adjusted based on the complexity of the patient case tied to patient choice, while specialised care remains largely governed by traditional global budgeting. (European Observatory on Health Systems and Policies, 2023)

4.2.2.1 Uneven economic attractiveness across regions

There are multiple factors that collectively shape the economic viability of entering the Swedish public healthcare sector. First of all, there are regional differences in scale and market structure that influence market attractiveness, corroborated by the statement of the CEO & Co-founder, healthtech company (2026) on market size and potential customer base: *"... So of course there are differences between regions, and some are more attractive than others."* This reflects how resource distribution, such as patient base and procurement capacity across regional actors, influences network positioning, making some regions more central and attractive within the network than others (Håkansson and Snehota, 1995).

4.2.2.2 Price sensitivity and efficiency focus

The public healthcare market is price sensitive, as illustrated by the Head of Service Agreements, public healthcare region (2026):

> *"In public healthcare, price is extremely decisive. In procurement, we usually work with a scoring model. If we have three equivalent suppliers and their products are broadly comparable, then the final result is often determined through a combination of price and scoring."*

This aligns with Kuoppamäki (2021) on the price sensitivity of the Swedish public healthcare market, as well as Maack et al. (2025), who argue that the adoption and deployment of new technologies in healthcare are often driven by efficiency gains and cost reduction. The strong emphasis on price reflects a dominant market logic, where value is primarily assessed through efficiency, which can constrain innovation that requires long-term resource adaptation rather than immediate cost savings (Thornton et al., 2012; Thornton and Ocasio, 1999).

4.2.2.3 Reliance on funding sources

Regions can contribute resources to varying degrees to the development of new healthcare solutions. For instance, as described by Director of Health and Medical Services, public healthcare region (2026):

> *"A major priority is AI development. Another is making health data more accessible and usable. We also have an application process through which organisations can apply for funding for innovative healthcare solutions, and these calls can be quite specific in terms of what they want to stimulate."*

As collaborators, actors within the public sector can play an important supportive role. For example, public funding bodies such as Vinnova have been identified as valuable sources of support for start-ups (Saarela et al., 2016). Thus, public funding bodies act as key actors enabling resource mobilisation, shaping which innovations are developed and legitimised within the network (Håkansson and Snehota, 1995). Access to such funding can also serve as a source of pragmatic legitimacy for start-ups (Suchman, 1995).

4.2.3 Organisational culture, workforce constraints, and resistance to change

As previously stated in Section 4.2.2 (*Financial constraints, cost pressures, and funding dependencies*), cost pressures, and funding dependencies, demographic changes, particularly an ageing population and increased prevalence of chronic conditions in the presence of recession, place increasing pressure on Swedish healthcare. At the same time, the sector is facing workforce shortages and declining staff motivation (Anell, 2020; European Observatory on Health Systems and Policies, 2023). These pressures influence actors' willingness to engage in new activities, limiting the adaptability of the network despite technological opportunities (Håkansson and Snehota, 1995).

4.2.3.1 Organisational culture constraints

Swedish citizens have a relatively high trust in public institutions (OECD, 2024), and a high level of both basic and advanced digital skills, positioning Sweden in a favourable position to meet the EU's 2030 digital skills targets (DESI, 2022). However, organisational culture, referring to healthcare organisations' shared ways of thinking, feeling, and behaving, is seen as a major barrier to the adoption of innovation within the Swedish healthcare sector (Eriksson et al., 2024; Keller et al., 2013; Mannion and Davies, 2018). Actors within the system often display a general reluctance to change (Bengtson et al., 2022), and the integration of digital, service-based eHealth solutions has in many cases been met with resistance (Saarela et al., 2016). Looking at attitudes among healthcare professionals, the Head of Development Unit, public healthcare region (2026) highlights: *"It is difficult to change behaviours and culture in healthcare. That is where many initiatives stall."* This highlights how actor behaviour is constrained not only by resources but by institutionalised norms (Friedland and Alford, 1991).

The Director of Health and Medical Services, public healthcare region (2026) explains that the difficulty in changing behaviours is rooted in conservatism

and a strong sense of responsibility that healthcare professionals hold for patient outcomes:

> *"Healthcare is both conservative and innovative. There is a conservative side that says, "I do not trust this change that is coming," and there is also an innovative side. But fundamentally, I think it comes down to whether healthcare professionals feel safe. In healthcare, you are responsible for another human being. You are responsible for things going well, for the care to succeed and the treatment to work. Many people feel that responsibility very personally."*

Healthcare is thus characterised by both conservatism and innovation, where openness to new solutions coexists with resistance when changes are perceived as uncertain. This duality illustrates institutional pluralism, where logics focused on innovation and logics focused on risk avoidance coexist and create tensions in decision-making (Dunn and Jones, 2010). As healthcare is traditionally focused on risk minimisation, there is a recognised need to increase awareness and cultivate a more innovation-oriented environment, illustrated by the Innovation Coordinator, public healthcare region (2026):

> *"We work partly on increasing awareness and building a more innovation-friendly culture. Healthcare is used to working with risk and risk minimisation, and what we are trying to do is give healthcare tools and a mindset for working more with uncertainty rather than only with safety."*

Efforts to shift the mindset can be interpreted as attempts to gradually reshape institutional logics and enable new forms of activity within the network (Berg Johansen and Waldorff, 2015).

4.2.3.2 Administrative burdens and knowledge gaps

High administrative burdens and fragmented IT systems further contribute to resistance among healthcare professionals towards adopting additional digital

solutions, as noted by the VP, life-science/innovation hub (2026):

> *"One major challenge in healthcare is that a great deal of time is spent on administration. Doctors and nurses often need to manage multiple systems and log into several platforms that do not communicate with each other. So when they hear, "here is one more system you need to use," that creates resistance."*

Fragmented systems indicate weak resource integration, where digital tools are not effectively combined, increasing coordination costs across activities.

In addition, limited awareness of technical solutions and their potential applications creates further barriers (Petersson et al., 2022). Even when benefits are evident, eHealth solutions may be perceived as inferior alternatives, with users emphasising concerns about data security, feedback, and support (Petersson et al., 2022). Conversely, start-ups and engineering professionals often have limited knowledge of regulatory requirements and healthcare system needs (Darwich et al., 2025). Knowledge gaps between actors, such as healthcare professionals and representatives of a start-up further limit effective interaction and collaboration, as there is limited understanding of each actor's technologies, needs, and constraints.

4.2.4 Fragmented digital infrastructure and uneven adoption of innovation

Saarela et al. (2016) indicate that, despite Sweden's high level of digitalisation, the healthcare sector faces structural barriers to the effective integration of digital healthcare solutions, including misalignment between existing systems and digital innovations, as well as a competence gap between technological potential and users. This is reinforced by Reed et al. (2025) statement that there is a mismatch between the rapid growth of new information-driven technologies and their implementation in routine healthcare practices. This mismatch reflects challenges in combining heterogeneous resources; existing setups lock actors into specific ways of

combining resources and performing activities (Håkansson and Snehota, 1995).

4.2.4.1 Fragmented IT environment

Digital health adoption remains uneven due to fragmented digital infrastructure and siloed patient data. With healthcare professionals needing to navigate multiple disconnected systems, there is an additional operational burden (Saenyi, 2026). Due to the complex IT environment, many regions cannot manage hardware solutions outside their systems, as exemplified in the following statement of the Innovation Coordinator, public healthcare region (2026):

> *"We do not like products that sit outside our IT environment. We cannot manage hardware solutions in just any way, and so on. We are a very complicated customer in that respect. So we have difficulty taking in solutions that operate outside our IT environment, and I understand that startups find that frustrating."*

The reluctance to adopt external solutions suggests that established system structures make it difficult to adapt and incorporate new solutions. However, a more detailed differentiation between product categories lies somewhat outside the scope of this thesis. Nevertheless, the findings indicate that the above does not apply uniformly across all product categories, as illustrated by the Head of Quality & Technology, medtech company (2026):

> *"If we are talking about imaging systems and storage of such data, it is usually very standardised. It has been for quite a long time. So it is rare that you need to make any major adaptations, precisely because it is very standardised... We rarely adapt, but we need to check that compatibility between what we deliver works with others' equipment... we as manufacturers have an obligation to verify that what interacts with our systems does not pose any patient risk."*

Thus, fragmentation in IT environment are not a hindrance within all digital innovation related to healthcare, as some product categories are more standardised, where aligned resource interfaces facilitate coordination across regional actors (Håkansson and Snehota, 1995).

4.2.4.2 Outdated systems and future outlook

Moreover, healthcare leaders argue that digital systems in primary care are often outdated (Siira et al., 2024). Outdated systems reflect historical resource investments that constrain current possibilities. However, the Innovation Coordinator, public healthcare region (2026) highlights that there is a broader ambition nationally to improve data management:

> *"There is probably a bit of a dream among our architects that we would have better middleware or intermediary data handling. The whole nation is really working on healthcare data management and how it can be improved. If we succeed with that, then I think we should be able to manage these smaller solutions much better."*

National ambitions to improve data infrastructure can be seen as attempts to reconfigure resource structures and enable new forms of interaction across actors (Ford and Mouzas, 2013). Key technological priorities shaping healthcare innovation include the development of AI, improved access to health data, and investments in areas such as genomics, radiology, and precision medicine, as stated by the Director of Health and Medical Services, public healthcare region (2026):

> *"I am speaking not only for my own department now, but more broadly for the healthcare system as a whole. A major priority is AI development. Another is making health data more accessible and usable... There is also a more technical side involving major investment-heavy areas such as genomic analysis, radiology, and precision medicine. In addition, there is digital development, including AI and health data."*

These priorities signal a shift towards increased resource integration and new activity patterns centered around data and AI (Ford and Mouzas, 2013).

4.2.5 Regulatory complexity and constraints on public–private collaboration

There are multiple legislative and regulatory requirements within the public healthcare sector (Bengtson et al., 2022; Wagrell and Baraldi, 2019). In recent years, there has been an increase in regulatory requirements, as noted by the Head of Quality & Technology, medtech company (2026):

> *"We use quite a lot of resources for regulatory compliance. They have definitely increased in recent years. The regulatory climate has tightened quite considerably over the past ten years."*

Regulation shapes both resource use and accepted activities, while also defining what constitutes legitimate behaviour within the network (Thornton et al., 2012).

4.2.5.1 Resource-intensive regulations

According to the study by Saarela et al. (2016), legislation and the practical implications of those laws within the Swedish public healthcare sector are not designed to process new innovations. High regulatory demands increase the resource burden on actors, particularly smaller firms, affecting their ability to participate in the network (Håkansson and Snehota, 1995).

Applications that interact directly with patients are subject to medical device regulations, which increase compliance complexity, as stated by the Innovation Coordinator, public healthcare region (2026):

> *"if this is intended to become a medical device, start thinking about that now. It requires a lot of documentation and preparation in order to get there later. It is a huge journey."*

In the context of software, challenges of complying with regulatory requirements are particularly pronounced, as the introduction of new features

can alter a product's regulatory classification overnight, according to the CEO & Co-founder, healthtech company (2026):

> *"That is what is so interesting about software. I have been in this industry during the transition from the old framework, MDD, to MDR. The major difference with software is that you can release one feature overnight and suddenly become a medical device company. A scalpel is a scalpel, it does not suddenly change overnight. But software can."*

Regulatory requirements reinforce a strong state logic, prioritising safety and accountability over speed and flexibility (Thornton et al., 2012; Friedland and Alford, 1991). In particular, public procurement limits effective interaction between suppliers and customers (Wagrell and Baraldi, 2019), and is perceived as time-consuming, as stated by the Head of Customer Success, healthtech company (2026): *"My personal impression is that public procurement processes tend to be much longer and slower."* In line with this, the Director of Health and Medical Services, public healthcare region (2026) discusses the tension between regulatory compliance at the regional level and the entering companies' incentives for rapid implementation and growth:

> *"So there is a tension between what a region is allowed to do under the Local Government Act and public procurement law, and what, for example, a small MedTech start-up would like to do in terms of speed of implementation."*

This tension reflects competing institutional logics between public actors that lean on state logics and start-ups that lean more on market logic, shaping how collaboration unfolds (Berg Johansen and Waldorff, 2015). In this context, private healthcare providers constitute an alternative buyer-actor category. The VP, life-science/innovation hub (2026) identified both a procedural and a cultural dimension:

> *"I think there is also a cultural and philosophical difference in attitudes toward commercial actors…There is a legitimate*

> *concern in Sweden that companies should not be making excessive profits from taxpayer money... Even then. There will be a broader philosophical tension in Sweden around private companies earning significant profits within publicly financed healthcare."*

Analytically, this philosophical tension means that private providers are not simply faster to engage with; private actors operate under different legitimacy criteria, illustrating how institutional logics influence interaction patterns within the network (Berg Johansen and Waldorff, 2015). At the same time, the Chief AI Officer, university hospital (2026) expressed that there is a desire for the future potential of collaborative co-development between public healthcare, industry, and academia to enable innovation, including with smaller and less established firms:

> *"I feel that we are trying to find ways to collaborate with industry and academia as well. Can we co-develop things? Can we do it in some kind of win-win format?"*

These co-development ambitions indicate attempts to bridge institutional divides and create hybrid arrangements combining multiple logics (Dunn and Jones, 2010).

4.2.5.2 Constraints on and conflicting handling of data

The handling of patient data in Swedish healthcare is governed by a regulatory framework, in which the Swedish Patient Data Act (Patientdatalag 2008:355) sets the foundation of how data may be accessed and shared. In this context, constraints related to AI are not treated as a separate regulatory issue, but rather as part of broader information security considerations, as highlighted by the Director of Health and Medical Services, public healthcare region (2026):

> *"Yes, the situation is definitely stricter now than it used to be with cloud services. But I would say that this is part of broader information security issues. It is not just about AI, but also about*

how and where data is stored."

Data regulation directly affects resource accessibility and the ability to combine data between actors, limiting innovation potential. Inconsistent interpretations of GDPR across regions further complicate matters, as noted by the CEO & Co-founder, healthtech company (2026):

> *"Another issue is that we have GDPR, but then we also have 21 regions making different interpretations of GDPR. That is completely unreasonable. It makes things very difficult, because a solution that is accepted in one region may not be accepted in another. That becomes especially challenging for small and innovative companies."*

Diverging interpretations of GDPR illustrate institutional ambiguity, where actors enact the same rules differently, increasing uncertainty in the network (Friedland and Alford, 1991). Coordinator for Innovation Coordinator, public healthcare region (2026) emphasises that these issues are particularly pronounced in areas of imaging diagnostics, where there are challenges and disagreements regarding the anonymisation of data:

> *"Ideally, those environments should be anonymised. But there are also different interpretations of whether the regulations consider the data sufficiently anonymised, or whether it is still identifiable. We had a case not long ago that I read about, involving dental implants, where something anonymised had been sent, but then someone interpreted it as still being identifiable."*

Such inconsistencies hinder resource integration and create barriers to scaling innovations across regions. However, the Innovation Coordinator, public healthcare region (2026) notes that ongoing EU work on a European health data framework is expected to change this landscape:

> *"So here too, the regulations are still being explored. There is a huge amount of work ongoing at EU level around the European*

Health Data Space regulation that is coming. There, the idea is that we should be able to share information in a completely different way, both for secondary use in research and for primary use, meaning the exchange of health data at the individual level. That will also change the landscape a bit, I think, for these startup companies."

Future EU regulation may standardise interpretations, enabling more aligned resource use and facilitating network-wide activity coordination (Ford and Mouzas, 2013).

4.2.5.3 Non-comprehensive regulatory frameworks

Policy makers experience limited regulatory guidance and insufficient resources, while existing technical and regulatory frameworks are perceived as lacking relevance and detail, contributing to complex decision-making and challenges in implementation (Petersson et al., 2022). This lack of clarity is also reflected on the supplier side, as highlighted by the CEO & Co-founder, healthtech company (2026):

"There are no procurements specifically for what we are. There is no clear specification of requirements, and no clear way to relate to something that does not really exist as a category yet."

The absence of clear categories reflects how existing institutional frameworks have not yet adapted to emerging innovations, creating uncertainty for actors.

4.2.6 Sustainability requirements and compliance pressures

The Swedish National Council on Medical Ethics (SMER) is tasked with analysing medical ethical issues that arise in healthcare and medical research from an overarching societal perspective. SMER finds that working with issues that concern climate change and health is imperative, as global warming is described by the WHO as the single biggest threat to human health. In this context, the healthcare sector's global emissions have been estimated at 4.4 to 4.9% of total net greenhouse gas emissions. (Swedish

National Council on Medical Ethics (SMER), 2023). Sweden has high national sustainability aspirations, with a long-term target to reach zero net greenhouse gas emissions by 2045 (Naturvårdsverket, nd). Sustainability expectations introduce additional institutional pressures, shaping both resource allocation and the legitimacy of organisational practices (Meyer and Rowan, 1977; Zucker, 1977). Overall, sustainability expectations illustrate a need for companies operating in the Swedish healthcare context to demonstrate alignment with local and national environmental regulations, reporting practices, and sustainability ambitions. This matters because environmental compliance can become an additional source of legitimacy within the public healthcare network, shaping how companies present their value, allocate resources, and adapt to the institutional expectations of healthcare actors.

4.2.6.1 High expectations on healthcare sustainability reporting

Although not legally binding, policy documents from professional organisations such as the Swedish Society of Medicine indicate a growing normative expectation for the healthcare sector to transition towards environmentally sustainable practices (Svenska Läkaresällskapet, 2020). Recent regulatory developments concerning sustainability, particularly the Corporate Sustainability Reporting Directive (CSRD), have significantly increased the level of detail and assurance required in sustainability reporting (Mangiuc and Kagitci, 2025). These evolving expectations reflect a growing normative logic around sustainability, influencing how actors justify decisions and prioritise activities within the network (Thornton et al., 2012; Zilber, 2024).

4.2.7 Concluding remarks on wider world conditions

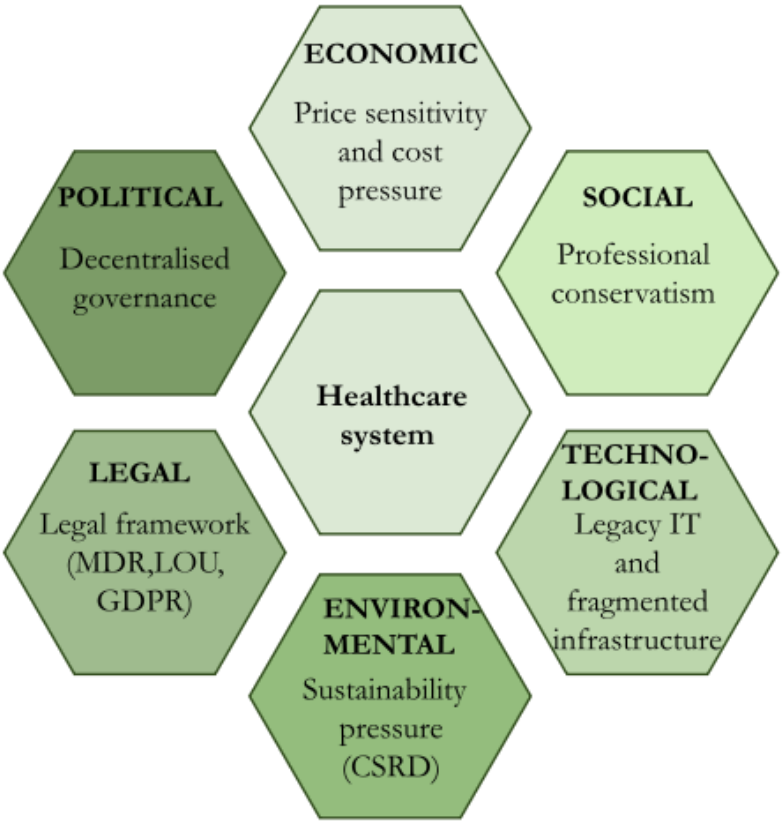

Figure 9: Structural conditions at the wider world level, identified through PESTEL analysis (Johnson et al., 2017).

The wider world conditions for digital innovation in Swedish public healthcare are characterised by a fragmented yet interdependent network structure, where decentralised governance, uneven resource distribution, and regulatory complexity shape how actors can interact, combine resources, and coordinate activities (Ford and Mouzas, 2013). From a business network perspective, these conditions limit resource integration and create challenges in aligning activities across regions, while also constraining change (Håkansson and Snehota, 1995). At the same time, institutional theory highlights how state, market, professional, and emerging sustainability

logics shape what is perceived as legitimate and appropriate innovation, sometimes creating conflict (Friedland and Alford, 1991). Together, these dynamics create a context marked by institutional complexity and coordination challenges, where digital innovation is not only a technical issue but also dependent on navigating legitimacy, aligning actors, and adapting to structurally embedded constraints at the wider world level (Thornton et al., 2012; Ford and Mouzas, 2013).

However, while there are many identified constraints on digital innovation within the wider world, there are emerging positive conditions (Ford and Mouzas, 2013). First of all, institutional stability reflects network conditions that are predictable with suggestions of future improvements in resource accessibility and activity coordination, supporting cognitive legitimacy through clear direction and long-term resource investments and relationship development (Suchman, 1995). Moreover, there exist resource providers where key actors mobilise resources and an overall high digital maturity among the Swedish population, which have the potential to create favourable demand-side conditions and support adoption.

4.3 The conditions of the small world

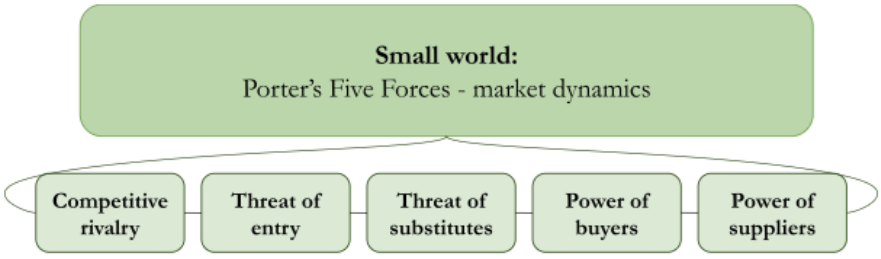

Figure 10: Second step of the analytical structure of the results chapter, analysing the small world, meso level (Johnson et al., 2017; Ford and Mouzas, 2013).

The five forces analysis examines the digital health innovation industry within the context of the Swedish public healthcare sector (Porter, 2008; Johnson et al., 2017). This examination assesses the market's competitiveness and attractiveness in broader terms by examining the overall competitive landscape, barriers to entry, the bargaining power of suppliers and buyers, the threat of substitutes, and the potential of complementors. With a broad scope of product categories, the analysis aims to capture cross-boundary implications for the market, but highlights that some claims are relevant only to certain product categories.

4.3.1 Competitive rivalry shaped by dominance of established firms and emerging digital competition

4.3.1.1 Market size and regulatory constraints on rivalry

Seen from a global perspective, Sweden is not a very large market for digital health innovation, corroborated by the statement of the VP, life-science/innovation hub (2026): *"Sweden can be a good first market, but it cannot be the only market for most companies"*. This is further reinforced by the account of the Head of Customer Success, healthtech company (2026): *"Sweden is not a very large market, and the public sector segment is already*

relatively saturated with actors that specifically target regions…"

Moreover, prior research has noted that stricter regulatory requirements can have market-consolidating effects (Darwich et al., 2025), and the Head of Quality & Technology, medtech company (2026) acknowledged this dynamic from the supplier side:

> *"The regulatory climate has tightened quite considerably over the past ten years. This is also a reason why some medical technology products that existed previously have been removed from the market. They cannot afford it. Or they have been acquired by larger companies. I think this can be competition-limiting. I would argue that."*

Together, limited market size and increasing regulation constrain the number of competitors, resulting in somewhat constrained market competition. From an ARA perspective, regulation not only affects the number of actors in the market but also shapes which actors have the resources and activities required to remain active (Håkansson and Snehota, 1995). Compliance capacity, therefore, becomes a resource that strengthens established firms' network positions.

4.3.1.2 Heterogeneous competitive dynamics across product categories

However, the Interim Head of Procurement, consulting/procurement firm (2026) states that the competitive landscape of the Swedish healthcare sector varies:

> *"I would say it differs. But competition is relatively limited. When you talk about medtech, these are often highly specialised products, and then competition is usually not very large, neither among the big players nor the smaller ones. It is relatively limited."*

From this, it can be understood that the competitive landscape of the Swedish healthcare sector varies by product type. This is further corroborated by the

statement of the Head of Quality & Technology, medtech company (2026):

> *"When it comes to imaging systems, there are quite few large players that deliver these systems. It is basically three: Philips, Siemens, and GE. I think the competition exists there but is perhaps a bit limited. It is not that small companies come in and challenge us, the systems are too large for that. However, there are globally new players on the way up… The laboratory side is more differentiated… There are very many smaller players there, and it is much more dynamic than the imaging system market."*

Thus, in certain product areas, competition is limited to a few large players, as the scale and complexity of the systems create barriers for smaller companies, while other areas experience a greater presence of smaller firms. For instance, the healthcare sector is undergoing increasing digitalisation, including the implementation of AI systems (Petersson et al., 2022), with a growing number of emerging software suppliers, as exemplified by the Head of Quality & Technology, medtech company (2026):

> *"There are many more suppliers of software. That is where things are happening most right now, especially connected to artificial intelligence applications."*

This development is further substantiated by the reflection of the Chief AI Officer, university hospital (2026):

> *"That said, in some cases it is definitely good. When it comes to AI, many smaller companies are entering the field. They may not have been around for very long, but they have specialised in an area that we find interesting. So I think we may see more of that going forward."*

With this, it is evident that competitive rivalry varies across product categories, ranging from concentrated competition among a few dominant

firms in segments requiring much capital to more dynamic and fragmented competition among other product areas, resulting in an uneven competitive landscape. This variation shows that rivalry is shaped by how resources are configured across product categories. In ARA terms, hardware-heavy segments rely on tightly interconnected resources and activities that favour established actors, whereas software and AI segments are more loosely structured, allowing smaller firms to compete through specialised resources, though still dependent on integration into existing activity structures (Håkansson and Snehota, 1995).

4.3.1.3 Specialised versus integrated solutions as a source of competitive rivalry

The Interim Head of Procurement, consulting/procurement firm (2026) emphasise that the emergence of companies providing targeted solutions may be constrained by healthcare providers' ambitions for interoperability:

> *"But there is another problem, and that is that there is just so much at once. It becomes AI, AI, AI, AI, AI everywhere. We cannot just do everything as small patches all over the place. We need, from an IT perspective and from a business strategy or operational strategy, to think about how we should work with AI. How does this fit into our thinking around AI? As things are now, there are lots of small suppliers picking away: "here you could work with AI, and here, and here, and here. And then IT eventually just says stop... But then it just becomes scattered efforts, and you perhaps need to set a strategy first and think about how everything fits together"*

At the same time, in some product categories, focused AI products are more competitive, as highlighted by the Head of Service Agreements, public healthcare region (2026):

> *"That became quite decisive in the evaluation. One supplier had trained its AI specifically for different use cases, for example,*

separate AI models for knees, spine, brain, and so on. Other suppliers had more general models. In that case, the more specialised AI clearly performed better, and that mattered in the procurement."

Thus, it is important to distinguish between the competitive strength of specialised AI solutions within specific use cases and the broader competitive advantage of providing integrated, interoperable solutions aligned with AI strategies at the organisational level of healthcare providers. At the same time, from an institutional perspective, solutions must align with norms of interoperability and strategic coherence to be perceived as legitimate, implying that even effective and specialised tools may be deprioritised if they are seen as contributing to fragmented or uncoordinated systems (Suchman, 1995).

4.3.1.4 Asymmetric rivalry and competitive advantages for larger firms

Larger firms, such as the established medtech company, become more competitive by following up with existing customers. When asked how new collaborations with the public sector are initiated, the Head of Quality & Technology, medtech company (2026)responded:

"This often happens by us continuously maintaining contact with existing customers, to see what upcoming needs they have. But also with customers we do not have any particular collaboration with today, to see how they are thinking further ahead, what are they interested in doing in the future? ... So we explore what they actually want to do. But we also have other strategic collaborations. For example, with Karolinska Institutet. They are running a cancer strategy where we are very involved... So partly we follow up with existing customers in one way. The other is that we work with strategic collaborations."

These established networks and strategic collaborations provide larger firms with privileged access to customer needs and development processes,

enabling continuous refinement of their offerings and strengthening their competitive position in the public healthcare market. In business network terms, these firms benefit from embedded actor bonds and repeated interaction, which give them earlier access to knowledge about needs and future procurement directions (Håkansson and Snehota, 1995). In addition, competition can be partly decided by process competence, not just innovation, as illustrated by the Interim Head of Procurement, consulting/procurement firm (2026):

> *"What often differs is that large companies have more experienced tender departments. They can use the pricing model to optimise their bid... They tend to be a bit more skilled at that, quite simply. They also tend to make fewer mistakes. Smaller companies often need to submit these documents and then they do not. Or they submit the wrong documents. That type of thing that might get them disqualified. Or they include reservations and say they do not accept certain terms. Large companies rarely do that. They know how the game is played. That is really the biggest difference, I would say."*

Hence, larger firms strengthen their competitive advantage through more extensive experience, allowing them to optimise bids and avoid costly mistakes, while smaller firms face a higher risk of disqualification due to errors or non-compliance. This advantage is further reinforced by the observation of the Interim Head of Procurement, consulting/procurement firm (2026) that the financial stability of larger firms makes them more attractive partners for long-term commitments:

> *"Then it can be a challenge for small companies if it is a slightly larger delivery with a quite long commitment, a quite long service and maintenance obligation. Then the customer might want a quite stable financial situation. Because you do not want to buy an instrument, and this is often the case within medical technology, where the only one who can deliver service, support,*

and consumables is the same supplier you bought from. They are certified together as medical technology equipment. If they then go bankrupt, it could be that I can no longer use the instruments. That can become very problematic. There, you could say that a smaller company has a competitive disadvantage because they do not have the same stability, the same financial solidity. They might have a turnover of four million and then they are supposed to make a delivery of ten. Then the customer can feel — will you really be able to scale up?"

At the same time, being an established firm can in some cases constitute a disadvantage. For instance, hardware companies may struggle to be perceived as competitive software providers due to their limited association with software development, as mentioned by the Head of Quality & Technology, medtech company (2026):

"When we move into the area of digital systems, it actually works somewhat against us. People are not used to us, a traditional hardware manufacturer, coming up with digital solutions, even though we are very capable in that area. We are not really the ones people naturally turn to… Hardware and software are two different types of industries. We are not seen as a traditional software supplier. People first ask whether we have something that can help that specific customer right then, and then they perhaps go to the traditional software developers as their first port of call. We definitely have a completely different starting position in software compared to hardware."

Overall, as established firms leverage networks, experience, and financial stability to strengthen their competitive position, smaller entrants face structural disadvantages in competing on equal terms. This indicates that rivalry is not only based on product quality, but also on accumulated network position (Ford and Mouzas, 2013). Over time, previous relationships, procurement experience, and trust become resources that are difficult for new

entrants to quickly replicate.

4.3.1.5 Institutional dimensions of competitive rivalry

Elements of competitive rivalry are also present at other levels of the Swedish public healthcare system in terms of innovation. Here, the public sector's dual role as both healthcare provider and funder contributes to competitive tensions, as private actors may be perceived as competitors (Saarela et al., 2016). The Director of Health and Medical Services, public healthcare region (2026) answered the following when asked about competition between regions: *"The part that concerns research always involves grants and competition, so there can certainly be those elements."*

With this perspective, competitive rivalry extends beyond market-based competition, with institutional dynamics introducing additional competitive tensions. This also illustrates institutional pluralism, as actors must navigate both market logics for the competition for resources and state logics, such as the appropriate use of public funds (Dunn and Jones, 2010).

4.3.2 Barriers to entry driven by regulatory complexity, resource demands, and incumbency advantages

4.3.2.1 High resource demands of compliance in healthcare and public procurement

Prior research identifies the regulatory environment as a central source of friction for healthtech start-ups operating in Sweden, with Darwich et al. (2025) noting that small MedTech companies often lack sufficient understanding of regulatory and health technology assessment processes, and Wagrell and Baraldi (2019) describing regulations and complex assessment processes as major barriers. Established actors benefit from incumbency advantages, while start-ups face barriers in public procurement due to limited references and capacity (Saarela et al., 2016). Generating evidence and complying with regulations is costly and demands resources and expertise Darwich et al. (2025). This is supported by the Head of Quality &

Technology, medtech company (2026), who notes that they have to dedicate substantial resources to regulatory compliance as a result of the increasing stringency of the regulatory environment, see Section 4.2.5 (*Regulatory complexity and constraints on public–private collaboration*).

As larger firms with more resources and experience can navigate the time-consuming and resource-intensive procurement process, it not only creates a competitive advantage but also an incumbency advantage, see Section 4.3.1.4 (*Asymmetric rivalry and competitive advantages for larger firms*). Especially, in larger-scale and complex procurements, the Chief AI Officer, university hospital (2026) highlight an incumbent advantage for larger and more established firms:

> *"Some procurements are so large and complex that once we start listing the requirements, it automatically becomes the case that only large and well-established companies are able to meet them."*

As such, the intensive compliance requirements, see Section 4.2.5.1 (*Resource-intensive regulations*) can be discouraging for smaller entrants, as reflected in the statement of the CEO & Co-founder, healthtech company (2026):

> *"I have been involved in public procurements before, and I can honestly say that I did not want to do that again. It took an enormous amount of time."*

In addition, the Head of Quality & Technology, medtech company (2026) highlights that the inclusion of sustainability requirements increases the evidence burden:

> *"It is difficult as a small or medium-sized company to live up to all the expectations and requirements that exist for medical technology products. If you also add the sustainability requirements that are coming, generally, not just for medical*

technology products, it gets even worse."

The Head of Quality & Technology, medtech company (2026) further elaborates on these requirements:

> *"Partly it is environmental requirements, but there are also extensive requirements about transparency regarding other types of sustainability requirements, social requirements, occupational health requirements... These are social requirements where suppliers need to have control over their subcontractors and the conditions under which those suppliers manufacture and distribute their products. You need to have control over this all the way down to the raw materials. This requires quite a lot of resources."*

Collectively, these requirements create significant entry barriers by demanding substantial financial, organisational, and technical resources that smaller firms often lack. As a result, compliance processes not only deter potential entrants but also reinforce incumbency advantages by favouring established firms with the capacity to manage these costs. Institutionally, these requirements also define what is considered legitimate participation in the market (Suchman, 1995). Firms must demonstrate not only technological value, but also conformity with regulatory, sustainability, and procurement expectations.

4.3.2.2 Heightened entry barriers under MDR regulatory requirements

As previously discussed in Section 4.2.5.1 (*Resource-intensive regulations*), the MDR approval is particularly highlighted as a challenge within the regulatory landscape of Swedish Healthcare. The VP of Operations, private healthcare provider (2026) considered the MDR process to be resource and time-intensive, stating the following.

> *"MDR is the regulatory framework for medical devices. It is difficult, unfortunately. That framework slows things down. I*

know Tandem has only recently been approved and become MDR accredited. But it definitely puts sticks in the wheels. And it is the Swedish Medical Products Agency that drives that."

As the MDR process presents further compliance challenges, there exist deliberate strategies to design products to avoid falling under MDR classification in order to get to market faster as described by the CEO & Co-founder, healthtech company (2026):

"Procurement is very complicated, and we also made a deliberate choice not to make the company a medical device under MDR, at least not in the first version of the product. That was important in order to get to market faster."

Thus, MDR requirements intensify entry barriers by extending development timelines and increasing resource demands, thereby limiting the ability of smaller firms to enter and compete in that submarket. The choice to avoid MDR classification further shows how firms adapt their resource and activity configurations to institutional requirements, even when this may shape the initial scope of the product (Thomann et al., 2016).

4.3.2.3 Notified bodies as a bottleneck of approval

The interview with the established medtech company also surfaced an actor category not mentioned by other respondents: notified bodies, the accredited assessment bodies that approve medical devices for market release. The Head of Quality & Technology, medtech company (2026)Head of Quality and Technology described how these actors have become a bottleneck under the new regulatory framework:

"These notified bodies have had to re-approve all systems under the new regulatory framework. As a result, they have become a bottleneck for what can be cleared for the market. Having a good relationship with a notified body is crucial for getting your product in time"

This highlights how relationships with notified bodies become part of the actor layer of the small world, where access to regulatory approval is shaped by prior interaction (Ford and Mouzas, 2013). In addition to the previous discussion in Section 4.3.1.1 (*Market size and regulatory constraints on rivalry*), this observation reinforces the finding that regulatory complexity functions not merely as a quality safeguard but as a structural entry barrier that disadvantage smaller actors, consistent with prior research identifying regulatory burden as a key challenge for small MedTech companies in regulated markets (Darwich et al., 2025).

4.3.2.4 Barriers in development and adoption of innovative solutions

Developing a reliable understanding of workflows, practices, and behaviours requires resources that are typically lacking among technology developers and healthcare professionals (Reed et al., 2025). In some product cases, parts of the product development process require collaboration with a clinic, which can be difficult to arrange (Wagrell and Baraldi, 2019). This is supported by the Innovation Coordinator, public healthcare region (2026), who notes that collaboration in the product development of new solutions often depends on goodwill from clinics, which can create barriers for the evidence generation phase of new solutions. In addition, collaboration requires capital, as explained by the Innovation Coordinator, public healthcare region (2026):

> *"One of the problems that appears is that we cannot give our time for free. We are not allowed to. If the work becomes more in-depth, they need to find funding in order to compensate the clinic for its time."*

Further barriers to entry emerge in the adoption phase, as there is a resistance towards being the first users. Rather, most adopters prefer that others have already used the innovation and that it has proven to be working, as emphasised by the Head of Service Agreements, public healthcare region (2026):

> *"And in Sweden, people really want a recognised Swedish*

reference. People do not necessarily want to be first. They would rather see that someone else has already used it. That is especially true in settings such as radiology or other advanced specialties, where you want recognised teams within the field to have tested the technology. That is why major university hospitals matter. They are seen as leaders in Sweden in their fields, and suppliers know that. If they can place their machine or technology there and prove that it is better, that becomes a strong reference. That is much harder for a small start-up."

In addition, the VP, life-science/innovation hub (2026) explains that solutions validated in one region often require revalidation in others:

"That is one part of the problem. Another part is that healthcare tends to be very localised. There is a mindset of "if it is not invented here, it is not accepted here." Even if a solution has been validated in one region, it often needs to be revalidated in another."

This implies that smaller firms face heightened barriers, as success depends not only on product quality but also on the ability to generate evidence and secure early adopters within the healthcare system. From a network perspective, evidence is not only a technical resource but also a relational one, as its value depends on recognition by credible healthcare actors (Håkansson and Snehota, 1995). Swedish references and university hospitals therefore function as legitimacy-generating nodes in the network (Håkansson and Snehota, 1995; Håkansson and Waluszewski, 2002; Thornton et al., 2012).

4.3.2.5 Limited data access as a barrier to innovation and market entry

Another significant barrier relates to access to data, as highlighted by the Head of Quality & Technology, medtech company (2026):

"We have an advantage there, with more access to data. Especially with the transition from the old regulatory framework

> *to the new one, where new data is required. This makes it difficult for smaller companies to create access to such data… Small companies have fewer resources and do not have access to the large amounts of data needed to properly ensure or introduce their products."*

Access to patient data can be complex and resource-demanding, see Section 4.2.5.2 (*Constraints on and conflicting handling of data*). Challenges related to patient consent and data governance are emphasised by the Head of Service Agreements, public healthcare region (2026):

> *"Another major issue is patient data. If the development requires access to patient data, that becomes difficult. If you cannot fully anonymise the data, then you need proper ethical approval and patient consent. That is a very large part of the work. Getting access to patients can itself be a significant challenge… That is definitely a challenge, especially around patient agreements and how that data is handled… you have to be extremely careful that you do not use patient data incorrectly."*

These constraints are further reflected by the Sales Director EMEA, medical imaging/AI company (2026):

> *"it is a scarce resource. It is difficult to get hold of, and difficult to get hold of the right type of data."*

Therefore, limited access to relevant patient data, combined with regulatory and ethical constraints, creates a significant barrier for new entrants, as firms lacking established data access and the resources to navigate these requirements face reduced ability to develop and validate their products. Data can therefore be understood as a critical resource whose value depends on access, legitimacy, and combination with clinical knowledge (Suchman, 1995). Limited data access restricts both product development activities and the ability to prove value in the network.

4.3.2.6 Barriers in accessing and navigating healthcare organisations

In addition, identifying the appropriate contacts and a suitable category for the product can be challenging for entering companies in some regions, as stated by the Innovation Coordinator, public healthcare region (2026):

> *"We have just as much trouble reaching them. The main route available to us is through managers. On our intranet and in our systems, it is published who the managers are at each unit and clinic. So we contact those we think would be relevant. It is easier for us if a person or idea concerns a specific area. If someone comes with a product that could fit many areas, then we have more difficulty finding the right person"*

In line with this, the Interim Head of Procurement, consulting/procurement firm (2026) explains that the integration of digital solutions requires greater cross-functional collaboration, making processes longer and more complex:

> *"It becomes a much more, there are more competencies that need to be involved. It becomes a longer and more complex process. The challenge is really that you need to find these new structures. Previously, IT sat over here doing their thing, and medical technology sat over there doing theirs. And now they need to collaborate much, much more. IT management, medical technology management, and healthcare management need to cooperate much more. You are not separate silos anymore, you need to find shared structures, shared processes, shared ways of working and guidelines."*

The Innovation Coordinator, public healthcare region (2026) further elaborates on accessing relevant healthcare professionals as a critical challenge:

> *"...we also struggle to get access to our own operations. It is not as if I can just go to a clinic and tell them that they have to do this.*

They decide for themselves... Innovation is not really perceived as part of the mission in our clinical operations."

Taken together, difficulties in identifying and engaging relevant stakeholders increase the time and coordination required for new entrants to establish a network within the healthcare system, thereby raising barriers to entry for innovative solutions. These barriers reflect the complexity of the actor layer from entering firms perspective: not only formal buyers, but also clinical, IT, procurement, and managerial actors (Håkansson and Snehota, 1995).

4.3.2.7 Incumbent advantage of the network

Building on the competitive advantages of larger firms related to established networks, see Section 4.3.1.4 (*Asymmetric rivalry and competitive advantages for larger firms*), these dynamics can also be understood as constituting an incumbency advantage. The Head of Service Agreements, public healthcare region (2026), explains that established suppliers benefit from their ongoing presence and embedded relationships within the healthcare system:

"So in practice, we mainly work with our existing suppliers and follow them closely over time. We expect them to present their new developments to us. That also means that much of public healthcare works with the larger established suppliers. If you are talking about start-ups, that is where the challenge lies"

Moreover, purchasing decisions can be influenced through early contact and dialogue with healthcare stakeholders, as described by the Head of Service Agreements, public healthcare region (2026), with the perspective of someone who has worked on both sides of the process:

"Many times, when I worked on the supplier side, you looked at all the public procurements that were published. For example, there are procurement portals were you can go in and see which procurements are coming up, and then you start working toward

those. But it is already decided. You have to be out there meeting people and maintaining dialogue with all the potential customers well before the procurement. That is when you can get your technology in... I can tell you that most people who are going to make a purchase already know what they want. So the choice of product is often made through presentations and contacts with healthcare before the procurement itself."

Hence, in some cases, preferred solutions may be identified prior to the formal procurement process. However, the Interim Head of Procurement, consulting/procurement firm (2026) argues that such perceptions are not always indicative of actual bias, but may instead stem from prior experiences that shape expectations:

"Sometimes you know that we are looking for that specific person, but we have to post the advertisement. Sometimes you just want to receive applications. And when you are standing on the other side, it can be very difficult to determine which is which. But it may be coloured by the fact that you have experienced it before, you felt that they had already been chosen, and then it is easy to go into the next process with that feeling."

The Interim Head of Procurement, consulting/procurement firm (2026) further notes that requirements may, intentionally or unintentionally, be formulated in ways that favour specific suppliers, even when based on functional needs, although procurement officers generally seek to mitigate such effects. (Interim Head of Procurement, consulting/procurement firm, 2026)

Consequently, although final decisions must consider price and comply with regulations, success depends on building early relationships, demonstrating value, and understanding key decision-makers. Earlier interactions may shape preferences and expectations before formal evaluation begins, reinforcing path dependence in supplier selection (Ford and Mouzas, 2013). This can

present a disadvantage for small firms entering the market.

4.3.2.8 Alignment effects reinforcing incumbency advantages

In addition, the widespread use of a single supplier makes organisations more likely to adopt the same system to facilitate collaboration and shared learning, as emphasised by the Head of Service Agreements, public healthcare region (2026):

> *"At the same time, there are situations where market dominance creates alignment. For example, in one area I worked with previously, one supplier had close to 70 percent of the Swedish market. That meant that most hospitals were already using their equipment. If a hospital then wants to purchase something new, it often prefers to choose the same supplier because that makes it easier to collaborate with other hospitals using the same system. If others are running tests or sharing experiences, it becomes less attractive to choose a completely different supplier. That kind of collaboration matters."*

This is corroborated by the statement of the Head of Quality & Technology, medtech company (2026):

> *"Healthcare in certain regions is used to a user interface from our company, while others are used to a different interface. One should not underestimate that, because as human beings, we are not really receptive to change. You want the same type of products even when you are going to buy something new. You are used to it. Sometimes they even play the safety card and say that for this to work safely, we want the same user interface as before."*

Moreover, the Interim Head of Procurement, consulting/procurement firm (2026) highlight that procuring authorities may seek a single supplier for a complete offering, creating barriers for highly specialised solutions.

As such, market dominance can further drive alignment in healthcare and

reinforce incumbency advantages by making alternative suppliers less attractive. In some cases, suppliers with niche solutions become even less attractive. Thus, the more healthcare organisations adapt their activities to a dominant supplier in some product categories, the harder it becomes to separate or replace that resource configuration (Ford and Mouzas, 2013).

4.3.2.9 Funding and support mechanisms with associated institutional constraints

Market entry enablers exist, such as access to funding, see Section 4.2.2.3 (*Reliance on funding sources*). For instance, the innovation support team in Region Östergötland provides guidance to companies seeking to engage with healthcare providers and establish themselves within the system.

However, these support structures are accompanied by institutional constraints. The Innovation Coordinator, public healthcare region (2026) notes that legal requirements related to public access to information can limit firms' ability to share sensitive data when seeking advice from public actors. In addition, internally developed solutions within regions may create legal ambiguities regarding ownership and fair competition:

> *"We have had a few cases where researchers have developed a product, it is MDR-approved, and they also work at the Region. Then the problem for us in the purchasing process is that it could be perceived as a conflict of interest."*

This is corroborated by the Chief AI Officer, university hospital (2026), who highlights ongoing challenges related to procurement rules, legal frameworks, and value sharing, particularly regarding fair returns and supplier eligibility:

> *"But then we would also need to receive something in return, since we contributed data, knowledge, and in many ways showed them how to build it. We would need some form of usage rights for that product going forward. That dialogue is ongoing, and we are actively trying to resolve the legal and procurement-related*

questions involved. But it is not easy... Another issue is that if we have developed something closely together with a supplier and then later need to procure it, that supplier may be disqualified from the procurement process because they were too involved beforehand. Then we might not even be allowed to buy the product back, which would also be a failed outcome."

Thus, while funding and support mechanisms facilitate initial engagement, legal and procurement-related constraints introduce uncertainty and risk, limiting their effectiveness as entry enablers for new firms. These tensions show how within state order, logics can coexist uneasily: public actors may want to support innovation, but must also preserve legality, neutrality, and fair competition (Berg Johansen and Waldorff, 2015; Dunn and Jones, 2010).

4.3.3 Threat of substitutes through in-house development and internalisation

4.3.3.1 In-house innovation development as a substitute for external suppliers

Public actors may also choose to build in-house instead of buying from external suppliers. Choosing between in-house development and bringing in suppliers is a case-by-case assessment for the University Hospital. A key consideration for the University Hospital is whether the organisation has the capability to develop the solution internally or seeks to build such competence in-house. The decision depends on the specific case, as organisations may choose to build internal capability or rely on external expertise, particularly when specialised companies possess superior knowledge in a given area. As a result, the threat of innovation in-house becomes less prevalent for CE-marked solutions, as exemplified by the Chief AI Officer, university hospital (2026):

"In other contexts, however, we look very much at what we can buy, either as finished products or by procuring something from a supplier who then develops it for us. This is particularly relevant

when it comes to solutions that are in one way or another close to the patient and therefore affect treatment or diagnostics. In those cases, the solution falls under the regulatory framework for medical devices. Then the process becomes much more complicated if we want to develop that kind of solution ourselves. In those cases, it is usually easier for us to have a supplier build it for us and then purchase it, because then it becomes a CE-marked product and follows the medical device regulatory framework."

In parallel, region-run primary care centres typically lack dedicated teams and incentives to drive innovation that can attract talent, as stated by the VP of Operations, private healthcare provider (2026):

"Yes, and the only reason we do is because we have investors who have invested in HealthTech, in healthcare companies with technology like our solution that can help us reach more patients. A region-run public healthcare centre does not have that. And even if they did have the resources, I do not think they would be able to attract the same talent. People want to work with exciting technology, build something cutting-edge, and develop something meaningful, not sit in an outdated system that may never really become anything."

Taken together, the threat of in-house development as a substitute varies between product types, where threats remain somewhat limited, particularly for complex and regulated solutions.

4.3.3.2 Risk of internalisation by partner firms

The Sales Director EMEA, medical imaging/AI company (2026) highlights another form of substitution threat faced by smaller firms that depend on larger suppliers to access the public healthcare sector, as these partners may develop similar solutions in-house, creating a tension between knowledge sharing and competitive risk:

> *"Our biggest competitors are actually our customers themselves and their own development departments. It is a balancing act. Once they learn too much, they do it themselves. That is not a good business for us."*

Collaboration with larger partners thereby introduces a substitution risk that can reduce opportunities for smaller firms to remain competitive. This illustrates a risk of asymmetric resource sharing in networks, where smaller firms depend on larger partners for market access but may lose control over specialised knowledge once it becomes embedded in the partner's activities (Håkansson and Snehota, 1995).

4.3.4 Buyer power driven by clinical influence, price sensitivity, and control over procurement processes

In the public healthcare market, the notion of "buyer" is fragmented across multiple actors. While regional authorities constitute the formal buyers responsible for procurement and budget allocation, the actual decision-making power is distributed among procurement units, healthcare providers, and clinical end-users, all of whom influence purchasing decisions to varying degrees.

4.3.4.1 Clinical influence on purchasing decision

Siira et al. (2024) state that leaders within primary care often hold decisive authority over whether a new solution should be implemented (Oborn et al., 2020; Hammerton et al., 2022; Brantnell et al., 2023). Moreover, Siira et al. (2024) note that healthcare professionals play a central role in disseminating knowledge and aligning organisational strategies with daily operations (Birken et al., 2012). For successful entry into the public healthcare sector with a new solution, the Director of Health and Medical Services, public healthcare region (2026) highlights:

> *"I think the most important thing is that the product genuinely improves patient outcomes or makes everyday work easier for the*

clinical operation... So I think a very important driver is that the people working in the clinical operation feel that the tool or app makes a real difference for them. If they feel that it helps them significantly, then they want it."

This is in line with the Chief AI Officer, university hospital (2026) notion that the identification of AI solutions at the University Hospital is partly driven by internal demand from clinicians. In addition, the VP, life-science/innovation hub (2026) emphasises that need-driven procurement is more likely to gain traction, as solutions originating from within the healthcare system reflect clearly identified needs and are often supported by internal champions:

"I would say that ideas originating in the healthcare environment tend to gain more traction because there is already a clearly identified need. If someone inside the system identifies a problem, that in itself signals that the need is real. And if you also have someone internally championing the idea and pushing it forward within a clinic, that opens more doors."

Taken together, strong clinical influence enhances buyer power by requiring suppliers to align closely with user needs. Clinical users therefore act as important legitimacy providers (Suchman, 1995). Their support can transform a solution from being merely technically available into being perceived as appropriate and useful within professional healthcare practice.

4.3.4.2 Price sensitivity and value-based evaluation strengthening buyer power

Wagrell and Baraldi (2019) state that the Swedish health sector is price sensitive, which is supported by the statement of the Head of Service Agreements, public healthcare region (2026):

"In public healthcare, price is extremely decisive. In procurement, we usually work with a scoring model... But in the end, price and quality are what matter most, and price

often weighs very heavily."

However, the Interim Head of Procurement, consulting/procurement firm (2026) gives dimension to this:

> *"Price is very important. But if you have a product that is more about saving costs, it might be expensive to purchase, but it creates efficiency and savings, or it is expensive to purchase but gives much better results in some way in healthcare, then you need to highlight that. Otherwise you will not win. You need to find a pricing model that brings that to the forefront. Otherwise you will lose."*

This indicates that while price is a dominant decision factor, buyers have significant leverage through shaping the terms of competition by defining evaluation models that require suppliers to clearly demonstrate cost-efficiency or added value. This reflects the coexistence of market and professional logics: suppliers must justify their offerings through economic efficiency while also demonstrating clinical relevance and improved care outcomes (Berg Johansen and Waldorff, 2015).

4.3.4.3 Backward integration and control over development, increasing buyer power

As previously mentioned, healthcare providers may choose to meet their own needs through in-house development of new solutions and innovation, see Section 4.3.3.1 (*In-house innovation development as a substitute for external suppliers*). This potential for backward integration strengthens buyer power by reducing dependence on external suppliers, although it remains constrained by the complexity of development and expertise required.

In addition, buyers may actively steer supplier innovation through ongoing relationships and network interactions, see Section 4.3.1.4 (*Asymmetric rivalry and competitive advantages for larger firms*). This creates a dynamic in which suppliers become dependent on buyer relationships for access and

relevance, further reinforcing buyers' bargaining position.

4.3.5 Supplier power shaped by lock-in effects and influence over demand formation

4.3.5.1 Lock-in effects reinforcing supplier power

The concentration of suppliers varies by product category, but is overall deemed to be limited, see Section 4.3.1.1 (*Market size and regulatory constraints on rivalry*). Nevertheless, larger firms often maintain established relationships with public healthcare providers, which can create lock-in effects whereby some supplier interfaces shape market alignment, see Section 4.3.2.7 (*Incumbent advantage of the network*) and Section 4.3.2.8 (*Alignment effects reinforcing incumbency advantages*). Thus, public procurement regulations limit the ability to engage with new suppliers when similar products are already covered by existing agreements, reinforcing reliance on incumbent vendors. In some cases, larger firms with innovative technologies can be selective of which potential customers they engage, particularly when the solution is unique, as described by Head of Quality & Technology, medtech company (2026):

> *"Because the technology was so new, we primarily wanted to deliver to customers that we saw would use the products in areas where we also wanted to develop. So we ended up in a situation where we actually chose our customers, because they had to explain to us what they would use the products for, since we could not deliver at the pace we perhaps wanted to."*

Consequently, incumbent suppliers retain a degree of power in the market through established relationships, lock-in effects, and, in some cases, the ability to selectively engage with customers.

4.3.5.2 Supplier influence on demand formation and solution identification

Even though market scanning for solutions is partially driven by internal demand, it is also driven by external supply through targeted marketing and supplier outreach. This process is reinforced through professional networks and industry events, as exemplified in the context of AI by the Chief AI Officer, university hospital (2026):

> *"So it comes from both sides, really. It may originate within the hospital, but it may also be triggered by the supplier. Many people also attend trade fairs and similar events, where they are exposed to product sales. So it comes from both directions."*

Thus, suppliers can influence demand formation by shaping awareness and preferences, which may strengthen their position in the early stages of the purchasing process. Supplier power is thus partly created before procurement through network interaction.

4.3.6 Complementors facilitating market entry through strategic partnerships

Healthtech companies can collaborate. The Head of Service Agreements, public healthcare region (2026), explains that a start-up may not sell a complete standalone product, but rather a solution that complements another product from a larger supplier. It can be a useful pathway to collaborate with a larger supplier in order to enter the market, as Head of Service Agreements, public healthcare region (2026) states:

> *"Many Tech and MedTech companies collaborate with each other. A start-up may not sell a complete standalone product, but rather a solution that complements another product from a larger supplier, such as Siemens. In that case, it can be very useful to collaborate with Siemens and enter the market through that route. I think that is a major pathway."*

The Interim Head of Procurement, consulting/procurement firm (2026) described this as a deliberate strategic option for smaller companies with highly specialised solutions:

> *"Can I go in as a subcontractor to the one who has the whole package? And say, I have a really great thing just here that I want you to offer in your bid. So you find a complete solution provider that can sell your extremely sharp innovative thing as part of their offering. Then the larger company handles the actual procurement against the public sector."*

This is backed up by the Senior Advisor, telehealth company (2026):

> *"In Sweden, Telia and Tele2 are the largest actors in healthcare when it comes to delivering telephony services and related support systems. So at an early stage we contacted Telia first, I believe. We then delivered our services through Telia and Tele2, through the partners that existed at the time. And we still do that... They became a reseller or partner for us. Once we got in through these small pilots, the business gradually grew and more organisations wanted the service."*

Taken together, larger suppliers can be viewed as complementors. These play a key role in facilitating market entry by enabling smaller firms to integrate their solutions into established platforms and networks, increasing the attractiveness and adoption of smaller firms' offerings while overcoming barriers related to scale and market access. In ARA terms, complementors help smaller firms connect their specialised resources to established activity structures and actor relationships (Håkansson and Snehota, 1995). This can reduce entry barriers, but also creates dependency on the larger partner's platform, reputation, and procurement position.

4.3.7 Concluding remarks on small world conditions

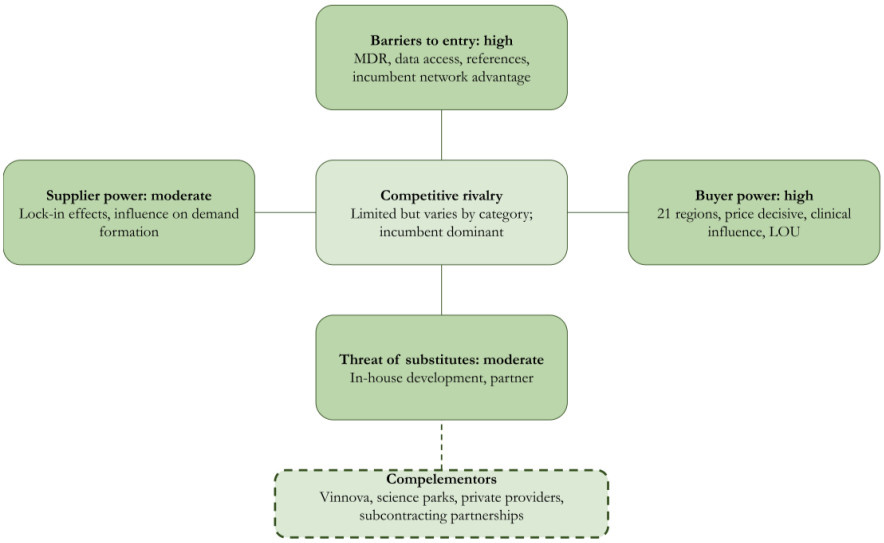

Figure 11: Competitive forces at the small world level. (Whittington et al., 2017; Ford and Mouzas, 2013).

The small world of digital health innovation in Swedish public healthcare is characterised by strong interdependencies between actors, resources, and activities, where competitive dynamics are shaped not only by isolated firm capabilities but also by network position and embeddedness (Ford and Mouzas, 2013). Established actors benefit from accumulated relationships, aligned resource configurations, and coordinated activity structures, creating path dependencies that reinforce incumbency advantages and limit the ability of new entrants to compete on equal terms. Through the lens of institutional logics, it is evident that these dynamics influence what is considered legitimate, appropriate, and valuable, requiring firms to align not only with market demands but also with public-sector norms related to regulation, interoperability, and clinical relevance (Friedland and Alford, 1991; Suchman, 1995). As a result, digital innovation does not diffuse solely based on technological performance, but through the ability of actors

to position their solutions within existing networks. Nevertheless, strong networks can enable diffusion once entry is achieved, where complementors can create viable entry pathways for smaller firms (Håkansson and Snehota, 1995). Moreover, although price matters, there is openness to value-based arguments. Especially in AI and software, smaller actors can compete through niche expertise. This suggests that innovations improving outcomes or efficiency can succeed if properly articulated.

4.4 Market entry pathways

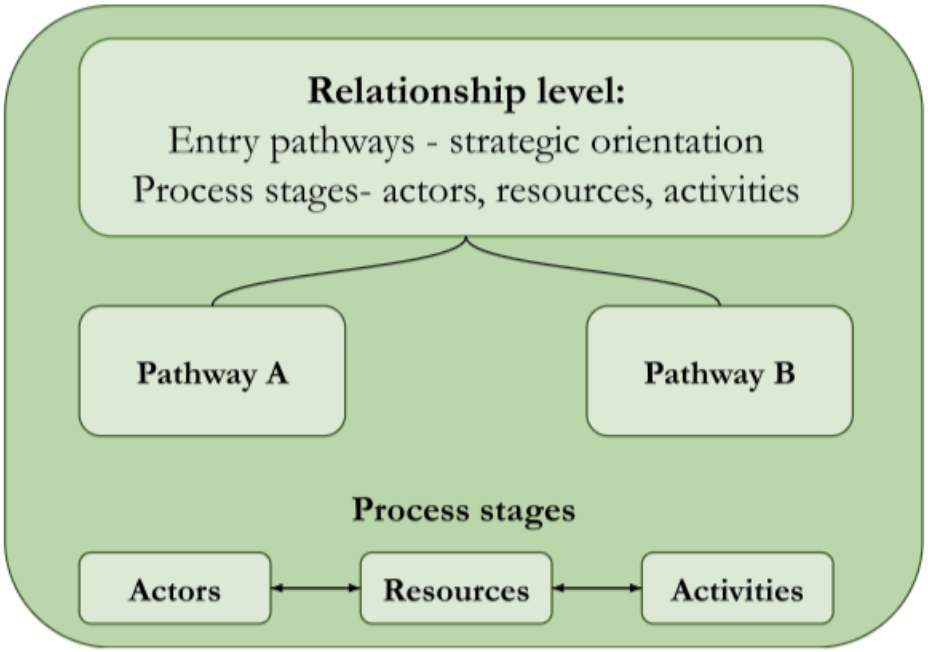

Figure 12: Third step of the analytical structure of the results chapter, analysing the relationship level (Ford and Mouzas, 2013).

The structural conditions examined through PESTEL at the wider world level and the competitive forces analysed through Porter's Five Forces at the smaller world level shape the conditions under which innovations could become embedded. This section zooms in on the relationship level, examining two possible entry pathways for companies. Rather than facing a

single standardised entry process, digital health and AI innovators navigate Swedish public care through two distinct pathways, each with its own combinations of relationships, resources, and strategic orientation. These pathways are an empirical typology developed inductively from the interview and secondary data and subsequently analysed through the lenses of Business Network Theory and Institutional Logics (Håkansson and Snehota, 1995; Thornton et al., 2012).

Pathway A: Direct public entry through procurement

Pathways B: Alternative market position

4.4.1 Pathway A: Direct public entry

The first pathway involves direct engagement with public healthcare organisations. The empirical material also reveals examples of related activities that can lead to public procurement; research collaboration and/or pilot-based entry. They differ in the degree of formalisation and the type of actor relationships required, but share an orientation toward working within the state logic governing Swedish public healthcare (Thornton et al., 2012). Prior research has examined each of these forms: public procurement as a governance mechanism (Konkurrensverket, 2024), research collaboration as a source of clinical evidence (Darwich et al., 2025), and co-development as a future of innovation-oriented public-private relationships (Bengtson et al., 2022).

4.4.1.1 Direct public procurement

Formal public procurement, the most structured form of direct entry, involves responding to procurement announcements under the Public Procurement Act (LOU). The Head of Service Agreements, public healthcare region (2026) described how this process functions in practice and why it systematically favours established actors:

> *"Most often, we come into contact with new solutions through the suppliers we already have agreements with. Since we are a public*

organisation, we are really only allowed to maintain dialogue with suppliers we already have contracts with."

(Head of Service Agreements, public healthcare region, 2026)

Reflecting on his earlier experience on the supplier side, he added:

> *"You have to be out there meeting people and maintaining dialogue with all the potential customers well before the procurement. That is when you can get your technology in... The big suppliers know everyone. They know exactly who people are, who makes decisions, and how they work. The small companies do not know that."*

Thus, formal procurement presupposes a specific resource combination: reference customers, financial solidity, regulatory certifications, and procurement-specific capabilities that most new entrants lack. The mechanisms by which these advantages operate are examined in detail in Section 4.3.2 (*Barriers to entry driven by regulatory complexity, resource demands, and incumbency advantages*).

4.4.2 Pathway B: Alternative market position

The second pathway reflects a strategically different orientation, in which innovators avoid or delay direct engagement with public procurement by positioning themselves in close-by market segments. This pathway takes similar forms in the empirical material, differing in degree and mechanism but sharing the same strategy of avoiding direct public procurement while maintaining a presence in the broader healthcare market.

Innovators can enter the public market indirectly by embedding their solution within a larger established supplier's offering rather than competing independently. Since public healthcare organisations frequently maintain long-term framework agreements with established suppliers, allowing smaller innovators to reach public healthcare customers through these relationships

without directly participating in procurement. The Senior Advisor, telehealth company (2026) described how this operated in their early growth phase in Section 4.3.6 (*Complementors facilitating market entry through strategic partnerships*).

The Sales Director EMEA, medical imaging/AI company (2026) described an even more embedded form, where the company's image enhancement software reaches Swedish hospitals without any direct Swedish customer relationship:

> *"When one of those companies decides to set up a system where our software is integrated... our software is part of that system wherever in the world that system is sold. Our customer is Philips, whereas Philips ' customers are the hospitals or clinics."*

This illustrates the jointness characteristics of business networks, where outcomes are produced collectively through the combination of complementary resources rather than by any single organisation (Ford and Mouzas, 2013). The innovator contributes specialised technical resources, while the established supplier contributes network-positioning resources built through long-term relationships. The Interim Head of Procurement, consulting/procurement firm (2026) with extensive public-sector experience reinforced this as a deliberate strategy for smaller companies in Section 4.3.6 (*Complementors facilitating market entry through strategic partnerships*).

However, the variant is not without its own constraints. The (Head of Service Agreements, public healthcare region, 2026) noted that *"the same regulatory requirements apply to subcontractors as to main suppliers"*

The Sales Director EMEA, medical imaging/AI company (2026) also described the risk of knowledge spillovers, see Section 4.3.3.2 (*Risk of internalisation by partner firms*).

4.4.3 Pathways as an analytical framework

The two pathways reflect different orientations toward the institutional logics governing Swedish public healthcare (Thornton et al., 2012). Pathway A accepts and operates within state logic. Pathway B responds by identifying market alternatives, drawing more heavily on market logic (Thornton et al., 2012).The conditions that make each pathway feasible are examined further through the process stages in Section 4.5 (*Process stages*).

4.5 Process stages

The following sections examine how embedding unfolds in practice by tracing how innovations move across critical stages within the Swedish public healthcare system. Rather than applying a predetermined stage model, the four stages presented below were identified inductively from the empirical material through a bottom-up analysis of the interview data, reflecting the junctures that recurred most frequently across respondents. They should not be viewed as actual or sequential steps in an implementation process, nor as a set pathway to market embeddedness. These recurring junctures were grouped into four stages:

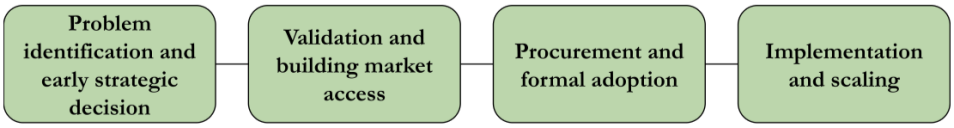

Figure 13: The four stages of the process derived from the empirical material

The process stages were identified from interviews with innovators, public actors, private actors, and market experts. As Section 4.4 (*Market entry pathways*) illustrates, the empirical material reveals a variation in how and whether different stages are encountered. An innovator following Pathway A may move sequentially through all stages. An innovator following Pathway B may bypass formal public procurement entirely, encountering validation and implementation dynamics only within the private segment.

The four stages do not capture a guaranteed pathway but a map of the critical terrain. Some stages are central for certain pathways and innovations, but absent in others. Their value lies not in suggesting that all must be completed, but in highlighting what characterises each juncture in which actors hold influence, which resources become critical, and how activities are coordinated within the institutional conditions that shape the market as a whole.

Throughout each stage, the analysis is structured around thematic subheadings that reflect the critical dynamics in the empirical material. Rather than applying the Actors-Resources-Activities (ARA) framework developed by Håkansson and Snehota (1995) mechanically as fixed categories within each stage, the ARA concepts are used as analytical lenses integrated into the thematic discussion, capturing how actors, resources, and activities are interdependent at each juncture. Institutional logics are incorporated as a complementary analytical lens where competing value systems become relevant for the analysis.

4.5.1 Problem identification and early strategic decision

The embedding of a digital health or AI innovation within the Swedish public healthcare system begins with the decisions made before a product is fully developed. How founders identify opportunities, make early regulatory and market-positioning choices, and mobilise initial actors and resources shapes which pathways remain open later in their development. The following subsections examine these conditions.

4.5.1.1 Founding conditions and opportunity recognition

At the problem identification stage, the company's founding team is the central actor, and the founders' backgrounds shape both the problems they perceive and the networks they can access. Prior research on early-stage Swedish digital healthcare start-ups has identified business opportunity recognition grounded in sector experience as a central factor in the development of viable ventures (Saarela et al., 2016). The interview material in this study corroborates and specifies this pattern. In several cases, clinical

expertise served as a direct entry point for problem identification. The CEO & Co-founder, healthtech company (2026) described her path from clinical medicine to HealthTech:

> *"When I worked clinically, I used many different systems. In healthcare, you always have an electronic health record system because you need to document everything there. But there are also many other applications you work in, and they are not connected to each other. So in clinical work, a lot of time is spent copying and pasting, suplicating documentation, and doing manual work"*

This clinical insight translated into the company's middleware concept, drawing on an analogy from outside healthcare: *"The idea was heavily inspired by open banking... I thought why are we not doing this in healthcare?"* (CEO & Co-founder, healthtech company, 2026). The Head of Customer Success, healthtech company (2026) describes their team's similar composition as an enabler for their positioning:

> *"We employ healthcare professionals within our customer success team. I am a physiotherapist by background, and we also have nurses and other healthcare professionals on the team. Our founder is also a nurse. This allows us to position ourselves as ´for healthcare professionals, by healthcare professionals ´"*

The (VP, life-science/innovation hub, 2026) reinforces this pattern more broadly, observing that ideas originating within the healthcare environment tend to gain more traction because the identified need is already validated by lived experience, see Section 4.3.4.1 (*Clinical influence on purchasing decision*).

The Head of Development Unit, public healthcare region (2026) confirms the same dynamic from the buyer side: *"... innovations tend to gain more traction when they originate from clinical practice, for example, through research. If an external actor proposes a solution, there is often more resistance."*

Analytically, this reflects a distinction within Suchman (1995) notion of cognitive legitimacy; solutions whose clinical relevance is already embedded in the professional community carry implicit trust that externally proposed solutions must build from scratch. In ARA terms, clinically originated innovations enter the network with pre-existing actor bonds between developer and end user, while externally proposed solutions must first establish these bonds before any resource or activity integration can proceed (Håkansson and Snehota, 1995).

Founders' clinical backgrounds constitute a foundational actor resource that shapes not only which problems are identified but also which relationships are immediately accessible at the outset (Håkansson and Snehota, 1995). As Ford and Mouzas (2013) note, actors' identities are shaped through interaction and relationship development over time; founders with clinical backgrounds enter the network with pre-existing actor bonds and resource ties that outsiders cannot quickly replicate. As Elg et al. (2025)note, technology does not exist in isolation but is shaped by the use and intended purpose of different actors, implying that innovations developed without grounding in clinical practice risk fundamental misalignment with their intended users. The VP, life-science/innovation hub (2026) reflects this pattern, observing that interoperability with existing systems is one of the most critical and consistently underestimated challenges for digital health innovators, see Section 4.2.3.2 (*Administrative burdens and knowledge gaps*).

Thus, not only must a digital healthcare solution address a clearly recognised clinical need, but it must also integrate with existing electronic health record systems, as failure to do so creates structural resistance regardless of its technical quality.

An often underestimated activity at this stage is for certain external innovators to validate with clinical actors to verify that an identified problem is genuine before committing significant resources to a solution. The Innovation Coordinator, public healthcare region (2026) describes this as a major part of the team's workload:

> *"We are mostly operating in the early part of the innovation process - needs validation, exploration, and testing. That is where we see that we work the most."*

However, accessing clinical actors for this purpose is itself a challenge. The Head of Development Unit, public healthcare region (2026) noted that innovation is not universally perceived as part of healthcare professionals' core responsibilities:*"Ideally, all employees - nurses, assistant nurses, managers. Development should happen close to patient care. But in practice, everyday work often takes priority."* This reflects the challenge of accessing clinical actors for needs validation reflects the interdependence of activities across organisational boundaries. The innovator's development activities cannot proceed without the clinical actor's validation activities, yet the clinical actor's everyday work activities consistently take priority. This activity interdependency, where changes in one actor's activities require adaptations by others, is a central dynamic in business network theory Håkansson and Snehota (1995).

4.5.1.2 Regulatory positioning and MDR navigation

A second defining set of decisions concerns how a solution will be classified under the Medical Device Regulation, and who is involved in making that determination, where the regulatory environment constitutes a central barrier for start-ups, see Section Section 4.3.2.1 (*High resource demands of compliance in healthcare and public procurement*). The empirical material confirms and specifies these dynamics.

Regulatory and information security consultants constitute a critical actor category here. The CEO & Co-founder, healthtech company (2026) described how consultants were engaged from the beginning and shaped the fundamental product strategy:

> *"The very first thing we did in 2022, when we were basically just a PowerPoint presentation, was to use funding from Vinnova's MedTech4Health programme to bring in a consultant I had*

> *worked with before. We asked them very directly: Are we a medical device? What would make us one? At what point would we become one?"*

The CEO & Co-founder, healthtech company (2026) highlights a distinctive characteristic of software-based medical solutions compared to traditional medical devices: their capacity for rapid modification, which can unintentionally lead to breaching regulatory requirements overnight Section 4.2.5.1 (*Resource-intensive regulations*). This makes early regulatory positioning particularly consequential.

The Innovation Coordinator, public healthcare region (2026) observes that a significant share of start-ups that contact the region have not recognised that their solution qualifies as a medical device, requiring them to revisit earlier development steps and undertake a resource-intensive MDR approval process that significantly delays their pathways:

> *"Many startups that come to us have not even considered that route. They do not think that what they have is a medical device. But in many cases, we see that the intended purpose makes it a medical device. Then it has to be MDR-approved in order to be taken to a clinical setting and used. That means they have to go back and do the MDR journey... it is a huge job."*

Early investment in regulatory knowledge illustrates how resource combinations become path dependent over time; the choices made at this stage concerning early regulatory positioning constrain and enable what is possible in subsequent stages (Håkansson and Waluszewski, 2002). Deliberate early engagement with this boundary, as illustrated by CEO & Co-founder, healthtech company (2026), the company's use of a Vinnova consultant, represents a strategic investment that shapes the following development trajectory. A company that invests early in understanding the regulatory landscape builds a resource base that shapes its entire development trajectory, while a company that discovers its regulatory status late must

expend resources revisiting earlier stages rather than advancing.

The regulatory positioning reflects a market versus state logic (Thornton et al., 2012), where an MDR avoidance strategy could serve as an example, see Section 4.3.2.2 (*Heightened entry barriers under MDR regulatory requirements*). Analytically, this suggests a strategic navigation of the regulatory complexity in which detailed regulatory knowledge is in itself a resource. This connects to what Thornton et al. (2012) describe as actors' use of logics as a toolkit, drawing on detailed knowledge of institutional frameworks to make strategic choices about positioning rather than passively submitting to a single logic. In this case, market logic is prioritised without abandoning state logic since the product is designed to fall on a specific side of the boundary defined by state logic.

The contrast with innovators who underestimate regulatory requirements reveals the cost of this tension when it is not actively managed. Start-ups that discover their MDR status late have effectively made an implicit market-logic choice without understanding the state-logic consequences and must then undertake a costly correction that disrupts their development (Innovation Coordinator, public healthcare region, 2026).

4.5.1.3 Early market segment choice

The study's findings show that choosing to target public healthcare, private providers, other HealthTech firms, or international markets depends on regulatory complexity, sales cycle, resources, and growth goals. This decision is consequential not only for early revenues but also for which pathway remains viable later in the embedding process. Analytically, the choice can be understood as a strategic activity through which founders position their innovation relative to the institutional conditions they face (Thornton et al., 2012; Håkansson and Snehota, 1995).

Innovators who avoid public healthcare shift their focus to private providers and HealthTech, moving from MDR certification to information security compliance, and from clinical validation to sales and market fit in agile

markets, see Section 4.3.2.2 (*Heightened entry barriers under MDR regulatory requirements*) and Section 4.4.2 (*Pathway B: Alternative market position*). As the CEO & Co-founder, healthtech company (2026) explains:

> *"Given my experience from the previous HealthTech company, we made a strategic decision from the beginning not to target public healthcare directly. Procurement is very complicated, and we also made a deliberate choice not to make the company a medical device under MDR, at least not in the first version of the product. That was important in order to get to market faster."*

The CEO & Co-founder, healthtech company (2026) further illustrated how sales cycle length differs fundamentally between segments, making segment choice directly consequential for the pace at which a company can generate revenue:

> *"With a small tech company, from signing the contract to going live can take just a matter of days. But with a large healthcare provider, it took about a year from signing. And right now, we have been in dialogue with another large healthcare provider for almost a year. So the sales cycles are completely different."*

Even within the segment choice, not all regions are equally attractive, further discussed in Section 4.2.2.1 (*Uneven economic attractiveness across regions*). The CEO & Co-founder, healthtech company (2026) noted that scale and ecosystem density matter:

> *"Region Stockholm, for example, is attractive because it has the largest volumes and a very large number of private healthcare providers. That is very different from a smaller region like Blekinge. So, of course, there are differences between regions, and some are more attractive than others."*

The Head of Customer Success, healthtech company (2026) described a similar reasoning combined with an assessment of market saturation in the

public segment, see Section 4.3.1.1 (*Market size and regulatory constraints on rivalry*).

From an ARA perspective, the market segment choice is not merely a commercial decision but a network positioning decision that determines which actor relationships become relevant, which resource combinations become necessary, and which activity patterns become established. As Ford and Mouzas (2013) note, organisations tend to specialise in certain activities as a result of repeated interaction and adaptation. A company that repeatedly engages with private healthcare providers develops specialised capabilities, relationship patterns, and resource combinations that are increasingly difficult to redirect toward public procurement without significant reinvestment. The early market segment choice, therefore, creates path dependence that shapes the entire subsequent embedding trajectory.

4.5.1.4 Early funding

Beyond the founding team, public funding bodies emerge as critical early actors. Prior research identifies public funding as a particularly important supporting mechanism for Swedish digital health start-ups, with Saarela et al. (2016) identifying Vinnova as a central enabler in the early-stage ecosystem. The empirical material confirms this and specifies the mechanism through which funding operates. As previously described, public funding bodies such as Vinnova are a valuable source of support for start-ups entering the healthcare sector. The empirical material confirms this and specifies the mechanism through which funding operates: early-stage funding functions less as a direct input to product development and more as an enabling resource that unlocks access to expertise and relationships that would otherwise be out of reach, as illustrated in Section 4.5.1.2 (*Regulatory positioning and MDR navigation*), the use of Vinnova grants to access regulatory and information security consultants.

Beyond national funding bodies such as Vinnova, private foundations constitute a further category of actors in the early-stage ecosystem. The Head

of Service Agreements, public healthcare region (2026) in Region Skåne described their presence and accessibility:

> *"... you have both Wallenberg and Rausing. In Helsingborg and Skåne, there are different foundations and investors that are specialised in providing money for innovation in healthcare. Those are actors that startups should look at and keep track of. We collaborate with them as well. They also have points of contact within healthcare"*

This observation is significant for two reasons. First, it identifies a funding pathway that operates alongside and at least partially independent of state funding mechanisms. Second, and perhaps more importantly, these foundations have their own network ties to healthcare: they act not only as financial resources but also as additional network connectors. The regions themselves can also contribute resources for the development of new healthcare solutions. The Head of Service Agreements, public healthcare region (2026) described the financing asymmetry:

> *"You cannot assume that you can simply enter and that the region will fund everything. The region can certainly contribute resources - we have staff and time that can be allocated to research and development - but the actual funding often has to come from the innovator or company. That then determines how much time can be devoted to the project."*

The Innovation Coordinator, public healthcare region (2026) reinforced this from the coordinating side, emphasising that even clinical time cannot be treated as a free resource, see Section 4.3.2.4 (*Barriers in development and adoption of innovative solutions*). He continued by describing how innovation coordinators actively connect early-stage innovators with external funding actors and network partners from the outset:

> *"That is why we try to ensure that people make the right contacts when they come in at an early stage. We might direct them to*

Almi, to an incubator, to a Science Park, or to a cluster that can support them, so that they can build the right networks around themselves."

Since the region cannot itself provide sufficient financial resources, even its own clinical time needs to be funded, innovation coordinators function as bridging actors whose role is not to validate innovations or provide funding directly, but to connect innovators with the actors, expertise, and relationships the formal system does not automatically provide access to.

In some cases, time-bounded external funding can also catalyse activity that might not otherwise occur within public actors themselves. The Chief AI Officer, university hospital (2026) described how government funding can force an engagement across organisations that would normally advance slowly through internal queues:

"The funding became available within a relatively short time frame, which meant that we had to get something started very quickly. That is perhaps not something one is very used to in Swedish healthcare, that things need to happen quickly. It means that you may need to bypass some processes or accelerate certain processes."

He further described how shared funding created incentives for cross-actor coordination:

"In this case, that was actually beneficial in terms of getting these issues moving, starting to solve legal questions, and beginning to collaborate across IT, legal and clinical operations."

This account is analytically significant because it reveals a mechanism that standard accounts of funding as an input resource cannot fully capture. Ford and Mouzas (2013) argue that organisations specialise in certain activities through repeated interaction and adaptation, producing efficiency advantages but also rigidity with established activity patterns. Prior research on Swedish

healthcare has identified siloed digital infrastructure and care governance as a structural source of coordination failure (Ludvigsson et al., 2025). What the University hospital case illustrates is that time-bounded external funding can temporarily override this sequential specialisation, forcing legal, IT, and clinical actors to coordinate in parallel. Thus, the funding can, in some cases, not only enable the innovator but also reconfigure the internal activity patterns of the public actor, at least for the duration of the funded project. This is consistent with the co-evolutionary dynamic described by Ford and Mouzas (2013), in which actors adjust their strategies and capabilities in response to changes in the network environment - even when that adjustment is temporary and externally triggered.

In network theory terms, early funding functions as what Håkansson and Snehota (1995) describe as a resource that derives its value not from its inherent attributes but from how it can be combined with other resources. Three distinct mechanisms are visible in the empirical material. Vinnova funding generated value by combining with external regulatory expertise, which in turn enabled product architecture decisions, which in turn shaped market positioning, a cumulative resource chain constructed on the innovator's side of the network. For innovators accessing regional foundations such as Wallenberg and Rausing, funding simultaneously unlocks capital and pre-existing actor bonds into the regional healthcare network a resource-and-relationship combination that a purely national funder cannot provide. For the University hospital, government funding generated value by temporarily combining legal, IT, and clinical activities that would normally specialise along separate timelines a cross-boundary activity synchronisation constructed on the public actor's side of the network. In all three cases, the usefulness of the funding depended on its fit with existing network structures and on its capacity to alter those structures, consistent with Ford and Mouzas (2013) observation that network positions and activity patterns are shaped both by historical specialisation and by current interaction.

4.5.2 Validation and building market access

Innovators face a second critical stage in which they must establish that their solution works, addresses a genuine clinical need, and is trustworthy enough to be adopted in clinical practice. The empirical material specifies which actors, resources, and activities shape the transition from early-stage product to trusted solution in the Swedish public healthcare context, which is examined in the following subsections.

4.5.2.1 Sources of reference and validation

Across the interview material, university hospitals emerged as actors with disproportionate influence over which solutions gain legitimacy at the validation stage. The Head of Service Agreements, public healthcare region (2026) described this dynamic directly:

> *"If I were a start-up and wanted to enter with something new, I would say that it is not enough to invest in the product itself. You also need a strong reference site where the product can be developed further and evaluated. You want to publish studies, and you want evidence that the solution actually works. Ideally, in Sweden, you also want Swedish studies."*

He further emphasised the specific role of university hospitals in this reference economy, as a way to build legitimacy, as there is a hesitation towards being first adopters, see Section 4.3.2.4 (*Barriers in development and adoption of innovative solutions*). In network-theoretic terms, university hospitals function as actors whose identity and position in the network give them disproportionate influence over resource access and activity coordination, as Håkansson and Snehota (1995) describes. Their endorsement connects the innovator's technical resources with the hospital's reputational resources in a way that creates value neither could generate on its own. This illustrates what Ford and Mouzas (2013) describes as jointness; outcomes are produced collectively through interaction rather than by the actions of a single actor.

Prior research identifies research collaboration as one structured pathway through which innovators gain access to this form of legitimacy (Darwich et al., 2025). The Director of Health and Medical Services, public healthcare region (2026) described this as both a legitimate and underutilised route:

> *"What has worked well, in my view, is when companies initiate a research collaboration. For example: ´We have a product that needs to be evaluated - could we conduct a study of it? ´Then the company enters a research environment... It is a structured and legitimate system where results can be published. I would see that as an opportunity that is perhaps not always fully utilised."*

This matters at the validation stage since research collaboration generates what Suchman (1995) terms moral legitimacy: credibility grounded in evaluation in a clinical environment rather than initially focusing on commercial performance. The empirical material further suggests that this moral legitimacy is particularly influential when conducted at major Swedish university hospitals, reflecting a localisation logic in which clinical context is treated as non-transferable even when results are generalisable.

Beyond university hospitals, the empirical material also shows that clinical department heads and individual innovation-oriented clinicians constitute a second critical actor category. The Innovation Coordinator, public healthcare region (2026) described the underlying logic:

> *"It really comes down to having built a relationship. If you have not built a personal relationship with someone, then it is much harder. It is not about a specific profession. It is about having a relationship with someone who has some influence in that setting."*

The Head of Development Unit, public healthcare region (2026) reinforced the pattern, noting that innovation culture varies significantly across units within a single hospital:

> *"Even within a large hospital, some units are very innovative while others are not... you need to choose the right units. If the culture is not there, nothing will happen anyway."*

The VP, life-science/innovation hub (2026) added a further insight about the role of internal champions in advancing adaptation decisions:

> *"You need a clinician involved who can both validate the relevance of the solution and act as a champion internally, helping to build wider buy-in in the organisation."*

Analytically, this relational dynamic reflects the actor dimension of the ARA framework: actors are not autonomous entities but organisations and individuals whose capabilities and influence are shaped through interaction over time Håkansson and Snehota (1995). The innovator adapts their product and communication strategy in response to clinical feedback, while the clinician who becomes an internal champion for an innovation gradually takes on a new role that goes beyond their everyday clinical work in their organisation through that relationship. This co-evolution, unfolding through repeated interaction, is what transforms an initial contact into a sustained actor bond Ford and Mouzas (2013). The activity of pursuing these relationships, identifying, approaching, and maintaining contact with innovation-oriented clinicians, is therefore as critical as the technical validation activities it enables.

4.5.2.2 Multiple references for building trust

Beyond formal evidence and university hospital references, the empirical material shows that validation is fundamentally about establishing trust, and that trust in the Swedish public healthcare context is not a single credential but an accumulated resource built through sustained interaction. The gap between innovation and conservatism is examined in Section 4.2.3.1 (*Organisational culture constraints*) and could be explained by the personal-responsibility dimension that the Director of Health and Medical Services, public healthcare region (2026) addresses, which makes trust central:

> *"In healthcare, you are responsible for another human being... Many people feel that responsibility very personally. Because of that, they want to trust the medicines they use, the instruments that monitor patients, and, if they use AI tools, they want to trust that those tools provide correct information."*

In such conditions, the empirical material suggests that what shifts the balance is rarely a single piece of evidence but the gradual accumulation of credibility signals across multiple actor relationships as described by CEO & Co-founder, healthtech company (2026):

> *"In healthcare, trust is incredibly important. It has helped that I am a doctor and that I have a professional network in the field. It also becomes easier once you have signed your first customer. When we signed one private healthcare provider, it became easier to sign the next one, because others could see that someone had already trusted us. Building trust in healthcare takes time."*

Analytically, this captures a central mechanism in business network theory: early actor bonds generate reputational resources that reshape how subsequent actors evaluate the innovator (Håkansson and Snehota, 1995). A signed customer becomes a resource tie whose value exceeds its direct revenue contribution, because it signals legitimacy to other potential partners evaluating whether to engage.

4.5.2.3 International validation

Even if there's cases that point to Swedish validation being more valuable, the VP, life-science/innovation hub (2026) described that international success also can build legitimacy in Sweden:

> *"One company I am thinking of was very clear from the beginning that the US would be their priority market. It takes time to enter the US, build relationships with key opinion leaders, establish the right partnerships, and get access to hospitals. But once you gain*

entry into one clinic and clear the regulatory path, many more doors can open. Success in the US can also strengthen legitimacy back home in Sweden."

This observation is analytically significant because it identifies a reverse legitimacy mechanism: international success could function as a resource that strengthens an innovator's position in the Swedish network, even without domestic references. In Suchman (1995) terms, pragmatic legitimacy accumulated in one institutional context can be converted into moral or cognitive legitimacy in another, reshaping how Swedish actors evaluate the innovator's credibility. The strategic dilemma for early-stage innovators is not simply between Swedish-specific adaptations that generate revenue sooner and standardised architectures that support global scaling; it is also about how the reputational resources generated in one market can be redeployed in another.

4.5.2.4 Communication alignment in trustbuilding

Another dimension of trust-building in the empirical material concerns communication. The CEO & Co-founder, healthtech company (2026) emphasised that communication toward public healthcare must align with sector-specific norms rather than broader tech-industry narratives:

"You adapt the way you present yourself to the sector. You do not communicate in an overly provocative way, and you do not present yourself as if you are just another fast-scaling tech company. That kind of communication is not a good fit for healthcare."

This illustrated the institutional logic tension at the relational level (Thornton et al., 2012): innovators operating under market logic must translate their value proposition into terms legible within state and professional logic. Credibility is therefore not only a function of what an innovator offers but of how that offer is articulated. Communication alignment is itself an activity through which actor bonds are built or broken; misaligned communication

can disrupt the resource combinations regardless of underlying product quality (Ford and Mouzas, 2013).

4.5.2.5 The pilot trap

The pilot project is an institutionally embedded mechanism and surfaces across the interview material, but occasionally emerges as problematic. The VP, life-science/innovation hub (2026) described a pattern she labelled *"death by pilot"*:

> *"One challenge in Sweden is what you could call 'death by pilot´. Companies end up doing pilot after pilot without ever reaching real implementation and payment... Right now, the pattern is often: 'Please pilot this solution. We cannot pay for it yet, but we need to test it. And once you have shown good outcomes, good luck.´ But many companies need a first customer who is actually willing to pay the first invoice."*

This pattern reflects a structural asymmetry in the actor relationship between innovators and healthcare organisations: healthcare organisations absorb the benefit of validation without bearing the cost of commitment, while innovators bear the full resource burden of repeated validation cycles. In ARA terms, this is an incomplete resource combination (Håkansson and Snehota, 1995): validation evidence is valuable only when combined with a purchasing commitment that translates into adoption. When healthcare organisations absorb validation evidence without providing the purchasing commitment, the innovator is left with a resource whose value cannot be realised. Prior research has noted a related pattern in implementation studies more broadly, where frontline adoption often occurs, but organisational-level embedding stalls Greenhalgh et al. (2017); the interview material specifies the mechanism underlying this broader pattern in the Swedish context: the willingness to pilot is higher than the willingness to commit financially, producing evidence without revenue.

The VP, life-science/innovation hub (2026) also proposed a structural

alternative that would break this asymmetry:

> *"What I would love to see is a much clearer pathway. For example, a region could say: This year, we want to solve this specific challenge; we invite two or three companies to pilot solutions; and the winning company is guaranteed to become our first customer."*

In Ford and Mouzas (2013) terms, this describes an alternative activity structure in which pilots and procurement are coupled from the outset rather than separated into sequential activities that often fail to connect. Instead, in the Swedish healthcare system, pilots function as a discrete activity performed independently of purchasing, with few established activity links between the two. Breaking the pilot trap would therefore require not just commitment from individual actors but reconfiguration of the activity structure itself, a change that individual actors cannot achieve alone.

4.5.2.6 Information security architecture

Information security architecture is a closely related resource that must be built deliberately from the beginning rather than retrofitted at a larger scale. For companies handling health data, this emerges as a potential market-facing resource that is evaluated by potential customers, partners, and procurement actors across the entire ecosystem. This evaluation takes different forms depending on the actor. For innovators selling directly to healthcare providers, certifications serve as signals of trustworthiness, necessary but not sufficient conditions for market access. The Sales Director EMEA, medical imaging/AI company (2026) illustrates this dynamic from the supplier side, as a software component embedded within larger medical systems:

> *"We are only a software component, so we do not need exactly the same certification that our customers need fot their final systems. However, for our customers to buy from us , we still need to be certified. We have ISO 13485 and ISO 27001… Then they certify their own system - including our component and all the other*

components they use."

The Head of Customer Success, healthtech company (2026) descibed how they similarly rely on ISO certifications and CE marking to signal to potential customers that security is a priority . This pattern aligns with Suchman (1995) observation that certifications function as pragmatic legitimacy signals - resources whose value depends on how they are interpreted by external evaluators rather than on their inherent properties.

The Chief AI Officer, university hospital (2026) describes the choice between external cloud services and internal infrastructure as competing security priorities, with no clear organisational consensus yet:

> *"American cloud services are one such example that comes up in these discussions. This is connected to questions such as how we view dependence on someone else's infrastructure versus our own security. At the same time, if we build our own environment, that brings its own disadvantages and can in some cases be technically more vulnerable than a cloud-based solution. I do not think any region yet has fully clear answers to these questions."*

This bilateral uncertainty, where neither innovator nor healthcare organisation has fully figured out how to handle information security in AI contexts, complicates the process of demonstrating security as a resource. It reflects a co-evolutionary dynamic in which both innovators and healthcare organisations are adapting their strategies and capabilities in response to changes in the network environment. Neither side has established positions, and the eventual resolution of this uncertainty will emerge through interaction rather than through unilateral decision-making by either party Ford and Mouzas (2013).

One example of an attempt to evaluate information security, however, done by a private healthcare provider, is exemplified by the CEO & Co-founder, healthtech company (2026):

> *"We are in dialogue with a private healthcare provider, and they actually tried to hack us as a part of their evaluation. We discovered the attempt, although we did not know at the time that it was them. Later they told us. They did not succeed. We have had other large actors evaluate us in different ways as well."*

Across these cases, a pattern emerges: information security architecture built in response to regulatory pressure can, over time, become a source of legitimacy and competitive differentiation; however, there is yet no clear consensus on how to perform these evaluations.

4.5.2.7 Clinical data and data infrastructure

Across the interview material, clinical data access emerged as the most contested and strategically significant resource at the validation stage, particularly for AI-based solutions that require substantial datasets for training and validation. The Innovation Coordinator, public healthcare region (2026) escribed the bilateral nature of the problem directly:

> *"Companies come every month with AI-based solutions. They say, here you can get control over this whole flow. And yes, maybe we could - but you are not going to be able to get any data into this, because we are not going to release our information into the AI engine you have built, because it sits on a server we do not trust. So we cannot use the product. I do not think we have yet built up the capability to really meet these suppliers properly."*

The underlying requirement, as he explained, is that AI models need to be trained on the local population to perform reliably, which in some cases makes obtaining more local clinical data essentials:

> *"So in order to bring in an AI solution, it first has to be trained on our population. For example, in mammography, when we look for breast cancer, the system has to be trained on women in our region so that we can see that it actually performs correctly.*

Otherwise, it will not perform correctly."

Anonymisation, which might, in principle, resolve the data access tension, has itself become increasingly complex, see Section 4.2.5.2 (*Constraints on and conflicting handling of data*) and Section 4.3.2.5 (*Limited data access as a barrier to innovation and market entry*). The Head of Service Agreements, public healthcare region (2026) described the shift:

> *"What people often do is anonymise the information before sending it away. But that is becoming more and more difficult. You can identify people from an X-ray image. If, for example, you have an implant with metal components, a patient may be able to identify themselves from that. It has become much stricter around that. Before, people thought that you could not identify anyone from a skeleton image. But that is becoming easier and easier."*

While smaller innovators struggle to obtain even anonymised datasets, the Head of Quality & Technology, medtech company (2026) described a different position:

> *"We are rarely dependent on obtaining data from regions. We have a 70 percent market share and we make sure to own the data that our equipment generates. Not just in Sweden but also globally"*

This means that the established medtech company can train and validate AI applications using proprietary datasets accumulated through decades of installed equipment worldwide, while smaller innovators must negotiate access under conditions that many regions are unwilling or unable to provide. Data ownership thus functions as a self-reinforcing mechanism of incumbency advantage. For new entrants without such data, validation becomes dependent on negotiated access, which as the Innovation Coordinator, public healthcare region (2026) acknowledged, is currently difficult for the region itself to grant.

In ARA terms, the data access challenge is not only a resource problem but an activity problem since it requires coordination across multiple actors whose priorities and risk tolerances differ systematically Håkansson and Snehota (1995). Even when regions are willing to share data, consistent regulatory interpretation across legal, IT, and clinical functions is far from automated, see Section 4.2.5.2 (*Constraints on and conflicting handling of data*).

Data access challenges extend beyond who can obtain clinical datasets. The broader digital infrastructure within which data is created, stored, and shared presents a parallel set of constraints rooted in the technical architecture of Swedish healthcare. The VP of Operations, private healthcare provider (2026) described the integration challenge directly:

> *"Even if we are a super modern, innovative tech company, we still need to adapt to the systems that exists, and those are outdated, local medical record systems... That project [integrating with the National Medication List] took one and a half years to implement, and not because we are slow, but because the counterpart we needed to integrate with is extremely slow and built on outdated systems that we somehow have to connect to and make work."*

Clinical data and its underlying infrastructure thus exemplify what Håkansson and Waluszewski (2002) describe as resources that become path dependent through the investments and adaptations made around them. The legacy IT systems that make data access technically complex are themselves the product of earlier resource investments that were not designed with interoperability in mind, and the difficulty of reconfiguring them reflects the lock-in effects that emerge when resources become deeply embedded in existing network structures. This path dependence means that data access challenges cannot be resolved by technical solutions alone but require coordinated adaptation across multiple actors, a process that may be accelerated by EU regulatory reform but must ultimately occur through the network itself.

4.5.2.8 Regional variation

Innovation units within regions play a facilitative role, though their capacity and approach vary considerably. The Director of Health and Medical Services, public healthcare region (2026) described a dense and accessible network:

> *"We have many arenas for collaboration. There is collaboration between universities and healthcare we have the life science office, and there is joint life science work across Stockholm, Uppsala, and the broader Mälar region... I have worked in other regions and it is really not comparable. This is a very innovative environment."*

He added a structural explanation for this density: *"Stockholm accounts for about one quarter of all healthcare in Sweden and almost half of all medical research"*. Region Östergötland describes a more constrained position, the Innovation Coordinator, public healthcare region (2026) acknowledges that the team faces difficulty engaging its own clinical organisation, *"partly because clinics retain autonomy over whether to participate in activities such as clinical trials."*

This variation creates structurally uneven validation conditions. A solution that gains clinical validation in one region may face a different environment in another. This unevenness also takes form in regional variation in regulatory interpretation. This inconsistency functions as a structural advantage for larger, established suppliers, who can absorb regional variation, and as a structural barrier for smaller innovators, for whom repeated regional adaptation is economically unsustainable, see Section 4.2.5.2 (*Constraints on and conflicting handling of data*).

The Innovation Coordinator, public healthcare region (2026) mentioned initiatives for cross-regional collaboration networks that could mitigate this fragmentation:

> *"But we do have a large network, created through another project, that has been running for a couple of years now called SICH. Today it is coordinated by Västra Götaland and Gothenburg. That network includes Skåne as well, and the regions that have university hospitals."*

The Head of Service Agreements, public healthcare region (2026) acknowledged the existence of cooperation and information sharing but noted that *"I would not say that this leads to regions acting together in a very coordinated way."* The Chief AI Officer, university hospital (2026) confirmed the resulting inefficiency:

> *"Different regions are solving the same kinds of questions in parallel, and we spend a lot of energy on that . We will probably end up producing somewhat different solutions, which is beneficial in some cases, but perhaps unfortunate in others if we are not making better use of each others's lessons learned."*

For innovators, this means that embedding in one regional network does not automatically transfer to others; the co-evolution of relationships, resources, and activities must be partially repeated in each context.

This regional fragmentation illustrates how the wider world level of the network, the broader institutional and regulatory environment, shapes conditions at the relationship level in ways that individual actors cannot easily control Ford and Mouzas (2013). Decentralised governance creates 21 partially distinct network environments, each with its own actor constellations, resource interpretations, and activity patterns. For innovators, this means that embedding in one regional network does not automatically transfer to others; the co-evolution of relationships, resources, and activities must be partially repeated in each context (Håkansson and Snehota, 1995).

4.5.3 Procurement and formal adoption

While validation establishes that a solution works and addresses a genuine clinical need, procurement is the formal mechanism through which adoption becomes binding. Prior research on Swedish public procurement identifies it as a process grounded in the principles of transparency, equal treatment, and competition (Konkurrensverket, 2024), Wagrell and Baraldi (2019) identify the public sector's customer role as the most problematic for MedTech start-ups, with barriers including regulations, complex decision-making processes, and assessment requirements beyond the start-up's control. The empirical material in this study confirms both observations while specifying the mechanisms through which procurement operates in practice.

4.5.3.1 Formal rules and informal realities in public procurement

A recurring insight across the interview material is that formal procurement rules and informal procurement realities are partly decoupled. As mentioned in Section 1.1.3.3 (*Public procurement act*) the way public healthcare organisation purchase solutions is governed by The Public Procurement Act (LOU). What cannot be governed, though, is the informal relationship-building and pre-procurement dialogues, which also shape procurement outcomes, see Section 4.3.2.7 (*Incumbent advantage of the network*). The Head of Service Agreements, public healthcare region (2026) described the knowledge asymmetry between incumbents and new entrants that makes this pre-procurement positioning so consequential:

> *"I see how much the large suppliers know. The big suppliers know everyone. They know exactly who people are, who makes decisions, and how they work. The small companies do not know that. The big ones have excellent control over that. And because they have so many agreements and so many products, they are with us all the time. Then they hear if something is underway, and they know whether it is something that would suit them."*

This dynamic was confirmed by the Head of Quality & Technology, medtech

company (2026), who described that many new collaborations are initiated through already established contacts, see 4.3.1.4. He further described strategic collaborations with major university hospitals in Region Skåne, Linköping and Örebro, as *"very influential when it comes to future ways of delivering care"*, through these University Hospitals, the established medtech company collects clinical feedback and builds the evidence base that is required for product development. This continuous presence across the ecosystem means that by the time a formal procurement is announced, the incumbent's understanding of the buyer's needs, preferences, and internal dynamics is already deeply established, a network position that new entrants cannot replicate through the procurement process alone.

The Interim Head of Procurement, consulting/procurement firm (2026) described the mechanism from the buyer's internal perspective:

> *"How do you get into the public sector? You go in and lobby and influence the person who is going to set the requirements, the one who does the specification... The procurement officers, they rarely have any opinion about any of this. It is the technicians and the users who write the requirement specification. The clinics. Those are the ones you need to influence."*

As previously described in Section 4.3.2.7 (*Incumbent advantage of the network*), procurement preferences can be shaped prior to formal tender through early dialogue. The Interim Head of Procurement, consulting/procurement firm (2026) described how this lobbying can produce unintended consequences for the procurement itself:

> *"Someone may have been very good at selling in their system and the advantages that system has. Then the tender document could be angled towards that, consciously or unconsciously... You have fallen into the trap as a buyer and accidentally specified towards a specific supplier. That can happen."*

The Director of Health and Medical Services, public healthcare region

(2026) acknowledges that procurement documentation should, in principle, be objective:

> *"a procurement must always start from the beginning…The procurement documentation should be objective", while also noting that different procurement models exist that can account for smaller actors, though these are mainly used within hospital settings rather than at the broader regional level"*

This gap between formal procurement rules and informal procurement practice reflects a central insight of business network theory that outcomes in networks emerge from the interactions among nodes and threads, each with distinct goals, resources, and constraints, rather than from formal governance structures alone (Håkansson and Ford, 2002). Established suppliers' incumbency advantage is therefore not primarily a product-quality advantage but a network-position advantage, built through path-dependent relationship development that new entrants cannot shortcut.

The separation between procurement personnel and clinical end users adds a further layer of complexity. The VP, life-science/innovation hub (2026) described the resulting risk:

> *"In the public sector, including healthcare, the people procuring solutions are not always the same people who will actually use them. That means they may lack the competence or practical understanding needed to evaluate whether a solution is truly valuable. Sometimes they also define the problem in such a specific way that they implicitly define what the solution should look like. Then, if a company comes in with a different but potentially better approach, it struggles to fit into that framework."*

The Interim Head of Procurement, consulting/procurement firm (2026) elaborated on the knowledge gap directly:

> *"The procurement officers are rarely, the way an industrial procurement specialist at Sandvik would be, where you are extremely knowledgeable and specialised in steel purchasing. Within the public sector, procurement officers are much more generalists, because they have to cover much broader areas. It is an incredible diversity of purchasing within the public sector. So you can never have that deep specialist knowledge. Meanwhile, the companies are like: how can the customers not know this? Because they naturally know their instruments and products one hundred percent."*

This generalism means that procurement officers rely heavily on clinical and technical input when specifying requirements, reinforcing the strategic importance of the informal pre-procurement dialogues described above, and creating conditions where familiar products from known suppliers enjoy an advantage that Ford and Mouzas (2013) would describe as the rigidity that emerges from established patterns.

4.5.3.2 Incumbency advantages and barriers for smaller actors

As described in Section 4.3.2.7 (*Incumbent advantage of the network*) , established suppliers benefit structurally from the informal pre-procurement dynamics that shape purchasing decisions before formal tenders are announced. Procurement expertise, financial credibility, and user-familiarity lock-in of established firms further reinforce the advantage, collectively making formal procurement processes more navigable for larger incumbents than for smaller new entrants, see Section 4.3.1.4 (*Asymmetric rivalry and competitive advantages for larger firms*).

Price constitutes a further dimension that may affect smaller actors' ability to compete on the market, as it is a decisive procurement mechanism, see Section 4.3.4.2 (*Price sensitivity and value-based evaluation strengthening buyer power*). For early-stage innovators who lack the economies of scale of established suppliers, competing on price while simultaneously investing

in evidence-building, regulatory compliance, and market-access activities creates a resource tension that is difficult to resolve without external funding. This tension is compounded by the fact that the pricing model itself can be influenced during the pre-procurement phase by suppliers who have built the ongoing relationships described in Section 4.5.3.1 (*Formal rules and informal realities in public procurement*), meaning that for innovators without those relationships, the pricing model is a given rather than something they can shape. Interim Head of Procurement, consulting/procurement firm (2026) confirmed this dynamic: *"If you have a competitive advantage, you want to try to influence it beforehand. Once we have set the tender documentation and sent it out, it is fixed."* The CEO & Co-founder, healthtech company (2026) described how this combination of price pressure and resource-intensiveness reinforced the strategic logic of avoiding public procurement at this stage: *"From a business perspective, that was not something we wanted to focus on, especially not as an early-stage startup. Instead, we needed to focus on smaller, more agile actors."*

User-familiarity lock-in constitutes a subtler, but significant, reinforcing mechanism, in which established user interfaces reinforce supplier continuity, see Section 4.3.2.8 (*Alignment effects reinforcing incumbency advantages*). This mechanism transforms what is actually a user preference into a procurement constraint, as clinical staff can even claim interface continuity as a safety measure. The Head of Quality & Technology, medtech company (2026) observed that the natural outcome for smaller companies is acquisition: *"It is not surprising that small companies, startups or those launching new products, are usually acquired quite quickly by larger companies."*. In network theory terms, this reflects a consolidation dynamic in which established resource constellations absorb rather than accommodate new entrants, reinforcing existing network structure rather than transforming it (Håkansson and Waluszewski, 2002).

Interestingly, incumbency advantages are not without their own constraints, as, for instance, a company's established identity as a hardware manufacturer

limits its ability to compete in adjacent markets, see Section 4.3.1.4 (*Asymmetric rivalry and competitive advantages for larger firms*). This suggests that the same mechanism that creates incumbency advantage in established product categories with deep relationships, recognised expertise, and historical trust can become a constraint when companies want to move into new areas. In Network Theory terms, this illustrates how actor identity, shaped through repeated interaction over time, can become a source of strength and rigidity (Håkansson and Snehota, 1995). The incumbent is embedded in a network position that resists reclassification, just as new entrants struggle to establish a position in the first place.

Taken together, the mechanisms described in this section illustrate the specialisation dynamic identified by Ford and Mouzas (2013): large suppliers have specialised in public procurement documentation, regulatory compliance demonstration, and relationship maintenance with procurement units through repeated interaction and adaptation, creating efficiency advantages in these activity patterns that new entrants cannot quickly replicate. For early-stage innovators, competing in these specialised activity patterns requires either matching the incumbent's specialisation, which demands resources most startups do not have or finding alternative routes that bypass the procurement dynamics where incumbents are dominant. This asymmetry provides a structural explanation for why alternative market positioning, as described in Pathway B Section 4.4.2 (*Pathway B: Alternative market position*), emerges as a rational strategic response rather than a failure of ambition.

4.5.3.3 Alternative procurement routes

Within the formal procurement system, the empirical material reveals several alternative routes that can reduce the costs for smaller innovators. These routes do not eliminate the structural advantages of incumbents described in the preceding sections, but they create openings that bypass the most demanding features of standard competitive tendering. Direct procurement in co-development contexts represents one such route. The Innovation Coordinator, public healthcare region (2026) described how this operates in

practice:

> *"Sometimes, when we make a direct purchase, there can also be an agreement where it is viewed as joint development. In many cases, these startups are based on research that has taken place at Linköping University, where the startup may be one part of something larger."*

He also described how start-up solutions can reach the region without any direct procurement relationship at all:

> *"Sometimes these solutions also come through another supplier. For example, let us say that we have an X-ray machine that performs an examination, together with a system that supports it. Then, a startup may provide one part of the analysis within that system. In that case, it comes through the system supplier. So it is not we who make the big purchase, it is more that we get an additional feature in the system we already have."*

Innovation procurement, in which the final solution is developed collaboratively rather than specified in advance, represents another route. The Chief AI Officer, university hospital (2026) described both its potential and its unresolved structural tension:

> *"It would be incredibly exciting if we could establish that more continuously, that startup companies or other firms contact us and say that here is something we could help develop that would genuinely benefit healthcare... But then we would also need to receive something in return, since we contributed data, knowledge, and in many ways showed them how to build it. We would need some form of usage rights for that product going forward."*

The Chief AI Officer, university hospital (2026) further identified a paradox embedded in the procurement rules, where early collaboration with a supplier

may later lead to disqualification from the tender process, thereby preventing the acquisition of the co-developed solution, see Section 4.3.2.9 (*Funding and support mechanisms with associated institutional constraints*). This illustrated how state-logic safeguards, equal treatment and absence of conflict of interest can generate unintended consequences that work against the market-logic intention of fostering innovation partnerships (Thornton et al., 2012).

Subcontracting to an established supplier remains the most widely used alternative route, and corresponds to Pathway B variant three described in Section 4.4.2 (*Pathway B: Alternative market position*). The Interim Head of Procurement presented this as a strategic option for specialised smaller firms, see Section 4.3.6 (*Complementors facilitating market entry through strategic partnerships*), and the Chief AI Officer, university hospital (2026) confirmed this pattern from the buyer side: *"There are also cases where larger companies collaborate with smaller firms, and in that way the smaller firm can effectively enter through a larger supplier in a procurement process."*

In ARA terms, the subcontracting route illustrates how value emerges from the combination of complementary resources across actor boundaries Håkansson and Snehota (1995). The innovator contributes specialised technical resources, a specific algorithm, an analytical component, or a software module, while the established supplier contributes network-positioning resources, including accumulated experience through years of repeated interaction with procurement actors, existing customer relationships, framework-agreement eligibility, and reputational credibility. Neither actor could independently generate this market access pathway; the outcome is a product of their jointly produced combination, which Ford and Mouzas (2013) describe as the defining characteristic of business network interaction.

4.5.3.4 AI procurement as an emerging and unresolved challenge

Among the procurement challenges identified in the empirical material, AI-based solutions stand out as a category that sit uneasy within existing

procurement frameworks. The Chief AI Officer, university hospital (2026) directly describes the hospital's current readiness.

> *"We have not conducted very many such procurements yet, so it is almost a bit too early to say what the general answer is. But we will have to see. As a region, we also need to have sensible positions on what requirements we should set."*

He identified data security as the most contested open question, describing it as a dilemma with no clear regional consensus:

> *"Many of the issues relate to data sharing and security. American cloud services are one such example that comes up in these discussions. This is connected to questions such as how we view dependence on someone else's infrastructure versus our own security. At the same time, if we build our own environment, that brings its own disadvantages and can in some cases be technically more vulnerable than a cloud-based solution. I do not think any region yet has a fully clear answer to these questions."*

He further elaborated on the absence of frameworks and how it creates a distinctive frustration, solutions are visible and technically available, yet institutionally inaccessible:

> *"It is simply not acceptable to use ChatGPT in a hospital setting when handling patient data. That is a clear no. But it is still frustrating when you can see that the technology exists. There should, reasonably, be companies capable of making this available securely within our environment. But then we must make sure that all rules and guidelines are followed."*

The Head of Service Agreements, public healthcare region (2026) identified AI model evaluation as a further gap. A recent MRI procurement in the region illustrated how differences in AI model design proved decisive, see Section 4.3.1.3 (*Specialised versus integrated solutions as a source of*

competitive rivalry), yet no systematic evaluation framework exists:

> *"One major issue we are struggling with is how to quality assure AI. That is something many people are asking: how do we validate and quality assure an AI solution?"*

Security requirements add a further layer of complexity, mentioned in Section 4.5.2.7 (*Clinical data and data infrastructure*), Region Östergötland were unable to engage with AI suppliers whose solutions rely on external servers that the region cannot trust, reflecting a mismatch between what AI innovators can offer and what regional infrastructure can currently accommodate (Innovation Coordinator, public healthcare region, 2026).

The Interim Head of Procurement consultant identified a further coordination problem that compounds the absence of procurement frameworks. She described a pattern in which multiple units simultaneously seek to introduce AI solutions, each responding to a specific operational need, noting that widespread, fragmented AI initiatives necessitate a more coordinated and strategic approach, see Section 4.3.1.3 (*Specialised versus integrated solutions as a source of competitive rivalry*). The Chief AI Officer, university hospital (2026) described the organisational response the hospital has developed in response to this fragmentation:

> *"At the beginning, the hospital had no process at all for AI. If you were a clinical representative with an idea, or had been contacted by a company, you basically did not know where to turn. What we did was create what we call an AI Council, with representatives from clinical operations, IT, legal, and procurement. This group meets weekly, goes through incoming matters, and reviews what needs exist at the hospital."*

As discussed in Section 4.5.2.6 (*Information security architecture*), neither innovators nor healthcare organisations have yet established clear positions on how to handle information security in AI contexts, a bilateral uncertainty that complicates procurement. The AI Council represents

an internal organisational adaptation to external co-evolutionary pressure (Ford and Mouzas, 2013), an attempt to build internal activity structures needed to engage with a rapidly changing external network environment. Prior research has emphasised that digital transformation continuously creates new interdependencies among actors, systems, and regulations that existing governance structures struggle to absorb as quickly as they arise (Saenyi, 2026). Siira et al. (2024) reinforces the importance of organisational transformation and suggests that, beyond network access and collaboration, successful implementation in areas such as AI to automate medical history-taking and triage in primary care is facilitated by a supportive organisational climate, including strong leadership and positive social relations. It is not the technology itself, but the organisational transformation it requires that is the challenge (Siira et al., 2024). The AI council can be understood as one hospital's early attempt to close that gap, but whether this adaptation diffuses to other regional actors and how quickly will significantly shape the conditions under which AI innovations can become embedded within the Swedish public healthcare system.

4.5.3.5 Competing logics at the procurement stage

A tension visible across the procurement stage concerns the relationship between how procurement decisions are formally governed and how they are made in practice. The formal ethical platform governing Swedish healthcare priorities places cost-efficacy as the third principle, applicable only once human dignity and need-solidarity have been met (Government Prop. 1996/97:60). In procurement practice, however, the empirical material suggests a different hierarchy. The Head of Service Agreements in Region Skåne described price as decisive, see Section 4.2.2.2 (*Price sensitivity and efficiency focus*). This gap between formal principles and practical implementation illustrates what Thornton et al. (2012) refer to as institutional logics operating at various system levels: the values embedded in legislation do not inherently translate into the criteria that guide daily purchasing decisions.

A further competing logic visible in the empirical material concerns cross-boundary solutions, innovations that address needs spanning multiple clinical units or budget holders simultaneously, see Section 4.3.2.6 (*Barriers in accessing and navigating healthcare organisations*). The Head of Service Agreements in Region Skåne suggests that procurement processes in practice tend to be anchored at the unit level, where individual budget holders define both the need and the scope, creating friction for solutions whose value depends on integration across boundaries:

> *"I think the public sector sometimes has difficulty keeping up when things become cross-boundary. I am sitting here at this clinic, I have this need. Then someone over there also has a need. You come with a solution that combines our two needs. Then we are going to have a problem. What do they have to do with my need? I have my need and my budget... cross-boundary solutions often become a bit more complicated."*

This observation is consistent with prior research describing how siloed digital infrastructure and fragmented care governance limit the adoption of solutions that span organisational boundaries (Ludvigsson et al., 2025). In institutional logic terms, the professional logic of individual clinical units, "solve my problem with my budget", conflicts with the state logic of systemic efficiency that cross-boundary innovation requires (Thornton et al., 2012).

4.5.4 Implementation and scaling

The final step of the embedding process concerns what happens after a solution has been procured or formally adopted. Implementation and scaling pose unique challenges compared to validation and procurement, shifting focus from access and value demonstration to sustained adoption, workflow integration, and cross-regional coordination. While the previous stages are characterised by the innovator's efforts to enter the network, this stage reveals the extent to which the network itself must adapt.

4.5.4.1 Organisational and cultural barriers to adoption

Once a solution enters the implementation stage, organisational and cultural barriers emerge as critical determinants of whether adoption succeeds or stalls. A recurring finding across the empirical material is that new solutions are introduced without removing the processes they are intended to replace, mentioned by Head of Development Unit, public healthcare region (2026):

> *"There is a strong need. But the challenge is that we often add new solutions without removing old ones. That creates more work rather than less. Something needs to be removed for it to truly make a difference"*

The VP, life-science/innovation hub (2026) reinforced the same observation from a broader market perspective:

> *"Healthcare staff are already so pressed for time that there is very little margin to try something new. People default to what they already know, even if those systems are old and inefficient. So overall, I would say there is simply too little margin in healthcare to absorb innovation."*

This observation is consistent with Reed et al. (2025) finding that frontline teams are frequently overwhelmed by the volume and variety of new interventions they are expected to adopt, often with little consideration of how these initiatives interact or how unresolved challenges might be made worse by new technologies. Hidefjäll et al. (2023) argue that technologies which do not challenge the given institutional order are more easily adopted in complex organisational fields such as healthcare, implying that solutions requiring significant workflow changes face greater resistance regardless of their technical quality.

The Head of Development Unit, public healthcare region (2026) further noted that innovation adoption varies significantly across units within the same organisation:

> *"You need to choose the right units. If the culture is not there, nothing will happen anyway"*

This finding underscores that implementation is not a uniform process but one conditioned by local organisational cultures that cannot be centrally mandated. In network-theoretic terms, this reflects what Ford and Mouzas (2013) describe as the embeddedness of activity patterns within established relationships: existing workflows represent stabilised activity links among professionals, patients, and systems that resist reconfiguration even after the formal adoption decision has been made.

4.5.4.2 Change management and clinical buy-in

Successful implementation depends on whether clinical professionals perceive the new solution as trustworthy and integrated with their existing practice. The Director of Health and Medical Services, public healthcare region (2026) described healthcare as both conservative and innovative, noting that professionals want to trust the tools they use because they bear personal responsibility for patient outcomes, see Section 4.2.3 (*Organisational culture, workforce constraints, and resistance to change*).

This is particularly consequential for AI-based solutions, where the Director of Health and Medical Services, public healthcare region (2026) stresses that *"AI can never take responsibility for a patient's wellbeing. There must always be a person who says: I am comfortable with this interpretation"*. Siira et al. (2024) identify attitudes among primary healthcare professionals as a key barrier to AI implementation, with scepticism persisting even when encouraged by healthcare leaders, and conclude that the true challenge of implementing AI in healthcare is not the technology itself but the organisational transformation it requires.

The pace of implementation also matters. The Chief AI Officer, university hospital (2026) added that accelerated implementation introduces change management risks that undermine long-term adaptation:

> *"Whenever you do something quickly, and not everyone feels that they have had enough time to be involved, share their perspective, and contribute to the process, it becomes harder later to bring it into the organisation in a way where everyone feels that they know exactly what it is, that they were involved from the beginning, and that they understand how it should be used"*

This challenge is further compounded by the tendency described in Section 4.5.4.1 (*Organisational and cultural barriers to adoption*) new solutions are sometimes added on top of existing workflows rather than replacing them, meaning that even a well-received innovation can increase the administrative burden on already pressured staff rather than reducing it.

Even when AI-based solutions that are perceived by its developer to outperform existing clinical practice, adoption is not guaranteed. The Head of Quality & Technology, medtech company (2026) described a test in which the company's AI application was compared against existing diagnoses and treatment plans: *"It was only about a year before our diagnoses and suggested treatment programmes surpassed what the doctor could produce. This was very controversial"*. Despite these results, he described how resistance persists: *"People are perhaps a bit too resistant to change to dare to step into a situation that will happen regardless of whether you want it or not. People are a bit too afraid that they might lose control"*

In ARA terms, clinical professionals are not passive adopters but active participants whose engagement shapes both the solution and the organisational context in which it is used Håkansson and Snehota (1995). When clinicians are excluded from the implementation process, the actor bonds necessary for sustained adoption are not established, and the solution remains an external imposition rather than an embedded practice. As discussed in Section 4.5.2.1 (*Sources of reference and validation*), early adoption among innovation-oriented units can generate word-of-mouth effects that gradually shift the broader organisational attitude, suggesting

that change management is not a single event but an ongoing process of network-level norm adjustment.

Maack et al. (2025) suggest that what facilitates integration is not the dominance of one institutional logic over another but the "adjustmentalisation" of diverse logics- the ongoing adaptive negotiation between managerial, professional, patient and digital logics that allows eHealth solutions to coexist within the same clinical environment. This framing adds nuance to the competing logics analysis: implementation does not require resolving the tension between these logics but rather creating the rational conditions under which they can be navigated simultaneously.

4.5.4.3 Scaling and coordination challenges

Scaling a validated solution beyond a single clinic or region introduces coordination challenges that are qualitatively different from those encountered during piloting. The VP, life-science/innovation hub (2026) the absorptive capacity problem directly, cited in Section 4.5.4.1 (*Organisational and cultural barriers to adoption*), noting that healthcare staff have too little margin to try something new and default to what they already know. This resistance to change does not diminish at the scaling stage; if anything, it compounds as the solution encounters a wider range of organisational cultures, IT environments, and legal interpretations.

The Chief AI Officer, university hospital (2026) noted a further challenge in cross-regional scaling, that parallel problem-solving across regions leads to duplicated efforts and underutilised shared learning, see Section 4.2.1.1 (*Polycentric governance and limited integration*).

Saenyi (2026) provides a structural explanation for this pattern, identifying the lack of transparency from the governance as a systematic barrier to scaling. In her analysis, stakeholders cannot determine who has the mandate to decide, where decisions are made, or how cross-regional issues can be raised to a higher level. Regional coordinators described halting investments while waiting for clarity about the division of responsibilities between

national and regional levels, creating paralysis rather than coordination. Saenyi (2026) further argues that the ecosystem remains locked into dependence on established electronic health records vendors, slow diffusion of innovation, and barriers for smaller market players, outcomes that are continually reproduced because existing governance structures fail to adapt to the interdependencies generated by digital transformation.

This interpretation corroborates findings from the empirical material in this study, as described in Section 4.3.2.5 (*Limited data access as a barrier to innovation and market entry*); what is accepted in one region may not be accepted in another, effectively dividing a national market into 21 distinct regional markets. For innovators, scaling therefore requires not only a technically scalable solution but also the capacity to repeat the relationship-building, regulatory navigation, and needs validation processes across each new regional context. In network theory terms, this reflects the non-transferability of network positions since an innovator's embeddedness in one regional network, which is built by specific actor bonds, resource ties, and activity links, does not automatically extend to other regions where these relationships often must be established independently (Håkansson and Snehota, 1995). For larger, established suppliers, this fragmentation is more manageable, as they already maintain relationships across regions. For smaller innovators, this means that the costs and efforts required at earlier stages are not left behind but carried forward into the scaling phase, when they must be repeated across multiple regions.

A further weakness in coordination emerges at the boundary between procurement and implementation. The Interim Head of Procurement, consulting/procurement firm (2026) identified this gap:

> *"Typically, an Achilles' heel, something that can fall between the cracks. Often, the procurement officer might hand it over to the operations, and then the question is: do they have a project manager, and have they budgeted for this?... No one has designated who is responsible. Whose responsibility is what*

throughout the entire process until it is complete? That is what falls."

This implementation gap represents a discontinuity in activity links in Network theory: procurement and implementation are formally sequential but organisationally disconnected when there are no established activity links that would ensure that the output of one becomes the input of the other (Håkansson and Snehota, 1995).

4.5.4.4 Institutional logic tensions

The scaling challenges described in Section 4.5.4.3 (*Scaling and coordination challenges*) assume that embedding requires navigating each regional context sequentially. The empirical material, however, reveals that the institutional framework can occasionally be leveraged to bypass this logic entirely. The most prominent example is the strategy employed by Kry and MinDoktor, who used the Patient Law (2015) and the principle of non-discrimination to achieve national reach after establishing a contractual foothold in a single region. By securing a contract with Region Jönköping during a primary care accessibility crisis, Kry gained access to the national interregional reimbursement mechanism (utomlänsersättning), enabling it to provide care to patients across all regions while their home regions were legally obligated to reimburse the contracted region (Bengtson et al., 2022). One executive in a private healthcare provider described the normalization of digital consultations following the pandemic (VP of Operations, private healthcare provider, 2026):

"Initially, we where here to challenge the existing healthcare system and deliver innovative care through digital consultations. Then the pandemic came, and today it is completely natural to have a digital video consultation... We have always been questioned: is it patient-safe to have a digital consultation? But after the pandemic, people understood that it is patient-safe to have a digital visit. In 2019, we started opening our own health

centres."

In institutional logic terms, this represents the active use of logics as a toolkit Thornton et al. (2012): market logic drives commercial growth while the state logic's own mechanisms of non-discrimination and interregional reimbursement are deployed to achieve scale. However, the applicability of this mechanism is narrow; it depends on regulatory features specific to patient-chosen primary care and has no direct equivalent for most digital health and AI innovations.

More broadly, the institutional tensions identified across the four process stages intensify at the implementation stage. Maack et al. (2025) identify five coexisting logics in Swedish primary care digitalisation: managerial, market, professional, patient, and digital. Rather than one logic dominating, they describe an adjustmentalisation process through which logics are continuously negotiated and adapted. This finding adds nuance to the competing logics framework used in the earlier stages of this analysis. While the tension between market logic and state logic is most visible in the earlier strategic stages, the implementation stage is characterised by a more complex interplay in which digital technology itself functions as a separate evolving logic. The Chief AI Officer, university hospital (2026) illustrated in Section 4.5.3.4 (*AI procurement as an emerging and unresolved challenge*), the frustration of seeing powerful tools that are institutionally inaccessible as a concrete manifestation of this collision at the practice level.

Hidefjäll et al. (2023) argue that this type of misalignment is not incidental but structural, when the different logics operating within healthcare are not aligned, for example, when patient needs, or professional routines are deprioritised relative to regulatory or managerial concerns, implementation of digital health innovations is more likely to stall. Their point is that implementation not only depends on whether a specific tool works technically, but also on whether the broader institutional environment supports its adoption. Building on Hidefjäll et al. (2023), we suggest that a digital health innovation may be caught between a professional logic that

prioritises established clinical routines, a state logic that through regulatory and procurement frameworks restricts which tools can be used, and a market logic that makes commercially available alternatives visibly accessible, creating a tension that cannot be resolved at the level of the individual clinician alone. This extends their argument by applying it specifically to the context of digital health startups seeking to enter public healthcare, where the misalignment between logics is experienced not only by implementing organisations but also by the innovating firms themselves.

Saenyi (2026) reinforces this point from a governance perspective, arguing that as digital transformation progresses, each new initiative creates new dependencies between actors, systems, and regulations that did not previously exist. The problem is that Sweden's current governance structures are not designed to respond to these emerging dependencies at the speed at which they arise, Saenyi (2026) argues that feedback from practice does not reach decision-makers, authority over cross-regional issues is unclear, and regulation tends to lag behind the technology it is meant to govern. The result is that governance is constantly reacting to coordination challenges that digital transformation itself produces, rather than anticipating them.

In network-theoretic terms, the implementation and scaling stage reveals the full consequences of what Håkansson and Waluszewski (2002) describe as the heaviness of existing resource constellations. The investments made over time in relationships, technical integrations, standards, and shared work routines between healthcare organisations and their existing suppliers create an inertia that shapes what is possible for new entrants. Implementation is therefore not the final step of a linear process but a continuous negotiation between the new and the established, in which the network's existing structures determine the conditions under which innovation can become embedded.

4.5.5 Concluding remarks on the process stages

The four process stages are presented sequentially for analytical clarity, but in practice they overlap. Many dynamics described under one stage may recur in others, illustrating an iterative process with resources, activities and actors that are interdependent in different forms.

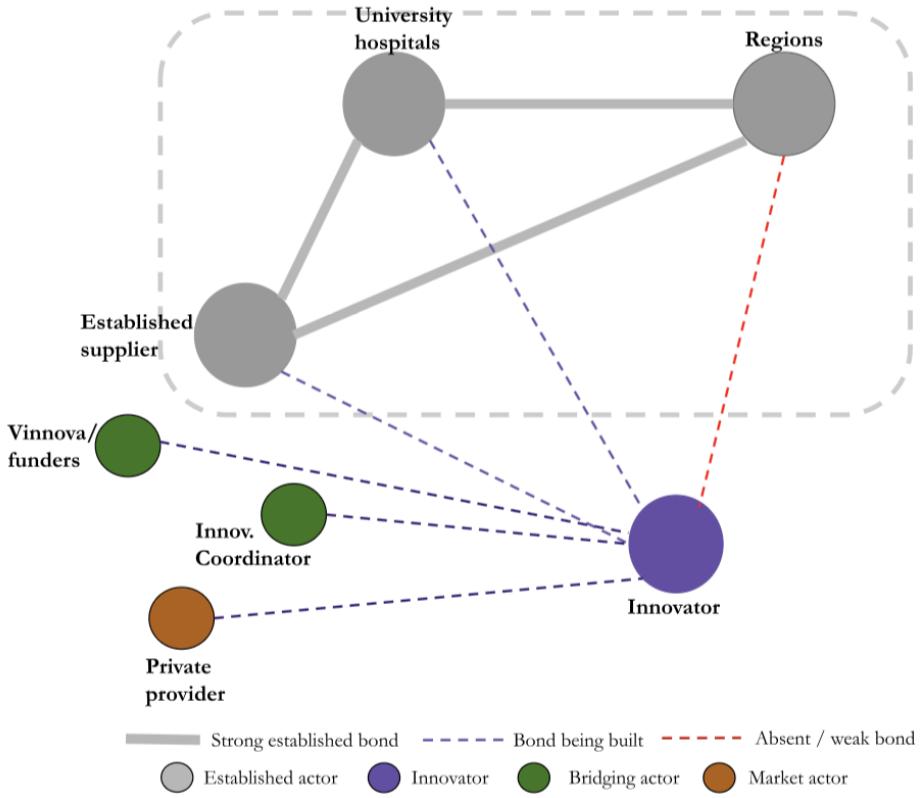

Figure 14: Network summary showing the innovator's position relative to established actors. Bond thickness reflects relationship strength identified in the empirical material; bond style (solid, dashed, dotted) indicates whether bonds are established, being built, or absent. Developed inductively by the authors through abductive analysis combining empirical findings with the ARA framework (Håkansson and Snehota, 1995).

As *Figure* 14 illustrates, the innovator enters from a position outside an

already densely connected network of established actors. The thick bonds between university hospitals, incumbent suppliers, and regions represent relationships built over time while the innovator's connections are thinner, fewer, and must be built from scratch. The embedding process described across Sections 4.5.1 - 4.5.4.4 is, in essence, the work of turning those absent or weak bonds into established ones.

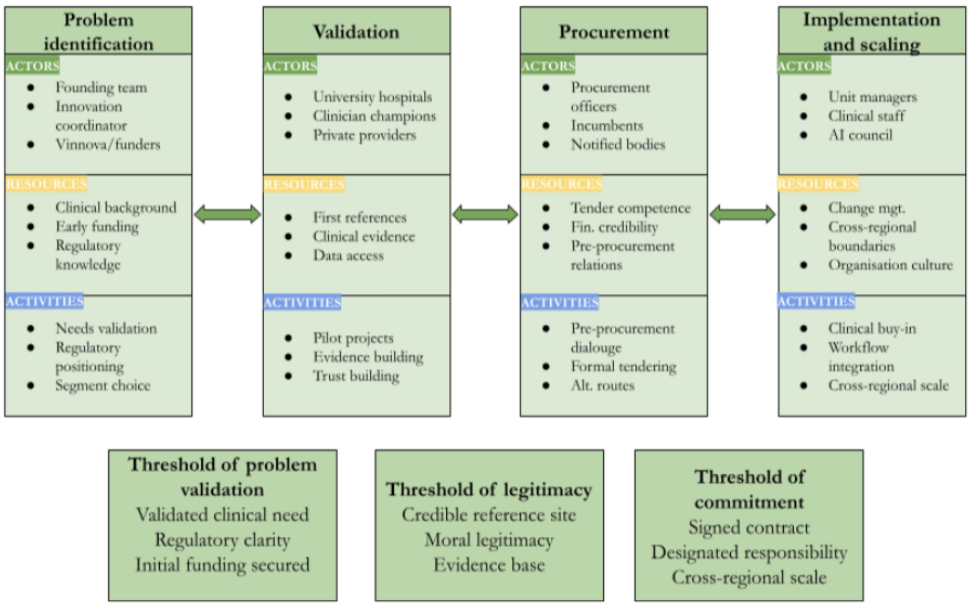

Figure 15: Process stages of embedding in Swedish public healthcare, showing key actors, resources, and activities at each stage with empirically identified conditions at each transition. Developed inductively by the authors through abductive analysis combining interview data with the ARA framework (Håkansson and Snehota, 1995) and Institutional Logics (Thornton et al., 2012).

Figure 15 breaks this process down by stage, showing which actors, resources and activities are most critical at each juncture. It also identifies three thresholds; these are not formal gates but recurring patterns in the empirical material where the absence of a specific actor, bond, resource or activity prevents further progress. Together, the two figures show that embedding requires building both network position (*Figure* 14) and

assembling the right combination of actors, resources and activities at each stage (*Figure* 15).

5 Discussion

This study set out to examine how companies developing digital health innovations become embedded in the Swedish healthcare system. The results reveal that embedding is not primarily a technological challenge but a relational and institutional one, shaped by structural conditions, competing value systems, and power asymmetries that interact throughout the process. This is consistent with the broader shift in implementation research, which moves from product-centric explanations to systematic ones (Greenhalgh et al., 2017; Hellstrand Tang et al., 2024). The following section discusses how the study's findings relate to existing research.

5.1 Embedding as a processual and relational phenomenon

A contribution of this study is the identification of four recurring stages that characterise how embedding unfolds in practice across problem identification, validation, procurement, and implementation. While existing research has examined digital health embedding in Swedish healthcare from several angles: regulatory barriers (Bengtson et al., 2022), single-case network studies (Wagrell and Baraldi, 2019), start-up perspectives (Saarela et al., 2016), and HTA mapping (Darwich et al., 2025), these perspectives have largely remained separate from each other. By integrating perspectives from innovators, established suppliers, regional administrators, and hospital actors, this study provides insight into how the stages connect.

The two analytical figures developed in this study; the Network summary *Figure* 14 and the process stage mapping *Figure* 15, represent an analytical contribution. *Figure* 14 visualises the structural network position of the innovator in relation to established actors, making visible the bond asymmetries between incumbents versus the thin, absent, or building bonds that new entrants must construct. Figure 15 complements this by mapping the specific actors, resources, and activities that become essential at each stage. Taken together these figures offer an integrated analytical tool that

connects the network positioning challenge (who is connected to whom, and how strongly) with the processual challenge (what must be built, and when).

Unlike single-stage studies, this perspective reveals how decisions at one stage constrain what is possible at the next. A company that does not establish regulatory positioning early faces costly disruptions later. Bengtson et al. (2022) call for research into how regulatory responses generate dynamic complexity. The process stages in this study address this by showing that regulatory complexity is not a static condition but can manifest differently at each stage: as a product design decision in the early phase, as a legitimacy requirement during validation, as a formal prerequisite in procurement, or as a governance gap during implementation.

A recurring finding across the process stages is that critical transitions from validation to procurement, from procurement to implementation, and from implementation to sustained adoption are sometimes disconnected, when no established mechanism ensures that the output of one stage becomes the input of the next. Darwich et al. (2025) identify an "implementation gap" between MedTech innovation and the healthcare system, framed primarily in terms of HTA competence. This study suggests the problem is broader: it is not one gap but a series of disconnections running through the embedding process. At each transition, responsibility shifts to a different part of the organisation, and the empirical material suggests that established mechanisms for carrying over what was achieved in the previous stage are sometimes lacking. The empirical material points to three possible explanations for these disconnects. First, each function has developed its own priorities, timelines, and success criteria, with no single actor holding responsibility for the full chain from validation through to clinical adoption. Second, as Greenhalgh et al. (2017) and Hellstrand Tang et al. (2024) have noted, healthcare is a risk-averse environment in which organisational culture acts as a barrier to change; clinicians carry personal responsibility for patient outcomes, which makes them reluctant to adopt solutions they do not yet fully trust. Third, public organisations may be better positioned to absorb these inefficiencies than

private actors, since regions are not subject to the same commercial survival pressure that drives private innovators to seek faster returns. Together, these three factors, organisational specialisation, cultural risk aversion, and the difference in survival pressure, help explain why these gaps tend to persist.

While prior research has focused more on initial adoption Greenhalgh et al. (2017), this study specifies that embedding requires continuous adaptation across regions and organisational contexts since embedding in one regional network does not automatically transfer to others. The decentralised governance structure means that actor bonds, resource ties, and activity patterns must be partially rebuilt in each new regional context. Saenyi (2026) describes this fragmentation from a governance perspective, noting that existing structures fail to adapt to the interdependencies generated by digital transformation. What this study adds is the innovator's experience of that fragmentation: it is not only an abstract governance problem but also a resource demand that disproportionately burdens smaller companies relative to established suppliers who already maintain cross-regional relationships. Håkansson and Snehota (1995) describe this as the non-transferability of network positions, a concept that takes on particular significance in a system where 21 regions each constitute a partially distinct network environment.

5.2 Power asymmetries

This study further highlights structural asymmetries in competition. Established actors benefit from existing relationships, procurement expertise, financial resources, and data access, giving them a systemic advantage over smaller entrants. These findings are consistent with Greenhalgh et al. (2017), who identify barriers beyond product quality, such as fragmented IT systems and strict data governance. Such conditions can reinforce inequalities by favouring embedded actors with existing infrastructure. Still, while this thesis identifies incumbent advantage as a central mechanism, prior research addresses it more implicitly. Greenhalgh et al. (2017) and Hellstrand Tang et al. (2024) primarily focus on organisational complexity

and implementation challenges rather than on competitive dynamics. However, the findings resonate with one of the traditional theoretical perspectives, developed by Schumpeter (1942), who argue that large firms dominate innovation due to their resources and scale.

While Ford and Mouzas (2013) describe how organisations develop specialised capabilities through repeated interaction, the empirical material in this study shows that this specialisation produces not only efficiency but also exclusion. The activity patterns that incumbents have developed through years of pre-procurement dialogue, tender optimisation, and data accumulation are not available to actors who have not had the opportunity to develop them. The mechanisms identified here are more specific than Schumpeter's general argument about scale and suggest that they operate through network positioning rather than solely through resources and scale.

It could be argued that mechanisms of incumbent advantage are more prominently reflected in the findings of this thesis, partly due to the inclusion of interviews with actors operating within that sphere. Conversely, this emphasis may also stem from the application of the ARA framework, which facilitates a broader analytical perspective and thereby highlights structural dynamics such as incumbent advantage. Nevertheless, although a detailed analysis of product-category differences lies outside the scope of this thesis, the empirical evidence indicates that this mechanism is not equally prevalent across all product categories. This variation may be explained by differences in resource requirements, where more resource-intensive categories exhibit higher entry barriers, thereby reinforcing incumbent positions to a greater extent.

Another power asymmetry that emerged from the empirical material concerns university hospitals. They hold power in two directions simultaneously. At the network level, their endorsement signals to other regions and procurement actors that a solution has been assessed by a trusted institution. At the unit level within those same hospitals, individual clinical teams decide whether the solution is actually used in everyday practice. A further dimension,

though one that the empirical material cannot substantiate, is that a solution that becomes part of the clinical environment at a university hospital not only gains a reference but it could possibly gradually shape the expectations, habits, and tool preferences of the practitioners who will later work across the healthcare system. This means that university hospital engagement may influence adoption not only through the direct legitimacy it provides today, but also indirectly through the familiarity future clinicians gain. Whether this mechanism is strong enough to meaningfully reduce the resistance to change observed at the unit level in this study is something the empirical material cannot answer, but it points to a longer-term dynamic of the power university hospitals hold.

5.3 Institutional logics at the relational level

Building trust and legitimacy while being adaptive emerges as a critical activity for entering innovative firms. The findings of this study imply that legitimacy is a network-based resource. Building credibility through relationships with key actors is essential for validation. This supports Greenhalgh et al. (2017), who conceptualise legitimacy as socially constructed through interaction, as well as Hellstrand Tang et al. (2024), who emphasise networking and early stakeholder engagement, where early collaboration with buyers can shape expectations and improve alignment, with co-production identified as a key strategy for ensuring relevance and adoption (Hellstrand Tang et al., 2024). However, in healthcare, it cannot be ignored that legitimacy is also built on product quality.

A central finding of this study is that the institutional logic tensions identified across the four process stages are not only managed at the organisational level, but also at the relational level. Innovation coordinators bridge the gap between market and state logic when connecting innovators with clinical actors. In the empirical material, innovation coordinators, clinical actors, and procurement actors recur across the stages of the embedding process, either bridging or embodying competing institutional logics. The specification that

logic negotiation occurs at the relational level is significant because, as Zilber (2024) argues, the institutional logics perspective has tended to study logics at the macro- and meso-levels.

The finding that logics are translated through specific actor relationships aligns with research that has sought to bring institutional analysis closer to everyday practice. Smets and Jarzabkowski (2013) show that institutional complexity is constructed in everyday relational practices, not given as a macro condition. This relational specification extends the work of Maack et al. (2025), who describe adjustmentalisation as a continuous negotiation between logics within primary care organisations. This study shows that adjustmentalisation also happens interpersonally, carried out by specific actors who translate between competing value systems on behalf of new entrants. Thornton et al. (2012) describe logics as a toolkit, but the empirical material here suggests that toolkit use depends on which relationships an actor has built: a founder with a clinical background can draw on professional logic directly, while one without must rely on intermediaries to perform that translation.

5.4 Product categories and the question of generalisability

Although a systematic comparison between product categories lies outside the scope of this thesis, the empirical material indicates that product characteristics may influence how embedding processes unfold. The following section should therefore be understood as a reflection on the generalisability of the findings, rather than as a full product-category analysis.

The empirical findings suggest that not all conclusions are uniformly applicable across the full spectrum of products within the scope of this study. Innovative solutions across different clinical domains are subject to distinct mechanisms and contextual conditions that influence their development and implementation. For example, in certain contexts, system-wide solutions are preferred, whereas in others, highly specialised solutions requiring specific

training are more appropriate. In particular, the inclusion of both digital health platforms and medical devices within a single analytical scope presents challenges, as these categories differ substantially in their characteristics and requirements. However, this broad categorisation may still offer value by providing an initial, high-level overview of the innovative landscape.

An insight that emerged from the empirical material concerns the regulatory boundary regarding digital innovations and medical devices in Healthcare. The CEO & Co-founder, healthtech company (2026) described how software products can be classified as medical devices overnight by adding a single new feature, a boundary that is particularly fluid for software-based solutions. This means that even software companies that have deliberately positioned themselves outside MDR must remain aware that changes to their products could alter their regulatory status. This implies that the regulatory dynamics described in this study are more broadly applicable than the product category distinction might suggest. It is not about a single regulation but about navigating the regulatory landscape, since all software-based innovations operate near a regulatory boundary that can shift overnight.

In the Swedish public healthcare system, a key challenge is the dual role of public actors as both facilitators and regulators. As regulatory and compliance complexity increases, the adoption and scaling of innovation become less likely (Greenhalgh et al., 2017). However, regulation is not purely restrictive. It can also enhance legitimacy and stabilise markets, thereby supporting long-term innovation ecosystems (Pérez, 2002). Similarly, Wennberg and Sandström (2022) show that public sector involvement, while potentially distorting competition, can enable innovation by providing infrastructure, resources, and stability. This contrast in argumentation is reflected in the findings of this study and may be explained by the fact that different product categories operate under distinct conditions and are perceived differently by the public sector. Certain categories appear to be more highly prioritised, and therefore may receive greater institutional support, whereas others encounter comparatively less favourable conditions.

What the empirical material shows is that there is a distinction between how well a product fits into the institutional categories currently available in the system. A product that already sits within an established category can be evaluated and procured using existing processes. A product that falls between categories or doesn't have a category yet faces friction because the system doesn't have an established way to handle it.

6 Conclusion

6.1 Answering the research questions

6.1.1 RQ1

How do structural conditions in the Swedish public healthcare system shape the environment in which companies developing healthtech innovations seek to become embedded?

The structural conditions in Swedish public healthcare emerge as a layered and interconnected system rather than a set of independent barriers. Decentralised governance with autonomous regions fragments the national market, requiring innovators to partially rebuild relationships, evidence, and trust when entering a new regional context. Established suppliers hold advantages through pre-procurement dialogues, tender-writing and data ownership that new entrants can find it difficult to match. The regulatory environment has tightened over the past years. This is not only a quality safeguard but also a structural barrier to entry for small, innovative firms. Public funding bodies, private foundations, and private healthcare providers partially counterbalance these conditions by connecting innovators with expertise, clinical relationships, and commercially accessible entry points, but do not fundamentally change the structural and institutional conditions of the healthcare system. Importantly, the system is not inherently hostile to innovation; it is built around patient safety, equal treatment, and responsible use of public resources. These values are hard to align with the speed and commercial orientation that innovative healthtech firms seek.

6.1.2 RQ2

How do new healthtech companies navigate the process of becoming embedded in the Swedish public healthcare system?

Companies do not follow a single route into the public healthcare system but make early strategic choices that shape the path ahead. Two pathways

emerged: direct engagement with public healthcare organisations, where activities such as research collaboration and pilot projects can lead to formal procurement, or positioning through private providers or established supplier partnerships, where market logic rather than state logic norms guide engagement. These pathways are not mutually exclusive, but early choices shape which relationships, capabilities, and activity patterns a company develops, thereby creating path dependency.

From the empirical material, four recurring stages were identified that characterise how embedding unfolds in practice, though not all companies encounter all stages, and the sequence is not fixed but shaped by ongoing interaction between the innovator and the network it seeks to enter. At the problem identification stage, emerging activities include: drawing on clinical backgrounds and sector experience to identify genuine needs; engaging regulatory and information security consultants to establish their product's classification early; making strategic choices about which market segments to target first; and securing early funding. At the validation stage, companies can build credibility through university hospital references, clinical champion relationships, and early customer contacts, each of which generates legitimacy that facilitates subsequent steps within the network. At the procurement stage, innovative companies navigate relationships established through pre-procurement dialogue, alternative routes such as co-development and subcontracting with established suppliers, and the translation of their value proposition to fit the procurement scoring model and value for healthcare providers. At the implementation and scaling stage, companies must involve clinical teams and navigate their organisational culture. In addition, the fragmentation problem reappears during scaling, as the entire relationship-building process may need to be repeated in each new regional context. Embedding is therefore not a linear progression from innovation to market but a continuous, iterative negotiation with the healthcare system.

6.1.3 RQ3

How do competing institutional logics shape the conditions for embedding new healthtech firms within the Swedish public healthcare system across different stages of the embedding process?

The results show that the institutional logics present in the Swedish public healthcare sector do not create a single set of demands but rather shift depending on where in the process a company is and which actors and relationships it chooses to prioritise. At the early strategic stage, the friction is between what companies need (speed, revenue, scalability) and what the system requires (regulatory compliance, clinical evidence, equal treatment). At the validation stage, professional logic becomes more central. The personal responsibility clinical professionals carry for patient outcomes generates conservatism that neither market nor state logic can adequately capture. At the procurement stage, the coexistence of both state and market order becomes particularly evident, since market logics, such as price, tend to dominate decisions in practice. At the implementation stage, a fourth tension arises: clinicians can see that powerful digital tools exist, but cannot use them because governance and regulation currently prohibit their use.

Rather than one logic dominating, these tensions coexist through a continuous negotiation without a clear hierarchy. This study specifies what the adjustmentalisation looks like at the relational level: innovation coordinators can contribute to bridge the gap between market and state logic; clinical champions can translate market-oriented ideas to professional logic terms; and at the procurement stage, innovators, procurement officers, and internal advocates all engage in active translation between the commercial value language of market logic and the regulatory, accountability, and public value considerations associated with state logic. At the implementation and scaling stage, unit managers and clinical leadership must navigate simultaneously between professional logic and digital logic. Together, these forms of active logic translation, at the relational level, specify what adjustmentalisation looks like in practice for new entrants navigating the

Swedish public healthcare networks.

6.2 Contributions and applications

6.2.1 Theoretical contributions

The study aims to shift the focus of research on digital health innovation from product performance to the process through which companies become part of the public healthcare system. The four stages and their critical activities were derived from the empirical material rather than from a pre-existing model. Thus, they could offer a starting point that future research can build on, refine, or test if the same critical junctures appear in other settings. Since these stages were identified through retrospective interviews rather than longitudinal observation, they should be understood as a map of where critical junctures tend to appear, not as a fixed sequence that all innovations should follow.

The combination of business network theory and institutional logics used in this study suggests that researchers studying innovation in regulated public sectors, for example, defence, energy, transport or education, where dominant public actors and competing value systems shape what innovators can do, may benefit from a similar relational approach. Network theory helps explain how relationships, resources and activities develop between actors, while institutional logics help explain why certain choices feel rational or legitimate in the first place. Used together, these two perspectives make it possible to study how these dynamics play out at the relational level, between specific actors who must navigate competing value systems through their everyday interactions rather than only at the organisational or field level where each framework has typically been applied.

The entry pathway typology, direct public entry versus alternative market positioning, is something future researchers can test and refine further in other contexts, potentially developing it into a more generalisable model of how innovators orient themselves relative to public institutional conditions.

A further contribution lies in the methodological approach, by drawing on interviews with innovators, regional administrators, hospital actors, established suppliers, and independent procurement specialists, this study presents findings across multiple positions in the network rather than relying on a single perspective. While the sample size within each respondent group is limited, the breadth of perspectives helps identify patterns in the links among different actor categories rather than reflecting the views of one side.

6.2.2 Practical applications

From a practical perspective, the findings of this study offer insights for the actors involved in or affected by the embedding process in Swedish public healthcare. The results in Chapter Four serve as decision support for understanding the structural conditions, available pathways, and institutional tensions that shape the embedding process across its different stages.

For innovators, the four process stages and the pathway typology provide a frame for anticipating which actors, resources and conflicts are likely to matter at each stage of the embedding process. The findings can inform decisions about regulatory positioning, market segment choice, and the kind of relationships worth investing in early.

For regional healthcare actors and policymakers, the empirical material highlights structural patterns, such as the pilot-to-procurement gap and the regional fragmentation of regulatory interpretations, which shape the conditions under which innovators operate. These findings can serve as a starting point for identifying where coordination, synchronisation, or structural redesign would have the greatest practical impact.

Although the conclusions are grounded in a specific context of Swedish public healthcare and have limited generalizability, they may offer broader lessons for actors operating in adjacent sectors, where similar dynamics between innovators and dominant actors are likely to arise.

6.3 Fulfilment of purpose

The purpose of this study has guided the priorities set throughout the work. The purpose has been answered through our three research questions. While additional knowledge has emerged for both the academic field and actors involved in the embedding of digital health innovations in public healthcare.

The study's main conclusion is that embedding into the Swedish public healthcare system is a relational and institutional process rather than a purely technical one. Companies developing digital health innovations do not navigate a single standardised entry route, but a layered system of structural conditions, multiple possible pathways, and competing institutional logics that shift in character across the embedding process. Building the right relationships, mobilising the right resources, and engaging in the right activities at the right stage are more decisive for embedding than the product's technical strength. The purpose has thereby been fulfilled by mapping how these dimensions interact across stages, and by identifying patterns that connect them.

6.4 Suggestions for future research

This study has adopted a broad scope in an attempt to capture the full complexity of how digital health innovations become embedded in Swedish public healthcare. This breadth inevitably leads to the fact that specific areas have only been addressed at an overview level rather than in depth. The following suggestions identify where future research could zoom in on dimensions that this study has surfaced but not fully explored.

The four process stages and the pathway typology in this study were derived from retrospective interviews conducted over a short period of time. Following specific innovations through the embedding process as it unfolds, from problem identification and early strategic decision to implementation and scaling, would allow direct observation of how actor bonds, resource ties, and activity patterns evolve. A longitudinal study would also test whether the

same critical junctures appear in real time as they emerged in the empirical material gathered for this study.

Using a different theoretical perspective could more explicitly address the dynamics of innovation adoption and implementation at the organisational level. While this study focuses on network interaction and institutional conditions shaping entry, less attention is given to how innovations are taken up within healthcare organisations in practice. Therefore, applying a diffusion- or implementation-oriented framework, such as the NASSS framework (Greenhalgh et al., 2017) could provide a more granular understanding of how factors such as perceived value, organisational compatibility and complexity influence the transition from pilot project to a broader adoption. This would complement this study's focus on pathways and network dynamics by extending the analysis to the internal dynamics of adoption and scaling.

A further direction for future research concerns the assumption in business network theory that no single actor controls the network. The empirical material in this study indicates that public sector actors in Swedish healthcare hold structural power that comes close to such control. However, the pathway typology shows how innovators respond by building positions in adjacent market segments, through private healthcare providers, HealthTech firms and established supplier partnerships that operate at least partly outside the public sector's direct influence. Future research could examine whether similar dynamics appear in other strongly regulated sectors in which one actor holds a dominant network position, and whether the emergence of alternative market structures is a recurring response that restores the more distributed network dynamics described by business network theory.

The empirical material identifies AI procurement and AI governance as areas where the Swedish healthcare system is still developing capabilities, frameworks and coordination structures required. How these capabilities evolve and interact with AI innovations and evolving EU regulations, such as the Health Data Space, warrants a more thorough investigation. Particularly,

whether this will serve as an enabling force for innovators and whether such new governance models would diffuse across the system or remain differently interpreted locally.

This study does not include the end-user perspective, which could add another dimension to the embedding process. Including clinical staff and their experience of adoption would add more nuance to the usability and the everyday consequences of new implementations. i Including patients could add another perspective on attitudes towards a more digitalised healthcare system and whether the trust clinicians need to feel for the new tools they use, the patient also needs to carry.

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7 Appendix

Appendix A – Interview guide for group A: public sector representatives

Introduction and background

1. Could you briefly describe your role and your involvement in innovation or implementation processes?
2. How do you typically come into contact with new healthtech solutions?

Innovation processes

3. Can you describe a specific healthtech innovation or solution that you have been involved in?
4. How was the collaboration or process initiated?
5. Which actors or departments became involved as the process progressed?
6. Who had the greatest influence over whether the process moved forward or stalled?

Procurement, implementation, and challenges

7. What typically needs to happen for a solution to move forward?
8. Which factors or resources are most important for successful implementation? (e.g., time, budget, evidence, internal support, technical capacity)
9. Where do challenges or friction most commonly arise during the process?
10. How do existing routines, responsibilities, or organizational structures usually need to change when implementing new solutions?

Broader reflections

11. What do healthtech start-ups most commonly underestimate when trying to enter Swedish healthcare?

12. Do you experience tensions between innovation initiatives and other organizational priorities, such as budgets, patient safety, procurement requirements, or existing workflows?
13. In your view, what most strongly affects whether a healthtech innovation is successfully adopted or not?

Appendix B - Interview guide for group B: private healthcare providers

Introduction and background

1. Could you briefly describe your role and your involvement in innovation or implementation processes?
2. How do you typically come into contact with new healthtech solutions?

Innovation processes

3. Can you describe a specific healthtech innovation or solution that you have been involved in?
4. How was the collaboration or process initiated?
5. Which actors or departments became involved as the process progressed?
6. Who had the greatest influence over whether the process moved forward or stalled?

Procurement, implementation, and challenges

7. What typically needs to happen for a solution to move forward?
8. Which factors or resources are most important for successful implementation? (e.g., time, budget, evidence, internal support, technical capacity)
9. Where do challenges or friction most commonly arise during the process?
10. How do existing routines, responsibilities, or organizational structures usually need to change when implementing new solutions?

Broader reflections, collaboration and external relations

11. Do you perceive differences between how public and private healthcare organizations approach innovation adoption and implementation?
12. How do relationships with regions or public healthcare actors affect your ability to adopt or scale new solutions?

13. What do healthtech start-ups most commonly underestimate when trying to enter Swedish healthcare?
14. Do you experience tensions between innovation initiatives and other organizational priorities, such as budgets, patient safety, procurement requirements, or existing workflows?
15. In your view, what most strongly affects whether a healthtech innovation is successfully adopted or not?

Appendix C - Interview guide for group C: Healthcare start-ups

Introduction and background

1. Could you briefly introduce yourself and describe your role within the company?
2. Could you briefly describe your solution and its intended use within public healthcare?

General Questions

3. How would you describe the main structural barriers to entering the Swedish public healthcare system?
4. How do you experience differences between healthcare organizations?
5. How do you experience differences between regions?
6. In your experience, what distinguishes collaborations that progress from those that remain at the pilot stage?

Case-Specific Questions

7. Has your company attempted to introduce your solution within a public healthcare organization or setting?
8. How was the collaboration with the healthcare organization initiated?
9. Which actors became involved from your side as the process progressed?
10. Which actors became involved from the healthcare organization's side as the process progressed?
11. Who appeared to have the greatest influence over whether the process moved forward?
12. What steps were required for your solution to progress further?
13. Which resources were most critical for succeeding in the process?
14. At what stage did you experience the greatest difficulties?
15. Did you need to adapt your solution or business model to fit the public healthcare system? If so, in what way?

16. Looking back, were there resources or capabilities that you initially underestimated?
17. Have you experienced cases where the process stalled? If so, at what stage and why?

Broader Reflections

18. When attempting to introduce your solution into public healthcare, do you experience conflicts between innovation and other organizational priorities?
19. If yes, which priorities, values, or logics appeared to be in conflict?

Appendix D - Interview guide for group D: healthcare industry experts

Introduction and background

1. Could you briefly introduce yourself and describe your role?
2. In what ways do you typically interact with healthcare providers, healthtech companies, or innovation processes?

Industry Perspectives

3. How would you describe the current conditions for healthtech innovation within Swedish healthcare?
4. What do you perceive as the main structural barriers for healthtech companies trying to enter the public healthcare system?
5. How do you experience differences between regions or healthcare organizations regarding innovation adoption?
6. In your experience, what distinguishes innovations or collaborations that progress from those that stall?

Innovation processes

7. Based on your experience, how do collaborations between healthcare organizations and healthtech companies typically emerge?
8. Which actors or functions usually have the greatest influence over whether an innovation progresses?
9. At what stage do innovation processes most commonly encounter difficulties?
10. Which resources or capabilities are typically most important for successful implementation? (e.g., clinical evidence, organizational support, financing, technical integration, internal champions)
11. To what extent do existing organizational structures, workflows, or incentives create challenges for implementation and scaling?
12. Do you perceive differences between how public and private healthcare organizations approach innovation and implementation?

Broader Reflections

13. Do you observe tensions between innovation initiatives and other priorities within healthcare organizations?
14. In your view, how is the Swedish healthcare innovation landscape changing?
15. Looking ahead, what do you believe will be most important for improving innovation adoption and collaboration within Swedish healthcare?

Appendix E - Thematization

Thematization from interviews

Theme	Code	Data
Governance Fragmentation and Institutional Coordination	Decentralised decision authority	*"It does not really matter much who governs nationally in healthcare matters, it is really the individual region that matters."*
	Misalignment between regulatory, procurement, and innovation logics	*"There is a tension between what a region is allowed to do under the Local Government Act and public procurement law, and what, for example, a small MedTech start-up would like to do in terms of speed of implementation."*
	Internal access barriers	*"We also struggle to get access to our own operations. It is not as if I can just go to a clinic and tell them that they have to do this. They decide for themselves."*
	Innovation not embedded in core mandate	*"Innovation is not really perceived as part of the mission in our clinical operations. That is something we are working on, getting people to understand that this is also part of what we are supposed to do."*
	Interpretive fragmentation of regulation	*"We have GDPR, but then we also have 21 regions making different interpretations of GDPR. That is completely unreasonable."*
Formal Compliance and Market Access Mechanisms	Regulatory complexity	*"MDR is the regulatory framework for medical devices. It is difficult, unfortunately. That framework slows things down. I know Tandem has only recently been approved and become MDR accredited. But it definitely puts sticks in the wheels."*
	Regulatory uncertainty	*"There are no procurements specifically for what we are. There is no clear specification of requirements, and no clear way to relate to something that does not really exist as a category yet."*
	Procurement as institutional bottleneck	*"Public procurement processes tend to be much longer and slower"*
	Institutional constraints on public–private collaboration	*"If we have developed something closely together with a supplier and then later need to procure it, that supplier may be disqualified from the procurement process because they were too involved beforehand. Then we might not even be allowed to buy the product back."*
	Long entry processes	*"But with a large healthcare provider, it took about a year from signing. And right now, we have been in dialogue with another large healthcare provider for almost a year."*
	Early-stage alignment with system requirements	*"The very first thing we did in 2022, when we were still basically just a PowerPoint presentation, was to use funding from Vinnova's MedtechAHealth programme to bring in a consultant I had worked with before. We asked them very directly: are we a medical device? What would make us one? At what point would we become one?"*
	Evidence and validation burden	*"If a start-up wants to enter with something new, it is not enough just to invest in the product itself. You also need a strong reference site where the product can be developed further and evaluated. You want to publish studies, and you want evidence that the solution actually works. Ideally, in Sweden, you also want Swedish studies."*
	Pre-procurement influence and informal selection	*"Many times, when I worked on the supplier side, you looked at all the public procurements that were published... But it is already decided. You have to be out there meeting people and maintaining dialogue with all the potential customers well before the procurement."*
	Financial constraints	*"One major issue is financing. You cannot assume that you can simply enter and that the region will fund everything."*
	Legacy system lock-in	*"We are a very complicated IT environment. Things do not just plug in. We do not like products that sit outside our IT environment. We cannot manage hardware solutions in just any way."*