How do the interactions between institutions and digitalization shape FSAs for internationalization?

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Names + Student Nos:	Name(s)	Student Number(s)
	Frederik Winterberg	20203147
	Søren Binderup Jensen	20205014
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Abstract

This master's thesis explores how the interaction between institutions and digitalization shapes the development and internationalization of firm-specific advantages. With new technologies emerging continuously, these shape global business dynamics. We argue that it is essential to understand how institutions enable or constrain the scalability of digital FSAs across borders. The thesis applies a qualitative single-case methodology, examining KMD, a Danish software firm with deep roots in the institutional environment of the Danish public sector, to investigate how institutional conditions shapes the formation and transferability of FSAs in international expansion. The analysis draws on Dunning's Eclectic Paradigm, the FSA/CSA framework, and neo-institutional theory, particularly the national business system approach. The findings demonstrate that Denmark's coordinated institutional environment, has supported the emergence of digital FSAs, advantages that later facilitated KMD's acquisition by NEC Corporation. The thesis contributes to international business literature by clarifying how digital FSAs are not only derived from within firms but rather should be seen as something that institutions and digitalization enable and shape. We conclude that the interaction between institutions and digitalization is a persistent force in shaping FSAs, one that will remain central to IB literature over time.

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1. Introduction

Over the past several decades, international business has been continuously reshaped by digitalization. Today, the global economy is undergoing a digital revolution that is fundamentally changing how firms operate and compete across borders. The introduction of advanced digital technologies has connected the digital and physical world, as it enables systems, machines, and people to communicate and adjust in real-time (Luo & Zahra, 2023). Digitalization, being the use of digital technologies to transform business models and create new value-producing opportunities (Gartner, n.d.), not only influence firms' ability to innovate but is also a requirement for staying competitive in an evolving global economy. The urgency of this transformation is evident when looking at macroeconomic trends. Specifically, the digital economy has been growing at least two and a half times faster than overall GDP, thereby contributing extensively to global output. Disruptions such as the COVID-19 pandemic have accelerated the adoption of digital tools, as firms of all sizes are pressured to digitalize to stay relevant.

This thesis investigates the research question: "*How do the interactions between institutions and digitalization shape the firm-specific advantages for internationalization?"*. This research question guides the findings within the thesis and provides a focused perspective for examining the interactions of institutions and digitalization within the context of international business.

Digitalization has fundamentally altered how firms develop and scale competitive advantages across borders. Classical international business theories, like Dunning's eclectic paradigm and the FSA/CSA matrix (Dunning, 1988; Rugman & Verbeke, 2003), remain essential analytical tools. However, they were conceived in a pre-digital context. As digital technologies become more advanced and developed, they contradict traditional assumptions related to the location-bound and internalization logic of firm-specific advantages (FSAs), particularly as platform-based business models and digital modularity increase the scalability of these advantages (Banalieva & Dhanaraj, 2019; Hennart, 2019). Simultaneously, institutional theory emphasizes that these digital FSAs are not developed in isolation. Rather, they are co-developed within specific institutional environments that both enable and constrain their development and transferability (North, 1991; Scott, 2008; Kostova, 1999). This thesis integrates these theoretical perspectives to examine how institutions interact with digitalization to develop FSAs for internationalization. By doing this, we demonstrate that digital FSAs are strongly tied to evolving institutional environments.

Much IB literature highlights firms' response to cross-border operations, global pressures, and the deployment of digital capabilities. However, existing literature has not profoundly developed a framework that incorporates the role of institutions in shaping digital FSAs, particularly in an international context (Rana & Allen, 2024; Banalieva & Dhanaraj, 2019).

This thesis will explore this imbalance by drawing on institutional theory, particularly neo-institutionalism and the business systems approach, to explore how national and transnational environments intertwine with digitalization to shape firm-specific advantages. We argue that institutional configurations, whether dysfunctional or coherent, have a major role in determining how firms adapt to evolving global and digital conditions and how firms reconfigure resources. Institutions can be seen as a priori enablers of digitalization. Regulatory and infrastructure dimensions, being the regulative pillar of institutions, such as data protection laws, electronic identification systems, and national e-government platforms, create the groundwork for widespread digital adoption. Normative and cultural factors, including trust in public institutions and widespread digital literacy, further reinforce these conditions. This insight is applicable in understanding digital transformation and its effect on internationalization (Rana & Allen, 2024; Scott, 2008; North, 1991).

Our contribution to IB literature lies in highlighting how institutional structures, ranging from digital infrastructure and legal frameworks to public-private coordination mechanisms and shared norms, and digitalization influence the development and international transferability of digital FSAs. Relating this to OLI, a core proposition is that location advantages stem from contextual characteristics, such as geographic, economic, or market-based conditions in host countries (Dunning, 1988, 2008). Nevertheless, these location advantages are increasingly shaped by institutional conditions in the digital era. Hence, our thesis extends this by demonstrating how the interplay between institutions and digitalization shapes the development and international scalability of digital firm-specific advantages. In essence, institutional environments both moderate location choices and co-produce which digital FSAs firms are able to develop and deploy across borders. Institutional theory is, therefore, complementing the OLI paradigm by emphasizing that digital FSAs are embedded in institutional structures, but also enable and constrain the development of these. In the case of KMD, we seek to illustrate how FSAs are not only derived from internal innovation but also from institutional structures. Adding to this, it demonstrates that successful internationalization of digital FSAs is closely aligned with host-country institutional structures.

To ground this investigation, it is important to clarify digitalization. As introduced above, it refers to the process of employing digital technologies to transform firms' operations and value propositions (Gartner, n.d.). Digitalization does not only involve adopting new digital tools, but also the process of rethinking processes and business models as capabilities like big data analytics or cloud computing have made such transformation necessary for firms to adapt and remain competitive. Thus, digitalization is a term related to automation of tasks but, more importantly, requires firms to strategically realign their operations. Related to international business, digitalization challenges many traditional assumptions concerning distance and scalability. For instance, coordinating operations in different markets or reaching global customers via online platforms is substantially easier because of digitalization (Meyer et al., 2023). At the same time, new challenges and opportunities related to digitalization emerge. For instance, firms must consider cybersecurity risks and incorporate them into their internationalization strategy (Meyer et al., 2023). Understanding all the underlying factors of digitalization is crucial to address its impact on established theories of FSAs and internationalization.

While earlier sections emphasize the interdependence of institutions and digitalization, it is worth noting that these are co-evolving forces. Institutional conditions, like digital infrastructure and legal frameworks, is evidently shaping firms' capacity to develop and scale digital FSAs, but these are simultaneously altered as firms integrate digital technologies into their business models (North, 1991; Kostova, 1999; Stallkamp et al., 2022). These dynamics are foundational in relation to digital internationalization and are frequently used in our analysis within this thesis. Current literature has begun to reflect digitalization's impact on firm strategy. However, the importance of institutions in developing and scaling digital FSAs remains under-explored (Stallkamp et al., 2022).

The empirical focus of this thesis is KMD A/S, a major Danish IT company. KMD was originally owned by Danish municipalities and held a near-monopoly on local government IT systems. This institutionalized ownership conferred on KMD's deep sectoral expertise, high public trust, and tailored software platforms, which arose as core FSAs directly from Denmark's institutional context (OECD, 2006). Denmark's leading role in public digitalization, along with KMD's significant contributions to this sector, were pivotal factors in several ownership transitions. Specifically, NEC perceives the acquisition of KMD as a strategic move to enhance its growth and expand its global capabilities in software development, particularly within the public sector. Notably, Denmark has continuously been recognized as the top nation in public digitalization according to UN E-Government Surveys (United Nations, 2024).

This is further emphasized during the acquisition phase conducted by NEC. *"Denmark is regarded as a European role model for improving public-sector services and achieving rationalizations through digitization,"* said Takashi Niino, former President and CEO, NEC Corporation. *"Through the acquisition of KMD, NEC will gain access to technology, competencies and products that are absolutely world-class. We see huge potential in rolling out KMD's platforms and experiences from Scandinavia to the rest of Europe and also globally"* (KMD, 2018b). Hence, KMD serves as a great case company to investigate how institutional environments, combined with digitalization, have fundamentally altered firm-specific advantages, ultimately influencing the firm's internationalization strategy.

By tracing the evolution of KMD, this thesis examines how Denmark's advanced institutional environment enabled the firm's digital innovation and how digitalization shaped its international strategy. We highlight the interaction between institutions and digitalization in developing FSAs for internationalization. To ground the case analysis, the following section reviews the theoretical and empirical literature related to our research area.

2. Literature Review

The following literature review examines how the interaction between institutional environments and digitalization has shaped the development of firm-specific advantages and influenced internationalization strategies. It is guided by the research question: *"How do the interactions between institutions and digitalization shape the firm-specific advantages for internationalization"*.

As international business increasingly evolves in a global economy becoming more digitalized, it is no longer sufficient to look at firms' global expansions strategies without delving into their institutional context. The current literature recognizes that institutional environments and digitalization co-evolve, with policy infrastructures, regulatory frameworks, and cultural aspects either enabling or diminishing a firm's ability to develop its internal capabilities into advantages that can be globally scaled. This review synthesizes existing research to investigate how country-specific advantages (CSAs) and institutional environments, when intertwined with digitalization, alter firms' competitive advantages for internationalization.

Before delving into the findings of the literature review, we first outline the theoretical perspectives used in our analysis. This thesis integrates three theoretical perspectives, namely institutional theory, Dunning's OLI paradigm, and the FSA/CSA framework. These interlinked theoretical perspectives were chosen because they together enable a multi-level analysis to delve into the interactions between institutions and digitalization. Institutional theory helps us understand how national-level structures shape digital transformation trajectories. The OLI paradigm provides a framework to analyze how digital FSAs are generated, matched with locations, and internalized. The FSA/CSA framework reveals how firm-level and country-level advantages must be aligned and adapted in a rapidly evolving global economy.

2.1 Theoretical Framework

2.1.1 Institutional Theory

In this section, we investigate various institutional perspectives with a focus on national-level institutions as this level demonstrates where many key changes in regulation, infrastructure and norms are manifested and implemented. This helps clarify how various actors, on country level, firm level and civil society organization level, contribute to regulating and pushing adaptation of digitalization in firms. Our entry point draws on neo-institutionalism in organization studies (Scott, 2008), complemented by a national business systems perspective (Whitley, 1992a, 1992B). This foundation allows us to explore how the institutional perspective interacts with digitalization to influence the evolution of FSAs critical for internationalization. When we talk about institutions, our stance is similar to North (1991), who describes institutions as "*...humanly devised constraints that structure political, economic and social interaction. They consist of both informal constraints (sanctions, taboos, customs, traditions, and codes of conduct), and formal rules (constitutions, laws, property rights)*" (North, 1991, p. 97).

To answer how the interaction between institutions and digitalization shapes firm-specific advantages (FSAs) for internationalization, we must first understand how national-level institutions influence firm behavior and strategic choices.

2.1.1.1 Neo-Institutionalism and National Business Systems

Neo-institutionalism in organizational studies puts emphasis on how organizations conform to institutionalized norms and expectations in order to gain legitimacy (Scott, 2008). In our study, this perspective highlights how pressure from dominant actors, such as the state, firms, and civil society, shape expectations about digital transformation and influences how firms adopt and embed digital technologies in their offerings. Thus, we take the stance that the development of FSAs should not exclusively be seen as a matter of internal resource accumulation but also the outcome of adapting to institutionalized models of behavior in a given national context (Scott, 2008).

The national business systems (NBS) approach puts emphasis on how firms are both embedded within national institutional contexts while also participating in global markets and responding to regulatory changes and technological developments. This perspective becomes particularly relevant for understanding how institutions and digitalization interact, and how these interactions affect internationalization, because it recognizes that firms do not passively receive institutional pressures. Instead, they actively interpret, negotiate, and sometimes reshape them in relation to their strategic goals (Whitley, 1992a, 1992b; Morgan et al., 2010; Rana and Morgan, 2019).

In contrast to global value chain and international business (IB) theories, which tend to assume relatively uniform firm responses or downplay the role of domestic institutions, the NBS approach accounts for national variation in firm behavior. It shows how institutions co-constitute firms—shaping their structure, strategy, and capabilities over time. Therefore, it becomes easier to interpret how different business systems condition firms' ability to develop FSAs, and how firms may impact institutions in creating regulations.

In parallel to neo-institutionalism, the national business systems (NBS) perspective helps us understand how institutional arrangements differ across countries. This includes, but is not limited to, education systems, labor markets, corporate governance structures, and innovation regimes. In the context of digitalization, these arrangements influence the digital skills available in the workforce, the structure of public–private innovation collaboration, and the regulatory environment for digital infrastructure, all of which affect how firms build and scale digital FSAs that support internationalization. Additionally, the availability of public and private institutions willing to finance firms, also affects how firms can invest in digital infrastructure and innovation, further conditioning their ability to scale FSAs. National education in home and host countries also plays a central role in shaping the availability of digital skills for firms. Likewise, digitalization influences institutions in home and host countries.

2.1.1.2 Institutional and Digital Co-evolution of FSAs

Therefore, our stance on institutions is that they play a dual role. They influence the pressures firms face to adopt digitalization, through rules and norms, and they condition the resources and pathways through which firms can build competitive advantages. For example, a state that promotes digital public services or incentivizes data interoperability creates both demand and support for firms to develop scalable digital solutions.

By focusing on national-level institutions, this framework allows us to trace how state actions, civil society expectations, and sectoral norms coalesce to influence not just whether firms digitalise, but how they do so—and how this, in turn, shapes their readiness and capability for internationalization.

For example, the EU's digital regulation agenda, including frameworks such as the General Data Protection Regulation (GDPR) and the Digital Markets Act (DMA), has driven institutional changes across European countries and firms operating in them, with varying implications for firms depending on the structure and responsiveness of their domestic institutional environments.

In coordinated and collaborative business systems such as Denmark's, where public institutions rely on transparency and trust, and the public sector is closely linked to private-sector actors, firms are often better positioned to adapt to complex digital regulations. This alignment between state policies, regulations, and innovation infrastructure supports firms in developing digital capabilities that comply with international standards while also enhancing competitiveness.

For example, Danish firms, which are embedded within a coordinated business system, benefit from clearer regulatory frameworks and collaborative relationships between public institutions and firms. Moreover, Denmark's high level of digital embeddedness across both public institutions and private firms allows firms to influence the policies by participating in governance processes. This co-evolution between firms and institutions creates a feedback loop in which firms help refine regulatory standards while concurrently upgrading their own digital capabilities. Hence, whenever international regulations like the EU's GDPR and DMA emerge, Danish firms are often better prepared to comply.

In Denmark, for instance, government investment in digital public infrastructure, development of digital skills, and e-governance has created a national environment in which firms are both expected and supported to implement secure and interoperable digital solutions. This institutional scaffolding not only accelerates firms' digital transformation but also increases their legitimacy and readiness to scale these capabilities in international markets. By contrast, in countries with fragmented or less coherent business systems, firms may lack the institutional support or regulatory clarity needed to internalize digital norms effectively, delaying their ability to compete under stricter international standards.

We can therefore take a stance that, from an NBS perspective, coordinated institutional environments such as Denmark's enable firms to move beyond basic regulatory compliance by developing digital FSAs like interoperable platforms, regulatory adaptability, and standard-setting capabilities, which in turn enhance their ability to internationalize in a global economy increasingly governed by digital regulation. These institutional dynamics also influence internal firm structures, encouraging strategies to adapt to digitalization aligned with national regulation.

Therefore, the business systems perspective is essential to understanding how digital FSAs are not only internal firm competencies that firms build on their own, but rather the product of institutional co-evolution, where firms and institutions jointly adapt to global digital pressures. This sheds light on why some firms are better positioned for internationalization in the digital age, as they emerge from national systems that enable rather than constrain the development of internationally viable digital capabilities.

Table 1 outlines key institutional and firm-level features that shape how FSAs are developed. It reflects the interaction between formal and informal institutions, such as state policies, labor systems, and norms, and internal organizational dynamics, as conceptualized within the national business systems perspective (Whitley, 1992a, 1992b; Rana and Allan, 2024). These features illustrate how national institutional environments condition the strategies, structures, and capabilities of firms in ways that influence their digital transformation trajectories and potential for internationalization.

Institutional Features	**Description**
Norms governing trust and authority relationships	• Trust in formal institutions and interaction-based relationships supporting digital transformation. • Importance of social capital in accessing digital infrastructure, funding, and coordination platforms. • Authority hierarchy affecting autonomy in digital strategy implementation and innovation decisions.
Rationales and logics affecting decisions and justifications	• Justifications for adopting digital solutions based on efficiency, legitimacy, and strategic differentiation. • Material and ideational logic shaping decisions on digital investments, data management, platform features, and integration strategies.
State structures and policies	• Complementarity between government bodies and industry in developing digital infrastructures and compliance ecosystems. • Support for intermediary organizations in digital innovation, e-government platforms, and cross-sectoral standard setting. • Degree of state involvement in shaping and regulating digitalization through acts like GDPR and the Digital Markets Act.

Financial system	• Role of institutional investors (e.g., pension funds) and banks in supporting firm-level digital transformation strategies. • Structure and depth of financing for long-term digital infrastructure investment.
Labor system	• Strength and digital orientation of public education, vocational training, and certification systems. • Role of employer and labor organizations in reskilling and promoting digital adaptability across sectors.
Firm Characteristics	
Nature of Ownership and Governance of firms	• Role of managerial autonomy in enabling long-term digital investment and innovation. • Extent of foreign firm linkages (e.g., through subsidiaries, joint ventures, or licensing) and how these shape digital capability development and global compliance alignment. • Specialization of managerial functions and risk-sharing mechanisms that enable firms to reconfigure processes and develop digital FSAs. • Degree to which ownership type (e.g., family-owned, state-owned, public-listed) affects strategic commitment to digital transformation.
Nature of networks and inter-firm relationships	• Role of intermediaries and support institutions in coordinating digital infrastructure and knowledge transfer. • Degree of cooperation and complementarity in inter-firm relationships across sectors, supporting access to shared digital platforms and innovation ecosystems. • Stability and efficiency of business associations in pushing sector-wide digital norms and strategies. • Reliance on social capital and long-term relationships to access digital resources and market knowledge.

Internal management dynamics	• Specialization of roles and decentralization of decision-making to promote digital experimentation and innovation. • How hierarchy affects inclusion of bottom-up ideas in shaping digital solutions. • Nature of incentive systems and long-term commitment between employers and employees in supporting continuous digital transformation. • Formalization of authority structures and how they support implementation of digital strategies.

Table 1 (Authors own work, 2025)

2.1.2 OLI Paradigm

John Dunning's eclectic paradigm, or the OLI framework, remains foundational for explaining firm-level decisions and international production around foreign direct investment (FDI). The framework proposes that multinational enterprises (MNEs) will engage in FDI when they possess three related advantages, namely Ownership (O), Location (L), and Internalization (I) advantages (Dunning, 1988; Dunning & Lundan, 2008). Ownership advantages refer to firm-specific assets that provide a competitive advantage in foreign markets; location advantages refer to host-country conditions that attract foreign activity; and internalization advantages explain why firms choose to retain internal control over their operations rather as opposed to licensing or outsourcing (Buckley & Casson, 1976).

2.1.2.1 Ownership Advantages in a digital context

Over time, the ownership dimension has been altered into more specific categories. Dunning (2000) differentiated the dimension to asset-based ownership advantages (Oa), such as trademarks, proprietary technologies, or codified knowledge, and transaction-based ownership advantages (Ot), which reflect firms' ability to coordinate cross-border operations and diminishing risks related to socio-political uncertainty, regulation, or institutional volatility. Both Oa and Ot are very relevant in a digital context. Oa revolves around digital assets like algorithms, platforms, and data management, while Ot captures firms' ability to manage dispersed value chains using APIs, cloud systems, and project management tools (Dunning, 2000).

Oppositely, institutional ownership advantages (Oi) are directly related to the context of institutional theory. This includes both formal institutions, such as enforcement mechanisms, legal systems, and regulatory incentives, but also informal norms like cultural alignment, trust, and policy coherence that connectively shape how firms develop and apply ownership advantages (Dunning & Lundan, 2008). Institutions often provide the foundation upon which firms build digital FSAs in digitally advanced economies. For instance, public-private digital governance partnerships, digital infrastructure, and national data strategies collectively form the institutional foundations for firms to develop and scale technological ownership advantages.

The evolution of the ownership dimension must also be understood across several analytical perspectives (Dunning, 2000). Ownership advantages include a firm's ability to learn and apply knowledge embedded in institutional environments and digital systems. Firms increasingly rely on cooperative governance structures and non-equity alliances to access and deploy digital capabilities. From an asset-based view, the relation between tangible and intangible assets is increasingly diminished due to digitalization, where relational assets, such as trust-based platform partnerships, and intellectual assets, such as proprietary algorithms, dominate.

2.1.2.2 Institutional Implications for Internationalization

Specifically, the ownership dimension of the OLI framework is shaped by institutions. In certain contexts, institutional support, like digital literacy policies, IP protection, or R&D subsidies, allows firms to generate and safeguard digital ownership advantages. Oppositely, institutional gaps may hinder the development or deployment of these capabilities, which requires firms to internalize operations more extensively (Dunning, 2000).

This expansion of the ownership dimension also highlights that not all firms face the same constraints. For instance, firms facing pressure from short-term investors may diminish their focus on long-term capability-building, especially where digital returns can differ or are uncertain. Other firms may lack managerial focus or face internal resistance to change and integrate digital tools.

In such cases, even well-developed Oa or Ot advantages may be under-leveraged unless these are supported by appropriate Oi incentives and structures.

Hence, despite digitalization enhancing the scalability and portability of digital FSAs, these advantages are conditioned by firm-level readiness and institutional embeddedness. The revised OLI paradigm must therefore consider how firms develop, protect, and deploy ownership advantages through the interplay of asset specificity, strategic coordination, and institutional alignment. In this thesis, the OLI framework is applied to investigate how firms, specifically those operating in digitally advanced institutional environments, develop OLI advantages tailored for international expansion. This perspective highlights both the economic incentive for internationalization and how institutions either enable or constrain the development and deployment of digital FSAs into global competitive advantage.

Table 2 presents key OLI-related dimensions that influence how digital firm-specific advantages are developed, deployed, and scaled in international contexts. The table below emphasizes how ownership, location, and internalization advantages interact with institutions and digitalization to shape FSAs for internationalization. It builds on the expanded OLI paradigm (Dunning & Lundan, 1988; Eden & Dai, 2010), where ownership advantages are divided into asset-based (Oa), transaction-based (Ot), and institutional (Oi) advantages. These categorized ownership advantages are further conditioned by location-specific institutional settings and internalization decisions, which are shaped by regulatory risk and governance needs. Together, these components of OLI illustrate how firms develop FSAs that are globally scalable by aligning their digital capabilities with supportive institutions, which ultimately supports the strategic decisions about how and where to internalize their value creating operations.

OLI Dimensions	**Description**
Ownership Advantages (O) Oa – Asset-based Ownership	• Includes proprietary digital assets such as platforms, software, and data analytics tools. • Enhances international competitiveness when supported by strong institutional infrastructure.
Ownership Advantages (O) Ot – Transaction-based Ownership	• Reflects firm ability to manage complex digital processes across borders (e.g., APIs, agile workflows).

	• Depends on institutional quality, cross-border integration, and risk-mitigation mechanisms.
Ownership Advantages (O) Oi – Institutional Ownership	• Relates to legitimacy, regulatory compliance, and trust-based access shaped by institutional support. • Co-produced through public-private governance systems, IP regimes, and digital standards.
Location Advantages (L)	• National digital infrastructure, data privacy regulations (e.g., GDPR), and e-government maturity. • Countries with coordinated institutional systems provide strong CSAs for digital FSAs.
Internalization Advantages (I)	• Digitalization enables modular governance models (e.g., platforms, APIs) reducing need for full ownership. • Institutional risks (e.g., regulatory gaps, IP enforcement) drive decisions to internalize capabilities.
OI Interplay: Institutional Complementarity	• Firms leverage institutional strengths across countries (e.g., Danish regulatory expertise + Japanese global reach). • Enables scalable and compliant FSAs through selective internalization and location synergy.
OLI Constraints and Strategic Response	• Firms with low institutional support or short-term pressure may underutilize digital FSAs. • Strategic responses include acquisition, alliance, or internal restructuring to secure OLI alignment.

Table 2: OLI dimensions in an institutional and digital context (Authors own work, 2024)

2.1.3 FSA/CSA Framework

Another foundational theory through which international strategy can be analyzed is the FSA/CSA framework, which examines the interaction between firm-specific advantages (FSAs) and country-specific advantages (CSAs) (Rugman & Verbeke, 1992; Rugman & Collinson, 2012). FSAs refer to capabilities unique to the firm, such as managerial expertise, organizational routines, technology, or brand equity, that enhance the firm's ability to compete internationally. CSAs are related to characteristics of the home or host country in which the firm is currently operating, or wants to operate, including institutional stability, infrastructure, regulatory conditions, or educational systems. The framework's logic is that firms succeed in foreign markets when their FSAs are either supported by home-country CSAs or are applicable with host-country environments that offer complementary CSAs (Rugman & Verbeke, 1992; Rugman & Collinson, 2012).

2.1.3.1 Digitalization and FSA/CSA interactions

FSAs can be location-bound, which means they are embedded in a specific institutional or cultural environments, or non-location-bound, meaning that they are transferrable across borders without experiencing a significant value loss (Rugman & Verbeke, 1992; Rugman & Collinson, 2012). A firm's ability to internationalize is dependent on whether its FSAs can be recombined with or adapt to relevant CSAs in the foreign target market. For instance, firms with weak FSAs but strong home-country CSAs may seek to leverage national advantages to successfully compete, such as resource endowments, while firms with strong FSAs but weak and unfavorable home-country CSAs seeks to internationalize to leverage stronger institutions or market conditions elsewhere.

Digitalization is altering the nature and connection of FSAs and CSAs, making it essential to revisit the framework's applicability (Lo et al., 2023; Denicolai et al., 2021). First, digitalization facilitates the development of new and often more transferable FSAs, like digital platforms or cloud-native infrastructures, that are deployable across multiple markets with minimal negative outcomes. For instance, a Saas firm's codebase is more easily scalable through cloud delivery without the need of physical assets. Hence, these digital FSAs are less location-bound than some of the more traditional manufacturing-based advantages. Second, digitalization also reinforces the role of institutionally embedded CSAs, very relevant in areas such as data governance, digital infrastructure, and public-private digital collaboration (Meyer et al., 2023). Countries with advanced digital institutions, that encompass e-government platforms or strong digital literacy, create a strong foundation for firms to build digital FSAs. In essence, digitalization enhances CSAs through resources or markets but also the institutional capacity to support digital transformation.

Regarding the above, FSAs are conceptually connected to ownership advantages in the OLI paradigm, as both concern firm-level resources that enhance firms' cross-border competitiveness. Similarly, CSAs are connected to location advantages and institutional theory, as location-specific benefits are increasingly dependent on the quality of institutions, including the regulatory environment and policy coherence. This interconnectedness emphasizes why the three included theoretical frameworks, namely institutional theory, OLI, and FSA/CSA, are mutually reinforcing and useful in examining the research question.

2.1.3.2 FSA in Institutional contexts

However, digitalization does not completely eliminate the complexity of transferring FSAs. Particularly those who are based on tacit knowledge or those very customized still remain highly embedded in their domestic institutional context (Rugman et al., 2011). For instance, a firm developing and deploying software tailored to a given public-sector will experience difficulty in exporting these capabilities without significant adaptation. Despite modular architecture, FSAs that are heavily reliant on trust, local norms, or co-developed standards still remain location bound. Digital tools may therefore increase portability, but they do not erase institutional embeddedness for some capabilities.

The FSA/CSA framework also supports the logic that firms succeed not only by transferring FSAs abroad, but by ensuring compliance with host-country CSAs (Rugman et al., 2011). In the context of digitalization, this could involve pairing a firm's software capabilities with CSAs in a foreign market such as a digitally literate workforce, favorable regulatory environments, or reliable cloud infrastructure. In addition, when FSA are deeply connected to home-country CSAs, it can be necessary to acquire new capabilities, e.g., through acquisitions or strategic partnerships, to ensure compliance with host-country conditions.

This dynamic is especially relevant in digital internationalization, where firms seek to combine capabilities to adapt to diverse institutional settings. For example, if a given firm acquires a foreign software firm, it enhances the parent firm's ability to access locally embedded knowledge and align its FSAs with the host-country's CSAs. Hence, digitalization enables such strategies by making coordination and integration more feasible but does not diminish the importance of a firm's institutional fit to the host-country settings.

Essentially, digitalization expands the reach of FSAs, while making institutionally conditioned CSAs more salient. Firms must critically assess both their FSAs' digital transferability and their institutional compatibility with the target market. The FSA/CSA framework thus remains an essential analytical tool to investigate how firms develop and adapt their advantages through the interplay of institutional environments and digital technologies. In this thesis, the framework will help explain how KMD's internationalization efforts is shaped by the CSAs it has both inherited and accessed, particularly those embedded in Denmark's well-developed digital institutions but also the institutional demands of foreign public sector markets, and its evolving FSAs.

Table 3 below reflect the theoretical perspectives used in this thesis, namely neo-institutionalism, national business systems, the OLI paradigm, and the FSA/CSA framework, to clearly state their relevance to institutions and digitalization and their connection to internationalization. The table illustrates how each framework offers complementary insights into how institutions and digitalization shape the development and transferability of FSAs for internationalization. Combined, the used frameworks provide multiple layers of analysis, as they contribute to our understanding of how firms can leverage institutions and digital tools to develop globally scalable FSAs.

Framework	**Core Concepts**	**Relevance to Digitalization**	**Connection to Internationalization**
Neo-Institutionalism	Firms adapt to institutionalized norms and expectations to gain legitimacy; institutional pressures (rules, norms, cognitive) shape behavior.	Explains how digital transformation is adopted not only for efficiency but also to align with socially constructed expectations (e.g.,	Highlights how institutional legitimacy pressures influence firms' digital FSA development and strategic readiness for foreign markets.

		digital legitimacy, compliance).	
National Business Systems (NBS)	Institutional structures (education, labor, governance, finance) vary across countries and shape firm capabilities and strategies.	Illustrates how distinct national systems condition the availability of digital skills, public infrastructure, and collaborative innovation capacity.	Clarifies why some firms are structurally better equipped to develop digital FSAs that support internationalization.
OLI Paradigm	Ownership (O), Location (L), and Internalization (I) advantages drive FDI decisions. Ownership refined into Oa, Ot, and Oi.	Digitalization affects all three: FSAs (Oa, Ot) become more scalable; digital institutions strengthen Oi and shape L; modular governance shifts internalization logic.	Provides a structured lens to assess how digital FSAs are developed (O), matched with institutional contexts (L), and deployed across borders (I).
FSA/CSA Framework	FSAs: firm-level capabilities; CSAs: national-level advantages. Emphasizes location-bound vs. transferable FSAs and matching FSAs with host CSAs.	Digitalization expands FSA transferability (e.g., platforms, algorithms) and reinforces CSA relevance through digital infrastructure and institutions.	Explains how firms leverage digitally enabled FSAs in combination with institutional CSAs to enter and compete in foreign markets.

Table 3: Summarizing Theoretical Perspectives on Institutions, Digitalization, and Internationalization (Authors own work, 2025)

To structure the literature review, the findings are organized around four sequenced parts:

Part 1: Literature on Institutions

This section explores how national institutional environments, such as regulatory regimes, digital infrastructures, and governance systems, act as catalysts or constraints for digital transformation. It focuses on how these country-specific factors shape firms' ability to access resources, build legitimacy, and compete internationally, thereby influencing the development of firm-specific advantages in a global digital economy.

Part 2: Literature on Digitalization

This section assesses how digitalization, through technologies such as digital platforms, AI, big data, and digital finance, reshapes the development and deployment of firm-specific advantages. It explores how digital tools interact with institutional environments to enable faster market entry, reconfigure competitive positioning, and demand new forms of strategic flexibility, thereby influencing how firms internationalize in a digitally mediated global economy.

Part 3: Literature on Firm-Specific Advantages

This section examines how digitalization transforms firms' internal capabilities into internationally scalable firm-specific advantages. Emphasis is placed on how digital tools interact with organizational structures, managerial orientations, and institutional environments to shape dynamic capabilities. These digitally enabled FSAs are increasingly modular, knowledge-based, and responsive to cross-border complexity, highlighting how internal adaptation and institutional alignment jointly influence international competitiveness.

Part 4: Literature on International Strategy

This section synthesizes how evolving firm-specific advantages and institutional conditions converge to reshape internationalization strategies. It explores how digitalization enables new strategic models, such as platform-based entry, networked expansion, and modular value creation, while also requiring firms to navigate regulatory complexity, institutional diversity, and emerging ethical considerations in the global digital economy.

By organizing the literature across these four parts, the review offers a comprehensive and critically engaged synthesis of how institutional contexts and digital transformation intersect to shape the development of firm-specific advantages. Each section clarifies how these forces jointly influence the rationale, pathways, and strategic configurations of international expansion in the digital age.

2.2 Literature on Institutions

The institutional environment within which a firm operates is instrumental when considering firms' adoption of digital tools and internationalization potential. Revolving around the research question: "*How do the interactions between institutions and digitalization shape the firm-specific advantages for internationalization"*, this section delves into how technological infrastructures, national regulatory frameworks, and governance institutions enable or constrain CSAs that influence digitalization and international strategies.

2.2.1 Regulations and Policies

A given country's regulatory environment represents a crucial element of CSAs, especially in industries experiencing a high degree of digitalization. Several studies pinpoint that nations with well-developed regulatory systems incentivizing innovation continuously enhances firms' digital internationalization ability by reducing information asymmetries and transaction costs (Drori et al., 2024; Feliciano-Cestero et al., 2024). Oppositely, institutional environments that are highly fragmented or overly restrictive can present significant barriers, which will decrease the adoption of digital technologies and increase friction in coordinating cross-border operations (Hervé et al., 2020; Guinea & Sharma, 2025; Bauer et al., 2024). For instance, Bohnsack et al. (2021) highlight how the electricity sector, fundamentally being highly regulated, demonstrates the need for an alignment between country-specific policies and firms' digital strategies when seeking to internationalize.

Yaprak et al. (2018) provide empirical evidence from Turkey to highlight how geographic positioning and government incentives form complentary CSAs. Their findings emphasize that strategic location combined with favorable regulatory climates significantly decreases foreign market entry barriers. Additionally, Evers et al. (2023) and Johanson et al. (2024) suggest that institutional clarity and quality affect firms' digital transformation capacities ultimately affecting their ability to scale internationally, especially in industries with complex requirements difficult for firms to comply.

2.2.2 Digital Infrastructure and the Role of Countries

Country-level digital infrastructure, including internet access, broadband penetration, and e-governance maturity, further contributes to a nation's CSA portfolio. As Fersch et al. (2025) demonstrate in the Danish context, the success of digital initiatives in rural regions often hinges on the synchrony between infrastructure readiness and population-level digital literacy. Denmark’s well-established digital ecosystem has, for instance, served as a model for NEC’s adaptation of e-invoicing technologies in Japan, revealing how strong digital infrastructures can be transferred and emulated across institutional boundaries (United Nations, 2024).

Country-level digital infrastructure, such as broadband penetration and strong internet access, further adds to a nation’s CSAs. As Fersch et al. (2025) highlight, the success of digital initiatives in rural regions often relies on the synergy between infrastructure readiness and the digital literacy level amongst the population. For example, Denmark’s well-developed digital ecosystem has served as a strong model for NEC’s adaptation of e-invoicing technologies in Japan, which reveals how strong digital infrastructures can be transferred and applied despite crossing institutional boundaries (United Nations, 2024).

OECD (2021) similarly affirms that institutional arrangements, including public-private coordination and digital governance capabilities, are crucial determinants of a nation’s digital readiness. Nations with well-functioning legal systems, transparent policymaking, and digital strategies usually generate stronger CSAs, which directly relates to a firm’s ability to develop innovative products and compete internationally (Han et al., 2024; Du and Li, 2025). Conversely, institutional voids including gaps in regulation, administrative capacity, or enforcement, can diminish innovation if it is not addressed through partnerships with civil society actors or non-market strategies (Rana & Sørensen, 2021).

2.2.3 Governance in Institutions

Moving further beyond regulation and infrastructure, administrative efficiency and political stability also influence a nation’s role as an enabler of digital internationalization. Bauer et al. (2024) note that state engagement with cloud and ICT policies on a strategic level can potentially increase sovereignty and competitiveness, but at the risk of technological isolation or protectionism. Institutional and cultural predispositions regarding innovation also substantially affect a nation's innovation ecosystems, which impacts the rate of digital adoption but also the success of international ventures (Dong et al., 2025; Johanson et al., 2024). Similarly, Meyer et al. (2023) argues that even in digitally mature countries, responsiveness to global norms or a lack of cultural alignment can discourage inward and outward investment flows.

Additionally, the findings of Bauer and Pandya (2025) on the Digital Markets Act (DMA) provides an example of how European attempts at synthesizing regulations, aimed at ensuring fair competition, can inadvertently diminish digital innovation by enforcing uniform regulative standards on heterogeneous firms. In essence, institutions can contradict themselves, as they can simultaneously play a vital role in building CSAs but also create friction, which depends on the alignment between national-level capabilities and firm-level needs.

2.2.4 Digital Country-Specific Advantages

Digitalization has fundamentally transformed the conceptualization and application of CSAs. While traditional CSAs primarily revolved around static attributes, such as access to cheap labor or natural resources, contemporary CSAs increasingly become more dynamic and institutionally embedded, like regulatory flexibility and infrastructures, that facilitate knowledge diffusion (Zhou and Liao, 2024; Mancuso et al., 2025). As Bhatti et al. (2022) note, advanced digital technologies, such as artificial intelligence and big data analytics, diminish liabilities of foreignness for firms operating in digitally mature economies and allowing them to customize their operations to host-country market conditions.

Furthermore, the literature pinpoints the increasing importance of digital distance, being the difference in digital maturity between home and host countries, as vital for internationalization performance (Wang et al., 2024b; Zhang et al., 2025). Firms operating in digitally mature nations such as Denmark can more easily deploy digital solutions abroad. On the other hand, firms from nations that are less digitally mature often face high entry barriers unless they possess a high degree of absorptive capacity (Steinmueller, 2001; Driffield et al., 2021). The importance of a nation's digital maturity level as a determinant of national competitiveness highlights the transformation in the nature of CSAs.

2.2.5 Institutions as Enablers of Digital Firm-Specific Advantages

As this section has highlighted, institutional environments shape both the direction of digital transformation and capacity within firms. It is evident that institutions form the contextual foundation from which firm-specific advantages are built and evolved. Relating this to KMD, Denmark's public sector digitalization initiatives, superior digital infrastructure, and coherent policy, created a well-developed institutional foundation that fostered KMD's growth into a public-sector software leader enhancing their international potential (NEC Corporation, 2018). The table below illustrates how academic literature defines certain dimensions of institutional factors.

Institutional dimensions	**Definition**	**Supporting Literature**
Regulatory Environment	The rules, laws, and compliance frameworks that either enable or constrain digital adoption and cross-border operations. Transparent, innovation-oriented regulations reduce institutional frictions and encourage digital internationalization.	Drori et al. (2024); Feliciano-Cestero et al. (2024); Bauer et al. (2024); Bohnsack et al. (2021); Yaprak et al. (2018)
Digital Infrastructure	National readiness in terms of broadband access, e-governance maturity, cloud platforms, and interoperability. These assets directly impact a firm's ability to scale digital services and foster innovation.	Fersch et al. (2025); Digitaliseringsstyrelsen (2024); OECD (2021); Han et al. (2024); Du and Li (2025)
Public-Private Coordination	Institutionalized collaboration between governments, private firms, and civil society actors, supporting co-creation and policy alignment in digital strategies.	OECD (2021); Rana and Sørensen (2021); Johanson et al. (2024)
Cultural and Political Stability	Cultural openness to innovation and political engagement in digital transformation affect national innovation systems, regulatory predictability, and investment attractiveness.	Dong et al. (2025); Meyer et al. (2023); Erixon et al. (2024); Bauer and Pandya (2025)

Digital Ecosystem Maturity	An evolving concept capturing national-level capabilities in digital finance, AI, data analytics, and platform economies. It reflects the dynamic quality of CSAs in the digital age.	Zhou and Liao (2024); Wang et al. (2024b); Zhang et al. (2025); Bhatti et al. (2022);

Table 4 (Authors own work, 2025)

2.3 Literature on Digitalization

Digitalization is both a technological trend as well as a concept that changes how firms deliver services, create value, and organize work. Relating it to this thesis, digitalization in understood as a system that alters and influences the logic of international business, shaping how entry strategies and new business models can be developed, both from an academic stance and as a challenge for firms.

To address the research question: *"How do the interactions between institutions and digitalization shape the firm-specific advantages for internationalization?",* this section will investigate the research on digitalization within international business. Specifically, it delves into how institutional settings and digitalization interact to shape firm-level capabilities. The emphasis is on how digitalization, including technologies and transformation, shape FSAs for internationalization, by highlighting the effect they have on product innovation, operational processes, and firm and nation strategy.

2.3.1 Digitalization as an Enabler

Researchers within International Business have consistently characterized digitalization as a capability that amplifies, reconfigures or replaces traditional firm-specific advantages and location bound resources (Brock & Hitt, 2024; Lo et al., 2023; Knight & Liesch, 2002; Dachs et al., 2024). Brock and Hitt (2024) argue that firms capable of integrating digital capabilities into their strategies benefit from better responsiveness, agility, and cross-border functioning. Lo et al. (2023) take the literature further and elaborates on how digital platforms work as an enabler for firms to bypass physical infrastructure constraints, thereby allowing for asset-light internationalization models. Furthermore, as Dachs et al. (2024) and Knight and Liesch (2002) explain, digital tools can be used to facilitate real-time knowledge transfer across geographically dispersed subsidiaries, enhancing global R&D coordination and accelerating innovation cycles.

In addition to integrating digital capabilities and tools to transfer knowledge, Massa et al. (2023) distinguishes three levels at which digital tools operate, being: macro (institutional), meso (ecosystem), and micro (firm). At the macro level, governments that promote digital adoption directly influence firm behavior through incentives and compliance requirements (Massa et Al, 2023; OECD, 2021). At the meso level, industrial ecosystems such as Denmark's public digital infrastructure generate shared standards that facilitate interoperability. At the micro level, firms leverage these digital tools, such as data analytics, platform models, and AI tools to build products that respond to international demands (Strange et al., 2022; Zhang et al., 2025).

2.3.2 Digital Strategies and Institutions

A key institutional condition, for successful digital internationalization, is argued by Wang et al. (2024a) and Feliciano-Cestero et al. (2024) to be a robust digital infrastructure. This infrastructure serves both as a resource base and as an enabling institutional environment, which helps shape how firms can deploy strategies across border, and from a country perspective, how firms can attract mergers and acquisitions by providing a better digital climate (Ketolainen & Pakhamäki, 2022). Furthermore, Deng et al. (2022) and Strange et al. (2022) puts emphasis on the importance of how well-developed digital infrastructure can reduce transaction costs of firms and allow for more efficient cross-border internationalization.

So even though digitalization allows for easier internationalization, international strategies must still be aligned with the institutional conditions of host countries. Some studies emphasize the interaction between digital capabilities and institutional conditions in enabling internationalization for firms. Seppänen et al. (2025) argues how firms with higher digital maturity respond better to complex regulatory environments compared to those with less digital maturity. This is further emphasized by Stallkamp et al. (2022) who highlights how platform-based firms' international traction, only when their digital models are attuned to that of the local regulatory and socio-economic context.

Bauer and Pandya (2025) caution that digital regulations, such as the Digital Markets Act in EU, may paradoxically constrain innovation across borders, by imposing uniform requirements across multiple countries that are diverse. This highlights the need for firms to align their international digital strategies with local institutional conditions. Dong et al. (2025) further extends this view, by linking the effectiveness of digital innovation to location-specific enablers such as knowledge diversity and supply chain resilience, and how firms must incorporate this into their strategies. Similarly, Cadden et al. (2023) argues that firms with strong entrepreneurial orientation or with a high level of digital maturity, are more capable of thriving within volatile institutional environments. Together, these studies suggest that digital transformation alone is not sufficient to comply with institutional contexts. The international success of firms depends on their ability to strategically tailor their digital approach to the exact institutional context in which they operate.

Dong et al. (2025) further extends this view by linking the effectiveness of digital innovation to location-specific enablers such as knowledge diversity and supply chain resilience—factors that firms must incorporate into their strategic planning. Similarly, Cadden et al. (2023) show that SMEs with strong entrepreneurial orientation and big data capabilities are better positioned to thrive in volatile institutional environments. Together, these studies suggest that digital transformation alone is not sufficient; success depends on a firm's ability to strategically tailor its digital approach to the institutional context in which it operates.

2.3.3 Risks of Digitalization

While digitalization should be seen as a critical factor to remain competitive in today's world, there are still significant risks that firms must consider when developing and deploying FSAs in international contexts. Jean et al. (2020) and Luo (2022) note that digital platforms can negatively impact firms to cybersecurity risks, more complex regulations, and reputational damage. Such challenges are enhanced when engaging in cross-border operations, as institutional differences in regulations and data privacy norms can constrain or delay market entry.

Fragmented institutions demand that firms are technically agile and comply with bureaucracy across jurisdictions (Mancuso et al., 2025; Meyer et al., 2023). The growth of regional and national compliance regimes often requires firms to indulge in "compliance-by-design" approaches and invest in legal-technical coordination, which potentially can diminish or constrain their ability to scale digital FSAs globally.

Cybersecurity in particular has become a core institutional and operational risk for firms. Obi et al. (2024) elaborate upon how the growing number of cyber-attacks causes a need for firms to adopt proactive security strategies. Other studies also highlight the institutional dimension, recommending stronger cooperation and knowledge sharing across borders to strengthen global cyber security resilience (Obi et al., 2024; Mancuso et al., 2025).

Similarly, Waliullah et al. (2025) have investigated the consequences of accelerated digitalization in the banking sector. The risks this accelerated digitalization has imposed necessitate firms to make heavy investments in security governance and third-party risk management, as a mitigating factor against phishing, ransomware, and data breaches. These risks not only erode reputational and financial status but also affect consumer trust.

Another risk that digitalization imposes is digital overextension. Mithani (2023) warns that uncoordinated adoption of multiple digital tools can create fragmentation and misalignment, potentially weakening FSAs and cross-border operations. Another institutional risk in the digital climate is regulatory fragmentation. Bauer et al. (2024) argues that when new technologies emerge, regulations can obstruct digital scalability, pushing firms to embed risk management into their internationalization strategies from the outset. This highlights a case of how digitalization impacts institutions by regulating technologies and hindering firms in scaling and creating FSAs. To end this section, the table below illustrates how academic literature defines certain dimensions that are relevant to the thesis.

Digitalization Dimension	**Definition**	**Supporting Literature**
Digitalization as a Key Business Capability	Digitalization functions as a strategic enabler that amplifies or reconfigures traditional FSAs, facilitating global coordination, responsiveness, and asset-light expansion.	Brock and Hitt (2024); Lo et al. (2023); Dachs et al. (2024); Knight and Liesch (2002)
Digital Transformation	Digital tools affect firms at macro (institutional), meso	Massa et al. (2023); Strange et al. (2022);

	(ecosystem), and micro (firm) levels, shaping policy compliance, interoperability, and firm-level innovation.	OECD (2021); Zhang et al. (2025)
Institutional Complementarity	Digital capabilities gain value when aligned with institutional logics. Firms must tailor platforms and tools to local legal, political, and infrastructural conditions.	Seppänen et al. (2025); Stallkamp et al. (2022); Dong et al. (2025); Cadden et al. (2023)
Risks and Limitations	Digitalization introduces vulnerabilities—cybersecurity risks, regulatory exposure, and integration complexity—which may hinder international scaling if not managed.	Jean et al. (2020); Luo (2022); Mancuso et al. (2025); Meyer et al. (2023); Mithani (2023); Bauer et al. (2024)

Table 5 (Authors own work, 2025)

2.4 Literature on Firm-Specific Advantages

Firm-specific advantages are crucial capabilities for a firm's international competitiveness. In a digital context, FSAs are increasingly derived from intangible resources or assets like organizational agility, technological capabilities, knowledge-based routines, and managerial commitment (Bohnsack et al., 2021; Johanson et al., 2024). When these FSAs are situated within an institutional environment that focuses on global markets and are digitally mature, firms can leverage their FSAs and more effectively utilize them in their international strategies.

2.4.1 Internal Development of Digital Firm-Specific Advantages

Digitalization reshapes FSAs' character to be more modular, scalable, and transferable across borders. Firms like KMD, boasting stable SaaS-based business models and mature digital infrastructures, gain the potential to reach new markets at low marginal cost (KMD, 2018b). The takeover by NEC demonstrates how digital intangible FSAs can attract foreign partners in search of technological competences suitable for smart city or e-government projects. Such skills involve advanced invoicing programs, like KMD Connect, and systems that facilitate secure, cloud-based service delivery.

In broader literature, firms with strong digital capabilities, such as cloud integration, analytics, and modular software architectures, does have a better position to build and recombine knowledge-based FSAs in response to external stimuli (Cadden et al., 2023; Dong et al., 2025). It is evident that these knowledge-based FSAs are more dynamic, which means they evolve continuous interaction with digital ecosystems and institutional environments. For instance, manufacturing or software firms that combine digital services with products, namely digital servitization, depend on the integration of their internal capabilities with infrastructural and regulatory enablers (Meng et al., 2025).

However, digital FSAs are not solely technological. Internal governance and firms' strategic orientation are essential. Multiple studies note that firms with agile decision-making and digital leadership are more geared towards leveraging digital tools which, in turn, influence their international presence (Feliciano-Cestero et al., 2024; Du and Li, 2025). These findings resonate with literature on organizational ambidexterity, that is the concept of combining explorative and exploitative innovation, as firms must enhance their existing intangible FSAs and seek new sources of value simultaneously (Xing et al., 2025).

2.4.2 Institutions Role in Digital Firm-Specific Advantages

FSAs do not emerge independently, but are often developed within, and constrained by, institutions. European firms must, for instance, navigate in a highly fragmented ICT policy environment, where they are obligated to comply to certain standards and focus on cybersecurity, which may limit the scope for digital experimentation (Bauer et al., 2024). These regulations impact firms' ability to invest in new capabilities such as data analytics tools, AI, or platform architectures. Relating this to KMD's case, Denmark's digital-first public policies were crucial for their digital knowledge-based FSA development, while NEC's operations in Japan required, despite being situated in a digital mature country, adapting to a slower-moving infrastructural and regulatory environment (Fersch et al., 2025).

At the organizational level, these dynamics often generate organizational unlearning and reconfiguration. Dayan et al. (2024) express the need for firms to discard outdated routines and legacy systems when they start to operate in more advanced or digitally demanding markets. It is substantially easier for firms to redeploy their knowledge-based FSAs abroad when they operate in digitally mature ecosystems, especially when supported by digital entrepreneurship policies, innovation strategies, and education systems (Capestro et al., 2024; OECD, 2021).

Moreover, firms that operate within favorable institutional contexts tend to develop a collection of different bud interrelated bundle of intangible FSAs, including internationalization experience, managerial know-how, innovation routines, and digital business models. There are continuously refined and can be selectively recombined to fit different markets, as seen in KMD’s strategy of refining and adapting its platforms for other European public sectors (Dong et al., 2025; Feliciano-Cestero et al., 2024; Rugman & Verbeke, 2003).

2.4.3 Organizational Readiness in Firm-Specific Advantages

The human dimension of FSA development has grown tremendously under digitalization. Digital readiness, including technological and cultural, partly depends on managerial capabilities and convictions (Du & Li, 2025). Firms with digitally literate leaders, that are open to change and oriented toward international growth, are more likely to develop intangible FSAs relevant for internationalization. Yu et al. (2022) distinguish between strategic digital transformation, which is about reshaping a firm’s business model and international stance, and operational digital transformation, which focuses on efficiency within the firm. KMD’s integration of automation platforms and digital invoicing is a great example of the former, highlighting how internal process innovation can enhance the firm’s ability to scale their tangible FSAs outward.

This internal capacity is further enhanced through targeted non-market strategies. Khan et al. (2023) emphasize that firms need network-based FSAs in areas such as compliance navigation, lobbying, and societal legitimacy in institutions with complex regulations. These capabilities enhance digital legitimacy and scalability, crucial in industries reluctant to the government such as public-sector software.

However, firms can experience challenges when developing such FSAs. Firms who experience lack of internal coordination, underinvestment in human capital, or organizational rigidity can slow digital transitions (Seppänen et al., 2025). Moreover, regulatory threats, like those introduced by uniform digital laws such as the Digital Markets Act, can subsequently transform intangible FSAs from valuable to being a liability (Bauer & Pandya, 2025). Consequently, FSAs must be continuously aligned with evolving digital norms and institutional demands.

2.4.4 Adapting Firm-Specific Advantages

Newer literature introduces the concept of global digital competence (GDC) to synthesize digital tools, adaptability, and international strategy. It is evident that high-GDC firms strategically coordinate their supply chain systems, digital platforms, and customer interfaces across borders (Cahen et al., 2025).

Domestic institutional voids refer to the underdevelopment or absence of institutions that enable and support market activity (Doh et al., 2017). Such voids are often characterized by dysfunctional composition and weak legal enforcement, including issues like product counterfeiting or unclear regulations (Sheng et al., 2011). These environments diminish factor markets' efficient functioning, including labor, finance, and trade intermediaries, especially evident in several emerging economies.

In these often unstable and complex institutions, firms increasingly rely on compositional capabilities, being the ability to creatively recombine firms' available resources into innovative responses allowing for continued competitiveness (Zhang et al., 2024). Such capabilities are especially essential when firms must operate within institutions with volatile regulations or lack of support. Rana & Sørensen (2021) highlight that adaptive strategies, like co-creating frameworks with stakeholders or NGOs, allow firms to extend their intangible FSAs into previously inaccessible markets. Consequently, institutional voids require firms to collaborate with external actors by being flexible internally, which means these voids do not solely constrain strategy but reshape it.

Notably, these capabilities often rely on intangible assets such as entrepreneurial orientations, experimentation, and learning (Mihailova, 2024; Hervé et al., 2020). Organizational learning mechanisms, ranging from learning through observation to direct experience, can continuously alter FSAs, to ensure they are more responsive to possible difficulties with institutions. This is especially crucial for SMEs and firms who are digital from its uprising that seek to enter diverse institutions.

KMD’s case illustrates the transformation and mobilization of intangible FSAs under digital and institutional pressures. Initially grounded in Denmark’s public-sector digital needs, KMD's intangible FSAs evolved to become relevant internationally through investments in platform standardization, user experience, and interoperability. This repositioning was partly driven by institutional shifts—privatization, liberalization of the Danish IT sector—and enabled by Denmark’s leadership in digital public services.

Relating this to KMD’s case, it highlights the mobilization and transformation of intangible FSAs necessary to cope with digital and institutional pressures. Moving from a firm grounded in Denmark’s public sector digital needs, KMD’s intangible FSAs have been evolved and refined to become internationally relevant by investing in interoperability, platform standardization, and user experience. Evolving and refining their intangible FSAs were partly driven by institutional shifts, through liberalization of the Danish IT sector and privatization, but also enabled by Denmark’s leadership in digital public services (OECD, 2021).

NEC’s acquisition reflects the value of these intangible and knowledge-based FSAs on a strategic level. NEC sought to enhance KMD’s software expertise, which was mainly government-oriented, to expand its own digital initiatives aimed towards global public-sectors. Notably, the connection between supportive institutional contexts, like Denmark’s status as a digital leader, and firm-level capabilities produced a portfolio of exportable intangible FSAs (NEC Corporation, 2018; OECD, 2021).

In essence, developing intangible FSAs in heavily digital firms like KMD is a process of continuous refinement, rather than a static process, shaped by institutional environments, firm-level learning, and policy incentives. When firms internationalize, they must realign their intangible FSAs with the technological, regulatory, and cultural characteristics of the host country they seek to enter, thereby transforming firm strategy from replicating their current operations to strategically adapting the. Thus, the table below illustrates how the literature defines certain dimensions of FSAs.

FSA Type	**Definition**	**Supporting Literature**
Knowledge-Based FSAs	Digital capabilities encompassing analytics, cloud integration, software modularity, and learning routines developed through internal innovation and institutional interaction.	Bohnsack et al. (2021); Dong et al. (2025); Mihailova (2024); Hervé et al. (2020)
Network-Based FSAs	Advantages arising from inter-firm collaborations, supply chain integration, co-creation with public agencies or NGOs, and the ability to scale platforms across markets.	Zhang et al. (2024); Rana and Sørensen (2021); Cahen et al. (2025)
Tangible FSAs	Proprietary digital infrastructures, SaaS platforms (e.g., KMD Connect), and physical IT architecture that supports scalable service delivery.	KMD (2018); NEC Corporation (2018); Cadden et al. (2023)
Intangible FSAs	Organizational agility, managerial orientation, digital leadership, reputation, and institutional trust—often shaped by policy environments.	Du and Li (2025); Scott (2008); Khan et al. (2023); Dayan et al. (2024); Johanson et al. (2024)

Table 6 (Authors own work, 2025)

2.5 Literature on International Strategy

Evolving institutional environments combined with digitalization have transformed firms' international strategies. Traditional strategies, which were previously centered around gradual expansion, static resource commitments, and physical presence, now coexist with digitally enabled and agile strategies. The integration of supportive national institutions and digital competencies enhances the ability to internationalize through platform scaling, strategic acquisitions, and modular product delivery. The following section will address how these shifts reiterate international strategy, focusing on the interactions between institutional frameworks, digital tools, and FSAs.

2.5.1 Digitalization's Role in Internationalization

Authors in International Business have argued that global trade has been redefined by digitalization, as firms do not necessarily follow a linear process of internationalization anymore (Lo et al., 2023; Jacobides et al., 2018; Luo, 2021; Bergamaschi et al., 2021). Instead, they leverage cloud architectures, data flows, and platform modularity to enter foreign markets with greater flexibility and speed (Lo et al., 2023). Digital MNEs are increasingly affected by this transformation, as their internationalization strategies revolve less around ownership of physical assets but increasingly about coordinating ecosystems that operate across regulations and national boundaries (Jacobides et al., 2018). Essentially, internationalization strategies have developed from traditionally emphasizing traditional ownership, location, and internalization advantages to prioritizing adaptive resource deployment, ecosystem engagement, and knowledge integration (Luo, 2021; Bergamaschi et al., 2021).

Today, the capabilities necessary to enter markets through digital means have reduced the necessity of traditional foreign direct investment and physical establishment of subsidiaries and acquisitions (Luo, 2021). Rather Luo (2021) argues that there's been a shift from OLI to more dynamic capabilities and resource configuration in internationalization of firms. This is especially evident in strategies involving cloud-based services, SaaS platforms, and digitally mediated B2G (business-to-government) procurement models, where localization of infrastructure can be substituted with compliance to national standards, digital interoperability, and language customization (Knight and Liesch, 2002; NEC Corporation, 2018).

The literature emphasizes that firms engaging in digital internationalization must possess strategic competencies but also the proper digital capabilities to refine these capabilities to specific national contexts. As highlighted by Stallkamp et al. (2022) and Bauer and Pandya (2025), it is only possible for digital platforms to scale when they align with host-country infrastructural conditions, regulations, and expectations from institutions within the host-country. Knowing this, digitalization does not only expand the strategic capabilities a firm must possess but also increases their exposure to institutional complexity. Firms that have the ability to convert institutional complexity into an advantage are progressively shaping the boundaries of global competitiveness for digital MNEs.

2.5.2 Risks of Digitalization in Internationalization

Despite digital tools improving the speed of internationalization, they also introduce new risks. Firms become vulnerable to fragmented regulatory requirements, cyber threats, and cross-border data restrictions. Brock and Hitt (2024) and Jean et al. (2020) highlight that firms cannot refrain from being strategically versatile, as they must be able to dynamically reconfigure their digital strategies by corresponding to technological disruptions, policy shift and institutional changes.

A firm's capacity for strategic flexibility is deeply connected to their FSAs and embeddedness within institutions. For instance, it is necessary for European firms to manage the possible complications brought forth by the Digital Markets Act, GDPR, and other sector-specific regulations, by adapting their international strategies to maintain platform consistency and diminish legal complications (Bauer & Pandya, 2025). In essence, these complications require firms to understand host-country institutions and align their internal capabilities.

In KMD's case, its expansion through acquisition, for instance through acquiring In2media and Banqsoft, was not only to enhance digital capabilities but also to make them less dependent on the Danish public sector. These acquisitions enabled the firm to strategically adapt from a highly localized monopoly structure toward a scalable international strategy fitting with NEC's broader ambitions. Crucially, by adapting to certain regulations and being strategically flexible, the firm was able to withstand the pressures of national specificity and global integration.

2.5.3 Legitimacy in Internationalization

internationalization strategies have to bridge institutional voids, especially in environments where there are weak formal regulatory environments. In these environments, organizations have to build legitimacy by interacting with civil society actors, forming strategic partnerships, and adapting their market actions (Rana & Sørensen, 2021). Bridging institutional voids will be key to future success of companies in global public sector markets, particularly in developing nations, as it is likely to be based on such adjustment mechanisms.

Several studies emphasize that network-based strategies, especially those involving collaborative innovation and strategic alliances, are becoming more crucial (Lee et al., 2019; Costa et al., 2020). Network-based strategies assist firms in gathering localized knowledge, build trust in unfamiliar institutional settings, and involve end users in co-creating products. Looking at KMD, its future international strategy may depend on embedding its platforms within broader digital governance cooperations and seeking to establish partnerships with regional public-sector actors.

Additionally, as digital internationalization is accelerating, firms are met with challenges requiring them to continuously monitor the institutions in host countries. It is required that strategies are compositionally capable to reflect cultural, infrastructural, and legal variations, often required through learning-oriented approaches (Zhang et al., 2024; Mihailova, 2024). The role of international entrepreneurial orientation, characterized by firms' innovativeness, proactiveness, and risk-taking, are increasingly more important, especially for business units or SMEs seeking to scale digitally (Hervé et al., 2020; Nave et al., 2024).

2.5.4 Digital Platforms in Internationalization

The uprising of digital ecosystems is reconfiguring how international strategies are developed and implemented. A firm basing its strategy on ecosystems can avoid over-reliance on hierarchical control and rather build modular offerings that can be integrated with local actors (Jacobides et al., 2018; Massa et al., 2023). Such ecosystems offer adaptive methods for creating value, which enables firms to participate in global networks that appear complex without the responsibility to cover the full cost of establishment or compliance.

This has serious implications for participating in global value chains. Instead of establishing end-to-end control, firms would rather seek to enter host countries with critical digital tools, such as platforms, interoperable modules, and APIs. These strategies are visible in modular software offerings, which can be scaled in different national contexts depending on compatibility with digital government infrastructures (Jacobides et al., 2018; Massa et al., 2023).

Crucially, the convergence of FSA and institutions is influenced by these strategies. Firms that operate in digitally mature countries can, through the support of home-country digital advantages and adaptive firm strategies, internationalize by reconfiguring their value chain (Denicolai et al., 2021; Wang et al., 2024a). However, the success of these strategies depends on digital infrastructure, regulatory openness, and institutional legitimacy in given host countries.

2.5.5 Inclusion and Sustainability in International Strategy

Modern international strategies are not explicitly influenced by factors such as market logic and efficiency. Inclusion and sustainability are increasingly shaping how firms design and implement their digital internationalization strategies. Digital platforms can help diminish the traditional access borders for women entrepreneurs, SMEs, and startups when they seek to engage in international trade (Yordanova et al., 2024). These mechanisms of inclusion can be used as strategic leverage in markets where entry barriers are high because of cultural or institutional biases.

Sustainability is also a very crucial factor in developing international strategies. Okorie et al. (2023) highlight that circular economy principles are supportive in developing competitive advantages when combined with digital capabilities and aligned with ESG expectations. This is particularly relevant for firms whose digital solutions intertwine with transparency, governance, and public sector efficiency, as it is increasingly necessary to comply with certain sustainability standards for these firms.

In essence, international strategies cannot be viewed through a single lens, as the development of such strategies must combine economic, technological, regulatory, inclusive, and sustainability considerations. Looking forward, digital internationalization is not solely about market access but increasingly about considering the institutional and moral requirements of the digital age.

To sum up this section of literature on international strategies, the table below gathers certain dimensions and aspects relevant to the thesis with relevant definitions.

Strategic Dimension	**Definition**	**Supporting Literature**
Digital Entry Models	Firms use digital platforms, SaaS, and cloud infrastructures to engage foreign markets with minimal physical presence, enabling rapid and scalable internationalization.	Lo et al. (2023); Jacobides et al. (2018); Knight and Liesch (2002); NEC Corporation (2018)
Strategic Flexibility	The ability to dynamically adapt digital and organizational strategies in response to regulatory shifts, institutional demands, and global disruptions.	Jean et al. (2020); Brock and Hitt (2024); Bauer and Pandya (2025)
Networked Scaling & Legitimacy	Expansion through digital ecosystems, alliances, and partnerships that provide local knowledge, legitimacy, and adaptability in institutional voids.	Rana and Sørensen (2021); Costa et al. (2020); Zhang et al. (2024); Mihailova (2024); Nave et al. (2024)
Value Chain Reconfiguration	Integration into global value chains via modular offerings and platform strategies that bypass traditional hierarchical control.	Jacobides et al. (2018); Massa et al. (2023); Denicolai et al. (2021); Wang et al. (2024a)
Inclusion and Sustainability	Digital internationalization is increasingly shaped by ethical concerns, including inclusivity, ESG standards, and alignment with global sustainability agendas.	Yordanova et al. (2024); Okorie et al. (2023)

Table 7 (Authors own work, 2025)

2.6 Gaps within existing literature

While there is sufficient research on digitalization and international business, there are gaps in the interactions between institutions and digital technologies to shape FSAs. Several studies highlight the immense role of national digital infrastructure and regulatory frameworks (Drori et al., 2024; Feliciano-Cestero et al., 2024), not much literature is focused on how these institutional factors aligned with digitalization influence the development and transferability of FSAs. Institutions are typically classified as static enablers or constraints, rather than seeing them as dynamic systems that adjust, and are adjusted, by digitalization (Dong et al., 2025; Mihailova, 2024).

The literature also frequently ignores how these capabilities are embedded within and conditioned by various institutional settings, instead concentrating on firm-level digital capabilities like platform modularity, analytics, and leadership orientation (Brock & Hitt, 2024; Du & Li, 2025). Empirical research on how businesses modify FSAs in response to changing policy environments, fragmented regulatory regimes, or institutional gaps is lacking (Jean et al., 2020; Bauer & Pandya, 2025). This restricts our comprehension of how businesses preserve their digital legitimacy and strategic agility internationally.

Furthermore, the literature mostly concentrates on firm-level digital capabilities such as analytics, platform modularity, and leadership orientation (Brock & Hitt, 2024; Du & Li, 2025), without considering how these capabilities are customized by various institutional settings. Empirical studies in showing how companies modify their FSAs to fit fragmented rules, institutional voids, or policy environments are lacking in the literature (Jean et al., 2020; Bauer & Pandya, 2025). Our knowledge of how companies keep digital legitimacy and strategic agility across borders will increase by closing this gap.

Another underexplored area is the risks and consequences connected to digital internationalization. Many contribute by emphasizing how digital tools enable rapid global expansion (Lo et al., 2023, however, there is not much literature that critically assess internationalization challenges like cybersecurity threats or not complying to regulations (Luo, 2022; Obi et al., 2024; Mithani, 2023). These risks are important to understand how complex institutions can limit digital FSAs.

Lastly, concepts like digital distance can help explain the digital maturity level in different nations (Wang et al., 2024a, 2024b; Zhang et al., 2025), but the literature on how asymmetries in digital maturity levels affect MNEs compared to SMEs in developing FSAs that are globally scalable is still limited. Also, most studies tend to generalize across industries, despite big differences depending on the industry, neglecting how digitalization and internationalization of firms in highly regulated or public-sector markets are differentiated from several other markets (Meng et al., 2025; Bohnsack et al., 2021).

After having explored theoretical insights and literature regarding how institutional environments and digitalization shape firm-specific advantages for internationalization, the following section presents the thesis methodological approach.

3. Methodology

3.1 Research Philosophy and Approach

Our thesis adopted a qualitative case study methodology grounded in the philosophical standpoint of critical realism. The critical realist approach provided a multi-layered ontological and epistemological framework particularly suited for analyzing complex, context-embedded social phenomena such as, in our thesis, how the interaction between institutions and digitalization shaped FSAs for internationalization (Nielsen, 2018; North, 1991).

The ontology of critical realism was vital for this study as it enabled a causal understanding of the interrelation between observed organizational transformations and deeper structural forces (Nielsen, 2018). It facilitates the analysis to go deeper into the empirical evidence and identify the generative mechanisms, such as institutional support systems, policy shifts, and digital infrastructures, that affect the development and transformation of FSAs.

Ontologically, we assumed, through critical realism, that reality exists independently of human cognition and posit that reality is stratified through multiple dimensions, each dimension with its own characteristics and interactions. It is stratified into three levels:

1. The empirical domain: what we can observe.
2. The actual domain: what happens regardless of observation.
3. The real domain: the underlying causal mechanisms that generate events.

This stratification helped to understand the interaction between institutions and digitalization in shaping FSAs for internationalization, with a case study on KMD. In line with our critical realist perspective, the empirical domain of this thesis consisted of observations, experienced data, including internal insights, through one of the authors' affiliations with KMD, to gain access to more data. This was complemented by selected strategy documents and knowledge of the firm's initiatives.

The actual domain includes organizational events such as partnerships, restructuring, or regulatory shifts that occurred independently of direct observation, even though they were not directly observed during the thesis process.

The real domain consists of institutional drivers, regulatory regimes, and digital infrastructures that shape and constrain firm behavior over time, even though their influence is not directly observable (Nielsen, 2018).

The epistemology of critical realism revolves around our knowledge of reality and that it is mediated through socially constructed interpretations or frameworks (Nielsen, 2018). Relating this to our research question, this meant that we acknowledged our insight into institutions, digitalization and their impact of FSA development for internationalization are shaped by the theories we apply and empirical methods that we incorporate. Critical realism emphasizes that theoretical concepts help guide data collection and how we interpret it, which is crucial to explore the causal mechanisms behind what we observe. Rather than relying only on surface-level observations, this approach is based on an ongoing interaction between theory (what we expect or assume) and data (what we see in practice). Essentially, our knowledge of a given phenomenon can be improved by constantly moving between theoretical reasoning and empirical findings (De Vaus, 2001). In this thesis, theoretical frameworks served not only to identify mechanisms and structures but also to guide and be refined through the empirical analysis of KMD. The research process was abductive, involving a continuous reiterative process between theoretical insights and empirical observations. This logic aligns with Dubois & Gadde's (2002) model of systematic combining (Figure 1), which emphasizes the co-evolution of empirical data and theoretical constructs during case study research. Rather than viewing theory and data as separate phases, we treated them as dynamically intertwined, allowing emerging findings to refine our key concepts and vice versa. This iterative process deepened our causal understanding of how institutions and digitalization interact to shape firm-specific advantages for internationalization (Dubois & Gadde, 2002).

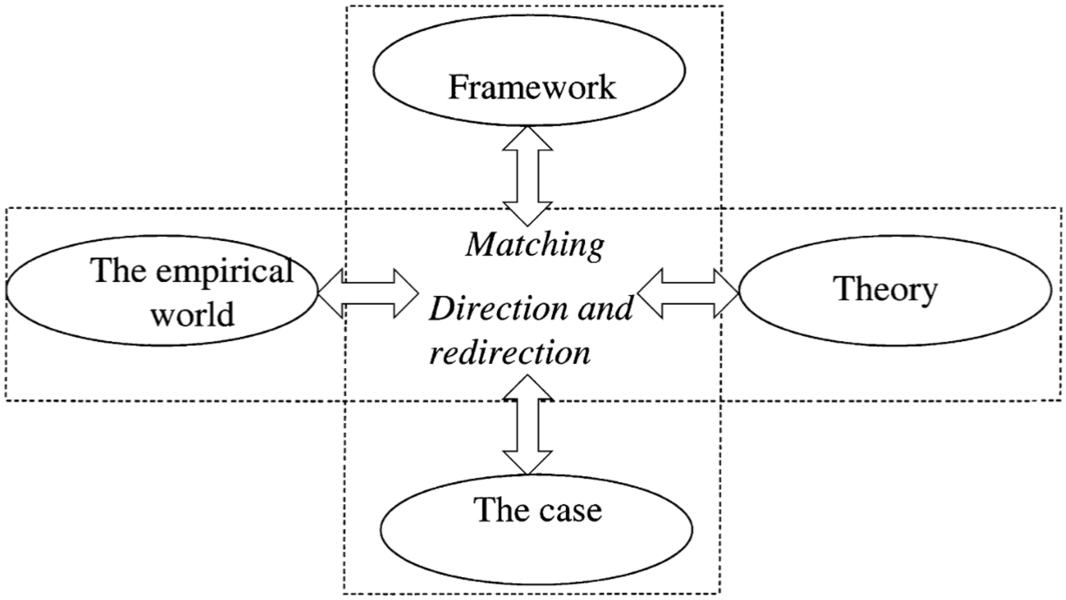

Figure 1: Systematic combining (Dubois & Gadde, 2002)

With a critical realist view, we assumed that while the world exists independently, our understanding of it is theory-laden and contextually interpreted. Thus, our goal of the study is not to merely provide an overview of KMD’s history but seeking to interpret why certain strategies emerged, how institutions influenced those decisions, which digital mechanisms were most significant in transforming FSAs, and how these can contribute to internationalization. This perspective allowed us to explore causality as the interaction of underlying mechanisms and contextual conditions, rather than as predictable or regular patterns.

Our methodological decisions were grounded in critical realism. This included the choice of a single-case study, the reliance on documentary sources, and the preference for explanation-building as the primary analytical approach. To support causal inference and strengthen the validity of our interpretations, we gathered multiple data sources, including internal insights, company reports, public records, and observations of organizational developments. These were gathered to triangulate rich information, enriching our empirical foundation of the thesis, and supporting the identification of institutional conditions interaction with digitalization, and how these shape FSAs.

3.2 Literature Review Methodology

The literature review in this thesis was conducted with a dual purpose:

1. Identifying and synthesizing the theoretical frameworks relevant to the interaction between institutions and digitalization in shaping FSAs for internationalization.
2. Guiding the abductive analysis of the KMD case study is important. In alignment with the project's critical realist stance, the literature review was not merely descriptive but interpretive and theory-oriented, aimed at uncovering conceptual structures and explanatory mechanisms (De Vaus, 2001; Dubois & Gadde, 2002).

The review focused on three key domains:

1. International business theories relating to FSAs and CSAs
2. Institutional theory, including the role of regulatory, normative, and cognitive dimensions
3. The literature on digitalization's impact in MNEs and SMEs

This thematic scope was selected based on their explanatory relevance to the research question, namely how institutions and digitalization jointly shape FSAs in the context of internationalization.

A structured approach was applied to identify relevant academic sources. Database searches were performed using Scopus, Web of Science, Google Scholar, and ScienceDirect, targeting peer-reviewed journal articles and seminal books. Search strings combined Boolean operators and key terms such as:

- "firm-specific advantages" AND "internationalization"
- "institutional theory" OR "institutional change" AND "digital transformation"
- "digitalization" AND "MNEs" OR "SMEs" AND "international strategy"

The criteria for including relevant sources included theoretical depth, conceptual relevance, and empirical strength. We prioritized academic sources that were published after 2000, but included older foundational texts, such as North (1991) and Whitley (1992a, 1992b), to ensure the literature was theoretically anchored. Sources were excluded if they addressed key concepts, namely institutions or digitalization, with no relevance to FSAs or internationalization strategies.

The literature was analyzed using a theory-guided interpretive synthesis. Instead of relying on frequency counts or citation metrics, the assessed texts within the review were based on their ability to reveal causal mechanisms, reflect open-system reasoning, and account for contextual contingencies, which is core principles of critical realism (Nielsen, 2018).

During the process of finding relevant academic sources, conceptual categories were not imposed a priori but rather emerged during reading, hence, it was an iterative process. This process led to the identification of relevant conceptual categories such as “institutions as enablers or constrainers”, “digitally enabled FSAs”, and “configuring FSAs for internationalization”. These categories served as pivotal constructs for the case study analysis, which aligns well with an abductive research strategy (Dubois & Gadde, 2002).

It became evident that the literature review was instrumental in developing an initial explanatory framework, which was reiterated and revised when empirical insights from the KMD case were integrated into the thesis. This aligns well with an abductive logic emphasized in critical realist case studies, where theory and evidence co-evolve (Dubois & Gadde, 2002).

The review confirmed that although institutions and digitalization are widely acknowledged as important drivers of firm strategy, few studies have examined their **interactive influence** on FSAs in international contexts (Rugman and Verbeke, 1992; 2003). Even fewer explore these interactions in the context of mature digital economies with complex institutional legacies, such as Denmark. The review thus helped position this thesis within a gap at the intersection of institutional theory, digitalization, and IB theory, which provided the theoretical foundation for both explanation and contribution.

3.3 Research Design: Qualitative Single-Case Study

For the thesis we applied a qualitative single-case design to address our research question:
“How do the interactions between institutions and digitalization shape firm-specific advantages for internationalization?”

The single-case strategy was suited for an in-depth exploration of a contemporary phenomenon within its real-world context, particularly when we, as researchers, had little control over events and the boundaries between phenomenon and contexts were blurred (Yin, 2014). The case design functioned as a blueprint, to logically connect the research question, data sources and analytical strategy. The structured focus on one organization avoided the superficiality often associated with multi-case surveys and instead supported the development of robust, theoretically informed explanations grounded in empirical detail (De Vaus, 2001; Yin, 2014).

KMD was not just regulated by institutions; for much of its history, it operated as an institutional actor itself, advancing public digital agendas and implementing state-driven reforms before transitioning into a commercial enterprise. The theoretical relevance and methodological justification for a single-case strategy were supported by KMD's unique characteristics. The firm's transition from municipal ownership to being privatized and now part of an MNE, it provided access to a complex case of institutional dynamics rarely captured in a single organizational setting. In addition, the longitudinal nature of the case supported causal inference by revealing patterns and transitions across multiple strategic phases. Following Yin's (2014) logic, this design allowed analytic generalization rather than statistical generalization. The approach also allowed for within-case variation, treating different strategic phases of KMD's development as embedded sub-units and facilitating temporal comparisons.

3.3.1 Case Selection

Several factors made KMD a suitable case to be selected as our case study, using criterion-based sampling. Firstly, its evolution from a municipally owned entity to privatization, to then being sold off and becoming part of a global MNE, provided a compelling case to study institutional change over time. Secondly, KMDs position at the intersection between the public-sector and digitalization made it ideal for observing how national institutions and regulations interact with digitalization and co-evolve together, thus creating FSAs. Thirdly, KMD's endeavors to internationalize through the past decade made it relevant for examining how FSAs adapt or can be scaled across national boundaries.

As KMD operates in a highly digitalized and institutionally mature national environment, we deemed the case to be contextually significant and could interpret how firms respond to both enabling structures, such as state-driven digital strategies, and evolving regulatory demands. By observing KMD at multiple stages, the thesis incorporated a temporal dimension that strengthened causal inference. The unit of analysis was the firm, embedded in its institutional and technological context, and the phenomenon under study was the development and evolution of FSAs shaped by these contextual factors (De Vaus, 2001).

3.3.2 Data Collection

Our collection of data relied on a variety of data sources, including our literature review, public policy documents, digital country regulations and strategies, company reports, EU regulations and internal documents and strategies. The data were selected after carefully reviewing them, based on their relevance to KMD's institutional context and their ability to illustrate how digitalization interacted with that environment, in creating FSAs.

Examples of empirical materials used include KMD's annual reports outlining its strategic repositioning, EU-level digital regulations, and public press releases from KMD and NEC.

While no formal interviews were conducted during the data collection process, one of the authors maintained a professional affiliation with KMD and engaged in several informal conversations with executives. These unstructured discussions were not recorded or systematically analyzed, but instead provided a contextual insight into KMD, that supported the interpretation of our data and theories. This experiential knowledge informed our understanding of the case, without explicitly being treated as primary data.

In addition to empirical sources, we also drew an extensive literature review of relevant academic literature. This included research on institutional theory, digitalization, and international business, which informed the theoretical framing and helped structure the explanation-building process. In line with a critical realist perspective, the literature was not merely treated as background information, but served as a source of conceptual insights, for identifying causal mechanisms and interpreting empirical findings.

3.3.3 Key Concepts

To enhance analytical clarity and construct validity, we draw on the following definitions for four central concepts used in our thesis:

- **Institutions** are characterized as formal and informal rules, norms, laws, and governance systems that influence organizational behavior and enable or constrain digitalization and international strategy (North, 1991; Scott, 2008). Drawing from our literature review, we identify institutions through public-private coordination, national regulatory environments, and structural shifts like policy reforms or privatization. Specific factors include procurement regulations, public-sector digital strategies, cloud and data governance policies, and the level of national commitment to cyber security and digital infrastructure (Drori et al., 2024; OECD, 2021).
- **Digitalization** is defined as the integration of digital technologies into service architectures, organizational processes, and strategic models. Thus, it is a multi-level transformation process (Brock & Hitt, 2024; Massa et al., 2023). Digitalization in this thesis, by delving into its impact across institutions, ecosystems, and firm level capabilities, is identified through factors such as cloud architecture, platform-based service delivery, participation in public-private innovation projects, and digital R&D initiatives. It also investigates adaptive capabilities connected to cybersecurity infrastructure, regulatory alignment, and risk management initiatives (Luo, 2022; Obi et al., 2024; Waliullah et al., 2025).
- **FSAs** refer to knowledge-based, organizational, and technological capabilities developed internally that confer competitive advantages in international markets (Rugman & Verbeke, 1992, 2003; Johanson et al., 2024). In a digital context, FSAs are increasingly intangible and modular, aligned with institutional environments and the digital maturity level of the nation the firm operates within (Dong et al., 2025; Mihailova, 2024). In this thesis, FSAs include software development expertise, interoperability strategies, platform integration, organizational agility, and digital leadership styles. These FSAs were identified through analyzing strategic acquisitions, like In2media and Banqsoft, and delving into how firms initiate the development of internal capabilities.
- **Internationalization,** our dependent variable, was defined as the firm's strategic expansion beyond domestic borders through mechanisms such as acquisitions, platform

scaling, and digital service delivery. In the digital era, internationalization is no longer limited to physical market entry but includes virtual expansion enabled by cloud platforms, developing strategies to comply with regulations, and ecosystem participation (Lo et al., 2023; Jacobides et al., 2018).

Each concept was linked to concrete indicators traceable in documents. This framework supported consistent analysis of how institutional and digital dynamics shaped the development of FSAs over different strategic periods.

3.3.4 Data Analysis

The analysis was conducted using an explanation-building logic supported by pattern matching (Yin, 2014). The theoretical propositions, such as the role of institutional support in building and reconfiguring digital FSAs, were held up against the observed empirical patterns found in the case analysis. When theoretical assumptions correspondingly linked with the observed empirical patterns, the explanatory power was strengthened. However, if theory and empirical observations diverted, the theoretical assumptions were revisited and refined.

Pattern matching involved comparing theoretically expected patterns with observed phenomena, which enhanced the validity of causality between institutional shifts, like public-sector digital strategies, and the development of firm-level digital capabilities and FSAs. To enhance internal validity, we cross-checked empirical insights from different document types and data sources. This approach also reduced the risk of bias or over-relying on a single perspective, as we could assess alternative explanations, such as internal organizational changes or KMD's response to global market trends (Yin, 2014).

This explanation-building logic helped us uncover how institutions and digitalization jointly shaped the development, reconfiguration, and scaling of FSAs for internationalization in relation to KMD's international strategy building.

4. KMD Case Description

KMD (originally Kommunedata) is one of Denmark's leading IT companies, known for specializing its offerings in public-sector software and services. The firm's history can be divided into two phases. From its inception in 1972 to 2008, it was publicly owned. The characteristics within this phase reflected that the firm was domestically consolidated and provided public service solutions. Its post-privatization era, spanning from 2009-present, was characterized by strategic diversification, internationalization, and integrating its operations into a global technology group.

4.1 1972–2008: Owned by Municipalities

KMD was established in 1972 through the consolidation of Danish municipalities, operating as a publicly owned firm under the national association of municipalities (Kommunernes Landsforening, KL). The firm's core mission was to develop and manage IT systems for the local government, including taxation, welfare, payroll, and systems to register land. KMD held a near-monopoly position as they effectively served as the internal IT department for Danish municipalities.

In 1996, the firm retained public ownership but was corporatized into a joint-stock company. This change set the stage for adapting to more business-oriented governance, as it enabled greater operational flexibility. Within this period, Denmark launched e-government initiatives, with KMD being a central implementer. KMD developed high-level FSAs embedded in Danish public-sector digitalization, but these were highly location-bound and not configured for foreign markets.

4.2 2009–2025: Privatization and MNE Ownership

During 2008, a legislation was passed by the Danish Parliament, in the light of KMD's de facto monopoly on IT solutions for the municipalities, that mandated the municipalities to divest their ownership of KMD, Consequently, the company was sold to the pension fund ATP and the private equity firm EQT AB for approximately 1.8 billion DKK. The legislation passed included a transition agreement designed, among other objectives, to establish price caps on the various monopoly systems that KMD continued to provide to the municipalities of the country after the sale. This indicated that the municipalities maintained a significant reliance on KMD, which resulted in total payments to KMD for these monopoly systems amounting to 1.1 billion DKK

(Computerworld, 2008). The decision was highly influenced by growing pressure from EU competition and procurement regulations, to ensure fair competition and transparency in public procurement, as the new directives required contracts to be competitively tendered.

In 2012, EQT and ATP sold KMD to Advent International, with co-investment from Sampension. Under Advent's ownership, KMD pursued an aggressive growth and diversification strategy, including major acquisitions:

- **ScanJour (2014)** – Document and case management systems (KMD Annual Report, 2014)
- **Banqsoft (2015)** – Banking software with operations in Norway, Sweden, Finland, and Poland (Banqsoft, 2015)
- **Edlund (2016)** – Danish life-insurance software (Mortensen, 2016)
- **UVdata (2016)** – School IT systems (UVdata, n.d.)
- **In2media / Charlie Tango (2017)** – Digital design and innovation consultancy (KMD, 2017)

These acquisitions signaled KMD's strategic shift toward a more diversified software portfolio spanning finance, insurance, education, and digital experience—complementing its core public-sector focus. By 2018, approximately 35% of KMD's revenue came from the private sector, and the company had established a regional presence across the Nordics and Poland.

In 2019, KMD was acquired by NEC Corporation of Japan for around DKK 8 billion (NEC Corporation, 2018). The acquisition was driven by NEC's interest in KMD's strong position in digital government software and its recurring SaaS business model. At the time of the acquisition, KMD employed approximately 3,000 staff and generated annual revenues of DKK 4.7–5 billion.

NEC's vision was to leverage KMD as a strategic platform for scaling digital public-sector solutions from Northern Europe to other global markets. This acquisition marked KMD's transition into a multinational corporate structure, with broader access to global resources, markets, and technological platforms.

5. Analysis

5.1 Introduction

Digitalization has fundamentally changed how companies build, scale, and apply competitive advantages across boundaries. Although fundamental to international business theory, classical models including Dunning's eclectic paradigm and the FSA/CSA matrix were first conceptualized before the evolution of digitalization (Dunning, 1988; Rugman & Verbeke, 2003). The acceleration of advanced technologies, including data analytics, cloud infrastructure, and platform-based models, has challenged conventional wisdom about the origin, transferability, and governance of firm-specific advantages and country-specific advantages (Hennart, 2019; Banalieva & Dhanaraj, 2019). Concurrent with this, institutional theory keeps underlining how crucial national settings and governance systems are in determining strategic responses to digitalization (North, 1991; Scott, 1995, 2008; Kostova, 1999).

This analysis investigates how the interaction of institutional environments with digitalization shapes the development, transformation, and international transferability of FSAs. Drawing from our previous section, our empirical focus is KMD, a Danish IT company whose development from a domestically embedded, municipal owned company to an internationally integrated subsidiary of NEC Corporation provides a rich setting for analyzing these dynamics. From public ownership to privatization to international acquisitions to final integration into a worldwide MNE, KMD's path reflects how institutions and digitalization co-determine companies' strategic capacities and paths of internationalizing.

Using three related theoretical lenses, namely institutional theory, the OLI paradigm, and the FSA/CSA matrix, this analysis is structured around four pivotal phases of KMD’s development. In phase 1, we analyze how domestic digitalization efforts and institutional embeddedness shaped the development of location-bound FSAs where KMD was publicly owned. In phase 2, we examine how offshoring and privatization were the firm’s first internationalization efforts, guided by digital enablers and new institutional logics. Phase 3 investigates KMD’s international expansion under private equity ownership, led by acquisitions, focusing on how the firm integrated and scaled externally acquired FSAs to scale across culturally similar institutional settings. Lastly, phase 4 explores KMD's transformation as they were acquired by the NEC. This phase emphasizes how internal networks, and digital platforms facilitate the transferability of FSAs into new institutional settings.

Within each phase we systematically analyze how digitalization influences the development, evolution, and transferability of FSAs, how country-specific advantages were utilized or accessed, and how institutions conditioned or altered strategic choices. By doing this, the following analysis contributes to IB literature by highlighting how digitalization alters the foundation of FSAs, but also the crucial role of institutions in determining their international applicability and relevance. KMD's evolution pinpoints the importance of aligning firm-level digital capabilities with national institutional settings, in every nation that a firm operates, to mitigate challenges that may arise.

5.2 Case Analysis: KMD's Internationalization in the Digital Age

5.2.1 Phase 1

Phase 1 covers KMD's early history as a municipally owned IT provider (fælleskommunalt selskab), beginning in 1972 and ending with its privatization in 2009. This phase is central to understanding how institutional structures shaped the foundations of KMD's FSAs. The company operated under the collective ownership of Denmark's municipalities, coordinated by Local Government Denmark (Kommunernes Landsforening). Therefore, KMD's activities were not driven by profit motives but by efficiency and public service mandates. From the perspective of our research question, this phase highlights how digitization (predecessor to digitalization), though significant, remained domestically embedded, and how institutional constraints inhibited internationalization, despite the gradual buildup of valuable public-sector IT expertise (Scott, 2008; North, 1991).

5.2.1.1 Institutional Context

The institutional environment in which KMD operated within in Phase 1, was defined by public ownership, political alignment, and a monopoly-like position within Denmark's public ICT sector. The strategic goals of KMD were highly synchronized with the interests across the municipalities, rather than responding to private market competitiveness. This reflects a constraint-based institutional configuration, where organizational behavior is shaped more by institutional norms than market logics (Scott, 2008).

Being institutional embedded provided stability for KMD and allowed them to gain legitimacy through efficiently driving Denmark-s early e-government initiatives. Steadily and continuously building and servicing the municipality's IT systems resulted in a high level of trust from public institutions. This privileged position also had its drawbacks. By the early 2000s, concerns emerged that KMD's monopolistic position inhibited innovation, reduced quality, and was in contradiction to Danish and European national competition policies (OECD, 2006). Moreover, the heavy reliance on KMD led many municipalities to under-invest in internal ICT competencies, increasing institutional dependency.

In terms of the OLI framework, KMD's ownership structure prevented the development of internationalization capabilities. Its operations were, however internalized through the municipalities themselves—effectively functioning as a cost center embedded in the broader machinery of Danish local government. There was no ownership advantage (Oa/Ot/Oi) compelling or enabling KMD to seek foreign markets, and no location advantage (L) outside Denmark was pursued. From an institutional theoretical perspective, we can describe KMD as being a constraint-based structure by being institutionally "locked in" to domestic service delivery. This echoes North's (1991) argument that institutions structure incentives and limit alternative strategic paths through path dependency.

5.2.1.2 Role of Digitalization

During this phase, digitalization played a key role in shaping and refining KMD's FSAs. Throughout the 1980s, 1990s, and early 2000s, Denmark was a global leader in digital governance, marked by high internet penetration, digitally literate citizens, and political support for IT modernization. Such initiatives were strongly supported by the Danish government, who launched its first digital strategy in 1995, called: "Information Society 2000", which sought to centrally coordinate e-government initiatives, some of which KMD implemented, but also to create strong digital literacy amongst the schoolchildren of Denmark (Danish Ministry of Research and Information Technology, 1995). This illustrates how institutional initiatives, such as government-led digital strategies, actively shape the trajectory of digitalization. These public initiatives demonstrate how national business systems channel digital innovation through institutionalized frameworks (Scott, 2008; Whitley, 1992a, 1992b).

During this period, KMD played a central role in the digitization of local government services. By first shifting from paper-based processes to automated digital systems, KMD helped build the foundation for Danish governmental digitalization, enabling Denmark to start incorporating digital solutions into their strategies. Every wave of technological innovation through this period was handled for the municipalities by KMD, moving from mainframe to client-servers models to early web applications. This fostered strong knowledge-based FSAs that became integral to KMD's advantage base.

However, much of the influence that digitalization has had on KMD was domestically bound. Most of KMD's innovation and services were highly customized for Danish regulations and norms, language standards and administrative processes, all of which differs a lot from country to country. So, while KMD built valuable FSAs embedded in digitalization, it was highly context-specific and not designed for scaling across borders. Therefore, digitalization acted as an amplifier for domestic efficiency, and not an enabler of cross-border capability.

5.2.1.3 Development of Firm-Specific Advantages

During these years, KMD's FSAs were largely a by-product of its institutional environment. Rather than developing competitive advantages in a "market sense", these FSAs were developed to provide public service delivery. To understand KMD's position in this period, it is essential to examine the nature of the FSA it developed, and how these were both enabled and constrained by its institutional setting. These advantages can be broadly categorized as intangible and knowledge-based FSAs, each rooted in their institutional setting. Such FSAs emerge when firms operate in stable institutional environments that foster embedded learning and stakeholder legitimacy (Rugman & Verbeke, 1995, 2003; Scott, 2008):

- **Intangible FSAs:**
    - Regulatory expertise and compliance with Danish public-sector norms.
    - Decades of accumulated trust and collaborative relationships with municipal clients.
- **Knowledge-based FSAs:**
    - Tailored software solutions aligned with local government needs.

Furthermore, KMD's FSAs were highly reinforced by switching costs. The municipalities of Denmark were highly reliant on KMD systems economically, making it difficult for competitors to replace them. But switching costs were not just technological. KMD's personnel held deep tacit knowledge of the Danish public sector, both in terms of regulatory expertise and legal processes, but also about system integrations. These knowledge-based FSAs also reflect the kind of context-specific advantages emphasized in the CSA/FSA matrix, where the firm's internal capabilities are deeply tied to country-specific institutional configurations (Rugman & Verbeke, 2003). These would be costly and time-consuming to imitate externally for firms. Therefore, for municipalities, picking a new IT-provider would not only involve costly system integrations, but also risk them loss of embedded expertise, further strengthening KMD's institutional position.

Looking at KMD's FSAs and how they emerged, their dependence on the home context meant their FSAs were highly location-bound. From an ownership advantage perspective, KMD possessed:

- **Oa**: Knowledge-based FSAs in the form of domain-specific technical capabilities (Rugman & Verbeke, 2003).
- **Oi**: Intangible FSA such as trust and legitimacy with public-sector actors (Scott, 2008).
- **Ot:** Absent - coordination mechanisms beyond national boundaries were undeveloped (Dunning, 1988; Eden & Dai, 2010).

In short, KMD possessed strong domestically locked FSAs in Phase 1, and lacked the institutional freedom to reconfigure them for international deployment.

5.2.1.4 International Strategy

Although KMD did not pursue internationalization during Phase 1, the absence is analytically significant. From an FSA/CSA perspective, the firm's strong home CSAs (e.g., regulatory legitimacy, public-sector integration) were paired with some highly location bound FSAs (tacit knowledge tied to Danish contexts). According to the matrix, firms in this quadrant would typically remain domestic, unless forced by externalities.

Institutional theory further clarifies the understanding of this structural dependency (Scott, 2008). KMD had no intention of seeking new markets, as a municipally owned "cost center", but rather focused on supporting its public-sector clients. As the firm was influenced by a governance structure that did not prioritize competition, they lacked incentives to explore foreign markets. KMD's trajectory was, in institutional terms, marked by path dependence and organizational rigidity.

While KMD had time to build advantages on its home market due to the structure, the trade-offs of this model included:

- **Focus vs. adaptability**: KMD became highly efficient and trusted within its niche, but unaccustomed to competitive markets.
- **Innovation vs. complacency**: Without competitive threats, innovation followed administrative needs, not technological trends.
- **Custom solutions vs. scalability**: Systems were built to order, limiting reusability and export potential for many solutions.

However, in the early 2000s, when EU procurement regulations began to restructure the rules for awarding contracts on the regulated market, KMD started facing competitive pressure. These signals did not yet translate into strategic change, until Phase 2 where KMD was forced to privatize.

5.2.1.5 Synthesis

To summarize, Phase 1 illustrates how domestic institutions shape FSAs, but also constrain competition and internationalization. As KMD's FSAs were used to serve in a single institutional setting, the firm had limited exposure to international markets, and no strategic rationale to expand beyond their settings. Therefore, we can say the following, using the OLI framework:

- **Oa**: Knowledge-based FSAs -Specialized software, domain knowledge, strong levels of trust (Rugman & Verbeke, 2003).
- **Ot**: Absent—KMD lacked coordination capabilities beyond Denmark (Dunning, 1988; Eden & Dai, 2010).
- **Oi**: Intangible FSAs - Strong local institutional legitimacy, but non-transferable abroad (Scott, 2008; North, 1990).
- **L**: No foreign location was considered.
- **I**: Activities were fully internalized within municipalities.

Thus, KMD can be understood as a "domestic institutional product" in Phase 1. An organization whose advantages were highly connected to its ownership and role within the public sector. Their potential for internationalization was slowly and steadily being built. However, the capabilities remained dormant, awaiting the institutional changes that would come in the following phases.

5.2.2 Phase 2

Phase 2 begins with KMD being privatized in 2009 and extends through the early-to-mid 2010s. The firm transitioned from public to private ownership, revising its strategic logic focused on profitability, efficiency, and restructuring internal costs. Under private equity ownership, KMD faced new pressures from institutions as they had to operate as a commercially competitive firm. This phase is particularly relevant to our research question, as it represents the first step in the firm's internationalization efforts, not directly through market entry, but through globalizing parts of its value chain via offshoring (KMD annual report, 2014). We analyze how institutional contexts, and digitalization interacted to reshape KMD's FSAs and operational model, using the extended OLI framework and neo-institutional theory (Dunning, 1988; Eden & Dai, 2010; Scott, 2008).

5.2.2.1 Institutional Context

Privatization was crucial in shifting KMD's institutional logic. This aligns with Scott's (2008) view on shifting logics under institutional change and North's (1991) argument that institutional restructuring affects organizational trajectories. The firm's strategic priorities shifted from delivering public service solutions to creating value for shareholders, which altered its internal structure. This institutional shift required KMD to include market-based logic in its operations, prioritizing efficiency, cost control, and commercial performance over public-sector responsiveness. To effectively meet these demands, KMD's internationalization efforts can be characterized as efficiency-seeking, particularly via offshoring to Poland. Poland had attractive CSAs due to its EU membership, moderate wage levels, growing tech talent pool, and increasingly mature IT sector (Dobrowolska, 2015). Hence, the country provided a preferred location advantage for Scandinavian firms, including KMD, seeking to streamline their operations.

It is important to mention that KMD's expansion into Poland was not market-seeking. The firm did not intend to sell to Polish clients. Instead, the office in Poland produced software and IT services more cost-effectively and supported Danish operations. KMD retained high-value public-sector engagements in Denmark, while outsourcing routine development tasks to Poland. Hence, phase 2 differs from phase 1 as value creation was not solely domestic.

KMD's choice of Poland over subcontracting to, for instance, third-party vendors in India, emphasizes that it preferred internalizing their operations (Dunning, 1988; Eden & Dai, 2010). The firm sought to retain control over knowledge, processes, and quality, especially when acknowledging public sector sensitivities around data security. Looking at Dunning's internationalization advantage logic, this corresponds well, as KMD integrated foreign operations into their organization to reduce governance and transaction costs (Buckley & Strange, 2011; KMD annual report, 2014; KMD, 2018a).

5.2.2.2 Role of Digitalization

Digitalization was a key enabler for KMD to transform their operations and offshoring. Advancements in digital tools, such as project management tools, broadband infrastructure, and real-time collaboration platforms, allowed KMD to align and coordinate distributed teams across Denmark and Poland. These digital tools made it feasible to allocate parts of the software development process abroad and reduce frictions related to coordination without compromising project delivery timelines.

Additionally, this phase saw SaaS and cloud-based delivery models as emergent. KMD began to modernize its legacy systems, by shifting from customized on-premises software to centralized, cloud-based solutions. Although the full transition to SaaS was first conducted later when acquired by NEC (Phase 4), its organizational and technical foundation was laid during phase 2. This change altered KMD's intangible FSAs by making them more platform-oriented, productized, and scalable, which is a contrast to the firm's earlier focus on aligning these systems for each municipality.

Thus, digitalization reshaped FSAs by enabling offshoring but also changing the foundation of software delivery. KMD's ability to manage dispersed teams and integrate cloud services became part of its evolving FSAs.

5.2.2.3 Development of Firm-Specific Advantages

KMD’s core knowledge-based FSAs, particularly its software development capabilities and domain knowledge in Danish public-sector IT, remained crucial in phase 2. However, during this phase these capabilities needed to be standardized, extended, and scaled. As previously mentioned, offshoring to Poland meant the firm had to align their operations with its FSAs. Specifically, engineers in Warsaw were trained in KMD’s proprietary systems and methods, gradually becoming integrated as the firm’s network-based FSAs.

This reflects a transfer of asset-based ownership advantages, notably proprietary software, IT methodologies, and processes, to a new foreign location (Dunning, 1988; Eden & Dai, 2010). Crucially, it also involved building transactional ownership advantages, like the ability to integrate and coordinate work across different nations using standardized processes, such as ITIL and agile methods.

Over time, the presence in Poland became an explicit tangible FSA. By operating in Poland, KMD gained the ability to scale project cost-effectively and rapidly, by leveraging the country’s labor market without compromising delivery. This comparative advantage was particularly useful in large-scale public-sector contracts that required flexibility and short delivery.

However, the process of altering FSAs, evident in this phase, also brought challenges. Some capabilities, especially those embedded in tacit knowledge held by Danish engineers, were difficult to transfer. Legacy systems often require substantial mentoring or re-documentation before certain tasks can be transferred. Also, the process of integrating teams from different institutional settings entailed challenges concerning culture coordination, specifically from Danish flat hierarchies and formal Polish settings, which required adaptation and learning from both parties.

5.2.2.4 International Strategy

KMD’s international strategy in phase 2 did, as mentioned, not involve selling to new foreign markets but rather producing abroad to improve its efficiency. The chosen mode of entry into Poland, being a wholly owned development center, can be characterized as a captive offshoring model. By doing so, KMD could retain full control over processes, quality, and data management, which was crucial as they still had an ongoing connection with the Danish public sector.

The strategic rationale behind internalizing these operations was mainly because of the following factors:

- **Data sensitivity:** It was important for KMD to obtain compliance between the public-sector software the firm offshored and the Danish and EU data regulations.
- **Institutional trust:** KMD was still relying on its government clients. Thus, when they needed assurance that outsourcing was not going to compromise critical services, the firm needed to comply.
- **Preserving capabilities:** Internalizing some of its operations meant that KMD could better retain proprietary knowledge and development standards.

Despite it being a successful venture, there were still trade-offs. The firm did not fully realize their expected cost savings in the short term (Bisgaard et al., 2020). Challenges such as resistance to change, integration inefficiencies, and coordination costs entailed that KMD's strategy with offshoring had to revise their strategy by implementing learnings along the way. The firm had to assure the quality of operations, especially for complex software connected to Danish legal structures. Hence, the benefits of offshoring only gradually increased as teams aligned and processes were handled correctly.

5.2.2.5 Synthesis

It is evident that phase 2 was the beginning of KMD's transformation from solely being a domestic actor to a firm operating internationally. Despite not being market-seeking, the foundations for later expansion were laid.

- **Institutions reshaped firm behavior**: Privatization influenced KMD through new logics of efficiency, commercial strategy, and shareholder value, which prompted offshoring.
- **Digitalization enabled new forms of FSA deployment**: The distributed operations were made viable and scalable through cloud-based development and collaborative tools.
- **Poland's institutional environment**, namely EU alignment, skilled labor, and moderate wages, became a key location advantage, which allowed KMD to retain control over operations while reducing the costs connected to them.

Reflecting through the OLI lens:

- **Oa**: KMD's proprietary software and development know-how (intangible and knowledge-based FSAs).
- **Ot**: The growing ability to coordinate complex, distributed IT development tasks (network-based FSAs).
- **Oi**: The institutional legitimacy KMD retained at home, especially with public clients, and the capacity to operate within a different regulatory system abroad.
- **L**: Poland's cost-efficiency and human capital advantages.
- **I**: Internalization through a wholly owned subsidiary ensured quality, trust, and control.

Phase 2 highlights how institutions and digitalization jointly reshaped FSAs and proved to be fundamental for future international expansion (Scott, 2008; North, 1991; Rugman & Verbeke, 2003). KMD became more cost-competitive, operationally flexible, and prepared to coordinate cross-border operations within different institutional settings. These capabilities would become key to its acquisition strategy in the next phase.

5.2.3 Phase 3

Phase 3 represents a major strategic shift for KMD, which also coincided with the private equity firm Advent International acquiring the company. To diversify its product line and speed up internationalization, KMD made several domestic and international acquisitions during this time. The development and reconfiguration of KMD's firm-specific advantages, particularly through externally acquired capabilities, were influenced by institutional environments and digitalization. This phase is crucial for answering our research question. We use the extended OLI framework (Dunning, 1977, 1988; Eden & Dai, 2010), focusing on internalization decisions related to M&A, location factors influenced by institutional complementarities, and ownership advantages (Oa, Ot, Oi). These dynamics are situated within the neo-institutional (Scott, 2008) and national business systems context of Northern Europe (Whitley, 1992a, 1992b).

5.2.3.1 Institutional Context

The acquisitions conducted by KMD between 2014 and 2018 highlight a deliberate move into markets with institutional proximity. This phase is best understood by the characteristics of regional institutional isomorphism, as KMD sought expansion within administratively and culturally aligned Nordic countries where the liability of foreignness was relatively low. KMD gained instant access to Norway, Finland, and Sweden by acquiring Banqsoft in Norway (Banqsoft, 2015). These markets had, similar to Denmark's, stable governance, mature digital institutions, and public trust in IT infrastructure, which were all significant country-specific advantages.

Instead of entering these markets organically, KMD acquired firms that had profound knowledge about the institutions, thereby mitigating the liability of foreignness and outsidership (Johanson & Vahlne, 2009). This reflects a classic institutional strategy, as acquisitions can solve legitimacy and trust barriers (Scott, 2008; North, 1991). As KMD acquired Banqsoft, the firm gained a firm with regulatory understanding, an existing client base, and national networks embeddedness, which are valuable institutional resources. Likewise, the acquisition of Edlund brought knowledge embedded in Denmark's insurance sector, while the acquisition of In2media, being a creative agency, enhanced KMD's innovation legitimacy, as they could enhance the user experience in design-driven domains (KMD, 2018a).

This phase also emphasizes how institutional path dependencies formed KMD's regional focus (North, 1991). Indeed, Scandinavia shares many institutional traits with Denmark, like digital maturity, legal framework, and welfare governance, which made cross-border acquisitions more sufficient. Markets such as Asia or the U.S. were deliberately avoided, as institutional divergence would have made M&A riskier.

5.2.3.2 Role of Digitalization

Digitalization proved to be both a driver and enabler of KMD's acquisitions strategy. During the 2010s, there was a surge in insurance-technology, fintech, and user-experience, which all were areas where digital capabilities rapidly evolved. KMD recognized these trends and chose to acquire external knowledge-based and intangible FSAs rather than develop them internally. For instance:

- The acquisition of Banqsoft was driven by increasing digitalization in banking, particularly as the demand for API-integrated and mobile platforms grew (KMD, 2015).
- In2media and Charlie Tango were acquired by KMD to enhance front-end development and user experience (KMD, 2018a). These capabilities were crucial for public and private sector clients that sought to transition to digital interfaces.

Moreover, digitalization has made technical integration substantially easier. Digital tools such as cloud platforms, modern APIs, and modular software design allowed KMD to easily align newly acquired systems with their own. For instance, the ability to integrate In2media's front-end designs with KMD's legacy systems reflected a shift from traditional acquisitions to system integrations and platform thinking made possible by digitalization (KMD, 2018a). Thus, digitalization both enabled the M&A logic but also lowered the internalization costs connected with merging IT portfolios.

5.2.3.3 Development of Firm-Specific Advantages

During this phase, KMD's FSAs were transformed through strategic acquisitions that provided the firm with new capabilities. Prior to 2014, KMD's FSAs were primarily location-bound to Denmark and specialized in public-sector back-end IT.

By 2018, KMD had acquired a portfolio of knowledge-based, intangible, and network-based FSAs across fintech, insurance, user experience, and digital consulting. These acquisitions were targeted and complementary:

- Banqsoft added non-location-bound tangible and knowledge-based FSAs through banking and leasing platforms already deployed across Nordic countries (Banqsoft, 2015).
- Edlund provided specialized expertise in life insurance and pension systems.
- Charlie Tango and In2media contributed intangible relational assets and creative capabilities, enhancing front-end design, user engagement, and digital strategy (KMD, 2018a).

Using the OLI framework, these changes can be described as follows:

- **Oa (Asset-based ownership advantages):** KMD significantly expanded its asset base through externally acquired IPs, digital products, and expert talent (tangible FSAs and knowledge-based FSAs).
- **Ot (Transactional ownership advantages):** Acquisitions enhanced KMD's ability to manage complexity and coordinate diversified value chains across borders (network-based FSAs and knowledge-based FSAs).

- **Oi (Institutional ownership advantages):** KMD acquired legitimacy and embeddedness in new sectors and geographies by absorbing firms already recognized in their institutional environments (intangible FSAs and network-based FSAs).

Moreover, the combinatorial intangible and knowledge-based FSAs that followed, which, in this case, is the ability to combine public sector, UX capabilities, and fintech, allowed KMD to develop more integrated digital solutions. These synergies were not only technical but relational and cognitive, which enabled the firm to further innovate between public and private domains (Rugman & Verbeke, 2003).

However, integrating these FSAs came with challenges. The acquired knowledge resided in personnel, systems, and practices that were culturally and operationally distinct. Nevertheless, the integration of these FSAs provided the firm with challenges. The acquired knowledge was embedded in personnel, practices, and systems that were operationally and culturally distinct. KMD pursued a selective integration approach, which allowed acquired firms, like Banqsoft in Oslo, considerable autonomy, while KMD gradually steered them towards an aligned strategic direction. This reflects the possible tension in post mergers and acquisitions between aiming to achieve integration for strategic synergy and allowing firms to be autonomous to maintain organizational legitimacy and local capabilities. This is a common theme in neo-institutional perspectives on mergers and acquisitions.

5.2.3.4 International Strategy

Phase 3 illustrated a shift in KMD's internationalization strategy from passive to proactive, as the firm conducted market-seeking M&As and had a desire to reduce its dependency on the Danish public sector. The acquisition strategy provided access to new sector and private clients and a stronger and more diverse revenue base for eventual resale under Advent International's "buy-and-build" logic (Dunning, 1988; Eden & Dai, 2010).

The acquisitions offered internalization advantages, as they allowed KMD to directly own and coordinate cross-border operations, instead of licensing agreements or entering joint ventures. By acquiring, the firm could retain full control over strategic assets, directly manage integration and platform development, and avoid external governance risks associated with partnerships.

However, KMD's acquisition strategy also introduced several strategic trade-offs. First there was a focus risk, as diversifying into insurance, banking, and creative design negatively impacted the managers' capacity and risked diverting or neglecting its core public-sector operations. In addition, institutional risk became evident as KMD's public clients in Denmark were concerned that the firm would overcharge as the firm increased its focus toward private-sector operations. This reflects a broader tension between the need to maintain legitimacy in public service delivery and private equity incentives (Scott, 2008).

Despite these risks, KMD has successfully expanded its operations, increased its attractiveness to global buyers, and diversified its FSAs, which set the stage for the NEC acquisition in phase 4.

5.2.3.5 Synthesis

Phase 3 illustrates an evolutionary phase in how institutions and digitalization shaped FSAs:

- **Institutions shaped entry strategy**: KMD chose to acquire firms operating in markets with institutional proximity to reduce integration complexity and mitigate risk.
- **Digitalization enabled FSA acquisition and integration**: The firm strategically responded to UX and fintech trends, which drove acquisition choices, while cloud architecture and APIs supported the synergies post-acquisition.
- **Institutional logic guided retention strategies**: A high degree of autonomy for acquired firms helped maintain legitimacy and key capabilities in local contexts.

From an OLI perspective:

- KMD's **ownership advantages** expanded in all three extended forms (Oa, Ot, Oi).
- **Location choices** were based on institutional complementarities and regional synergies.
- **Internalization** was pursued to capture the full value of acquired FSAs and reduce coordination risk.

Summarizing, phase 3 reflects a regional internationalization strategy developed on institutional compatibility and exploiting digital opportunities, which reshaped KMD into an acquisition-driven and diversified firm, prepared for global integration, which will be further elaborated in the next phase.

5.2.4 Phase 4

This phase investigates institutional and internationalization perspectives of KMD following its acquisition by Japanese multinational NEC Corporation in 2019. In line with our research question, Phase 4 explores how these two forces reconfigure KMD's position and capabilities as part of an MNE. The analysis draws on the OLI framework (Dunning, 1977, 1988; Eden & Dai, 2010) with its extended ownership dimensions (Oa, Ot, Oi), as well as insights from neo-institutional theory and business systems theory, bringing attention to how digitalization and institutional contexts interact, co-evolve and thereby create FSAs for internationalization.

5.2.4.1 Institutional Context

From an institutional perspective, it became evident that the acquisition of KMD by NEC Corporation represented a significant institutional shift. In contrast to the former ownership, where KMD was highly driven by financial performance and short-term value creation, NEC's ownership reflects a more long-term strategic orientation, with characteristics of the Japanese business system, which emphasized long-term relationships, centralized coordination, and integration across subsidiaries. NEC's stated objective was to leverage KMD's knowledge-based FSAs and network-based and intangible FSAs across Scandinavia, to strengthen its global portfolio in digital government and "safe city" solutions (Scott, 2008; KMD, 2018b).

This change of ownership structure introduces a dual institutional embeddedness for KMD. While still remaining deeply rooted within Denmark's public sector, KMD simultaneously has to align with NEC's global strategic and institutional logics. In effect, this duality reshapes the incentives and constraints under which KMD operates. The incentives now include access to global markets, long-term investment in digital R&D, and integration into NEC's broader portfolio of smart city and e-government solutions. Conversely, however, constraints arise from the need to balance local legitimacy with global standardization, manage divergent stakeholder expectations, and adapt to different institutional logics across countries.

Furthermore, NEC's ownership of KMD introduces new legitimacy dynamics. The foreign ownership of critical public IT infrastructure in Denmark has raised issues of autonomy and trust, which KMD had to respond to. Therefore, KMD's situation reflects broader concerns in neo-institutional literature about organizational legitimacy in transnational settings (Scott, 2008; Kostova & Zaheer, 1999). As firms become embedded in multiple diverse institutional settings, they face the challenge of conforming to different normative expectations and legitimacy standards. The extent to which KMD can reconfigure their operations in response to the change of institutional pressure from multiple sides, while retaining their legitimacy within Denmark, compels KMD to engage in legitimacy work. In this sense, KMD illustrates how MNEs and their subsidiaries continuously manage institutional complexity, to retain their legitimacy while seeking new markets.

5.2.4.2 Role of Digitalization

During the years of Phase 4, digitalization has worked both as an enabler and as an institutional force. Through integration with NEC, KMD gains access to technologies that can be classified as knowledge-based FSAs. Amongst others, these include biometrics and AI integration. These assets enable KMD to reposition itself, from being a "sector-specific" vendor, to actively being able to pursue cross-country opportunities. By embedding these technologies within KMD and into other solutions, KMD can transform localized solutions into scalable and exportable solutions.

However, as mentioned earlier in our thesis, digitalization should not be understood solely as a technological phenomenon that enables FSAs. It should also be viewed as a phenomenon that reshapes institutional structures. In the case of KMD selling to the public sector, the adoption of digital government technologies requires conformity to national regulations, legal frameworks, and rules specific to each country. These institutional differences influence the adoption of digital solutions in international markets, as standards and processing procedures often vary between countries.

As new technologies emerge, and digital solutions are introduced into public sector contexts, they give rise to new forms of coordination and reconfigure decision-making processes (OECD, 2021; Massa et al., 2023). An illustrative example of where KMD has challenged the established governance logics, is KMD connect in Japan. KMD Connect is an e-commerce solution that digitally handles payment information, documents, and invoices electronically. It's introduction to the Japanese market in 2023, in collaboration with NEC, coincided with new legislation on digital invoicing. It was initially deployed at NEC as part of its "Client Zero" strategy, adapting it to Japan's legislation. Through this process, KMD connect was customized in collaboration with NEC's internal teams, to meet the needs of Japanese firms, in particular SMEs who still handle their invoices manually (NEC, 2025). While it has taken time to gain traction, and land customers outside NEC, this has created a new and more efficient way of working for NEC.

This exemplifies that KMD's international expansion cannot only focus on scaling their digital FSAs, but rather must learn to co-evole within local institutional settings. Thus, highlighting how digitalization and institutions are mutually constitutive, as each is shaped by the other.

5.2.4.3 Development of Firm-Specific Advantages

When KMD was acquired by NEC, they retained their core FSAs built throughout the years. What changed, however, is the way these FSAs are leveraged, expanded, and transferred internationally under NEC ownership. From the perspective of ownership in the OLI framework, KMD retains:

- **Oa:** proprietary solutions like WorkZone and KMD Connect, and deep domain expertise in digital welfare systems.
- **Ot** : improved coordination capabilities across borders through integration into NEC's internal network, enabling better management of transaction costs and risk in international engagements.
- **Oi:** legitimacy derived from operating in Denmark.

The synergy between NEC and KMD has enabled KMD's historically location-bound FSAs to travel across borders. By leveraging NEC's global network of subsidiaries, KMD has been able to transform its historically location-bound FSAs into more transferable assets. This collaboration reduces KMD's dependence on localized institutional knowledge by enabling local subsidiaries to bridge those institutional gaps. At the same time, Denmark's strong international reputation in digital government enhances the perceived legitimacy of KMD's offerings, constituting an important intangible FSA (OECD, 2021). The proven effectiveness of KMD's solutions, on a highly digitalized market such as, further reinforces KMD's knowledge-based FSAs, which NEC can now scale across different institutional environments. NEC now uses KMD as a platform to deploy proven Danish digital government solutions globally, through internal subsidiaries and networks. This reduces the cost and uncertainty of foreign entry. Illustrative examples include:

- In the United Kingdoms, KMD's WorkZone solution secured its first international client in 2023 through collaboration with NEC Software Solutions. KMD's public-sector experience was adapted to UK institutional needs via NEC's local knowledge and legitimacy. (KMD Internal, 2023)

- In Australia, KMD and NEC Australia signed a deal in 2025 with the Australian Human Rights Commission, repurposing Danish digital governance experience within a new institutional context. (KMD Internal, 2025)
- In Japan, KMD Connect was deployed through close cooperation with NEC headquarters, indicating a further deepening of internalization advantages and global FSA scaling. (NEC, 2025)

These cases illustrate that KMD's FSAs are no longer confined to their Danish origins but are being selectively transferred and adapted in new institutional environments through NEC's internal networks — supporting Dunning's emphasis on ownership–internalization interaction.

5.2.4.4 International Strategy

KMD's international strategy has shifted from organic, regionally limited ambitions to coordinated global expansion embedded within NEC's mid-term strategic plan (NEC, 2021). Under this model, KMD no longer enters foreign markets independently; instead, it internationalizes through NEC's subsidiaries, leveraging internalized governance mechanisms to reduce transaction costs and institutional barriers.

This approach aligns with the internalization aspect of the OLI paradigm (Dunning 1988; Eden & Dai, 2010). By deploying KMD's FSAs through NEC's internal hierarchy, the firm avoids market-based uncertainty and governance risks. KMD's current entry mode resembles a global internal partnership model, where NEC provides the local channel, while KMD supplies the technological and institutional content.

However, this strategy is not without trade-offs. KMD must still overcome institutional barriers even with NEC 's local presence in many foreign markets. While NEC helps KMD to mitigate *some* institutional barriers, e.g. by tailoring solutions together with subsidiaries familiar with host-country norms and regulations, the strategy still demands considerable efforts, to adapt solutions to different countries. Each market represents its own regulatory and socio-political environment, which means that even with NEC's support, KMD cannot rely on full standardization for internationalization.

Thus, the "NEC-KMD" model reduces uncertainty and entry cost traditionally associated with foreign market entry, when KMD's solutions travel to new countries. However, it does not eliminate the need for localized compliance and legitimacy. While KMD gains greater reach and speed through NEC subsidiaries, they also experience increased organizational complexity due to institutional differences.

5.2.4.5 Synthesis

Phase 4 illustrates how the interaction between institutions and digitalization shapes the development and transferability of FSAs in the context of internationalization.

- Institutions influence firms' legitimacy level and viability of FSA deployment across borders. National business systems and regulations condition how digital solutions are perceived.
- The scalability level of FSAs is influenced by digitalization when combined with strong internal governance, highlighted in NEC's internationalization strategy.
- All three forms of ownership advantages (Oa, Ot, Oi) are conditioned by the interaction between institutions and digitalization.

KMD's transition within a global MNE in Phase 4 reflects how the combined effect of institutions and digitalization reshape FSAs. KMD's success in adapting to diverse institutional settings and leveraging its existing subsidiaries highlights how internationalization involves looking broader than exporting strategies. Firms must understand and align their international strategies with diverse institutional settings.

5.3 Key Findings from the Case Analysis

Phase	New FSAs	New CSAs	Mode of Internationalization	FSA Transferability	FSA/CSA Alignment
Phase 1: (1972–2008)	Expertise in Danish public IT, legacy systems, trust	Home: Denmark's strong public digital infrastructure	None (Domestic focus)	Low – highly location-bound	Weak (No foreign expansion)
Phase 2: (2009–2014)	Distributed development, project management, cloud shift	Host: Poland's IT talent, cost efficiency	Offshoring to Poland	Moderate – technical FSAs more portable	Moderate (Efficiency-seeking)
Phase 3: (2014–2018)	Product FSAs via acquisitions (Banqsoft, Edlund, etc.)	Hosts: Nordics' mature IT markets through acquisitions	Cross-border M&As	High – scalable, non-location-bound FSAs	Strong (Strategic CSA-FSA synergy)
Phase 4: (2019–Present)	Platform-based SaaS, digital government model	Host: NEC's global presence	Acquisition by NEC (strategic FDI)	Very High – FSAs scaled globally via NEC	Very strong (Global synergy)

Table 8 (Authors own work, 2025)

The above matrix presents a phase-wise synthesis of KMD's internationalization strategy mostly focused on FSAs and CSAs. It also emphasizes how digitalization gradually increased the portability of KMD's FSA's, transforming them from highly location-bound assets into globally scalable capabilities. The cells highlighted in green reflect phases where FSAs became notably more transferable due to a higher degree of digitalization and development of digital technologies. This is directly related to an important theoretical insight. Digitalization enables the decoupling of FSAs from specific institutional or geographic environments, allowing MNEs to recombine capabilities and country-specific advantages more fluidly. We emphasize the need to integrate the dimensions of digitalization and institutions conceptually when analyzing FSAs and internationalization. This theoretical integration will remain relevant over time, as these two will continue to shape each other over time.

6. Discussion

6.1 Discussion of Findings in Relation to Existing Literature

This thesis reflects the interactions between institutions and digitalization, particularly how these concepts collectively shape FSAs within internationalization strategies, using KMD as our critical case. Existing literature often emphasizes how digitalization can transform operations, focusing on how digital capabilities, such as cloud integration, platform modularity, and data analytics, enable firms to diminish traditional market-entry barriers and enhance their international scalability (Brock & Hitt, 2024; Lo et al., 2023). Findings from this thesis support these arguments, as it reflects that while digitalization significantly improves scalability of digital FSAs and the potential for international expansion, it still must be compatible with diverse institutional settings.

The analysis of KMD revealed that Denmark's institutional environment and advanced digital ecosystem have been fundamental in building digital FSAs, including secure cloud-based service delivery and software solutions. This alignment can be linked to the perspective of neo-institutionalism and national business systems, which emphasize national institutions influence organization capabilities and strategies (Scott, 2008; Whitley, 1992a; 1992b). Nevertheless, while it is commonly portrayed in the literature that embedding such capabilities and strategies in digital infrastructure provides competitive advantages (OECD, 2021; Stallkamp et al., 2022), the empirical findings in the KMD case challenge this view by illustrating that significant constraints can be introduced. Particularly, KMD's FSAs exhibit limited transferability when intersected with diverse regulatory standards, institutional settings, or digital maturity levels, as they are deeply embedded in Denmark's institutional environment.

This observation aligns with Rugman & Verbeke's (2012) insights concerning the transferability of institutionally embedded FSAs internationally can be difficult, which highlights an important point often neglected in literature about digital internationalization. Existing literature often emphasizes the common qualities of digital FSAs, being characterized as inherently non-location-bound and easily transferable (Denicolai et al., 2021; Lo et al., 2023). However, this thesis findings reflect another perspective different from this view, as it emphasizes that digital FSAs, even though they are technologically modular, remain substantially influenced by the regulatory and socio-political environments of both home and host countries.

Moreover, the findings confirm and extend recent literature that acknowledges digital internationalization risks, like cybersecurity vulnerabilities and fragmented regulations (Jean et al., 2020; Obi et al., 2024). NECs acquisition of KMD illustrates the potential risks firms might face when aligning FSAs across diverse institutional settings. The analysis highlights the risks related to digitalization as not solely operations but deeply rooted in institutional complexities stemming from inconsistent regulatory environments like those imposed by the Digital Markets Act (Bauer & Pandya, 2025). Consequently, Digital FSAs appear to simultaneously enable their initial purpose but also diminish their global transferability when they are institutionally embedded.

A significant theoretical contribution derived from our analysis lies in reinforcing and critically assessing existing literature on institutional co-evolution (Dong et al., 2025; Mihailova, 2025). While current literature often frames institutions as static foundations or as either enablers or constraints, our findings from the KMD case highlight that institutions and digitalization are interactive and dynamic in shaping and reshaping each other. Nevertheless, our case analysis also reveals a theoretical inconsistency. Specifically, how far digital FSAs can remain viable and robust when they span across several divergent institutional contexts. This unresolved question challenges the positive assumptions related to digital capabilities in existing IB literature, suggesting that digitalization cannot fully mitigate institutional divergence, despite it helps to overcome traditional market-entry barriers.

Furthermore, this study contributes to and critically assess the literature on digital maturity and distance (Wang et al., 2024a, 2024b; Zhang et al., 2025). The analysis reveals that significant differences in digital maturity between home and host countries affect the transferability and adaptation of digital FSAs. The tendency in existing literature is to generalize such effects across different sectors, but neglect industry-specific differences, especially those involving public-sector technology. Oppositely, our analysis highlights KMD's public sector digital solutions as sensitive to institutional variations, which extends our existing understanding of digital maturity and distance with real-world case insights.

In essence, the findings from this thesis broadly affirm established notions about the crucial role of digitalization and institutions in international business. However, we also challenge the very positive assumptions related to the development and transferability of digital FSAs. The analysis provides a more nuanced perspective on the relations between institutional context, digital capabilities, and firm-specific advantages, as we critically situated KMD's experience within the theoretical frameworks, which highlighted fundamental gaps in existing literature.

6.2 Implications of the Findings

The findings of this thesis carry several theoretical implications for understanding digitalization, institutional frameworks, and internationalization within IB studies. In addition to expanding on existing theoretical perspectives, the thesis offers recommendations for firms operating in institutionally diverse context, to better understand how institutions and digitalization interact in shaping FSAs.

The theoretical implications which this thesis brings to the table lead to a recommendation for a more nuanced integration between institutional theory and internationalization framework, when digitalization is a factor. Much of the existing literature has either prioritized technological determinism, by portraying digital capabilities as inherently scalable and institutionally agnostic (Lo et al., 2023; Denicolai et al., 2021), or positioned institutions as static facilitators and barriers to digitalization (Dong et al., 2025; Mihailova, 2024). Our thesis contributes to this by demonstrating that institutions and digitalization are not static influences on FSAs, but rather co-evolving forces that shape, constrain, and enable each other. By showing how digital FSAs are embedded in, and continuously reshaped by, institutional environments, as seen in the case of

KMD, this thesis calls for theoretical frameworks that more explicitly account for the dialectical interactions between digitalization and institutional environment.

Moreover, our findings challenge the assumptions with the OLI paradigm and FSA/CSA frameworks, that FSAs are universally transferable. While the OLI paradigm (Dunning, 1977, 1988) traditionally views ownership advantages as easily deployable across borders, this study demonstrates that digital FSAs are significantly conditioned by local institutional contexts. This nuanced understanding further builds on other studies that emphasize how digital FSAs are more conditioned to institutional constraints (Stallkamp et al., 2022; Jean et al., 2020; Banalieva & Dharanaj, 2019; Meyer et al., 2023). Our study, however, shows the need for a theoretical discourse to reconsider the implications of institutional embeddedness to categorize FSAs according to their institutional context and adaptability, and not only its technological attributes.

Policy-wise, the findings highlight the importance that governments and regulatory institutions play in shaping FSAs. These happen e.g. through digital infrastructure, innovation policies, and digital governance frameworks. Essentially, this means that governments who aim to foster a competitive environment, attractive to digital firms, within their country, must recognize that supportive institutional environments go beyond digital infrastructure and a digitally skilled workforce. Instead, policymakers should facilitate regulatory frameworks that prepare firms to operate in international environments. This means designing regulations with international norms and standards. In practice, it's difficult to achieve a homogenous regulatory environment across countries, but it can be feasible to foster regulatory interoperability by working towards cross-border regulatory cooperation (OECD, 2021).

Despite being well-intentioned and promoting fair competition and interoperable regulatory rules, our findings put emphasis on how rigid and fragmented regulations, exemplified by frameworks such as EU's Digital Markets Act, can constrain internationalization. Therefore, policymakers should balance regulatory standardization with the flexibility necessary for digital innovation and international scalability.

6.3 Limitations of the Findings

While our thesis has provided insights into how institutions and digitalization interact to shape FSAs for internationalization, there are some limitations that we must acknowledge. Recognizing these limitations may help readers interpret the results correctly and influence the subject of future research.

6.3.1 Methodological Limitations

Although our thesis provides an in-depth case analysis and an understanding of how institutions and digitalization interact, the reliance on a single case study has its limitations. This methodological choice constrains the generalizability of our findings. Furthermore, the institutional environment of Denmark, where KMD has evolved most of its FSAs, may limit the applicability to firms operating under different institutional environments.

Moreover, our data collection strategy poses additional constraints. While the theoretical foundation is well-established through peer-reviewed articles in our literature review, the empirical grounding of the case-study relies on one of the author's relations to KMD. Therefore, the thesis would benefit from data collection through structured in-depth interviews. However, from a critical realist perspective, this insider access has enabled contextual and causal insight into the mechanisms shaping strategic decisions, which rarely can be observable without continuous engagement with firms and institutions. In the light of this, this mode of access aligns with critical realism's emphasis on understanding the underlying mechanisms rather than solely relying on interviews. While the absence of interviews potentially narrows the explanatory power of why certain FSAs were prioritized over others internationally, the first-hand observations of internal decision-making, however, adds contextual depth and credibility, in interpreting how the FSAs travelled across borders.

6.3.2 Contextual Limitations

Another limitation of our thesis stems from the nature of our research question. As both digitalization and laws and regulations are something that evolves rapidly, certain context-specific findings in our thesis may lose relevance over time. However, our central argument is not tied to a specific movement. Rather, we emphasize the need to integrate the dimensions of digitalization and institutions conceptually when analyzing FSAs and internationalization. This theoretical integration will remain relevant over time, as these two will continue to shape each other over time.

While our research has analyzed several phases of KMD's institutional and strategic evolution, the relative time horizon post NEC's acquisition constrains the ability to assess the full impact of this acquisition. Longer-term implications, such as how KMD can sustain market entry or ongoing strategic adaptations in international markets, could not be fully evaluated, therefore leaving unanswered questions about how institutions and digitalization has affected and created FSAs, and how KMD should retain these.

6.3.3 Industry-Specific Limitations

Our research has focused almost exclusively on digital solutions targeted at the public sector. In contrast selling to the private sector involves a different set of processes. The two sectors differ significantly, with the public sector being more sensitive to local regulatory, cultural, and institutional variations. Thus, the findings from our analysis carry sector-specific constraints and may not be applicable to firms operating solely in private sector environments. However, since our core argument emphasizes the interaction between institutions and digitalization in shaping FSAs, this theoretical lens remains relevant across sectors, even if institutional pressure may differ in a private sector context.

6.3.4 Theoretical and Analytical Limitations

While the synthesis of the theories contributed significantly and enriched our analysis, we acknowledge that it introduces some complications. For instance, it occasionally does not draw a clear distinction between the contribution of the individual theories or reflecting the causal mechanisms in a straightforward way. A sharper distinction between the frameworks in the analysis would have enhanced the theoretical validity of the thesis. However, the connection between these perspectives demonstrates how organizations face the challenges and opportunities related to institutions and digitalization.

Even though the findings provide empirical insights and contribute to expanding the included theories in relation to institutional environments and digitalization, it is important to recognize the above limitations. This acknowledgement emphasizes that carefully interpreting the methodological approach and findings in the analysis is necessary and should be considered in future research.

6.4 Recommendations for Future Research

Considering the above discussed findings, theoretical contributions, and limitations, several topics emerge that could further elaborate the understanding of how institutions and digitalization together shape FSAs for internationalization.

6.4.1 Comparative Case Studies

To address the limitations related to generalizability, future studies could investigate comparative case studies. By examining multiple firms with varying institutional settings and from different industries, subsequent studies can clarify how different levels of digital maturity and institutional contexts influence the development and transferability of FSAs. Specifically, comparative research could further clarify whether firms operating in environments with fragmented regulations or a low level of digital maturity experience different opportunities or challenges compared to firms operating in nations with a high level of digital maturity and well-developed digital infrastructure. This would enhance the generalizability of the included theoretical frameworks related to institutional theory, namely neo-institutionalism and national business systems perspective.

6.4.2 Longitudinal Studies

Given the fundamental changes in institutional settings and digitalization, longitudinal studies are essential. Longitudinal studies capture how regulatory frameworks, digital technologies, and market conditions together reshape FSAs and internationalization strategies over an extended period of time. By conducting such process-oriented approaches, it could provide deeper insights and clarify causal mechanisms related to how digital capabilities and institutions co-evolve, which is a different approach from this thesis.

6.4.3 Qualitative Research

Future studies would benefit from integrating qualitative research methods, like in-depth managerial interviews or focus groups, to reveal the dynamics related to FSA development and internationalization strategies. While this thesis includes insider insights regarding several topics, extending our research by engaging internal stakeholders with in-depth interviews would increase validity. By incorporating these, it could mitigate bias related to single embedded perspectives. To compensate for our results, adding qualitative research would not only enhance the understanding of the included theories but also reflect the managerial motivations and negotiations that shape how FSAs are developed and aligned with different institutional settings. Relating this to critical realism, more qualitative data could help identify frictions and informal logics on a deeper level that might be neglected by the included data sources.

6.4.4 Investigating Diverse Industries

Recognizing that this thesis is primarily linked to the public-sector, additional research could benefit from focusing on comparing digital FSAs across different sectors. Such research could illustrate whether regulations and institutional embeddedness of FSAs varies across different industries and whether these institutional factors influence how digital FSAs scale depending on sector-specific contexts. There might also be different levels of risk depending on the specific sector, such as regulatory complexities or cybersecurity threats. Future studies could investigate this topic and expand the understanding of digital internationalization risks identified in this thesis.

6.4.5 Quantitative and Mixed-Method Approaches

It would also be beneficial to include a quantitative or mixed-methods approach by testing the theories and several factors identified in this thesis empirically, like institutional compatibility, or internationalization outcomes. We suggest that future studies include statistical analyses to investigate how institutional settings, including different levels of digital maturity, shape the development and transferability of FSAs. Particularly, a mixed-methods design, that includes quantitative data, could validate or challenge qualitative insights, which could strengthen the generalizability of findings from diverting firm and country contexts.

6.4.6 Institutional Voids and Emerging Markets

Finally, future research could explicitly examine how institutional voids influence digital FSAs, particularly within emerging markets or institutions with low digital maturity, as it would extend this thesis's findings. Investigating how firms respond to institutional gaps, and adapt their strategies to increase their legitimacy, in environments with high uncertainty and institutional weakness could enhance our theoretical understanding of strategic alignment in underdeveloped institutional settings. This specific research is especially relevant as the pressures of global digitalization and interest in emerging markets increase.

Our hope is that these research recommendations will further clarify the theoretical perspectives included and practical understanding of the dynamics between institutions and digitalization in shaping FSAs for internationalization.

6.5 How the interactions between institutions and digitalization shape the FSAs for internationalization

To address our research question: "*How do the interactions between institutions and digitalization shape FSAs for internationalization?*", we represent the following conceptual model below (Figure 2). This model does not only visualize the theoretical insights developed in the discussion but serves as a link to our conclusion. Besides providing a visualization of the thesis's main arguments, it illustrates the dynamic relationships between institutions and digitalization in shaping FSAs for internationalization.

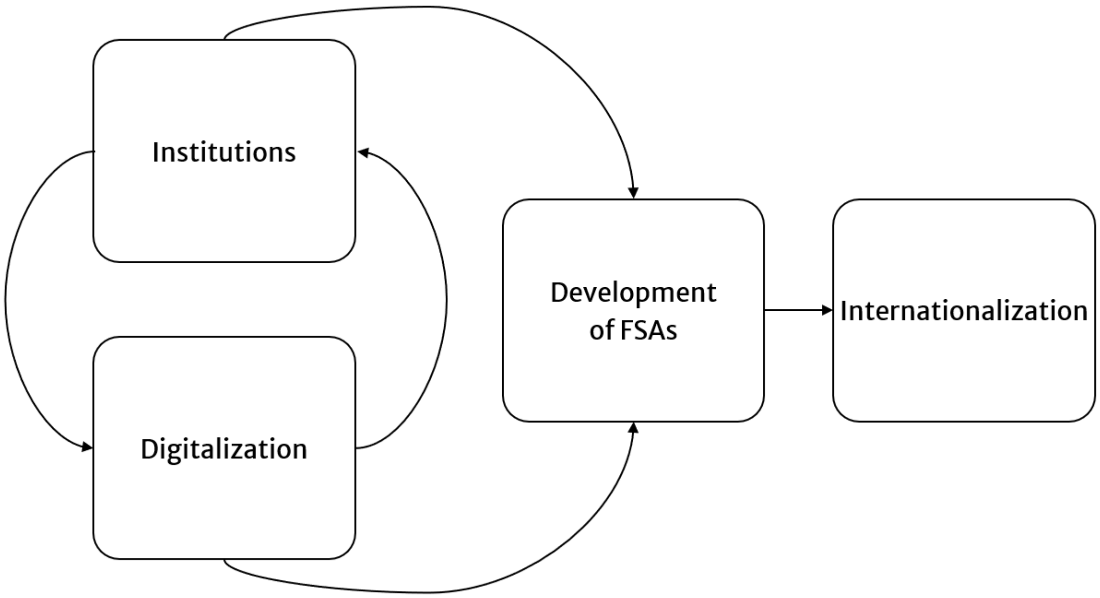

Figure 2: Interplay of Institutions and Digitalization in shaping FSAs for Internationalization (Authors own work, 2025)

The model illustrates that institutions and digitalization are interdependent constructs that continuously influence each other. Institutions provide incentives, set boundaries, and determine which digital strategies are institutionally viable. Institutions, on the other hand, must evolve as digitalization keeps transforming, meaning altering regulations and modifying public and private dynamics within different sectors.

This iterative interaction is central to FSA development. Empirical evidence from KMD demonstrates that digital FSAs are neither fixed nor universal in character. Rather, they are actively constructed and frequently transformed by their connection to specific institutional environments. Although Denmark's advanced digital and institutional environment has facilitated the development of digital FSAs at KMD, the international transferability of FSAs largely depends on the compatibility and adaptability of institutions.

The internationalization process presented in the model is, therefore, connected to how effectively firms can manage institutional diversity. Successful internationalization can, in this context, be characterized as strategic alignment and firm's ability to continuously align their digitally enabled

FSAs in nations with different institutional settings, instead of simply scaling standardized products and processes globally.

By visualizing these relationships, the model illustrates the main arguments establishing a clear connection to the research question. Consequently, this perspective provides a transition toward the final conclusion, as it reinforces the thesis's central message.

7. Conclusion

This thesis has explored and discussed how the interaction between institutional environments and digitalization shapes the development and international scalability of FSAs, guided by the research question: *"How do the interactions between institutions and digitalization shape FSAs for internationalization?"*. While both institutions and digitalization can explain some aspects of FSA creation and transferability, our thesis has tried to highlight relatively downplayed aspects in both and offered new insights to interpret these aspects. We argue that combining institutions and digitalization when analyzing the development of FSAs will provide a better understanding and explanation of how FSAs are created for internationalization.

As our model illustrates (figure 2), institutions and digitalization interact in the creation and scalability of FSAs. Specifically, institutions offer fundamental elements, such as digital infrastructure and regulatory frameworks that either enable or constrain the adoption of digital technologies. Simultaneously, digitalization influences institutional environments whenever new technologies emerge, making it necessary for firms to adapt to new practices and countries to create new regulations. This dynamic interaction guides how FSAs are developed and deployed across borders.

Through the empirical analysis of KMD, anchored in theoretical perspectives from institutional theory, the eclectic paradigm, and the FSA/CSA framework, we seek to uncover this interaction between institutional environments, digitalization, and the development of firm-specific advantages by examining a real-world case. The analysis illustrates that KMD's FSAs were initially developed within Denmark's digitally mature institutional context. While the digital nature of these FSAs supports their inherent potential for scalability, our thesis reveals that their internationalization trajectory was constrained by institutional divergence between Denmark and foreign target markets. This perspective challenges traditional assumptions, namely that digital FSAs naturally cross institutional boundaries, in international business literature. Instead, it emphasizes the necessity to account for the contextual embeddedness of digital enabled FSAs.

In answering the research question directly, the thesis provides clarity by emphasizing that digitalization is conditioned by institutions and vice versa. FSAs cannot be seen as static resources, they should rather be seen as dynamic capabilities continuously shaped by institutions and digitalization. Thus, we seek to enhance the understanding of internationalization in the digital age, by asserting that the success of firms' international strategies depends on their ability to manage and adapt their digital FSAs to different institutional settings abroad. Our core argument emphasizes that the interaction between institutions and digitalization is a persistent and dynamic force in shaping FSAs, one that will remain central to international business strategy over time. Hence, internationalization should not be viewed as a final destination, but rather as a continuous strategic process, shaped by the interaction between institutions and digitalization.

By highlighting the interactions between institutions and digitalization through the conceptual model and empirical case study, the thesis contributes theoretically by relating institutional theory more explicitly to internationalization frameworks. It also provides practical insights highlighting that it is not sufficient to possess advanced digital capabilities for successful internationalization if they are not strategically aligned with diverse and evolving institutional environments across border.

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