Ashish Adhikari

Going Digital, Going Global: How Digital Transformation Drives Business Model Innovation in International Firms

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Author: Ashish Adhikari
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ABSTRACT:

This thesis examines how digital transformation drives business model innovation in international firms and why scaling outcomes differ across borders. The study starts from the observation that digital technologies have widened the scope for new value propositions, delivery arrangements, and revenue models, yet understanding of these changes has remained fragmented across information systems, strategy, and international business research. A clearer explanation has therefore been needed of how digital transformation is translated into business model change and how this change is shaped by international operating conditions.

The objective of the thesis is to explain the relationship between digital transformation and business model innovation in international firms and to identify the conditions under which digitally enabled business models can be transferred and scaled across borders. The thesis has been positioned at the intersection of digital transformation, business model innovation, dynamic capabilities, and internationalisation. It has been guided by the view that digital transformation does not automatically produce successful business model innovation. Rather, digital opportunities are interpreted, selected, and transformed through organisational capability processes, while international outcomes are shaped by institutional and ecosystem conditions in different markets.

A qualitative research design has been employed. The study has combined a systematic literature review with a secondary evidence synthesis of four internationally active firms operating under different regulatory, market, and ecosystem conditions. Through this design, conceptual evidence has been integrated with case-based material to develop an explanation that is both theoretically grounded and practically relevant.

The findings indicate that digital transformation has been linked to business model innovation through recurring pathways, including data-driven augmentation, digital channel reconfiguration, platformisation and ecosystem orchestration, and monetisation redesign. Across these pathways, business model change has been enabled by the interaction of sensing, seizing, and transforming routines. International scaling has been shaped by regulation and data governance, ecosystem complements, network position, and market readiness. A central conclusion is that business model portability and business model performance should be treated as distinct. A digitally enabled model may be transferable in technical terms, yet still perform weakly if local compliance conditions, partner structures, or market constraints are not adequately addressed.

It is concluded that digital transformation should be understood not only as technological adoption but as a managed process of business model redesign under varying international conditions.

KEYWORDS: digital transformation, business model innovation, internationalisation, dynamic capabilities, scaling, cross-border strategy

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1 Introduction

1.1 Background and context

Digital Transformation (DT) is no longer a question of technological adoption, but is a strategic and organisational renewal challenge, which changes the way firms create, deliver, and capture value (Verhoef et al., 2021). This thesis has a strong focus on DT as an enabler of Business Model Innovation (BMI) with an explicit focus on the international scaling problem: how do digitally enabled business models get designed, governed and adapted so that they can travel across borders without losing coherence or legitimacy (Teece, 2010; Teece, 2018). The practical significance is obvious. Digital technologies reduce some traditional barriers to international expansion by facilitating remote coordination, more rapid experimentation, and low marginal cost replication of software enabled activities (Legner et al., 2017). Yet the same technologies also escalate cross border complexity because value creation increases its reliance on data governance, rules of the platforms, and ecosystem complements that differ across markets (Yoo et al., 2010; Jacobides et al., 2018).

The international setting makes DT enabled BMI analytically challenging because of what is technically replicable may not be organisationally executable or institutionally acceptable in host markets (Suchman, 1995). Cross border operations expose firms to diverse regulatory regimes, enforcement capacity and expectancy of legitimacy around privacy, algorithmic decision making and platform governance (Kostova, 1999). These constraints govern whether a business model can scale through a process of standardisation or must be redesign through a process of localisation of particular layers (Kostova and Zaheer, 1999). International business (IB) research has long established that firms face liabilities of foreignness and outsidership that impact learning, trust, and access to opportunity in foreign markets and these liabilities remain salient in digitally mediated contexts in which network effects and complements may be locally bounded (Johanson and Vahlne, 2009). Therefore, the fundamental question is not whether DT is important or not. The enigma lies as to why DT enabled BMI scales in some cross border settings but become constrained, fragmented, or contested in others (Chen et al., 2019).

Given the literature that is emerging about born digital companies, it is necessary to clarify what is considered an international firm in this study. Here, an international firm is a firm that creates and captures value across national markets through recurring cross border activities, customers or partner relationships. This includes established multinational enterprises and internationally active small and medium sized firms. It also includes born digital firms when the activity in the foreign market is substantial rather than incidental, such as sustained foreign revenues, acquisition of international customers, or cross border ecosystem participation (Oviatt and McDougall, 1994; Reuber and Fischer, 2011). This inclusive boundary captures the fact that small and digital native firms can internationalise fairly quickly, but maintains analytical attention on instances where the cross border constraints significantly influence DT enabled BMI outcomes rather than viewing any online transaction as internationalisation (Johanson and Vahlne, 2009; Monaghan et al., 2020).

1.2 Problem statement and Research Gap

The literature provides good foundations, but does not yet present a cumulative ex-planation of the translation of DT into scalable BMI across borders. Research in infor-mation systems and strategy indicates that DT can facilitate BMI by creating novel design spaces for value propositions, activity architectures and value capture mechanisms, particularly when digital infrastructures and governance allow for quick iteration and re-combination (Vial, 2019; Tilson et al., 2010). DT has also been linked with strategic renewal and organisa-tional change, with recent syntheses emphasising the importance of the congruence of technology, organisation and governance, rather than of the simple deployment of technology, as the key to achieving transformation effects (Hanelt et al., 2021). In parallel with the literature on BMI, it is becoming clear that innovation at the business model level is different from product or process change because it entails non trivial reconfiguration of the activity system and value logic, often spanning firm boundaries and partner roles (Zott and Amit, 2010). This is especially important when it comes to international settings, where boundary spanning and partner dependence are common. A further strand explains mechanism. The Dynamic Capabilities (DC) view argues that

firms achieve renewal when they can sense opportunities, seize them through business model design and commitments, and transform structures and routines to scale change (Teece et al., 1997; Teece, 2007). This mechanism lens is widely used in DT research because it helps explain why similar digital investments produce different outcomes across firms (Warner and Wäger, 2019). Yet, existing research often stops at the general claim that digital technologies enable BMI and that DC matter, without specifying the business model design choices and governance trade offs that determine whether a DT enabled model is portable across borders and resilient under divergent institutional expectations (Teece, 2010; Teece, 2018).

International business research, for its part, explains why scaling across borders is shaped by liabilities of foreignness and outsidership, institutional diversity, and distance dimensions that condition transferability and legitimacy of organisational practices (Kostova, 1999; Berry et al., 2010). These insights imply that international scaling cannot be reduced to technical replication. Even a digitally delivered model must secure local legitimacy, trusted partner relationships, and compliance with jurisdiction specific rules around data, consumer protection, and platform governance (Suchman, 1995). Yet, DT and BMI studies frequently treat such cross border conditions as background context rather than modelling them as moderators that reshape the DT to BMI pathway and its outcomes (Luo, 2021). As a result, the literature provides limited guidance on when international firms should standardise a digital business model core and when they should localise specific layers to sustain legitimacy and ecosystem fit (Banalieva and Dhanaraj, 2019).

Three gaps follow. First, there remains insufficient specification of the intermediate business model design choices that make DT enabled value creation portable across markets, particularly choices related to governance of data, interfaces, and partner incentives (Teece, 2010; Jacobides et al., 2018). Second, cross border conditions are not consistently integrated into DT enabled BMI explanations, even though evidence suggests that institutions, infrastructure maturity, and ecosystem complements shape international scaling outcomes (Chen et al., 2019; Luo, 2021). Third, findings vary across con-

texts, firm types, and levels of digital maturity, creating ambiguity about when born digital scaling logics generalise to other international firms and when physical embeddedness and local complements remain decisive (Monaghan et al., 2020). This thesis addresses these gaps by explaining DT enabled BMI as a mediated and context contingent process rather than a direct association, and by distinguishing business model portability from realised performance in host markets.

1.3 Research aim, objectives and questions

Methodologically, the study responds to the above gaps through a structured synthesis of high quality secondary sources, integrating peer reviewed research with systematically selected firm level materials used to evidence DT initiatives and business model changes. This design is appropriate because prior research already establishes that digital technologies can enable BMI and that DC matter (Vial, 2019; Teece, 2018), so the novelty is not in re asserting these links, but in specifying how DT initiative portfolios are translated into business model redesign and when cross border conditions amplify, deflect, or block scaling. The empirical emphasis therefore sits on identifying recurring DT to BMI pathways, and on theorising boundary conditions that affect portability, legitimacy, and ecosystem fit across countries (Johanson and Vahlne, 2009).

1.3.1 Research aim

The aim of this thesis is to explain how DT drives BMI in international firms and to clarify the cross-border conditions under which DT-enabled BMI is more likely to succeed.

This aim reflects two core premises in prior research. First, DT generates strategic value when it enables firms to reconfigure activities, relationships, and value creation logic, rather than when it merely digitises existing processes (Vial, 2019; Verhoef et al., 2021). Second, international operations introduce liabilities and distances that affect the transferability, legitimacy, and performance consequences of new practices and business models (Zaheer, 1995; Berry et al., 2010). The thesis therefore focuses on DT-to-BMI pathways and on the international context as a set of moderating conditions.

1.3.2 Research objectives

To operationalise the aim, the thesis pursues three objectives:

- To identify and synthesise DT-to-BMI pathways described in prior research and observable in international firm contexts, emphasising how digital technologies enable changes in value creation, delivery, and capture .
- To analyse cross-border moderators that shape these pathways, including liabilities of foreignness, institutional diversity, and distance dimensions relevant to digital operations and business model transfer .
- To derive actionable decision rules that translate the synthesis into managerial guidance, clarifying how international firms can align DT initiatives with coherent BMI choices under differing cross-border conditions .

1.3.3 Research questions

This thesis is organised around two Research Questions (RQ):

- RQ1: How does DT contribute to BMI in international firms?
- RQ2: Under what cross-border conditions does DT-enabled BMI support international scaling and competitive advantage?

Together, RQ1 and RQ2 frame DT as a driver of business model change and position international context as a set of conditions that shape whether those changes can be scaled and sustained. The questions also ensure that the thesis remains grounded in IB concerns, including legitimacy, distance, and cross-border learning, while maintaining focus on business model-level outcomes rather than on technology implementation aloe.

1.4 Theoretical Contributions

The thesis contributes theoretically in three ways. First, it integrates DT and BMI research with internationalisation logic by treating outsidership and legitimacy constraints as causal moderators rather than as peripheral context. Second, it refines the DC lens for this setting by specifying capability reconfiguration as the mechanism through which DT

initiatives become business model design choices, making cross border scaling an outcome of both learning and governance, not only of technological replication. Third, it introduces the distinction between business model portability and business model performance, clarifying why a design that works domestically can travel poorly when institutional requirements and ecosystem complements differ across markets.

1.5 Key concepts and definitions

This thesis relies on three central constructs: DT, BMI, and the international firm. Clear definitions are necessary because each construct is used inconsistently across fields.

1.5.1 Digital Transformation (DT)

DT is defined here as a strategic and organisational process through which a firm leverages digital technologies to achieve substantial changes in value creation and operational logic, including changes to structures, capabilities, and business processes (Vial, 2019; Warner & Wäger, 2019). This definition emphasises transformation rather than digitisation. It also aligns DT with organisational renewal, where digital technologies enable reconfiguration of resources and activities at scale (Verhoef et al., 2021).

1.5.2 Business Model Innovation (BMI)

BMI is defined as purposeful and non-trivial change in the firm's business model design, involving modifications to the activity system through which value is created and delivered, and to the mechanisms through which value is captured (Zott & Amit, 2010). This definition treats the business model as an interdependent system of activities that spans firm boundaries, which is particularly relevant when digital technologies increase reliance on partners and ecosystems (Jacobides et al., 2018). BMI may include new revenue logics, new customer engagement mechanisms, new partner configurations, or shifts from product-centric to service-centric offerings supported by digital infrastructures.

1.5.3 International firm

In this thesis, an international firm is defined as an organisation that creates and captures value across national markets through recurring cross border activities, customers, or

partner relationships. This includes established multinational enterprises and internationally active small and medium sized firms. Born digital firms are included when they exhibit substantive foreign market engagement, such as sustained foreign revenues, international customer acquisition, or cross border ecosystem participation, rather than occasional exporting through digital channels. This boundary ensures the analysis remains centred on international scaling challenges where institutional fit, partner access, and legitimacy expectations materially shape DT enabled BMI outcomes (Johanson and Vahlne, 2009; Monaghan et al., 2020)..

1.6 Scope, assumptions and delimitations

1.6.1 Scope

The thesis investigates DT-driven BMI in the context of international firms, with a focus on the outcome of business models and not on particular technologies. The empirical and analytical focus is of a synthesis-oriented design that combines a structured review of academic literature as well as a systematic selection of secondary sources. The secondary evidence is purposively sampled and theory guided, and has a focus on internationally active companies and documented cases that involve clear and verifiable signs of digital initiatives and observable business model change, and covering variation in digital maturity, industry ecosystem dependence and cross-border exposure. Firm level materials such as annual reports, investor presentations, and reputable case repositories are used to triangulate DT initiative portfolios, capability reconfiguration signals, and BMI outcomes, consultancy and industry analyses are used selectively for contextual support, where primary firm materials are limited. This is an appropriate scope given that DT and BMI are often communicated through public strategic narratives and detectable changes in value proposition, delivery architecture and monetisation, and that comparative analysis across cases across the international firms can highlight recurring pathways and boundary conditions.

1.6.2 Assumptions

Three assumptions are guiding the thesis. First, DT is assumed to be more than the adoption of digital tools and therefore, strategic consequences should be observable at the business model level (Vial, 2019). Second, BMI is assumed to be an appropriate lens for an understanding of how DT creates economic value, because DT often alters the feasible configuration of activities and relationships (Teece, 2018). Third, international context is assumed to be consequential and not incidental. Cross-border differences are considered as meaningful constraints and enablers which have the potential to moderate outcomes (Berry et al. 2010; Zaheer 1995).

1.6.3 Delimitations

Several delimitations are applied to keep the study analytically focused.

- The thesis does not try to measure the causal effect of DT on firm performance with the help of econometrics. Instead, it creates an integrated conceptual explanation and it derives patterns supported by prior research and secondary evidence.
- The thesis does not offer any technical evaluation of particular digital technologies. Technologies are seen as enablers, the strategic value of which is contingent on the extent to which they alter activities, relationships and value logic (Yoo et al., 2010).
- The thesis prioritizes internationally active firms with observable initiatives of DT and business model narratives. Firms that are strictly domestic or that are not properly documented in public sources are not within the main purview.
- The thesis recognizes that "international firms" encompasses born-digital firms as well as traditionally established firms that are in the midst of DT. Nonetheless, the focus is not so much on digital nativity per se, but on DT as a transformation process and while acknowledging that born-digital internationalisation is now a marked empirical phenomenon (Yang et al., 2025).

These delimitations align with the thesis aim and ensure that the analysis remains centred on DT-to-BMI pathways and cross-border conditions, rather than dispersing into broader debates on digital society or generic innovation.

1.7 Thesis structure

The thesis is structured into seven chapters, followed by a conclusion and supporting materials. Chapter 1 introduces the topic, defines the core concepts, articulates the research gap, and presents the research aim, objectives, and research questions. Chapter 2 reviews the literature on digital transformation, business model innovation, and internationalisation, and develops the conceptual framework linking digital transformation to business model innovation under cross-border conditions. Chapter 3 explains the research design, including the systematic literature review protocol and the approach to secondary evidence synthesis and case selection logic. Chapter 4 presents the systematic literature review findings, synthesising digital transformation to business model innovation pathways, cross-border moderators, capability patterns, and the interim refined framework and propositions. Chapter 5 reports the cross-case secondary evidence synthesis, including within-case narratives, cross-case comparison, and decision rules linked to the research questions. Chapter 6 integrates and discusses the results by triangulating the literature and case evidence, interpreting findings through theory, and presenting contributions and managerial implications. Chapter 7 provides the final synthesis, summarises answers to the research questions, offers practical recommendations, and outlines limitations and future research directions. The conclusion then summarises the overall argument and closes the thesis, followed by the reference list and supplementary tables.

1.8 Chapter summary

Chapter 1 established the central problem of the thesis and positioned it at the intersection of digital transformation, business model innovation, and internationalisation. It argued that the key issue is not whether DT matters, but why DT-enabled business models scale unevenly across borders. The chapter defined the core constructs, set the scope

and delimitations, and specified two research questions focused on DT-to-BMI pathways and the cross-border conditions that shape scaling. It also stated the thesis contribution, namely a mediated and context-contingent explanation that distinguishes business model portability from business model performance.

2 Literature Review

This chapter critically reviews the literature to build an argument, not only a summary, about how DT enables BMI in international firms and under which cross border conditions scaling succeeds or fails. The review is organised to support the thesis objectives and research questions by, first, clarifying DT and BMI foundations, second, specifying the mechanism lens through DC, and third, integrating internationalisation perspectives that explain why DT enabled business model designs travel unevenly across countries. Throughout, emphasis is placed on areas where findings diverge across firm types, industries, and levels of digital maturity, because these inconsistencies motivate the conceptual model and the thesis focus on boundary conditions rather than generic claims of positive effects.

2.1 Digital transformation (DT) foundations and dimensions

DT has matured from a technology-centric idea to an organizational and strategic phenomenon that reconfigures how firms create value, coordinate activities, and compete (Vial, 2019; Bharadwaj, 2019). Across business and information systems scholarship, DT is increasingly treated as a multi dimensional change process rather than a discrete information technology (IT) project (Hanelt et al., 2021). Digital business strategy research also treats DT as a shift in the firm's competitive logic and boundary choices (Bharadwaj et al., 2013). This distinction matters because many initiatives labelled "digital" do not constitute DT. Basic digitization typically refers to converting analogue information into digital form, and digitalization often denotes using digital technologies to improve existing processes and channels (Verhoef et al., 2021). DT goes further by reshaping the organization's value logic, operating model, and capability base. DT strategies often specify the targeted domains of change and the governance needed to coordinate them (Matt et al., 2015; Legner et al., 2017).

A helpful synthesis is to view DT as a sequence of interrelated moves: (i) establishing digital foundations, (ii) scaling digital processes and decision making, and (iii) enabling strategic renewal through new business models and boundary spanning structures (Vial,

2019; Hanelt et al., 2021). In this view, DT is not defined by specific technologies. Rather, it is defined by the extent to which technologies are mobilized to shift organizational capabilities and the firm's value creation architecture. Consequently, the same technology (for example cloud computing) can support mere process efficiency in one firm but enable business model innovation (BMI) in another, depending on governance, complementarities, and managerial intent (Verhoef et al., 2021). To clarify the boundary between digitization, digitalization, and DT as analytically distinct phenomena, **Figure 1** presents a staged view of typical initiative types and the kinds of organisational change they imply.

The literature converges on several recurring dimensions of DT. First, DT involves a technology dimension, including digital infrastructures, modular architectures, and data platforms that allow recombination and rapid experimentation (Yoo et al., 2010). Second, it involves an organizational dimension that includes changes in structures, routines, coordination mechanisms, and skills. Third, it involves a strategic dimension, which concerns changes in the firm's positioning, scope, and boundary decisions, including the shift from product centric strategies to platform, service, and ecosystem strategies (Hanelt et al., 2021). Fourth, DT frequently entails a governance dimension because digital value creation depends on how data, standards, and interfaces are controlled and shared, internally and across partners (Legner et al., 2017; Verhoef et al., 2021).

This multi dimensional framing also clarifies why DT is particularly consequential for international firms. Cross border operations multiply the complexity of DT because infrastructures, institutional constraints, and partner ecosystems differ across countries. A DT initiative designed in a home market may not travel easily to host markets due to regulatory divergence, data localization, privacy regimes, and heterogeneous customer expectations. At the same time, DT can reduce some traditional barriers to international scaling by lowering information costs and enabling remote coordination, digital distribution, and rapid replication of software enabled activities (Banalieva and Dhanaraj, 2019; Luo, 2021). This duality creates the central puzzle of this thesis: DT can support global scale and speed, but it also intensifies challenges of legitimacy and local fit. To consoli-

date the definitional diversity in the DT literature, **Table 1** summarises influential conceptualisations of DT and highlights the dimensions that each perspective foregrounds. A key limitation in the DT literature is that empirical findings are often not directly comparable because DT is operationalised through heterogeneous proxies, ranging from maturity models and survey based self assessments to specific technology adoption lists (Vial, 2019). This creates a measurement problem that partly explains why reported benefits vary by industry and by maturity stage, with early digitisation sometimes yielding efficiency gains while later transformation is more strongly associated with strategic renewal and business model redesign (Verhoef et al., 2021). For international firms, the issue is amplified because the same initiative can face different regulatory and ecosystem constraints across countries (Hanelt et al., 2021). This supports the thesis emphasis on DT initiative portfolios as inputs whose effects depend on capability reconfiguration and cross border context rather than on adoption alone.

Table 1. Selected conceptualizations of DT and core dimensions

Source	How DT is conceptualized	Emphasis	Implied DT dimensions most salient
Vial (2019)	A process that triggers significant changes to an entity's properties through combinations of digital technologies	Process logic and organizational change	Strategy, organization, technology, governance
Hanelt et al. (2021)	A phenomenon that reconfigures value creation and organizing through digital technologies	System level reconfiguration	Strategy, organization, ecosystem
Verhoef et al. (2021)	A multi disciplinary construct spanning digitization to transformation	Clarification of scope and disciplinary bridges	Technology, strategy, market, organization
Legner et al. (2017)	Digitalization wave reshaping BISE research agenda	Infrastructure and data driven organizing	Technology, governance, data architecture
Matt et al. (2015)	Coordinated changes in strategy, structure, and IT to exploit digital technologies	Strategic alignment and transformation strategy	Strategy, organization, IT alignment
Yoo et al. (2010)	Digitization creates layered modular architectures enabling new organizing logics	Architectural recombination and innovation	Technology architecture, modularity, ecosystem

While definitions vary, two themes recur. DT is both (i) a reconfiguration of capabilities and (ii) a reconfiguration of value creation structures. This observation becomes important in later sections because it suggests that DT should be examined through mechanism lenses that can explain capability reconfiguration and strategic renewal rather than treated as an exogenous shock.

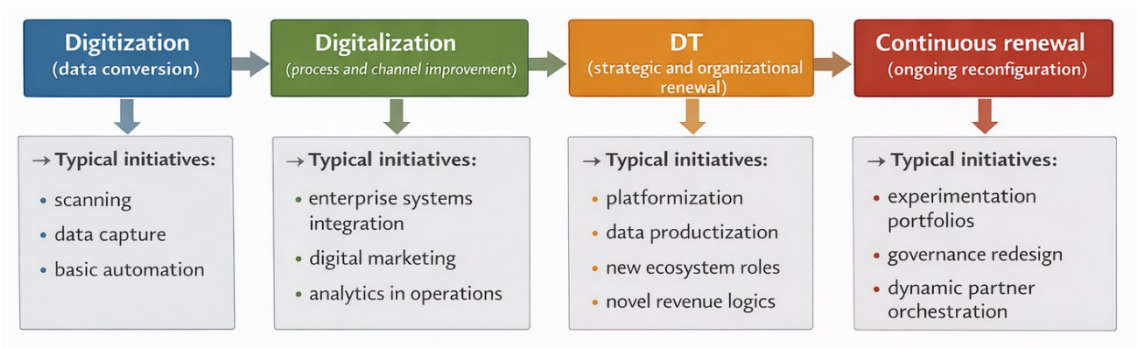

Figure 1. A staged view from digitization to DT and typical initiative types
Note. Author's own figure, informed by (Vial, 2019; Verhoef et al., 2021).

Figure 1 is not presented as a deterministic maturity model. It functions as an analytic device to distinguish operational digital improvements from changes that plausibly alter the business model.

2.2 Business model innovation foundations

Business model innovation (BMI) has become a central construct in strategy research because it explains competitive advantage that cannot be reduced to product features or process efficiencies alone (Chesbrough, 2010). The business model is commonly treated as the system of interdependent activities that determines how a firm creates and captures value (Amit and Zott, 2001; Zott and Amit, 2010). This activity system view is valuable for DT research because digital technologies often reshape activity interdependencies, information flows, and boundary decisions, thereby enabling new configurations of value creation that transcend functional silos and national borders.

The business model concept has also been developed as a representation of a firm's value logic, including the value proposition, the architecture of value delivery, and the mechanisms of value capture (Osterwalder et al., 2005). Combining these perspectives

suggests that a business model includes both design elements (what the firm offers, to whom, and how) and systemic properties (how activities fit together and how the system is governed). BMI then refers to novel changes in this design and system that materially alter how value is created and captured (Foss and Saebi, 2017).

Two clarifications from the literature are particularly relevant. First, BMI is not synonymous with business model change. Incremental changes in pricing or minor channel adjustments may not qualify as innovation unless they reconfigure the activity system or value logic in ways that are nontrivial and difficult to imitate (Teece, 2010). Second, BMI is not the same as innovation within a business model. Firms can innovate products, processes, or marketing while leaving the business model intact. BMI requires novelty at the level of the value creation architecture or the value capture mechanism (Casadesus Masanell and Ricart, 2010).

The BMI literature is conceptually rich, and it also contains a boundary problem that affects cumulative knowledge (Foss and Saebi, 2018). Some studies treat BMI as a discrete change in one or more business model elements. Other studies require system level reconfiguration in activity interdependencies, governance, and value capture logic (Zott et al., 2011). In such cases, the same empirical change may be coded as incremental adjustment in one stream and as innovation in another (Foss and Saebi, 2017). This thesis follows the activity system and value logic view to maintain analytical discipline. It also clarifies why cross-border scaling is not a simple replication exercise. A business model can be technically transferable and still fail if governance choices and complement dependencies misfit local ecosystems (Jacobides et al., 2018).

The Long Range Planning tradition emphasizes that business models and strategy are related but distinct. Strategy concerns choices about positioning and advantage, while the business model explains the logic of value creation and capture that implements strategy (Casadesus Masanell and Ricart, 2010). This distinction is helpful in international contexts because a firm may hold a coherent global strategy but operate multiple localized business models. Conversely, DT can induce BMI that forces strategic reconsidera-

tion, for example when a product firm becomes a platform orchestrator or when a multinational enterprise (MNE) shifts from asset heavy foreign operations to digitally mediated cross border delivery (Stallkamp and Schotter, 2021).

A major contribution of the BMI literature is the identification of design themes that shape performance. Activity system research often distinguishes novelty centred designs, which create value through new activity linkages, and efficiency centred designs, which create value through lower transaction and coordination costs (Zott and Amit, 2010). DT can support both: analytics and automation can reduce costs, while platforms and data driven services can support novel value propositions. Yet, for DT enabled international growth, novelty and efficiency interact. Scaling a novel digital business model internationally depends on whether activities can be replicated across contexts and whether the firm can manage cross border liabilities such as outsidership and legitimacy challenges (Johanson and Vahlne, 2009; Kostova and Zaheer, 1999). To operationalise BMI in a way that aligns with DT research, **Table 2** outlines core forms of BMI and specifies how digital initiatives typically enable each form at the business model level.

Table 2. What counts as BMI and common forms relevant to DT

BMI form	Description at business model level	DT relevance	Illustrative sources
Value proposition innovation	Novel bundles, outcomes, or digitally augmented offerings	Data driven services, personalization, outcome based contracts	Teece (2010); Verhoef et al. (2021)
Value creation and delivery innovation	Reconfiguration of activities, roles, and boundaries	Platform orchestration, ecosystem partnering, remote delivery	Amit and Zott (2001); Zott and Amit (2010)
Value capture innovation	Novel revenue logic or monetization mechanisms	Subscription, usage based pricing, data monetization	Teece (2010); Foss and Saebi (2017)
Governance and boundary innovation	Redesign of control over interfaces, standards, data, and complements	API governance, data access rules, partner accreditation	Legner et al. (2017); Stallkamp and Schotter (2021)

***Note**. Author's own compilation, based on (Teece, 2010; Foss and Saebi, 2017).*

Taken together, the BMI foundations indicate that DT enabled BMI should be studied as activity system reconfiguration under constraints. This leads to the next section, which discusses mechanisms linking DT to BMI using a capability based lens.

2.3 Mechanisms linking DT to BMI

To explain how DT drives BMI, it is not sufficient to list technologies or initiatives. A mechanism perspective is needed to account for how firms repeatedly reconfigure resources and activities. The dynamic capabilities (DC) view is widely used for this purpose. DCs are typically defined as the firm's abilities to integrate, build, and reconfigure internal and external competences to address rapidly changing environments (Teece et al., 1997; Eisenhardt and Martin, 2000). While the concept has been debated, it remains influential because it connects environmental change to strategic renewal through identifiable processes and managerial actions (Winter, 2003).

The DC view is also contested. It has been criticised for risks of tautology and for blurred boundaries between ordinary capabilities and higher order capabilities, particularly when capability labels are inferred from outcomes (Eisenhardt and Martin, 2000). This matters for DT enabled BMI research because it can encourage post hoc explanations that re describe success rather than specify mechanisms (Winter, 2003). In this thesis, DC is therefore used in a constrained way as a mechanism vocabulary to trace how sensing, seizing, and transforming routines structure decision sequences from DT initiatives to business model design choices, without assuming that DC automatically produce superior performance.

The DC view is particularly relevant to DT because digital technologies increase the pace of competitive shifts and expand the space of possible business model designs. Data and software allow rapid experimentation, but they also require new orchestration and governance routines. Empirical work suggests that DT succeeds when firms develop capabilities for sensing opportunities, seizing them through investments and business model design, and transforming the organization through continuous reconfiguration (Teece, 2007; Warner and Wäger, 2019). This triad maps naturally onto DT enabled BMI: sensing identifies new digital value opportunities, seizing converts them into viable business model designs, and transforming aligns structures and routines to scale the model.

Microfoundations research further clarifies that DCs are enacted through lower level processes such as managerial cognition, decision rules, resource allocation routines, and

coordination mechanisms (Warner and Wäger, 2019). In DT contexts, microfoundations often include digital sensing via analytics, experimentation routines, agile governance, and ecosystem partnering capabilities. The key implication is that DT drives BMI when digital initiatives are coupled with the capability to learn, reconfigure, and govern across organizational boundaries. The DC microfoundations that translate DT initiatives into business model outcomes are summarised in **Figure 2**, which positions sensing, seizing, and transforming as the key renewal mechanisms.

A complementary stream connects business models and DCs directly. Business models can be treated as both (i) objects of design and (ii) vehicles for executing dynamic strategy. From this perspective, DCs shape the firm's capacity to innovate its business model, while the business model becomes the manifestation of reconfigured capabilities in the market (Teece, 2018; Foss and Saebi, 2017). This is consistent with the argument that business models and DCs co evolve: changes in customer interaction data can shift sensing routines, which in turn enable new value capture mechanisms, which then require further transformation of governance and operations.

DT also creates distinctive capability demands because digitization produces layered modular architectures that change how innovation is organized (Yoo et al., 2010). Layering and modularity can accelerate recombination and international scalability because software components can be replicated at low marginal cost. However, the same properties can increase dependence on complements, standards, and external partners (Legner et al., 2017). Consequently, DT enabled BMI depends on ecosystem orchestration capabilities, including the ability to manage interfaces, align incentives, and govern data access across borders (Stallkamp and Schotter, 2021).

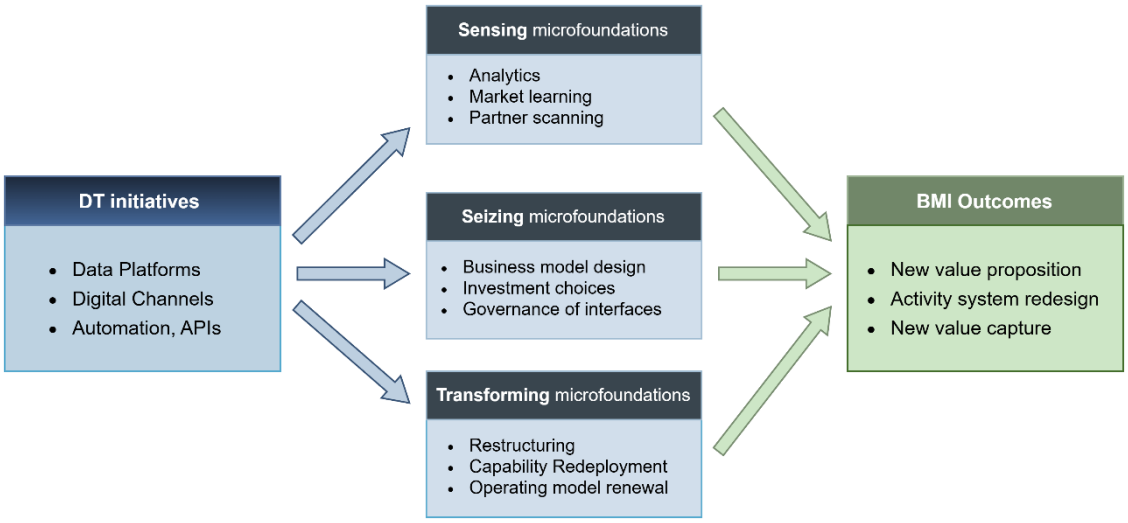

Figure 2. DC microfoundations as mechanisms linking DT initiatives to BMI outcomes
***Note**. Author's own figure, informed by (Teece, 2007; Warner and Wäger, 2019).*

This mechanism logic implies that DT does not automatically result in BMI. DT initiatives can remain trapped at the operational improvement level unless sensing, seizing, and transforming microfoundations are sufficiently developed to support business model level change. To connect initiative types to mechanism logic, **Table 3** maps common DT initiative clusters to the DC microfoundations they most directly activate and to the BMI levers they are most likely to influence.

Table 3. Mapping typical DT initiatives to DC microfoundations and BMI effects

DT initiative cluster	Dominant DC microfoundations enabled	Likely BMI lever	Selected supporting sources
Enterprise wide data platform	Sensing via analytics, real time monitoring	New value proposition through personalization, data products	Vial (2019); Teece (2018)
Digital channels and customer engagement	Sensing and seizing through rapid feedback loops	New delivery architecture, direct cross border reach	Verhoef et al. (2021); Banalieva and Dhanaraj (2019)
Automation and process digitization	Transforming via routine redesign, capability redeployment	Efficiency centred activity system redesign	Hanelt et al. (2021); Winter (2003)
API and platform governance	Seizing and transforming through interface control and partner orchestration	Ecosystem oriented business model and new capture mechanisms	Yoo et al. (2010); Stallkamp and Schotter (2021)

***Note**. Author's own compilation, based on (Teece, 2007; Warner and Wäger, 2019).*

The international dimension adds an additional layer. DC microfoundations may not transfer easily across subsidiaries and partner networks because they depend on managerial attention, institutional constraints, and the availability of complementary assets such as digital infrastructures and skilled labour. Therefore, cross border conditions are not merely contextual variables. They plausibly moderate how DT initiatives translate into capability reconfiguration and BMI outcomes. This logic motivates the incorporation of internationalization lenses in the next section.

2.4 Internationalization lenses relevant to DT enabled BMI

IB scholarship provides several perspectives to explain cross border expansion and its constraints. For this thesis, two families of lenses are particularly relevant: (i) network based internationalization logic and (ii) early and accelerated internationalization perspectives.

The network view embedded in the revisited Uppsala model (UM) argues that internationalization is constrained not only by lack of knowledge but also by network position. The “liability of outsidership” describes the disadvantages of being outside relevant networks in foreign markets, which limits access to opportunities and learning (Johanson and Vahlne, 2009). This concept is useful for DT enabled BMI because many digital business models depend on network effects, complementors, and platform participation. In such contexts, outsidership may be particularly costly: a platform can be technically scalable yet fail to gain foreign traction if local users, partners, and institutions do not join (Chen et al., 2019; Stallkamp and Schotter, 2021).

The UM has been further adapted to the modern environment. Contemporary work emphasizes that uncertainty and learning remain central, but relationship building, trust, and commitment processes occur in more complex, digitally mediated networks (Vahlne and Johanson, 2017; Coviello et al., 2017). DT can reduce some forms of uncertainty through data and digital monitoring, but it can also create new uncertainties related to regulation, cybersecurity, and legitimacy. Hence, the UM suggests that DT enabled BMI

requires strategies that build insider status, often through partnerships, local complementors, and credible governance commitments.

A second family of lenses is associated with accelerated internationalization, and international new ventures (INV). INVs are internationally expanding from the outset or very soon after, often by using knowledge, niche positioning and network resources rather than by accumulating foreign market experience over time (Oviatt and McDougall, 1994). Born global theory also frames early internationalisers as firms that internationalise rapidly without gradual market commitment processes (Hennart, 2014). DT has facilitated the increasing prevalence of such paths by reducing the cost of coordination and providing the opportunity for global reach via digital channels. This does not mean that the internationalization becomes frictionless. Rather, there is a shift in the sources of friction. Issues of legitimacy, localization, platform governance and institutional constraints start to become more salient than physical distribution constraints (Monaghan et al., 2020; Brouthers et al., 2016).

The born digital argument does not imply that physical embeddedness becomes irrelevant. Recent evidence shows that born digital firms may still deploy foreign direct investment, particularly into geographically and culturally distant markets, to access non digital complements and to reduce frictions that cannot be solved through digital channels alone (Kogut and Singh, 1988; Stallkamp et al., 2023). This qualification strengthens the thesis motivation: DT can expand the opportunity set for international scaling, but cross border diffusion still depends on ecosystem access, local legitimacy, and learning processes. The Uppsala emphasis on outsidership remains theoretically useful, even when internationalisation is digitally accelerated (Johanson and Vahlne, 2009).

Born digital firms accentuate these dynamics. Born digitals are firms that have an offering and operations that are deeply digital from the start. They might scale rapidly as a result of software and data to replicate, but face unique cross border challenges as value creation is dependent on digital ecosystems, standards and data governance (Monaghan et al., 2020; Banalieva and Dhanaraj, 2019). Empirical research on ibusiness firms indicates that network effects and country level influence can be a factor in international penetration, and outsidership liabilities can be managed through strategic sequencing

across markets (Chen et al., 2019). This fits in with the UM logic, but is accepting that digital firms may not follow gradual expansion in traditional sense.

Internationalization lenses also direct attention to legitimacy. MNE legitimacy is more complex than domestic legitimacy because it is evaluated by multiple institutional audiences across countries. Organizational legitimacy under complexity suggests that MNEs must manage competing expectations and potential conflicts between global consistency and local conformity (Kostova and Zaheer, 1999). This is particularly relevant for DT enabled BMI because new data uses, algorithmic decisions, and platform governance arrangements often raise legitimacy questions that vary across jurisdictions. **Table 4** synthesises the internationalization lenses most relevant to DT enabled BMI and clarifies how each lens helps explain cross border variation in the scalability and legitimacy of digital business models.

Table 4. Internationalization lenses and expected relevance to DT enabled BMI

Lens	Core idea	Relevance to DT enabled BMI	Selected sources
UM revisited, network logic	Internationalization constrained by network position and relationship learning	Platform and ecosystem business models require insider status, complementors, and trust	Johanson and Vahlne (2009); Vahlne and Johanson (2017)
Outsidership and network effects	Being outside networks reduces learning and opportunity access	Digital scaling depends on local participation and complement availability	Chen et al. (2019); Stallkamp and Schotter (2021)
INV perspective	Early internationalization through unique resources and networks	DT enables early global reach but shifts constraints to legitimacy and governance	Oviatt and McDougall (1994); Monaghan et al. (2020)
Digital economy internalization	Digitalization reshapes firm specific advantages and governance choices	Explains new advantages such as network advantage and data based advantages	Banalieva and Dhanaraj (2019); Luo (2021)

***Note**. Author's own compilation, based on (Johanson and Vahlne, 2009; Banalieva and Dhanaraj, 2019).*

2.5 Digitalization and international business (IB): what recent evidence says

Recent evidence in IB scholarship increasingly treats digitalization as a force that reshapes foundational assumptions about internationalization costs, firm specific advantages, and the boundaries of the firm. Internalization theory has been extended to account for the digital economy by arguing that digitalization changes both the costs of transferring advantages across borders and the nature of those advantages themselves (Banalieva and Dhanaraj, 2019). In this view, digital firms often possess network advantages, data advantages, and algorithmic capabilities that do not map neatly onto traditional asset based advantages. These advantages may scale quickly, but they can also be fragile if trust, legitimacy, or regulatory permissions are undermined.

A parallel stream investigates how digitalized service multinationals and platform firms internationalize. Conceptual and empirical work suggests that digital service MNEs may rely less on ownership of foreign assets and more on orchestrating ecosystems and digitally mediated governance (Hennart, 2019; Stallkamp and Schotter, 2021). The platform context introduces distinctive international strategy questions because network effects can be local, global, or hybrid. This shapes entry sequencing, localization strategies, and partner acquisition strategies. Empirical findings on ibusiness firms indicate that international penetration depends on mitigating outsidership liabilities and strategically selecting markets where diffusion can generate credible momentum (Chen et al., 2019). This implies that DT enabled BMI does not eliminate the importance of country context. Instead, it alters how country context matters.

Systematic reviews provide further consolidation. A recent systematic review on the internationalization of digital firms highlights fragmentation across domains and identifies drivers, strategies, outcomes, and contexts as key organizing themes (Yang et al., 2025). This synthesis reinforces the thesis motivation that research remains scattered across information systems, strategy, and IB, even though the underlying phenomenon is inher-

ently cross disciplinary. For digital platform based firms, a systematic review in the Journal of World Business emphasizes the need to integrate perspectives on platform characteristics, internationalization patterns, and typologies (Li et al., 2025). The review also points to unresolved questions about how platform governance choices interact with host country institutions and local complementors.

The most recent multidisciplinary review focused specifically on DT in IB provides an integrative agenda that positions DT as a driver of new global strategies and organizing forms, while recognizing persistent frictions in cross border contexts (Schmeisser et al., 2026). A crucial implication for this thesis is that DT should not be treated as a universal enabler. Its effects depend on the cross border conditions that determine whether digitally enabled activity systems are legitimate, interoperable, and scalable.

The born digital literature further reinforces this point by arguing that this process of rapid internationalization is not enough to eliminate the need for market embeddedness. Born digitals could be subject to some new constraints because digital offer is interwoven with national infrastructures, payments, identity regimes and regulatory standards (Monaghan et al., 2020). Survey evidence also links digitalisation to the internationalisation strategy choices of born-digital firms (Vadana et al., 2021). This is consistent with evidence showing that digitalization can bring down the cost of information but increase the complexity of governance and compliance at the cross-border level (Luo, 2021). In addition, digitalization can affect the relationship between global standardization and local responsiveness. Since software is replicable, firms will be tempted to standardize globally. Yet, the institutional structures and legitimacy expectations can impose the need for localized design, content governance, and data practices in order to force hybrid business model designs.

Findings also differ by type of firm. Platform focussed studies emphasise network effects, governance and complement availability as key bottlenecks in international scaling (Li et al., 2025) whereas the SME oriented stream more often frames digitalisation as a resource leverage mechanism that lowers barriers to information and increases reach through e commerce, digital value chain activities and market learning on platforms (Bargoni et al., 2024). These differences suggest that DT enabled BMI cannot be generalised

through a single scaling logic. Instead, boundary conditions seem to depend on ecosystem dependency as well as on the extent to which value creation is co produced with local complements, reinforcing the thesis focus on moderators and portability rather than replication alone (Monaghan et al., 2020).

A very practical way of thinking about the travel of business models across borders is to talk about core elements and peripheral elements. Core elements consists of basic value creation architecture, data logic, and interface standards. Peripheral elements comprise localized complements, customer experience layers and compliance adaptations. DT often increases the modularity of this separation. However, modularity is by no means automatic. It needs deliberate architecture and governance (Yoo et al., 2010; Legner et al., 2017). This framing is in line with the view that international scalability is a design outcome rather than a default property of digital technologies. To translate these arguments into an international portability logic, Figure 3 distinguishes between business model elements that should be stable for global scalability and elements that usually need to be adapted locally so as to be legitimate and compliant.

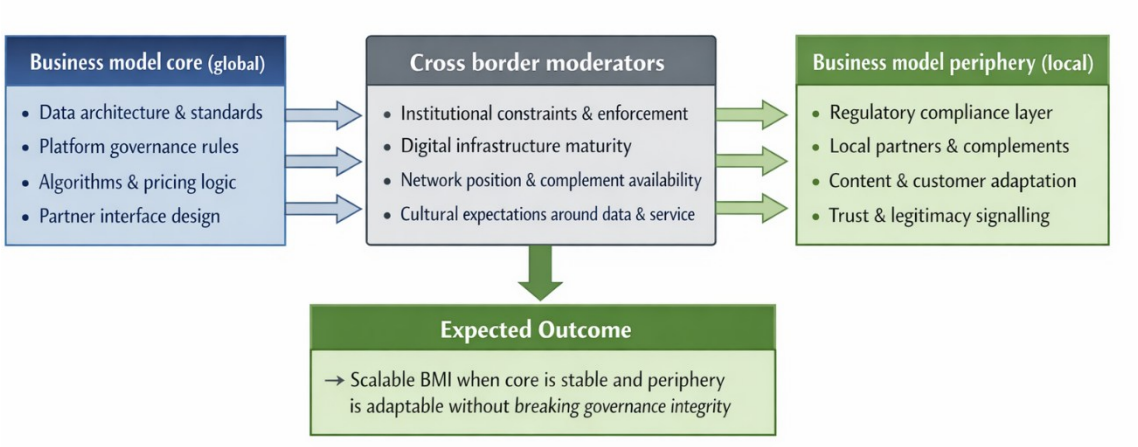

Figure 3. How business models travel across borders under DT: a modularity and legitimacy logic

***Note**. Author's own figure, informed by (Yoo et al., 2010; Legner et al., 2017).*

This conceptualization also relates back to the UM. Outsidership can be reduced through the construction of local periphery elements by way of partnerships, whilst the core

maintains coherence. On the other hand, too much localization can lead to fragmentation of the global model and a lack of learning synergies, while too much standardization can trigger legitimacy failures.

2.6 Methodological insights from prior studies

Methodologically, the studies on DT, BMI, and digital internationalization show three dominating trends.

First, systematic literature reviews are typical to the field of DT and digitalization scholarship in line with the conceptual fragmentation in this field. Reviews are synthesis works that try to integrate constructs and propose research agendas, but often fall short of creating testable mechanism models that incorporate international moderators (Hanelt et al., 2021; Tranfield et al., 2003). This observation supports the rationale for the design of the thesis: a conceptual framework is necessary, but it must be based on mechanism logic and cross border contingencies.

Second, qualitative case studies are prominent, particularly when it deals with understanding how firms build DCs for DT. This is in part due to the complexity of organizational change that DT entails, and the difficulty of capturing microfoundations through cross sectional surveys alone (Warner and Wäger, 2019; Eisenhardt, 1989). Case evidence is especially helpful for unravelling sequences: how initiatives are put in motion, how governance unfolds, how business models are redesigned over time.

Third, IB studies of digital firms involve both multi case and quantitative designs, which frequently employ platform diffusion data or international performance indicators. Such studies are valuable, as they shed light on country level and network effects that are key to the process of digital internationalization (Brouthers et al., 2016). However, many empirical studies emphasize on entry patterns or performance results without directly observing business model design processes (Chen et al., 2019). This leaves a methodological gap for the current thesis, which aims at explaining DT to BMI pathways and the conditions under which these pathways are valid.

A further limitation is the range of substantial differences in measurement approaches between studies, especially for DT and BMI. DT is alternately operationalized through IT

investments, digital maturity proxies or qualitative assessments, whereas BMI sometimes is seen as a binary outcome and sometimes as a multi dimensional construct (Hanelt et al., 2021). This lack of alignment leads to reduced comparability and adds to fragmented findings (Foss and Saebi, 2017). Therefore, one contribution of this thesis is to propose an integrative conceptual model that can be used to guide operationalization decisions in the following empirical chapters.

These methodological patterns have a direct link to the questions of the thesis research. RQ1 requires tracing how DT initiatives translate into business model redesign, which requires evidence on sequence, choices on governance and capability routines, not just correlations of digital adoption and performance. RQ2 needs attention to identifying cross border conditions that determine scaling results, which necessitates comparison across markets and ecosystems to reveal when portability fails. The use of secondary sources in this thesis, therefore, is not a limitation, but rather a fit to purpose choice, to allow for the triangulation of literature from peer reviewed studies and documented firm evidence in the derivation of pathways and boundary conditions difficult to capture using single method designs (Eisenhardt, 1989; Tranfield et al., 2003). In order to render the methodological implications and outstanding gaps more explicit across the core streams, Table 5 summarises representative studies and reviews, and indicates their focus, context, principle insight and the particular gap that motivates the present thesis. The table also clarifies how the evidence base maps on to requirements of RQ1 and RQ2.

Table 5. Representative studies and reviews informing DT enabled BMI in international firms and the gaps addressed in this thesis

Study (citation)	Focus and method	Context / firm type	Core insight	Gap motivating this thesis
Vial (2019)	Review and research agenda	Cross industry	DT is organisational transformation, not IT adoption	Limited integration with IB boundary conditions
Verhoef et al. (2021)	Conceptual synthesis	Customer centric transformation	DT portfolios vary by domain and maturity	Cross border scalability treated implicitly
Hanelt et al. (2021)	Conceptual synthesis	Strategy and IS	DT enables strategic renewal and BMI	Limited specification of portability across markets
Foss and Saebi (2017)	Conceptual review	BMI research	Clarifies BMI forms and mechanisms	Weak linkage to internationalisation constraints

Teece (2010)	Conceptual	Business models and strategy	Governance and value capture central to BM	Cross border institutional fit under developed
Warner and Wäger (2019)	Mechanism oriented synthesis	DC in DT	Microfoundations connect DT to renewal	Limited cross border comparison
Johanson and Vahlne (2009)	Theory revision	UM revisited	Outsidership and networks shape internationalisation	Digital scaling implications require integration
Monaghan et al. (2020)	Conceptual	Digital platforms	Digital scaling depends on platform governance and ecosystems	Limited linkage to BMI design choices
Li et al. (2025)	Systematic review	Platform based firms	Internationalisation conditioned by governance and institutions	Need mediated model linking DT, DC, BMI
Schmeisser et al. (2026)	Multidisciplinary review	IB and DT	DT reshapes strategy, but national context remains decisive	Need mechanism view at business model level
Stallkamp and Schotter (2021)	Conceptual	Digital firms	Digitalisation changes internationalisation pathways	Boundary conditions across maturity levels unclear
Stallkamp et al. (2023)	Empirical study	Born digital firms	Born digitals use FDI for complements and distance frictions	Link to BMI outcomes and portability needs theorising
Bargoni et al. (2024)	Systematic review	SMEs	Digitalisation supports SME internationalisation through distinct domains	BMI mechanisms and cross border moderators need integration

Finally, transparency standards for evidence synthesis have advanced. The PRISMA (Preferred Reporting Items for Systematic Reviews and Meta Analyses) statement provides widely used guidance for transparent review reporting, including flow diagram representation of screening and inclusion (Page et al., 2021). While the present thesis is not positioned as a full systematic review, adopting systematic search and screening principles strengthens methodological credibility and reduces selection bias.

2.7 Synthesis and conceptual model for this thesis

The preceding sections converge on a single organising claim. DT contributes to competitive advantage in international firms primarily when it is translated into coherent changes in the business model, and when those changes remain scalable and legitimate

across borders. This translation is neither automatic nor uniform. It depends on the firm's capability reconfiguration and on the cross border context in which the new business model must operate (Vial, 2019; Johanson and Vahlne, 2009).

First implication concerns the role of DT initiatives. DT initiatives are best understood as a portfolio rather than a single programme, typically including customer facing initiatives (digital channels, digital customer experience, personalization), operational initiatives (automation, analytics embedded in routines, digitally enabled coordination), and architecture and governance initiatives (enterprise data platforms, modular architectures, application programming interfaces, platform governance, and cybersecurity controls) (Verhoef et al., 2021; Legner et al., 2017). In this thesis, these initiatives are treated as inputs that expand the opportunity set. Yet they do not by themselves constitute business model change, a distinction that remains blurred in parts of the literature (Vial, 2019).

Second implication concerns mechanism. The DC view provides a mechanism lens linking DT initiatives to business model outcomes through sensing, seizing, and transforming processes (Teece, 2007). Capability reconfiguration is positioned as the pivotal intermediate layer. Sensing capability concerns identifying digital opportunities and threats through analytics driven learning and partner scanning. Seizing capability concerns business model design and commitment decisions, including monetization logic and governance rules for data and interfaces. Transforming capability concerns restructuring and boundary decisions required to scale the new model, including redeploying resources, redesigning roles, and re aligning governance (Warner and Wäger, 2019; Teece, 2007).

Third implication concerns what counts as business model change. BMI is treated as a system level outcome reflected in changes to value proposition, activity system design, value capture mechanisms, and governance. DT can enable BMI by lowering marginal costs of replication, enabling continuous iteration through data feedback loops, and shifting value creation toward ecosystem orchestration (Teece, 2010; Jacobides et al., 2018). BMI outcomes nevertheless vary in scope, ranging from efficiency centred redesign to novelty centred redesign with new roles and interaction patterns (Zott and Amit, 2010).

IB scholarship explains why DT to BMI pathways yield divergent results across markets. Cross border moderators operate at multiple levels. Institutional regimes shape feasible data use, platform governance, and legitimacy expectations. Network conditions shape diffusion because outsidership liabilities persist and network effects and complements can be locally bounded (Johanson and Vahlne, 2009;). Digital economy arguments further suggest that data, network, and orchestration advantages interact with market structure and institutional constraints (Banalieva and Dhanaraj, 2019). Recent evidence syntheses reinforce that international scaling depends on governance choices and host market institutions, not only technological replicability (Schmeisser et al., 2026; Li et al., 2025).

Two further features are incorporated in the model. First, feedback loops are acknowledged because BMI generates digital traces and learning that can strengthen sensing and redirect later DT initiatives. Second, portability is separated from performance because a business model can be technically replicable yet underperform when legitimacy or outsidership constraints block adoption.

The framework yields three expectations that guide the analysis and connect directly to the thesis research questions. First, DT initiatives contribute to BMI only when DC microfoundations translate digital options into coherent business model design choices (Teece, 2007; Warner and Wäger, 2019). Second, cross border moderators are expected to influence both the translation of initiatives into capabilities and the translation of capabilities into outcomes, rather than operating only at the final stage (Johanson and Vahlne, 2009; Banalieva and Dhanaraj, 2019). Third, international scaling outcomes are expected to depend on maintaining a stable business model core while adapting local layers through governance and network embedding choices (Zott and Amit, 2010; Jacobides et al., 2018). Bringing these streams together, Figure 4 presents the integrative conceptual framework guiding this thesis, linking DT initiatives to BMI outcomes through capability reconfiguration while making cross border conditions explicit as moderators.

2.8 Chapter summary

Chapter 2 built the conceptual base of the thesis. It clarified DT as a multi-dimensional transformation process, treated BMI as system-level redesign, and used dynamic capabilities as the mechanism linking digital initiatives to business model change. It then integrated internationalisation logic to show why outsidership, legitimacy, and institutional diversity shape cross-border outcomes. The chapter closed by presenting the conceptual framework that guides the empirical chapters and the later integrated discussion.

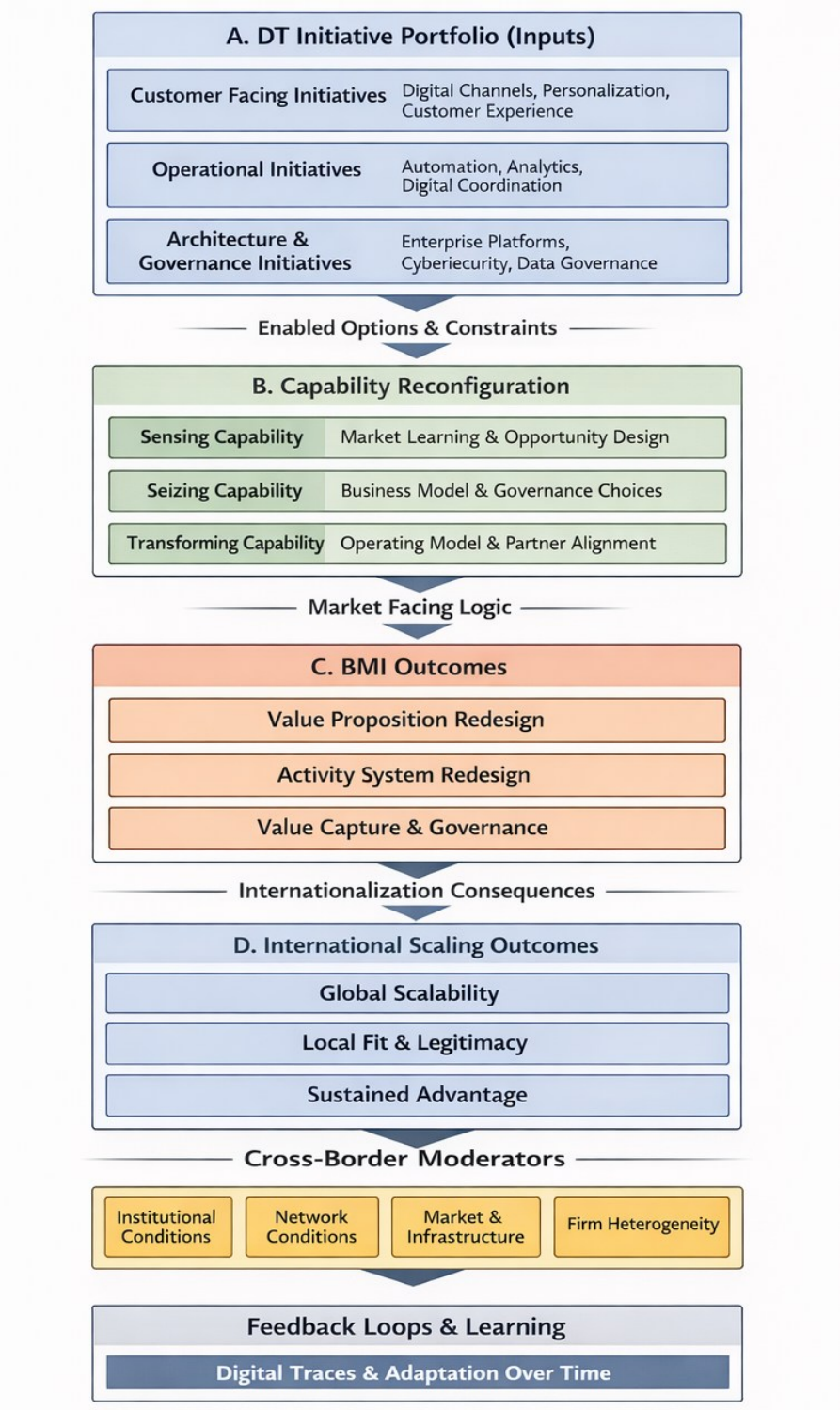

Figure 4. Conceptual framework: DT enabled BMI in international firms

3 Methodology

3.1 Research design and rationale

This thesis has a two-part research design. Part one is a Systematic Literature Review (SLR). Part two is a secondary evidence synthesis based on a small selection of international firms as cases. The design is selected to deal directly with the research questions. RQ1 asks the question of how Digital Transformation (DT) contributes to Business Model Innovation (BMI) in international firms. RQ2 asks under what conditions of cross-border conditions DT-enabled BMI supports international scaling and competitive advantage.

The SLR offers an organized account of what the literature has to say on DT to BMI pathways, mechanisms of capability, and cross-border moderators. It also helps to determine where there is divergence in the evidence in terms of firmer type and level of digital maturity. The case synthesis then traces these relationships through firm-level evidence, which is important because business model change is typically visible through sequences of decisions, governance choices, and redesign of value capture rather than through single observable events. This combination facilitates explanation and not just description. The overall logic is in line with evidence-informed review guidelines in management research, which views review work in terms of its being a transparent and replicable method, rather than as a sort of informal narrative summary (Tranfield et al., 2003).

A second design choice is the use of secondary evidence. DT and BMI are often communicated through public stories, product architecture and pricing changes, ecosystem partnership announcements, and risk disclosures related to data governance. These traces can frequently be found in annual reports, investor presentations, earnings call transcripts, product documentation and pricing pages. Document analysis is therefore a suitable method, provided that the source selection, extraction and interpretation are explicitly structured (Bowen, 2009). This approach also lends itself to cross-case comparison, as similar categories of evidence can be captured on a cross-country basis across countries where firms operate.

The two strands of the research design are summarised in Figure 5, and how the outputs from them contribute to the subsequent chapters. As shown in Figure 5, the SLR provides information about pathway taxonomy and moderator categories, whereas the portability testing of case synthesis and the boundary conditions by pattern matching between cases.

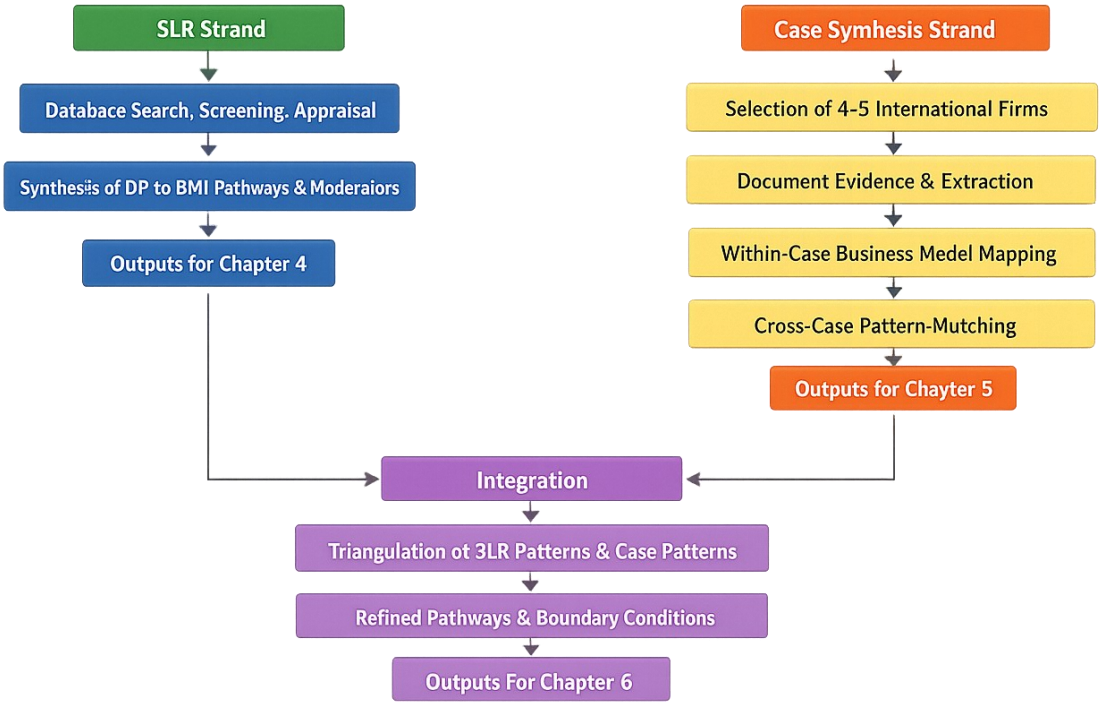

Figure 5. Research design and outputs of the thesis

3.2 Philosophical position and approach

The thesis follows a practical approach. The aim is to construct an explanation with a theoretical foundation and utility for international business decision making. DT, BMI and Dynamic Capabilities (DC) are considered analytical constructs that dictate how evidence is collected and compared and not labels applied after outcomes have been noted.

The study is conducted using an abductive logic. In practical terms, this means that existing theory is used to inform the initial extraction template and coding categories, while evidence from the included studies and cases is used to inform a refinement of explanation of pathways and boundary conditions. Abduction is especially appropriate for research that integrates several literature streams and heterogeneous data sources and it

supports the desired to develop a mechanism-oriented account of the translation of DT in a business model redesign (Dubois and Gadde, 2002).

3.3 Systematic literature review protocol

The SLR is a structured process and involves the following steps: planning, search, screening, quality appraisal, extraction, and synthesis. This sequence makes it possible for the review to be documented and duplicated, which adds methodological credibility (Tranfield et al., 2003). Reporting is organised according to Preferred Reporting Items for Systematic Reviews and Meta Analyses (PRISMA) guidance consisting of a clear structure for reporting identification, screening, eligibility assessment and final inclusion (Page et al., 2021).

3.3.1 Databases and search scope

The search focused on peer-reviewed journal articles and peer-reviewed review papers from the journals covered by the international business, strategy, and information systems. The core databases used were Scopus and Web of Science Core Collection. Business and management coverage was enhanced with ABI/INFORM (ProQuest) and Business Source Complete (EBSCO). In addition, citation chasing was attempted to identify relevant studies that might not be identified through the keyword search alone. Hand searching was used for leading outlets in the international business and global strategy to ensure coverage of high-impact work.

Hand searching targeted Journal of International Business Studies, Journal of World Business, International Business Review, Strategic Management Journal, Long Range Planning, Business and Information Systems Engineering, Information Systems Research, Journal of Management, Journal of Management Studies, The Journal of Strategic Information Systems, and Journal of Business Research. Journal-wise screening outcomes are reported in Supplementary Table S3.

The publication window was selected as 2008 -2026 to account for the emergence of platform-based and data-driven business models and the exponential increase of DT scholarship. Only English language studies were included.

3.3.2 Search strings and fields

Search strings were structured around three concept blocks: DT, BMI, and internationalisation. Title, abstract, and keyword fields were used where supported by the database. Table 6 provides the compact view of search blocks used across sources, ensuring conceptual coverage while keeping the search manageable.

Table 6. Core search string blocks used across databases

Concept block	Example terms	Notes
DT	"digital transformation" OR digitalization OR "digital strategy" OR "digital business strategy"	Captures DT and adjacent framing
BMI	"business model innovation" OR "business model change" OR "business model*" OR platform* OR ecosystem*	Captures BMI and platform and ecosystem work
International	international* OR cross-border OR global OR multinational OR "foreign market"	Captures cross-border scaling terms

To maximise transparency, a complete database-specific search table is provided as *Supplementary Table S1*. Supplementary Table S1 includes the exact query syntax, fields, applied filters, and the documentation rules used during export and logging.

3.3.3 Inclusion and exclusion criteria

Screening was guided by explicit inclusion and exclusion criteria to ensure construct relevance and cross-border fit. Table 7 summarises these rules. Table 7 is used consistently across all screening stages to reduce discretionary selection.

Table 7. Inclusion and exclusion criteria

Criterion	Include	Exclude
Publication type	Peer-reviewed journal articles and peer-reviewed reviews	Editorials, non-reviewed reports, opinion pieces
Topic fit	DT linked to BMI or business model change in an international setting	DT discussed with no business model implications

Unit of analysis	Firms with cross-border activity, delivery, or international platform reach	Purely domestic studies with no international component
Evidence	Empirical, conceptual, or review with clear method description	Unclear method or unclear construct use
Time window	2008–2026	Outside window unless theory foundational
Language	English	Non-English texts

3.3.4 Screening process and PRISMA documentation

Screening occurred in two stages. First, titles and abstracts were screened against Table 7. Second, full texts were assessed for eligibility. Duplicates were removed prior to screening. Full-text exclusions were logged with reasons to maintain an audit trail.

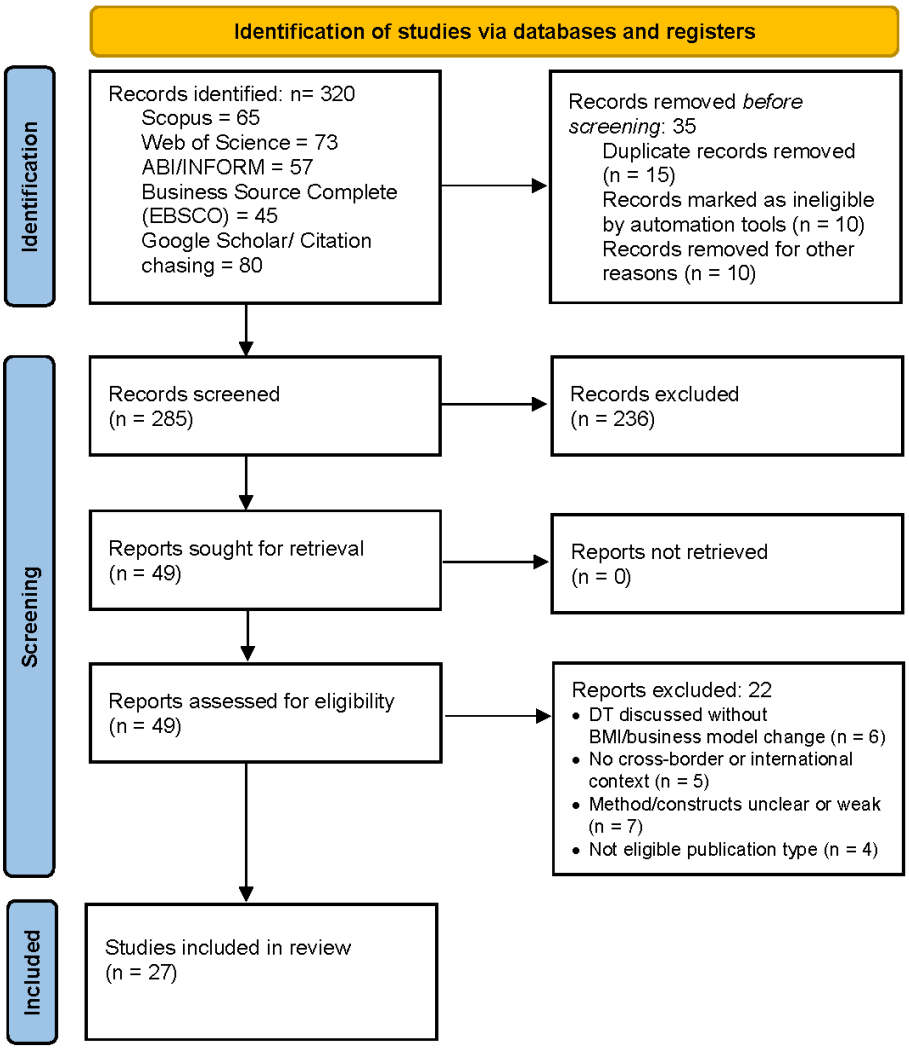

Figure 6. PRISMA-style screening flow used for the SLR

Figure 6 presents the PRISMA-style screening flow used in the review. Searches across Scopus, Web of Science Core Collection, ABI/INFORM, Business Source Complete, and supplementary Google Scholar and citation-chasing procedures identified 320 records. Before screening, 35 records were removed, including duplicate records (n = 15), records

marked as ineligible by automation tools (n = 10), and records removed for other reasons (n = 10). This left 285 records for title and abstract screening, of which 236 records were excluded. Forty-nine reports were then sought for retrieval, and all were successfully retrieved. Full-text assessment was conducted for 49 reports, of which 22 were excluded. The main reasons for full-text exclusion were that DT was discussed without explicit BMI or business model change (n = 6), no cross-border or international context was present (n = 5), the method or constructs were unclear or weak (n = 7), or the publication type was not eligible (n = 4). The final synthesis therefore retained 27 studies, which are reported in Supplementary Table S2. To strengthen transparency, journal-wise inclusion and exclusion counts are also reported in Supplementary Table S3. (Page et al., 2021).

3.3.5 Quality appraisal

Quality appraisal was used to strengthen comparability and reduce the influence of weak evidence. A light rubric was applied across included study types, focusing on method clarity, construct clarity, context reporting, evidence strength, and cross-border relevance. Table 8 presents the rubric used. Studies scoring low were retained only for sensitivity checks, while the main synthesis relied on medium and high scoring studies.

Table 8. Quality appraisal rubric

Dimension	Guiding question	Score 0	Score 1	Score 2
Method clarity	Are data and method steps described clearly	Missing	Partial	Clear
Construct clarity	Are DT and BMI defined and applied consistently	Weak	Mixed	Clear
Context reporting	Are firm type and international context reported	Missing	Partial	Clear
Evidence strength	Are claims supported with traceable evidence	Weak	Moderate	Strong
Cross-border relevance	Does the study inform scaling boundary conditions	Low	Medium	High

***Note**. Each included study was scored from 0 to 2 on the five dimensions above, giving a total score from 0 to 10. Studies scoring 0 to 4 were treated as low quality and used only for sensitivity*

checks. Studies scoring 5 to 7 (medium) and 8 to 10 (high) formed the main synthesis. The rubric was used to support consistent appraisal and transparent inclusion decisions.

3.3.6 Data extraction and synthesis strategy

Data extraction followed a structured template capturing: study aim, unit of analysis, firm type, sector, geography, DT initiative type, BMI form, capability mechanism framing, moderators, and reported outcomes. The extraction template also recorded how each study defined DT and BMI, because definitional drift is a known limitation across streams. The synthesis then grouped evidence into (i) DT-to-BMI pathways aligned with RQ1, and (ii) cross-border moderators aligned with RQ2.

To support transparency of what evidence underpins the synthesis, Supplementary Table S2 summarises the characteristics of the included studies, including study type, context, and primary contribution to RQ1 or RQ2.

3.4 Case sampling strategy for the secondary evidence synthesis

The secondary evidence synthesis uses purposive sampling with theoretical variation. The aim is not representativeness. The aim is to test whether DT-to-BMI pathways and boundary conditions remain credible under contrasting settings. Four to five cases are targeted to balance analytical depth with cross-case comparison.

The selection logic draws on case-based theory building principles that emphasise replication logic across cases. Some cases are selected for literal replication, where similar pathways are expected. Other cases are selected for theoretical replication, where differences in institutional context, ecosystem dependence, or digital maturity are expected to shape outcomes (Eisenhardt, 1989).

Table 9 summarises the criteria used to select cases and the intended variation across them. These criteria are applied before evidence collection to reduce selection bias.

Table 9. Case selection criteria and target variation

Criterion	Operational rule	Target variation
International scope	Recurring activity in two or more foreign markets	Regional versus multi-region presence

DT visibility	Public evidence of DT initiatives over time	Data platform, platform governance, servitisation
BMI observability	Clear shifts in offering, delivery, or monetisation	Subscription shift, ecosystem role change
Evidence availability	Multi-year documentation in credible sources	High versus medium disclosure depth
Cross-border friction	Exposure to regulation or complement dependence	High versus low constraint settings

3.5 Data sources and data extraction

Secondary sources were organised into three tiers. Tier 1 includes firm-authored materials such as annual reports, investor presentations, earnings call transcripts, corporate governance reports, and product and pricing pages. Tier 2 includes regulatory and market infrastructure documents where relevant, particularly those describing risk factors, data constraints, or platform governance obligations. Tier 3 includes reputable case repositories and peer-reviewed teaching cases where available.

Document analysis guides the treatment of these sources as data. This requires systematic selection, a transparent extraction procedure, and an explicit linkage between claims and evidence items (Bowen, 2009). Where documents are used for secondary analysis, an audit trail is maintained to document what was collected and how it was interpreted (Johnston, 2014).

Extraction is organised using the Business Model Canvas (BMC). BMC is used to capture business model elements in a comparable way across firms and across time periods (Osterwalder et al., 2005). Table 10 shows the extraction template structured by BMC blocks. Table 10 also clarifies the types of indicators that are extracted to evidence BMI.

Table 10. Evidence extraction template structured by BMC blocks

BMC block	Evidence captured	Example indicators
Value proposition	Offering shifts linked to digital features	Data-driven service layer, outcome-based promise

Customer segments	Segment changes across markets	New foreign segments, enterprise versus consumer shift
Channels	Delivery and distribution changes	Direct digital delivery, platform distribution
Customer relationships	Interaction model changes	Self-service, automated support
Key activities	Activity system redesign	API management, partner onboarding, data operations
Key resources	Digital assets and routines	Data platform, analytics stack, governance routines
Key partners	Ecosystem changes	Local complements, alliances, platform complementors
Cost structure	Cost drivers linked to DT	Cloud spend, compliance overhead
Revenue streams	Monetisation changes	Subscription, usage-based, tiered pricing

3.6 Data analysis plan

Analysis proceeds in two layers: within-case mapping and cross-case pattern matching.

3.6.1 Within-case mapping

Within-case analysis builds a timeline of DT initiatives and maps business model design before and after key shifts. The BMC template provides the core structure for this mapping, ensuring that value proposition, delivery architecture, and value capture can be compared across cases. Each case produces three outputs: (1) a DT initiative timeline, (2) a BMC map of business model change, and (3) a short analytic memo explaining cross-border constraints and responses.

Within-case work also records disconfirming evidence. This is important because public narratives often emphasise success. Capturing inconsistencies and gaps reduces the risk of treating disclosure as proof.

3.6.2 Cross-case pattern matching

Cross-case analysis compares cases using the same construct set: DT initiative portfolio type, capability signals, BMI form, and cross-border constraint type. The goal is to identify recurring DT-to-BMI pathways and specify boundary conditions that shape portability and performance across markets. Replication logic strengthens confidence when patterns recur across cases under variation (Eisenhardt, 1989).

Figure 7 summarises the analysis workflow from evidence collection to pathway synthesis. As shown in Figure 7, extraction and coding feed into within-case outputs, which then feed into cross-case matrices used to identify pathways and moderators.

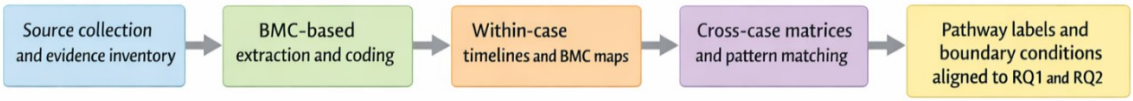

Figure 7. Analysis workflow from evidence extraction to pathway synthesis

3.7 Data management and ethics

All materials used are publicly available and legally accessible. No personal data is collected, and no private firm data is requested. Sources are stored with a consistent file naming convention that includes firm name, year, and document type. A retrieval log is maintained for web-based sources to record when evidence was accessed.

Claims in later chapters are linked to traceable evidence items. This practice is treated as part of research integrity and supports transparent secondary analysis (Johnston, 2014).

3.8 Quality, validity, and reliability

Trustworthiness is addressed through credibility, dependability, confirmability, and transferability. These criteria are widely used to assess qualitative work, particularly where data sources are heterogeneous (Lincoln and Guba, 1985). Practical steps used to support these criteria are consistent with established guidance (Shenton, 2004).

Credibility is strengthened through triangulation across document types. Annual reports, investor presentations, and product documentation have different disclosure incentives. Convergence across them increases confidence in extracted evidence. Dependability is

supported through an audit trail consisting of search logs, screening decisions, extraction templates, and coded evidence inventories. Confirmability is supported by linking analytic claims to source locations and recording contradictory evidence where it appears. Transferability is supported through explicit case selection criteria and contextual reporting for each case.

Reliability of the SLR is supported through explicit inclusion criteria and a structured screening sequence (Tranfield et al., 2003). PRISMA-style reporting increases transparency around inclusion and exclusion decisions (Page et al., 2021). The quality appraisal rubric in Table 8 provides a documented basis for weighting evidence in the synthesis.

A known limitation is disclosure bias in secondary sources. Firms may underreport failed initiatives or contested outcomes. This risk is addressed by triangulating across materials, logging missing disclosure, and avoiding speculative inference when evidence is weak.

3.9 Chapter summary

Chapter 3 explained the research design and justified the use of a structured SLR combined with a cross-case secondary evidence synthesis. It specified the search strategy, screening logic, quality appraisal rubric, case sampling criteria, extraction templates, and analysis procedures used to answer the research questions. It also clarified how credibility, dependability, confirmability, and transferability were supported through triangulation, explicit inclusion criteria, and a documented audit trail.

4 Findings Part I - Systematic Literature Review (SLR) results

This chapter reports the results of the SLR. The synthesis draws on the 27 included studies listed in Supplementary Table S2. The analysis is organised around the Chapter 4 outline. It starts with a descriptive overview. It then synthesises DT-to-BMI pathways in international settings. Next, it identifies cross-border moderators. It then consolidates capability patterns linked to stronger and weaker outcomes. It closes with an interim framework and propositions for future testing.

4.1 Descriptive overview of the literature

The included studies are concentrated in a relatively small group of high-impact outlets. Most contributions appear in Journal of International Business Studies and Long Range Planning, with further coverage in Strategic Management Journal and selected journals in information systems. This pattern is important because it locates the conversation at the intersection of international business, strategy, and information systems. It also helps explain why concepts and terms do not always travel cleanly across studies (Vial, 2019; Hanelt et al., 2021). The journal-wise screening summary reinforces this point. As shown in Supplementary Table S3, the final synthesis retained 27 studies distributed across a limited set of journals. Journal of International Business Studies contributed 8 included studies, followed by Long Range Planning with 5, and Strategic Management Journal with 3. Business and Information Systems Engineering, Journal of Management, and Journal of World Business each contributed 2 studies, while The Journal of Strategic Information Systems, Journal of Business Research, Journal of Management Studies, Information Systems Research, and International Business Review each contributed 1 study. The same table also reports the journal-wise screening profile used in the review, with title and abstract exclusions totalling 236 records and full-text exclusions totalling 22 records. This distribution suggests two things. First, research directly linking DT, BMI, and international scaling remains concentrated rather than widely dispersed across jour-

nals. Second, a substantial share of initially identified studies did not satisfy the combined threshold for conceptual relevance, international context, and methodological clarity required for inclusion.

The publication profile also shows an uneven build-up over time. Early anchor studies established the basic logic of internationalisation and early digital value creation (Oviatt and McDougall, 1994; Teece et al., 1997). A second wave consolidated business model foundations and digital innovation architecture (Amit and Zott, 2001; Yoo et al., 2010). A third wave brought DT into sharper focus as a form of strategic renewal and highlighted its implications for international business theory (Vial, 2019; Banalieva and Dhanaraj, 2019). The most recent work calls for stronger integration, especially around digital platforms and international scaling (Li et al., 2025; Schmeisser et al., 2026).

The evidence base remains heavily weighted toward theory. Most included studies are conceptual or review-based. Only one included study provides a direct empirical test using firm-level data on digital internationalisation outcomes (Chen et al., 2019). This imbalance is itself a finding. It helps explain why many claims are expressed as mechanisms, agendas, or conceptual models rather than as settled causal estimates (Hanelt et al., 2021; Schmeisser et al., 2026). It also creates space for synthesis, because the literature needs to be read collectively to show what it suggests and where it remains silent.

Three theoretical lenses dominate the sample. The first is the Dynamic Capabilities (DC) lens, used to explain how firms translate digital initiatives into strategic renewal through sensing, seizing, and transforming processes (Teece, 2007; Warner and Wäger, 2019). The second is the business model lens, where business models are treated as value creation and value capture logic and as an activity system (Teece, 2010; Zott and Amit, 2010). The third is internationalisation logic, especially the revisited Uppsala model with its emphasis on networks and outsidership (Johanson and Vahlne, 2009; Vahlne and Johanson, 2017). These lenses are often discussed in parallel. The SLR shows that stronger explanations emerge when they are connected in a single chain.

Context coverage is uneven. Many studies are cross-industry and general in orientation. A smaller group focuses on digital platforms and digitalised service multinationals (Hennart, 2019; Li et al., 2025). Born-digital firms also receive explicit conceptual attention

(Monaghan et al., 2020). Yet the empirical base remains limited for questions concerning business model design choices and governance trade-offs across borders (Chen et al., 2019; Schmeisser et al., 2026). This creates a practical problem. Managers face real choices about how to scale and how far to adapt, but the literature often offers high-level guidance rather than decision-ready conditions.

Overall, the descriptive overview leads to one clear conclusion. The literature strongly supports DT as a source of strategic options. It is less explicit, however, on the pathways through which those options are converted into portable business model designs across borders (Vial, 2019; Teece, 2018). This gap motivates the pathway synthesis developed in the next section.

4.2 DT pathways that lead to BMI in international settings

Across the included studies, DT is not presented as one programme. It is considered as a portfolio of initiatives that changes flows of information, coordination routines and governance structures (Vial, 2019; Verhoef et al., 2021). BMI, on the other hand, is a system-level shift. It involves value proposition changes, value delivery changes, value capture changes, and governance changes (Teece, 2010; Zott and Amit, 2010). The SLR suggests that DT makes BMI when three things come together. Digital efforts increase viable design options. DC processes are those that turn those choices into commitments. Business model designing thereafter stabilises these commitments into an activity system and value logic (Teece, 2007; Teece, 2010).

The synthesis determines four recurring pathways (DT-to-BMI) that are most salient in an international setting. These pathways are not exclusive. They often combine. Still, they are different in their core mechanism and also in the limitations they have in terms of scaling. Table 11 summarises the taxonomy and provides a link to representative sources for each pathway.

Table 11. Taxonomy of DT-to-BMI pathways in international firms

Pathway label	Typical DT initiative focus	Dominant mechanism	BMI change focus	Cross-border scaling logic	Representative studies

Data-driven augmentation	Data platforms, analytics, digital operating data	Digital sensing and rapid learning	Value proposition extension and new data-enabled services	Portability depends on data governance fit and analytics deployment capability	Vial (2019); Legner et al. (2017)
Digital channel reconfiguration	Digital channels, self-service, digitally mediated customer interaction	Seizing through channel redesign and customer interface choices	Delivery architecture redesign and customer relationship model change	Standardise core interface, localise experience and compliance layers	Verhoef et al. (2021); Matt et al. (2015)
Platformisation and ecosystem orchestration	Platform governance, interface rules, complementor management	Orchestration routines and network building	Governance and boundary innovation, ecosystem value creation	Scaling depends on network effects, local complements, and outsidership mitigation	Chen et al. (2019); Li et al. (2025)
Monetisation and value capture redesign	New pricing architecture, subscription or usage logic, bundling	Seizing through business model commitment and revenue architecture	Value capture innovation and activity system fit	Portability depends on willingness-to-pay norms and local contracting constraints	Teece (2010); Amit and Zott (2001)

***Note**. Author's own synthesis, informed by the studies listed in Supplementary Table S2.*

Table 11 clarifies how there is a movement of the literature from "digital initiatives" to "business model outcomes". The pathways vary in terms of their major object of redesign. The data-driven augmentation path primarily involves an extension of the value proposition. It is often with an analytics and digital learning loops (Vial, 2019). The digital channel reconfiguration pathway makes changes in how value is provided and the way how customers interact with the firm (Verhoef et al., 2021). The platformisation pathway

leads to shifting the boundary of the business model and design of governance by externalising value creation in ecosystems (Li et al., 2025). The monetisation pathway is concerned with value capture logic and also fit between pricing architecture and the underlying activity system (Teece, 2010).

The review also shows that these pathways vary in their dependency structure. Channel reconfiguration can scale with fewer external dependencies than platformisation. Platformisation depends on complementors and network participation. This dependence increases exposure to outsidership and localisation pressures (Johanson and Vahlne, 2009; Chen et al., 2019). Data-driven augmentation depends on internal data governance and analytics routines. It also depends on external legitimacy and regulatory fit when data crosses borders (Legner et al., 2017; Luo, 2021). Monetisation redesign depends on customer willingness-to-pay and contracting norms. These often vary by market, even with a stable product core (Teece, 2010; Hennart, 2019).

The key outcome of Section 4.2 is therefore not a claim that one pathway dominates. The finding is that DT-to-BMI pathways are diverse, and each pathway carries a different set of cross-border constraints. This leads to the moderators in the next section.

4.3 Cross-border moderators

The included studies converge on a central point. International scaling is not automatic in digital contexts. Cross-border conditions shape whether a DT-enabled business model can be transferred and adopted (Johanson and Vahlne, 2009; Li et al., 2025). The SLR identifies four moderator categories that recur across the international business and digital platform literature. These moderators operate before and after business model redesign. They shape both capability development and market outcomes.

Table 12. Cross-border moderators shaping DT-enabled BMI outcomes

Moderator category	What varies across borders	Why it matters for DT-to-BMI pathways	Representative studies
Regulation and data governance	Data access rules, privacy expectations, localisation constraints	Limits data portability and shapes platform governance legitimacy	Luo (2021); Schmeisser et al. (2026)

Ecosystem structure and complements	Availability of complementors, standards, partner depth	Determines platform take-off and local value creation capacity	Chen et al. (2019); Li et al. (2025)
Network position and outsidership	Insider access, trust, opportunity visibility	Shapes diffusion speed and partner acquisition in host markets	Johanson and Vahlne (2009); Vahlne and Johanson (2017)
Market readiness and adoption frictions	Customer trust, digital payment rails, infrastructure stability	Affects customer interface design and monetisation feasibility	Hennart (2019); Monaghan et al. (2020)

Regulation and data governance emerges as a core constraint. Digital advantage often relies on data flows and algorithmic capability. Yet cross-border rules shape what is feasible and legitimate (Luo, 2021). This constraint is strongest for data-driven augmentation and platformisation. It is less direct for channel redesign, although customer data and identity systems still matter (Verhoef et al., 2021; Schmeisser et al., 2026).

The second dominant moderator is ecosystem structure and complements. Business models that scale through platforms need network effects to take hold and require complements to exist. The empirical evidence on ibusiness firms reveals the role of the network effects and local participation in international penetration (Chen et al., 2019). The review literature on the plat-form effect reinforces that the design of governance and the host market institutional fit interacts with the availability of complements (Li et al., 2025). This suggests that platformisation is often limited by local ecosystem readiness instead of technical replicability.

Network position and outsidership is the third moderator. The revisited Uppsala model considers internationalisation as a networked learning. Outsidership minimizes the access to opportunities and slows down learning (Johanson and Vahlne, 2009). In digital situations, the mechanism continues. A platform can be technically scalable but it can break down without access to insiders and credible commitments to local actors (Vahlne and Johanson, 2017). This moderator has influence on all the pathways, but becomes decisive in those where business models rely on partners.

Market readiness and adoption frictions constitute a fourth set of moderators. Digitalised service multinationals have different frictions than asset-heavy firms. They may be less dependent on ownership and more dependent on orchestration but are still subject to the constraints of trust and legitimacy (Hennart, 2019). Born digital firms bring up similar issues. Digital reach is swift, but for a product, local infrastructure, payment systems and regulatory standards may limit diffusion (Monaghan et al., 2020). This moderator is especially relevant for the redesign of monetisation and for reconfiguration of channels.

A practical implication is derived from Section 4.3. Cross-border moderators do not operate as a final stage filter only. They influence previous design decisions. They also influence which investments in capabilities have the most pay-off (Banalieva and Dhanaraj, 2019; Luo, 2021). This insight has a direct link to capability patterns in the following section.

4.4 Capability Patterns Related to Success and Failure

The SLR is a great supporter of DC to be the main mechanism lens for DT-enabled renewal (Teece, 2007; Warner and Wäger, 2019). It also explains what this means in practice. "Capability" is not a weighty description. It is referring to identifiable routines and governance choices which link portfolios of initiatives to business model redesign.

Three capability patterns are repeated in studies of successful renewal: The first is pattern is stronger sensing with digital learning. Digital sensing is about analytics, customer feedback loops and scanning of partners and complements. It helps to recognize viable business model moves earlier (Teece, 2007). It is also central to the augmentation of data-driven value proposition innovation where an organization is learning from the usage data (Vial, 2019).

The second pattern is seizing by explicit business model commitment. Seizing is not only investment selection. It includes governance decisions which help to stabilise a design. It involves decisions on interface rules, pricing architecture and boundary decisions (Teece, 2007). This type of pattern is most visible in platformisation and monetisation

redesign. In the case of platform models, taking control involves rule-setting and incentive design for complementors (Li et al., 2025). In monetisation shifts, seizing encompasses the alignment of revenue logic and activity system economics (Teece, 2010).

The third pattern is changing by organisational reconfiguration. Transforomation is about aligning structures, roles and routines as per the new business model. It entails the rebuilding of coordination, resources reallocation and changes in governance processes (Warner and Wäger, 2019). It is also influenced by digital architecture. Layered modular architectures promote recombination yet simultaneously necessitate the imposition of order (Yoo et al., 2010). The implication is simple. Without a transformation of capability, firms can digitise processes but without changing the business model.

The SLR also shows regular patterns of failure. One first pattern of failure is trapped digitisation. Firms may implement digital tools without having to alter the system of activity. In such cases, DT is still operational improvement, but not BMI (Vial, 2019). A second failure pattern is poor governance in ecosystem models. When the platform rules are unclear or unstable, complementors do not commit. Scaling then stalls, particularly across borders (Li et al., 2025). A third pattern of failure is outsidership persistence. Firms may underinvest on local partner embedding and legitimacy work. Market entry then is shallow despite digital reach (Johanson and Vahlne, 2009; Chen et al., 2019).

The core insight from Section 4.4 is that “Capability patterns explain why similar digital initiatives produce different business model outcomes”. Cross-border conditions amplify this variance because they shape learning speed, partner access, and governance feasibility (Banalieva and Dhanaraj, 2019; Schmeisser et al., 2026).

4.5 Interim framework and propositions

Sections 4.1 to 4.4 support an interim framework that refines Chapter 2’s conceptual model. The refined framework makes two changes. It adds explicit pathway categories from Table 11, It also clarifies that cross-border moderators influence both (i) the translation of initiatives into capability reconfiguration and (ii) the translation of capabilities into business model outcomes. Figure 8 presents the refined framework.

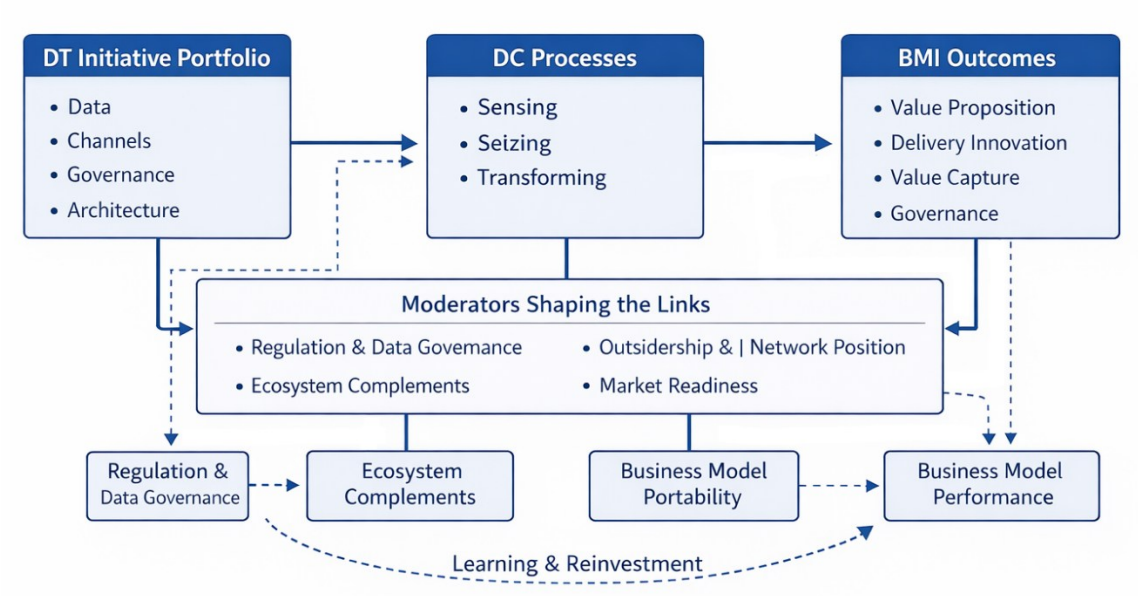

Figure 8. Refined interim framework from the SLR

Based on Figure 8, the ***SLR yields a set of propositions*** that are testable in future empirical work. *These propositions are framed to link directly to RQ1 and RQ2*.

P1. DT initiative portfolios are more likely to produce BMI when firms develop sensing routines that convert digital data into opportunity identification.

P2. Seizing routines that include explicit business model governance choices strengthen the translation of DT initiatives into scalable BMI outcomes.

P3. Transforming routines increase the likelihood that DT moves beyond operational improvement and results in system-level BMI.

P4. Data-driven augmentation pathways are more portable across borders when data governance fit supports lawful and legitimate data use in host markets.

P5. Platformisation pathways scale internationally when complement availability and partner participation support network effects in host markets.

P6. Outsidership weakens international scaling outcomes even when digital offerings are technically replicable, because learning and partner access remain networked.

P7. Monetisation redesign improves cross-border performance when pricing architecture aligns with local willingness-to-pay and contracting conditions.

P8. Business model portability does not guarantee business model performance, because cross-border moderators can block adoption even when design transfer is feasible.

In summary, Chapter 4 clarifies what the SLR evidence base supports and what it does not. The literature supports DT as a source of strategic options and supports DC as a mechanism lens. It also shows that cross-border scaling depends on moderators that shape both capability development and market adoption. These results inform the cross-case secondary evidence synthesis in Chapter 5, where the pathway taxonomy and propositions guide within-case mapping and cross-case comparison.

4.6 Chapter summary

Chapter 4 showed that the SLR supports a mediated explanation of DT-enabled BMI rather than a simple technology effect. Four recurrent DT-to-BMI pathways were identified, together with four moderator categories that shape international scaling outcomes. The review also showed that governance, capability reconfiguration, and business model design choices matter more than technology adoption alone. These findings produced the interim framework and propositions that guide the case analysis in Chapter 5.

5 Findings Part II: Cross-case secondary evidence synthesis

This chapter reports the results of the cross-case synthesis based on secondary firm evidence. The purpose is to complement the SLR results by tracing how DT initiatives translate into observable BMI choices in real international firms, and by making the cross-border frictions visible at the level of governance, ecosystem access, and local fit. The analysis uses the pathway taxonomy and moderator categories established in the SLR as coding anchors, so the case material can be compared systematically rather than narrated as isolated stories. In practical terms, Table 11 and Table 12 provide the classification backbone for the case mapping, while the BMC extraction logic introduced in Chapter 3 is used to record business model changes in a comparable format across cases.

5.1 Sample profile and case overview

The case set was selected using the criteria in Table 9, with an explicit goal of theoretical variation rather than representativeness. Four firms were chosen because each exhibits (i) sustained international activity, (ii) visible DT initiative portfolios over multiple years, and (iii) observable business model shifts. The cases also cover distinct DT-to-BMI pathways identified in the SLR. Two cases represent subscription and recurring revenue reconfiguration in software and services. One case represents platform and ecosystem scaling under strong governance demands. One case represents an industrial incumbent moving from product-centric selling toward digitally mediated services and recurring software revenues.

Figure 9 positions the four cases on two selection dimensions used throughout the analysis: ecosystem dependence and digital maturity of the core offering. This positioning matters because it shapes which cross-border constraints become binding. When ecosystem dependence is high, outsidership and complement access can dominate scaling outcomes. When ecosystem dependence is lower, institutional constraints and pricing architecture tend to dominate.

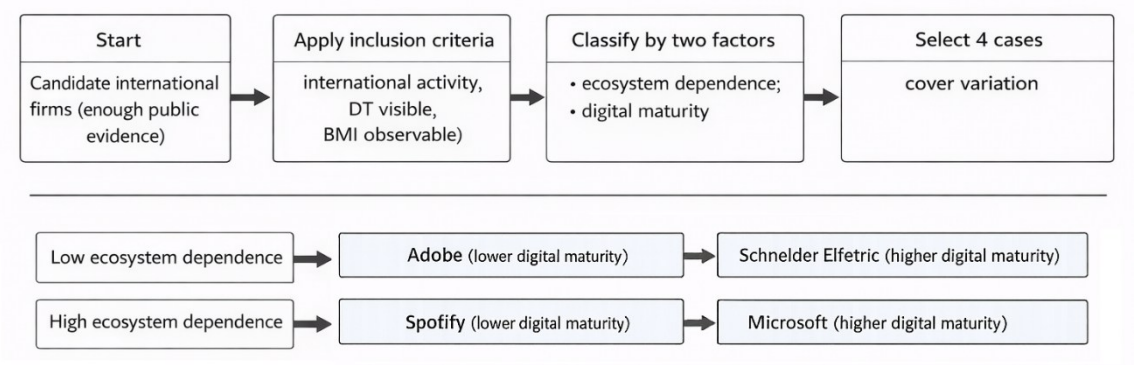

Figure 9. Case selection map for cross-case synthesis (ecosystem dependence x digital maturity)
***Note**. Author's own figure, informed by case selection logic in Chapter 3 and DT pathway typology from the SLR.*

Table 13 summarises the case set and the evidence base used for each firm. Evidence sources follow the tiered logic set out in Chapter 3. The emphasis is on firm-authored reports and filings, supported by investor materials when they add detail on business model design choices or on recurring revenue logic.

Table 13. Case selection and evidence sources (cross-case synthesis)

Case firm	Sector and baseline business model	Primary DT initiative clusters observed	Core BMI change observed (BMC-level)	International scaling pattern	Main evidence sources used (secondary)	Dominant cross-border frictions coded
Adobe	Creative and document software, monetised through recurring subscriptions	Product-led digital channels, data-driven marketing and lifecycle management, AI and cloud services, partner channels	Value capture redesign around subscription tiers and add-ons; channel and customer relationship digitisation	Global subscription scaling with tiered offerings and partner coverage	Annual report and investor materials	Pricing and market mix; compliance in regulated segments; partner coverage
Microsoft	Enterprise software and cloud services,	Global cloud infrastructure, hybrid	Platform-based value delivery and capture;	Multi-region platform scaling via	Annual report on Form 10-K	Regulation and compliance; partner

	monetised via consumption-based and per-user subscriptions	cloud, platform services, partner programs	modular service bundling; partner-mediated scaling	global datacenters and partner resellers	and investor report hub	governance; customer migration constraints
Schneider Electric	Industrial energy management and automation, product plus services base	Digital architecture and connected products, software and analytics, service digitisation	Servitisation and software recurring revenue expansion; digital services layer	International scaling through installed base plus digital service attach	Full-year results presentation and investor materials	Standards and local installed base partners; sector regulation; talent and integration
Spotify	Digital platform, freemium with Premium and Ad-Supported segments	Personalised product features, advertising platform scaling, marketplace programs	Two-sided value capture (subscription plus advertising); self-serve advertising scaling	Global user scaling with uneven monetisation by market	Annual report on Form 20-F	Rights-holder licensing; advertising market differences; localisation and tastes

***Note**. Author's own compilation based on firm disclosures and filings.*

The remainder of the chapter proceeds in two steps. Section 5.2 provides within-case narratives that link DT initiative portfolios to business model changes by BMC block, while coding cross-border constraints as moderators. Section 5.3 then compares cases to identify patterns and boundary conditions. Section 5.4 distils these patterns into decision rules that describe when firms standardise versus localise core elements. Section 5.5 closes by answering RQ1 and RQ2 at the level of the case synthesis.

5.2 Within-case narratives

5.2.1 Case A: Adobe (subscription scaling and lifecycle governance)

Adobe is a good one to isolate a recurring DT to BMI path where the firm has good control over the basic product architecture. The most obvious business model shift corresponds to a shift towards predictable recurring revenues through subscription design coupled with digital channels, data-driven customer lifecycle management and tiered packaging. The DT initiative portfolio is internally characterized as product-led growth enabled by a data-driven operating model and digital channels that minimize friction in acquisition and renewal. The annual report refers to Adobe.com as the central place for customers to sign up for and renew Creative Cloud subscriptions, and also addresses the use of pricing strategies to migrate customers to higher-value offerings. (Adobe, 2024)

The business model changes can be seen in multiple blocks of BMC. The value proposition is changing from standalone software ownership to always updated software bundles from the cloud. Customer relationships are moving towards self-service subscription management with embedded usage-based signals for retention and expansion. Channels move towards direct digital distribution to individuals and small business, and partner channels, and direct enterprise sales are also important to mid-market and large customers. (Adobe, 2024)

International scaling in this case is based on the standardisation of the product core with the localisation of some selected layers. The fundamental product suite has global coherence which is conducive for scale economics in software development and cloud operations. Local adaptation occurs primarily in the areas of pricing, packaging and channel coverage. Adobe's disclosures also suggest a strategic move into new markets and differentiated go-to-market motions by customer segment. (Adobe, 2024) This pattern is consistent with the "stable core, adaptable periphery" logic that was developed in Chapter 2, because greater governance and more modular packaging limits the risk that localisation will fragment the global model.

A second thing that we can see is governance of new layers of digital value. Adobe explains joining generative AI capabilities in subscription products and credits as a part of

the value capture and engagement logic. (Adobe, 2024) This is important for the cross-border scaling of AI applications because AI-enabled features can raise different privacy and governance expectations in different jurisdictions. In the coding, this is treated as an institutional moderator, which has an impact on the rules for feature deployment, and disclosure practices.

The case implies two boundary conditions. First, subscription-based scaling is best suited to situations where the firm can keep the core product standardised and local adaptation can mostly be managed through the packaging and price. Second, the data-driven lifecycle model demands credible governance, given the cross-border legitimacy around the use of data in using enterprise and public sector segments. Figure 10 summarises the within case DT to BMI pathway for Adobe and highlights the renewal feedback loop to support subscription scaling.

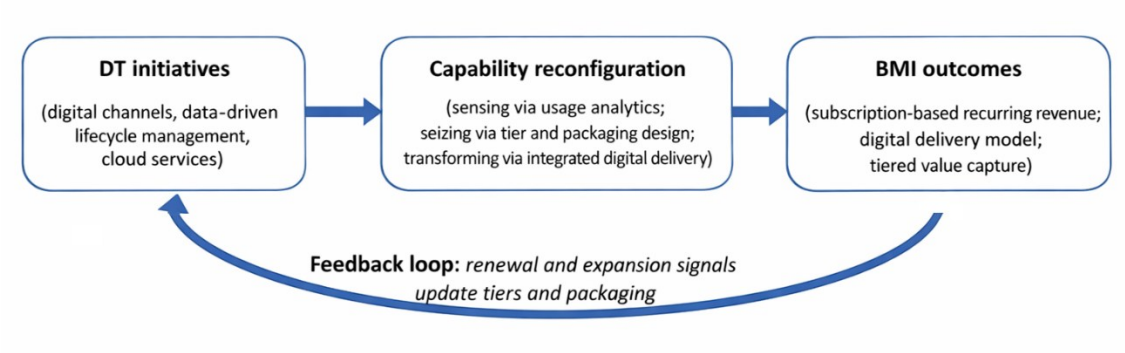

Figure 10. Within-case DT-to-BMI pathway for Adobe (subscription renewal loop)
***Note**. Author's own figure, informed by DC mechanism lens and Adobe disclosures*.

5.2.2 Case B: Microsoft (platform scaling with partner-mediated internationalisation)

Microsoft is a platform-centric approach where DT initiatives are deeply linked with global infrastructure and partner ecosystems. The annual report states that Azure is a unified set of cloud services available through a global network of datacentres to support the services of computing, storage, networking and AI. (Microsoft, 2024) The same disclosures show that Azure revenue is primarily impacted by consumption-based infrastructure and platform services, along with per-user services. (Microsoft, 2024) This is a signature of the business model directly. Value capture is not limited to just one-time licensing, but rather relies on usage and subscription.

The changes of the business model are again visible at BMC blocks. The value proposition is changed from packaged software to integrated cloud services and platform capabilities. The channel architecture continues to incorporate partners, resellers and cloud solution providers. The annual report describes partner programs, allowing partners provision, manage and support customer subscriptions, and describes cloud solution provider programs as a primary partner route to resell cloud services. (Microsoft, 2024) This design choice directly correlates with the international scaling. It reduces the outsidership risk by entrenching the firm within local partner networks.

The logic of international scaling is based on two pillars. First, infrastructure scale is considered an advantage in the form of datacenter economies and multi-tenancy. (Microsoft, 2024) Second is partner-mediated go-to-market is treated as a scaling layer which supports local market reach. (Microsoft, 2024) In coding words, the first pillar is a technical and technical operational scaling mechanism. The second pillar is a network mechanism, which is in tune with the Uppsala emphasis on insider status. It makes it cheaper to develop local relationships from the ground up.

Cross-border frictions manifest themselves in the case in the form of governance and compliance constraints. Cloud services are subject to different forms of regulation and regulatory risk is specifically called out in the annual report as a recurring topic regardless of jurisdiction. (Microsoft, 2024) For the synthesis, this is treated as an institutional moderator that has an influence on the services that can be standardised globally and on the services that require local patterns of deployment, contractual terms, or service boundaries.

This within-case pathway can be summarised as 'platformisation plus partner orchestration'. DT initiative builds a scalable service stack whereas BMI outcome is influenced on how the firm controls platform openness, partner incentive and customer migration from on-premises environments.

5.2.3 Case C: Schneider Electric (industrial digitisation to service and software recurrence)

Schneider Electric is included to represent an industrial incumbent moving from product-centric operations toward digitally mediated services and recurring software revenue. The firm's full-year results presentation describes a digital architecture labelled "From EcoStruxure to Connect," positioning connected products, software, analytics, and services as an integrated digital layer across buildings, data centers, industry, and infrastructure. (Schneider Electric, 2025) The same presentation signals a "digital flywheel" in which software and services expand recurring revenue and strengthen the value proposition. (Schneider Electric, 2025)

The BMI shift is visible as servitisation combined with software recurrence. The value proposition broadens from equipment and automation products toward outcomes framed through digital services, software, and advisory offers. The value delivery system shifts toward hybrid cloud and on-premises architectures with embedded cybersecurity and AI framing. (Schneider Electric, 2025) Value capture shifts toward recurring revenues in software and services, including explicit emphasis on ARR growth in the software business. (Schneider Electric, 2025)

International scaling logic in this case differs from the born-digital or cloud platform cases. The firm scales through an installed base and through local service and integration partners. Digital services act as an attach layer that can standardise some elements of monitoring, analytics, and service delivery. Local adaptation still matters because industrial automation, energy management, and building systems face local standards, regulatory requirements, and customer procurement norms. In coding, this produces a hybrid portability pattern. Core digital architecture can travel. Service delivery routines and compliance layers require local embedding.

Two cross-border frictions dominate. First, complement dependence is high. Customers often require local integration, installation, and ongoing service. Second, compliance and standards vary by market and by sector. These frictions reinforce the SLR finding that

ecosystem partners and institutional regimes jointly shape DT-to-BMI outcomes in international settings.

5.2.4 Case D: Spotify (born-digital freemium scaling with uneven monetisation)

Spotify is an example of a born-digital platform that is highly scalable in terms of user reach that happens to be international, but with uneven monetisation across markets. The annual report lists the business as operating in two reportable segments, Premium and Ad-Supported. (Spotify, 2025) It reports a revenue growth in both segments and provides revenue by country, with a large share in "Other countries" outside the United States and United Kingdom. (Spotify, 2025) This distribution aids in classification of the firm as an international platform with sustained foreign market involvement.

The logic of the BMI in this case is the design and governance of a two-sided value capture model. Premium revenue is dependent on subscription growth and ARPU whereas Ad-Supported revenue is dependent on impressions sold via direct, programmatic and self-serve channels. (Spotify, 2025) The report also asserts that geographic expansion presents challenges in terms of monetisation, and it lists the risks associated with licensing and variations in the markets of different countries. These disclosures are central for the cross-border moderation logic, (Spotify, 2025) International scaling is not just an issue of demand-side. It is influenced by rights-holder relationships, advertising market structure and local tastes.

The distinction in portability and performance is quite obvious in the case. The platform can be deployed worldwide at low marginal cost, which is beneficial to portability. Monetisation performance varies due to differences between the advertising markets and licensing structures in the various countries coupled with customer willingness to pay. (Spotify, 2025) This relates directly to the theoretical distinction that was developed prior to this thesis.

The portfolio of DT initiatives is less evident as discrete "transformation programs" and is more evident as continuous products and monetisation evolution. Still though, the

business model design decisions are clear. The firm invests in upscaling self-serve advertising as well as product improvements that facilitate engagement, which links to sensing and seizing microfoundations in Chapter 2. (Spotify, 2025)

5.3 Cross-case comparison

Cross-case comparison is based on a common coding frame: DT initiative portfolio type, capability signals, BMI form, and dominant cross-border constraints. Table 14 is a summary of the within-case mapping at the BMC level. The point is to show what changed in each case, and what elements were considered to be of the portable core and which of the periphery of adaptability.

Table 14. Within-case BMC mapping of DT-enabled BMI (condensed cross-case view)

BMC block	Adobe	Microsoft	Schneider Electric	Spotify
Value proposition	Cloud-based bundles with continuous updates and add-on value layers	Integrated cloud and platform services across workloads	Digital architecture combining connected products with software and services	Personalised content access with tiered access and formats
Channels	Direct digital plus partner coverage for teams and enterprise	Direct enterprise plus partner programs for cloud resale	Local integrators and service channels plus digital service delivery	Global app distribution with local market marketing
Customer relationships	Product-led lifecycle, renewal and expansion cycles	Contracts plus partner-managed subscriptions and enterprise support	Service contracts plus digital monitoring and advisory	Freemium conversion plus retention and ARPU management
Key partners	Channel partners for mid-market and enterprise	Cloud solution partners and resellers	Installers, integrators, and industrial ecosystem complements	Rights holders, advertisers, marketplace participants
Revenue streams	Subscription tiers and add-ons	Consumption-based cloud plus per-user subscriptions	Product plus growing software and service recurrence	Subscription plus advertising and marketplace programs
Governance layer	Packaging rules, data governance for digital lifecycle signals	Platform governance, compliance, partner incentives	Standards and cybersecurity alignment, service governance	Licensing governance, ad platform rules, localisation choices

***Note**. Author's own compilation from case evidence and BMC extraction template.*

There are three cross-case patterns which stand out. First, DT-to-BMI pathways are clustered around value capture redesign and governance and not around technology deployment. Adobe and Spotify exhibit explicit choices of monetisation architecture. Microsoft and Schneider Electric Demonstrate Platform and Service Governance Choices. In all cases, digital initiatives also increase the option set, but when the business model shift becomes visible when the pricing logic, packaging, role of partners, and rule of governance changes.

Second, cross-border constraints are also at different points in the pathway depending upon the firm type. For Microsoft and Spotify, network and complement constraints are relevant early to adoption and monetisation. For Adobe, institutional constraints are evident in enterprise adoption and feature governance more strongly. For Schneider electric, local complements and standards limit the scaling of routines to deliver services.

Third, portability and performance are orthogonal in the platform cases. In its disclosures, Spotify makes clear its international difficulties in monetising. (Spotify, 2025) Microsoft's disclosures raise awareness of a need to comply and partner mediated delivery. (Microsoft, 2024) In both, the model is capable of travelling, but outcomes are dependent on local ecosystem and institutional fit.

Table 15. Cross-case comparison matrix (pathway x BMI outcome x constraint type)

Pathway type	Case(s)	Dominant BMI outcome type	Constraint type most binding in scaling
Subscription shift with lifecycle governance	Adobe	Value capture redesign plus channel digitisation	Pricing and legitimacy expectations in regulated segments
Platformisation with partner orchestration	Microsoft	Governance and delivery architecture redesign	Compliance and partner governance across markets
Servitisation with digital architecture and recurrence	Schneider Electric	Value proposition expansion plus service recurrence	Local complements and standards across sectors
Freemium scaling with two-sided monetisation	Spotify	Two-sided value capture optimisation	Licensing and ad market differences by country

Note*. Author's own synthesis, using DT pathway taxonomy from the SLR*

5.4 Decision rules and patterns

This part is the transposition of the cross-case patterns into the rules of decision. These rules are not presented as a set of universal prescriptions. They are boundary condition statements that are based on the coded evidence. They explain what the cases imply about the timing of standardisation versus localisation by firms.

Figure 11 shows the basic logic in the form of a simple decision flow. The logic breaks down the design problem into three questions: what needs to stay stable for coherence at the global level, what can be modularised for fit at the local level, and what needs to be controlled tightly because of institutional risk.

Figure 11. Standardise versus localise decision logic derived from cross-case synthesis
***Note**. Author's own figure, informed by cross-case evidence and Chapter 2 framework.*

Table 16 is a listing of the decision rules in a form that can be reused in the integrated discussion chapter. Each rule is written as a conditional statement that is related to some observable design choice.

Table 16. Decision rules from cross-case synthesis (preliminary set)

Decision rule	What to stand-ardise	What to localise	Observable design choices in cases

When value capture depends on subscriptions, keep product core stable and vary packaging	Core product suite and update cadence	Price points, bundles, channel coverage	Tiered subscriptions and segment-specific go-to-market in Adobe
When scaling depends on partner reach, treat partner governance as part of the business model	Platform service stack and technical interfaces	Partner incentives, reseller programs, support structure	Partner programs for cloud resale and customer agreements in Microsoft
When installed base and service delivery are central, scale through a digital service attach layer	Digital architecture and analytics layer	Service routines, compliance, integration practices	Digital architecture framing and service recurrence emphasis in Schneider Electric
When monetisation relies on rights and advertising markets, separate global product portability from local monetisation design	Core platform experience and engagement features	Licensing coverage, ad formats, market sequencing	International risks and monetisation challenges stated by Spotify
When institutional legitimacy risk rises, localise governance before localising the product	Data and interface core	Data governance rules, compliance process, disclosure practices	Compliance and governance emphasis in platform and enterprise-facing cases
When both ecosystem dependence and institutional risk are high, stage entry to build insider status	Core architecture and brand promise	Local complement bundle, partnerships, enforcement routines	Partner and ecosystem logic across Microsoft, Schneider Electric, Spotify

***Note**. Author's own synthesis. The rules will be triangulated with SLR propositions in Chapter 6.*

5.5 Key takeaways linked to RQ1 and RQ2

The case synthesis is a concrete answer to RQ1 at the concrete level of observable business model design. DT contributes to BMI when digital initiatives are converted into changes in value capture logic, rules of governance, and roles of partners. The cases demonstrate that technology adoption is not the turning point. The turning point is business model redesign to change the way in which the firm sells, delivers and governs its offering across markets.

The synthesis also offers an answer to RQ2 by clarifying what cross-border conditions influence the outcome of scaling. Institutional regimes are most important if data governance, licensing or sector compliance are of central importance. Ecosystem dependence is most important when complements, partners or rights holders are critical to

value delivery and monetisation. When both conditions are true, then the scaling problem becomes a design problem. Firms require a core that is stable and supports global coherence and learning, and periphery that is flexible and handles legitimacy and local ecosystem fit. The next chapter will combine these case-based patterns with the results of the SLR to refine propositions and make contributions.

5.6 Chapter summary

Chapter 5 traced how DT initiatives become visible as business model redesign in four international firms. The cases confirmed that cross-border scaling depends on changes in value capture, partner roles, and governance, not on digital adoption alone. They also made the portability versus performance distinction concrete, especially in the platform and monetisation cases. The cross-case comparison then produced decision rules on what should be standardised and what should be localised across markets.

6 Integrated analysis and discussion

6.1 Triangulation: SLR versus cases

This section ties the results from SLR presented in Chapter 4 with the cross-case evidence presented in Chapter 5. The purpose is not to summarize findings. The aim is to evaluate convergence, extension and tension. The SLR defines the four DT to BMI pathways (Table 11) and the four cross-border moderators (Table 12). The cases then disclose the way these categories behave in practice.

The most powerful of these convergences relates to the proposition that DT adds value when it becomes business model redesign. The SLR approaches DT initiatives as an input and BMI as a system level outcome rather than a list of technology (Vial, 2019). The cases sustain this distinction. In the case of Adobe, the change in business model is exposed at the point of subscription architecture, packaging rules and renewal logic. In the case of Microsoft, the move is apparent on platform governance and partner-mediated delivery, not just cloud infrastructure scale (Microsoft, 2024). In the case of Schneider Electric, the move is made visible by digital services toward the installed base and recurring software revenues (Schneider Electric, 2025). In the Spotify case, value capture is a key component of the core logic stable platform portability. but value capture varies across markets (Spotify, 2025). These patterns correspond to the pathway taxonomy as presented in Table 11, namely monetisation redesign and platformisation (Teece, 2010).

A second area of convergence is that of moderation. The SLR suggests that the cross-border circumstances impact not only the ultimate performance but also the viability of the pathway and the intensity of the outcome (Luo, 2021). The cases make this visible. Regulation and governance also determine what data-driven features can be deployed, and how they must be justified to customers. Ecosystem structure determines the commitment of complementors and partners. Outsidership determines the rate of local participation. Market readiness is a key determinant of the speed of adoption and monetisation. These mechanisms correspond directly to Table 12 in which institutions and networks are classified as active constraints (Johanson and Vahlne, 2009).

The cases also advance the literature in three ways. First, they make clear the relationship between portability and performance, which is not what you'd expect. This distinction is proposed by the SLR in such a way as a conceptual refinement (Hennart, 2019). Spotify shows it clearly. Portability is high since the distribution and the product deployment are scalable. Performance is still spotty, though, because of licensing structures and variation in the advertising market (Spotify, 2025). Microsoft depicts an associated separation. Many of the services are portable in the technical design but the performance is dependent on compliance and the partner execution in each market (Microsoft, 2024). This is used in support of the thesis argument that technical scalability is not the same as scalable business model performance.

Second, the case evidence focuses the role of governance as a business model element. The SLR approaches governance as being part of BMI, particularly in platform and ecosystems (Li et al., 2025). The cases show that governance is not restricted to the platform's rules. It also incorporates subscription entitlements, credit systems, partner certification and compliance processes. These layers of governance often become the main place of local adaptation. This is a point we can see throughout Adobe, Microsoft and Schneider Electric despite having different pathways.

Third, the cases are helpful in specifying sequencing. The SLR emphasizes the issue of outsidership and network effects, but does not necessarily tell what to do first (Vahlne and Johanson, 2017). Chapter 5 evidences a repeating pattern. Instead, firms work to first stabilise a core that is large enough to scale, then localise governance and embed partners and only then attempt rapid expansion. Figure 11 already captures this logic in the form of a decision flow, but the integrated analysis brings out the "why" of why it works. It minimizes risk of fragmentation while allowing local legitimacy building.

Tensions also appear. The SLR literature frequently suggests digital models are fast-scaling per se, and this is especially true for born digital companies (Monaghan et al., 2020). The cases make this claim moderate. Even born digital scaling can necessitate physical embedding and complement access on the local end in distant markets (Stallkamp et al., 2023). This tension lends support to the thesis framing that digital reach alters the pattern of friction, but does not eliminate it.

Overall the triangulation lends itself to a mediated and moderated explanation. DT initiatives develop viable options, DC processes turn viable options into commitments, and cross border conditions influence whether the resulting business model can travel and perform (Teece, 2007). This logic is interpreted in the form of theory in the next section.

6.2 Interpretation through theory

The integrated findings are interpreted using two lenses. The first is DC as a mechanism lens. The second is internationalisation logic as a constraint and adaptation lens. Together, these lenses explain why similar DT initiatives can produce divergent BMI outcomes across borders.

From a DC perspective, the evidence supports a simple sequence. Sensing identifies digital opportunities and threats. Seizing turns them into design commitments. Transforming aligns organisation and governance to scale the new business model (Teece, 2007). The SLR propositions P1-P3 reflect this logic. The cases then illustrate it in applied form.

In the subscription pathway, sensing is strongly data-driven. It relies on usage signals and lifecycle analytics. Seizing is expressed through packaging design, tier boundaries, and value capture logic. Transforming is expressed through channel integration, support routines, and renewal processes. Adobe's disclosures are consistent with this interpretation, because subscription scaling depends on product and go-to-market integration, not only on product features (Adobe, 2024).

In the platformisation pathway, sensing is more ecosystem-oriented. It includes scanning partner needs and standards. Seizing takes the form of platform governance and partner incentives. Transforming includes building partner programs and compliance routines at scale. Microsoft's partner-mediated scaling highlights the importance of transforming routines that operate beyond the firm boundary (Microsoft, 2024). This aligns with the SLR emphasis on orchestration and governance in digital platform internationalisation (Li et al., 2025).

In the servitisation pathway, sensing is tied to installed base data and customer outcome requirements. Seizing is the choice to attach software and services to products with a recurring revenue logic. Transforming is the redesign of service delivery routines across

countries. Schneider Electric illustrates that this pathway depends on local complements and standards, so transforming becomes partly a partner and ecosystem task (Schneider Electric, 2025).

Internationalisation theory explains why these capability processes face limits. The revisited Uppsala model emphasises networks and outsidership. Outsidership constrains opportunity access and learning in host markets (Johanson and Vahlne, 2009). The case evidence supports this point in two ways. First, partner networks become a core scaling mechanism for enterprise and industrial contexts. Second, platform scaling requires complementors to join. Outsidership therefore remains a binding constraint even when digital distribution is feasible.

The internationalisation lens also clarifies legitimacy. In cross-border settings, legitimacy is evaluated by multiple institutional audiences. Practices that are acceptable in one market may be contested in another (Kostova and Zaheer, 1999). This problem intensifies for digital models because governance of data and interfaces becomes visible and sensitive. The integrated evidence suggests a practical response. Firms do not only localise product surface features. They localise governance and compliance layers, while keeping the architecture core stable. This is consistent with the “core versus periphery” portability logic visualised earlier in Figure 3.

Internalisation theory extensions for the digital economy strengthen this interpretation. Digital firms possess advantages tied to data, networks, and orchestration, but these advantages remain conditional on permission, trust, and institutional fit (Banalieva and Dhanaraj, 2019). The cases show that governance is the mechanism through which permission and trust are built. This explains why governance choices appear repeatedly as decisive “seizing” moves, rather than as afterthoughts.

The theoretical synthesis can be expressed as follows. DT initiates a design space expansion. DC processes convert the expanded design space into a coherent business model. Internationalisation conditions then determine whether this coherence can be maintained while local fit is achieved. The outcome is not a single performance effect. The outcome is a balance between global coherence and local legitimacy, achieved through modular adaptation.

Boundary conditions frame where the claims travel. The pathways are most visible in sectors where software, data, and digital services sit at the centre of value creation. This includes enterprise software, digital platforms, and industrial service models.

In asset-heavy settings with long investment cycles, DT often changes coordination and monitoring first. BMI often follows later (Tilson et al., 2010). Institutional context sets a second boundary. Strong data protection and localisation rules narrow the feasible design space for augmentation and platformisation (Luo, 2021). Sector regulation adds another boundary. Public sector, health, energy, and finance impose tighter governance demands than consumer subscription markets (Schmeisser et al., 2026).

6.3 Contributions to international business and business model research

This thesis makes three contributions. First, it combines research on DT and BMI with IB by using the constraints of outsidership and legitimacy as moderators in the cause and effect chain. Many studies in the field of DT approach the cross-border context as background description (Vial, 2019). Many IB studies consider digitalisation as a changing environment without having mentioned business model design mechanisms (Schmeisser et al., 2026). This thesis connects both these streams using the mediated model in Figure 8 and the pathway taxonomy in Table 11. It details the entry points of cross-country conditions in the chain and their importance.

Second, the thesis develops the DC lens for DT-enabling BMI for international settings. DC is commonly employed as a general explanation of success. This thesis employs DC as a constrained mechanism vocabulary for translating initiative portfolios to design commitments and scaling routines (Teece 2007). The integrated evidence demonstrates that it is not capability in the abstract that is the key issue. It is portability and governance configured capability. This is most evident in platform and service model cases where transformation needs to be done partner-enabled delivery and compliance routines.

Third, the thesis contributes to the portability versus performance distinction and demonstrates how it is possible to operationalise it. The SLR encourages the concept of distinction (Hennart, 2019). The case evidence demonstrates how it is appearing empirically, and in the particular case of born digital platform models and global cloud services.

This distinction is valuable because it avoids the illusion of over-optimism. A technically travelling model may not perform as well due to legitimacy, ecosystem or monetisation constraints. This assertion is supported throughout the pathway matrix in Table 15 and decision rules in Table 16.

Taken together, these contributions push the literature from general findings on association toward conditional explanations. They also provide a better basis for future empirical testing, given that they specify pathways, moderators and design levers.

The study objectives were achieved in three steps. Objective one was met by deriving DT-to-BMI pathways from the SLR and formalising them in Table 11. Objective two was met by identifying cross-border moderators and mapping them to pathway sensitivities in Table 12 and Table 15. Objective three was met by translating the cross-case evidence into decision rules that guide global coherence and local fit in Table 16.

6.4 Managerial implications

Managers face a practical design problem. They must choose which DT initiatives to prioritise, which business model elements to redesign, and how to scale internationally without fragmenting the model. The thesis offers guidance in the form of decision rules and sequencing logic. Table 16 already provides an initial set of rules grounded in the cases. This chapter consolidates them into a more directly usable format, emphasising trade-offs and observable choices.

The first implication concerns diagnosis. Managers should begin by identifying the dominant pathway they are pursuing. The pathway labels in Table 11 offer a starting point. A subscription shift demands packaging governance and renewal routines. A platformisation move demands partner incentives and interface rules. A servitisation move demands service delivery redesign and standards compliance across markets. A data-driven augmentation move demands data governance fit and analytics capability deployment.

The second implication concerns boundary conditions. Managers should then assess which moderators are likely to bind. Table 12 provides a structured way to do this. If regulation and data governance are binding, governance localisation becomes the first

adaptation priority. If ecosystem complements are binding, partner embedding and incentive design become the priority. If outsidership is binding, entry sequencing and credibility building become central. If market readiness is binding, adoption and monetisation expectations should be recalibrated.

The third implication concerns architecture. Managers should standardise what creates global coherence and learning. They should localise what creates legitimacy and market access. Figure 11 captures this logic as a design flow. The practical insight is that localisation is often safest when it targets governance and delivery layers first. Deep product core localisation can create fragmentation and reduce learning synergies.

To translate these implications into a compact playbook, Table 17 provides cross-case decision rules for global scalability versus local fit. The rules are expressed as conditional statements with direct design choices.

Table 17. Cross-case decision rules for global scalability versus local fit

Design problem	If these conditions are dominant	Standardise first	Localise first	Practical action to implement
Subscription scaling stalls across markets	High variation in willingness-to-pay and channel structure	Product core and entitlement logic	Packaging and pricing, channel coverage	Build tier architecture with local price fences and shared core features
Platform internationalisation underperforms	High ecosystem dependence and local complements vary	Interface standards and core platform rules	Partner incentives and governance enforcement	Stage entry via anchor partners, then open complements gradually
Cloud or digital service scaling faces trust issues	High regulatory scrutiny and compliance divergence	Service architecture and security baseline	Contracts, data residency options, compliance reporting	Offer compliant deployment patterns and transparent governance routines
Servitisation grows slowly outside home market	High installed base heterogeneity and local standards	Digital service layer architecture	Service routines, integrator model, standards alignment	Create a service attach model with local integrators and shared analytics core
Freemium portability does not convert to revenue	High licensing complexity and ad market variation	Product experience and engagement loop	Monetisation design, licensing coverage, ad formats	Separate global product scaling from market-by-market monetisation design

Innovation pace slows after early scaling	Learning signals fragmented across markets	Core data model and analytics backbone	Local compliance signals and feedback routing	Centralise learning metrics, localise collection under compliant rules

***Note**. Author's own table, informed by (Teece, 2010; Johanson and Vahlne, 2009).*

Finally, the evidence supports one sequencing principle. Firms should avoid treating scaling as a single rollout. They should treat it as staged learning with governance. This is consistent with the Uppsala emphasis on experiential learning, even in digital contexts (Vahlne and Johanson, 2017). It is also consistent with DC logic, because sensing and seizing improve when feedback loops remain coherent across markets (Teece, 2007). The next chapter summarises the answers to the research questions and derives practical recommendations from this integrated logic.

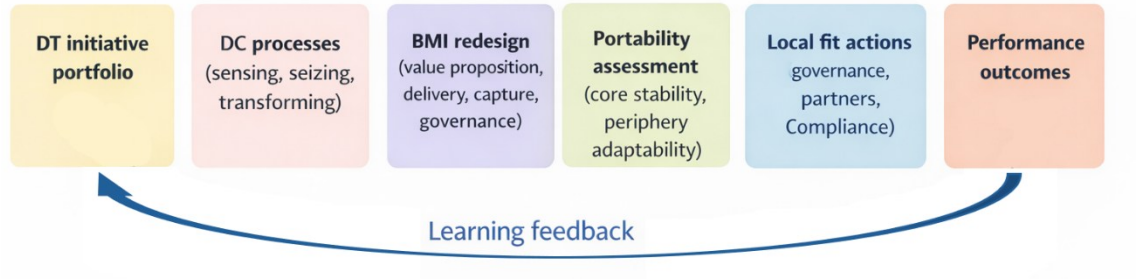

Figure 12. Integrated DT-enabled BMI scaling cycle
***Note**. Author's own figure, informed by (Teece, 2007; Vahlne and Johanson, 2017).*

6.5 Chapter summary

Chapter 6 integrated the SLR and case evidence into a single explanation of DT-enabled BMI in international firms. The discussion confirmed that dynamic capability processes mediate the translation of digital initiatives into business model redesign, and that regulation, network position, ecosystem complements, and market readiness shape scaling outcomes. The chapter also showed that managers need a stable business model core and selectively localised governance and delivery layers. These integrated findings lead directly to the final recommendations in Chapter 7.

7 Synthesis, recommendations and future research

7.1 Summary answer to each research question

RQ1 asked how DT contributes to BMI in international firms. The integrated evidence supports a mediated explanation. DT contributes to BMI when digital initiatives are translated into coherent changes in value creation, delivery, and capture, supported by governance redesign. This translation occurs through capability reconfiguration, captured by sensing, seizing, and transforming processes (Teece, 2007). Table 11 summarises the four pathway types that recur in the literature and are observable in firm evidence. These pathways describe where DT most often becomes BMI, rather than remaining process digitisation.

The synthesis also clarifies that business model change is not a binary event. It is a redesign of an activity system and value logic. In the cases, this redesign becomes visible in pricing architecture, packaging and entitlements, partner roles, and interface governance. These are the practical levers through which DT shifts from technology deployment to business model innovation (Teece, 2010).

RQ2 asked under what cross-border conditions DT-enabled BMI supports scaling and competitive advantage. The evidence supports a moderated explanation. Cross-border conditions shape both the translation from initiatives to capabilities and the translation from capabilities to outcomes. Table 12 provides the four moderator categories that recur across the SLR. Chapter 5 then shows how these moderators bind differently by pathway type. Regulation and governance shape data-driven and cloud models strongly. Ecosystem complements shape platform and industrial service scaling. Outsidership shapes diffusion when partners and complements are required. Market readiness shapes monetisation in consumer and ad-supported models (Johanson and Vahlne, 2009).

The thesis therefore answers RQ2 with a design claim. DT-enabled BMI supports scaling when firms maintain a stable core that enables coherence and learning, while adapting

governance and delivery layers to achieve legitimacy and ecosystem fit. This claim is operationalised through the cross-case decision rules in Table 17 and the sequencing logic in Figure 12.

7.2 Practical recommendations

This section translates the cumulative findings into a managerial playbook in a nutshell. The recommendations are in the form of choices and sequencing, because managers have trade-offs rather than one best path.

Recommendation 1: Diagnosis of the pathway before investing heavily Use the pathway taxonomy, Table 11, as a practical diagnostic. If the desired path is subscription scaling, invest up front in packaging governance and renewal processes. If the pathway is to be platformisation, invest early on partner incentives and rule clarity. If the intended pathway is servitisation, then invest early in service delivery routines and standards alignment. These investments vary in time and risk and therefore a clear pathway diagnosis saves wasted effort.

Recommendation 2: Governance as part of the business model Many scaling failures manifest themselves as governance failures, not technology failures. Governance covers rules for data access, interface standards, partner participation and compliance routines. It also has entitlement logic in subscription models. Treat governance redesign as explicit biomechanics of implementation (BMI) lever, not as implementation detail. This recommendation is made on the part of the both SLR and the cases (Li et al., 2025).

Recommendation 3: Separate portability work from performance work Portability work asks the question if the model can travel without loss of coherence. Performance work asks if it works under local constraints. The thesis demonstrates the high portability with uneven performance, being especially the case with platform, and ad-supported models (Hennart, 2019). This separation avoids premature scaling conclusions. It also promotes market-by-market monetisation design where necessary.

Recommendation 4: Localise governance and partner embedding, before localising the core The evidence is that the core fragmentation causes long-term scaling costs. Localisation should therefore focus firstly on governance, compliance processes and partner

embedding. Product core localisation should be sparing, and only used in cases where legitimacy or regulation makes it unavoidable. Table 17 gives a list of particular "standardise first vs localise first" decisions to make this principle work.

Recommendation 5: Stage entry in case of outsidership and of complements are binding When the ecosystems and networks are important, the entry sequencing becomes part of the business model. Firms should develop insider status by establishing anchor partners and credible commitments and then expand participation. This sequencing is in agreement with the Uppsala logic applied to modern networks (Vahlne and Johanson, 2017). It also conforms with the platform scaling evidence synthesised in the SLR (Chen et al., 2019).

Recommendation 6: Develop an explicit learning loop across markets. Scaling is not only rollout. It is learning. Firms need to normalise important metrics and analytics backbones, alongside making sure of compliant local information gathering and feedback routing. This helps to improve the sensing quality and maintains the decision of seizing coherent across markets (Teece, 2007). Figure 12 shows this cycle in the form of an operational loop.

7.2.1 Managerial implications

For managers in international firms, the main implication is that DT-to-BMI should be managed as a business model and governance problem, not only as a technology programme. Senior teams need to identify the dominant pathway they are pursuing, define the business model core that must remain stable across markets, and specify which layers can be localised without fragmenting the model. They should also separate portability metrics from performance metrics. A model may travel technically and still fail commercially. Roll-out decisions should therefore be gated by evidence on partner readiness, regulatory fit, local willingness to pay, and monetisation logic rather than by deployment speed alone. This also requires cross-functional ownership. Product, compliance, partner management, data governance, and commercial teams need to work from the same model design rather than from separate functional targets.

7.2.2 Policy-maker implications

For policy makers, the findings show that cross-border digital scaling is shaped by institutional frictions that sit outside the firm. Predictable data governance rules, interoperable digital infrastructure, transparent compliance processes, and support for ecosystem complements all affect whether firms can scale digitally enabled business models across borders. Public policy should therefore go beyond generic support for digital adoption. It should reduce uncertainty in areas such as cross-border data rules, digital payments, platform accountability, and compliance interpretation. Trade and innovation agencies can also support outward internationalisation by helping firms interpret foreign regulatory requirements, build trusted local networks, and connect with anchor partners in priority markets. The policy task is not to select winners. It is to lower avoidable transaction costs that slow business model transfer and weaken performance.

7.3 Contributions

The thesis has contributions at the intersection of the fields of DT, BMI and IB. It offers a pathway-based explanation of the DT-enabled BMI in an international context. This goes beyond making broad statements that DT enables innovation. It defines where is redesign of the business model and what are the most sensitive design elements in cross-border scaling. It adds the constraints of the IB into the DT to BMI chain. Outsidership, legitimacy, ecosystem complements, and market readiness are considered as moderating factors that would influence outcomes, not as context on the periphery. This integration explains why scaling results vary between similar digital models. It operationalises the portability vs. performance distinction. The distinction is associated with some observable design choices and sequencing. It is also related to the rules of managerial decision. Table 17 summarizes these rules in a concise form which can be tested in future work.

Methodologically, the thesis makes a contribution by combining the SLR synthesis and the second firm evidence. This approach bridges theory-heavy literatures with observable choices on business model design in practice. It also helps to clarify which propositions have good support and which are still open.

7.4 Limitations and future research directions

The thesis has its limitations which affect the interpretation. First, the evidence base is conceptual to some extent. Many included studies in the SLR are reviews or conceptual papers. This limits causal claims. It reinforces mechanism explanation and boundary condition reasoning. It also shows the importance of conducting additional empirical testing in future research (Hanelt et al., 2021). Second, the synthesis of the case is based on secondary disclosures. The overemphasisation of success narratives and the underreporting of failed initiatives could result from public reporting. This limitation was mitigated by triangulation from source types, but it is not possible to eliminate it entirely. Where possible, complementary evidence should be obtained through interviews or internal documents in the future.

Third, the case set is small and for theoretical variation. It helps in pattern identification. It does not allow statistical generalisation. Future research may test the decision rules with a larger number of samples, and using a structured coding of business model features and cross-border governance choices. Fourth, measurement is one of the remaining problems for which the field lacks a solution. DT and BMI are operationalised inconsistently in studies. Future research should construct clearer measurement systems and allude the divide between initiative portfolios, capability processes and business model outcomes. This is crucial for cumulatively building knowledge.

Future research can build directly on the pathway and moderator structure derived in this thesis. One priority is pathway-specific testing that uses consistent measures of DT initiative portfolios, capability routines, and BMI outcomes. A second priority is governance design under institutional variation. Work is needed on how firms modularise data rules, partner rules, and compliance layers across countries, and how these design choices shape legitimacy (Kostova and Zaheer, 1999). A third priority is sequencing under

outsidership and complement dependence. Studies can track entry order, partner embedding, and sector constraints, then test how these factors shape scaling outcomes (Johanson and Vahlne, 2009).

7.5 Chapter summary

Chapter 7 answered the research questions, stated the study's main contributions, and translated the findings into practical recommendations. It clarified what the thesis adds to theory, practice, and policy, and it also identified the main limits of the current design. The chapter ended by outlining future research directions that can test, refine, and extend the framework developed in this study.

Conclusion

This thesis investigated how DT contributes to BMI in international firms and which cross-border conditions shape scaling outcomes. The evidence supports a clear answer to the first research question. DT generates strategic value when it becomes coherent business model redesign rather than remaining limited to operational digitisation. Across the literature synthesis and the firm level cases, BMI is most visible in changes to value capture logic, delivery and channel architectures, and governance rules for data, interfaces, and partners. These outcomes emerge through dynamic capability processes. Sensing routines identify opportunities through analytics and ecosystem scanning. Seizing routines convert these opportunities into design commitments such as pricing architectures, platform rules, and partner incentives. Transforming routines align structures, resources, and boundary decisions to scale the redesigned model.

The second research question is answered through moderation logic. Regulation and data governance constrain what is feasible and legitimate, especially for data intensive and platform models. Ecosystem complements and partner availability condition take off when value creation is co produced. Outsidership remains influential because trust, learning, and complement access are networked. Market readiness shapes adoption and monetisation, particularly in consumer and ad supported settings. The thesis therefore distinguishes business model portability from business model performance. A model can travel technically yet underperform when legitimacy, licensing, or complement constraints limit adoption.

The thesis contributes by integrating DT, BMI, and internationalisation into a mediated framework with explicit moderators, and by providing decision rules that clarify what to standardise, what to localise, and how to sequence scaling when governance and ecosystem dependence are high. Future research should test these rules with larger samples and examine how firms modularise governance to sustain legitimacy and learning across jurisdictions.

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Supplementary Table S1. Detailed database search strategy (database-specific syntax and filters)

Source	Exact query string	Filters and limits	Documentation rule
Scopus	(("digital transformation" OR digitalization OR "digital strategy" OR "digital business strategy") AND ("business model innovation" OR "business model change" OR "business model*" OR platform* OR ecosystem*) AND (international* OR "cross-border" OR global OR multinational OR "foreign market"))	Article OR Review; English; 2008–2026	Export full records with abstracts and references; record export date
Web of Science Core Collection	(("digital transformation" OR digitalization OR "digital strategy" OR "digital business strategy") AND ("business model innovation" OR "business model change" OR "business model*" OR platform* OR ecosystem*) AND (international* OR "cross-border" OR global OR multinational OR "foreign market"))	Article OR Review; English; 2008–2026	Export cited references; record export date
ABI/INFORM (ProQuest)	AB(("digital transformation" OR digitalization OR "digital strategy") AND ("business model innovation" OR "business model change" OR "business model") AND (international* OR cross-border OR global OR multinational))	Peer reviewed; English; 2008–2026	Export RIS; log any subject filters used
Business Source Complete (EBSCO)	TX ("digital transformation" OR digitalization OR "digital strategy") AND TX ("business model innovation" OR "business model change" OR "business model") AND TX (international* OR "cross-border" OR global OR multinational)	Peer reviewed; English; 2008–2026	Export citations and abstracts; record export date
Backward citation chasing	Reference lists of all included studies and key reviews	Apply Table 7 criteria	Log parent paper ID and inclusion reason

Forward citation chasing	Forward citations of a defined seed set	Apply Table 7 criteria	Log seed paper ID and inclusion reason
Hand search	Within-journal search for “digital”, “platform”, “business model”, “internationalization”	Prioritise special issues	Log journal, year, and issue

Supplementary Table S2. Characteristics of included studies in the synthesis (n = 27)

Study	Outlet	Type	Unit and context	Contribution to RQ1 or RQ2
Vial (2019)	The Journal of Strategic Information Systems	Review	Cross-industry	DT definition and mechanism framing for RQ1
Verhoef et al. (2021)	Journal of Business Research	Conceptual synthesis	Cross-industry	DT domains and maturity differences for RQ1
Hanelt et al. (2021)	Journal of Management Studies	Systematic review	Cross-industry	Boundary conditions and organisational change for RQ1
Matt et al. (2015)	Business and Information Systems Engineering	Conceptual	Cross-industry	DT strategy components for RQ1
Legner et al. (2017)	Business and Information Systems Engineering	Conceptual	Cross-industry	Data governance and architectures for RQ1
Yoo et al. (2010)	Information Systems Research	Conceptual	Digital innovation	Modular architecture logic for RQ1
Teece et al. (1997)	Strategic Management Journal	Conceptual	General	DC and reconfiguration logic for RQ1
Teece (2007)	Strategic Management Journal	Conceptual	General	Sensing, seizing, transforming for RQ1
Warner and Wäger (2019)	Long Range Planning	Conceptual	Cross-industry	DC for DT renewal for RQ1
Teece (2010)	Long Range Planning	Conceptual	General	BM logic and value capture for RQ1
Teece (2018)	Long Range Planning	Conceptual	General	BM and DC integration for RQ1

Amit and Zott (2001)	Strategic Management Journal	Conceptual	E-business	Value creation themes for RQ1
Zott and Amit (2010)	Long Range Planning	Conceptual	General	Activity system BM view for RQ1
Foss and Saebi (2017)	Journal of Management	Review	General	BMI forms and boundaries for RQ1
Casadesus-Masanell and Ricart (2010)	Long Range Planning	Conceptual	General	Strategy vs BM distinction for RQ1
Zott et al. (2011)	Journal of Management	Review	General	BM research synthesis for RQ1
Johanson and Vahlne (2009)	Journal of International Business Studies	Theory revision	IB theory	Outsidership and network constraints for RQ2
Coviello et al. (2017)	Journal of International Business Studies	Conceptual	IB theory	Macro context and micro-foundations for RQ2
Vahlne and Johanson (2017)	Journal of International Business Studies	Conceptual	IB theory	Network and learning logic for RQ2
Oviatt and McDougall (1994)	Journal of International Business Studies	Conceptual	INV theory	Early internationalisation logic for RQ2
Monaghan et al. (2020)	Journal of International Business Studies	Conceptual	Born digitals	Born digital constraints for RQ2
Banalieva and Dhanaraj (2019)	Journal of International Business Studies	Conceptual	Digital economy	Internalisation extension for RQ2
Hennart (2019)	Journal of International Business Studies	Conceptual	Digitalised services	Digital service MNE implications for RQ2

Luo (2021)	International Business Review	Conceptual	Digital globalisation	New OLI advantages for RQ2
Chen et al. (2019)	Journal of International Business Studies	Empirical	iBusiness firms	Network effects and outsidership moderators for RQ2
Li et al. (2025)	Journal of World Business	Systematic review	Platform-based firms	Host institution and governance moderators for RQ2
Schmeisser et al. (2026)	Journal of World Business	Multidisciplinary review	IB and DT	Integrated agenda for RQ1 and RQ2

Supplementary Table S3. Journal-wise screening and inclusion summary

Journal	Included in final synthesis	Excluded at title/abstract screening	Excluded at full-text screening
Journal of International Business Studies	8	44	4
Long Range Planning	5	32	3
Strategic Management Journal	3	28	2
Business and Information Systems Engineering	2	21	2
Journal of Management	2	22	3
Journal of World Business	2	19	1
The Journal of Strategic Information Systems	1	15	3
Journal of Business Research	1	14	2
Journal of Management Studies	1	19	1
Information Systems Research	1	13	1
International Business Review	1	9	1
Total	27	236	22