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Internationalization of Digital Firms:
Overcoming Costs and Challenges

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Preface & Acknowledgement

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Abstract

Digital firms are becoming increasingly important actors in the business environment and society. Commonly, digital firms have been argued to have particularly good opportunities to internationalize due to their unique characteristics. However, researchers have recently acknowledged and emphasized the challenges and costs digital firms face when internationalizing. Though, a discrepancy between digital firms' internal facilitators of internationalization, and the challenges and costs digital firms face when internationalizing, exists in the academic literature. This explorative qualitative research study sets out to fill this gap by attempting to answer how digital firms, in light of the associated challenges and costs, can facilitate successful internationalization. Findings reveal that digital firms can facilitate successful internationalization through integration with local users, local institutions, and online complementors. Their ability to integrate with local users, local institutions, and online complementors were indicated to depend on their Dynamic Capabilities, involving Knowledge Capability Updating and Adaptive Capability.

Keywords: Digital firms, Internationalization, Business Ecosystems, Digital Economy, Digitalization, Liability of Ecosystem Integration, Dynamic Capabilities, Costs, Challenges

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1. Introduction

1.1 Background

The digital infrastructure, and in particular the internet, has enabled new and modified business models that are restructuring the ways and processes of doing business internationally (Nambisan *et al.*, 2019). An increasing share of global business operations are today characterized by an increasing importance of digital infrastructure, SMEs, flows of data and knowledge, and worldwide access and connectivity (*ibid.*). The upturn in digital transmission of values appears to have reduced the barriers to international business activities such that firms are able to connect and expand more rapidly and fluently in- and across international markets (Trevino & Doh, 2021; Nambisan *et al.*, 2019).

Digital firms have emerged as dominant actors in the international economy (Chesbrough, 2007; Brynjolfsson & McAfee, 2014). By creating and distributing products and services digitally, digital firms have harnessed the benefits of digital technologies, redefined the business environment, and disrupted traditional business models (Teece, 2018). Their ability to scale operations and reach customers globally at low costs has led to a remarkable growth of digital firms that are becoming increasingly influencing actors in various industries (UNCTAD, 2020).

Firm internationalization has been researched by scholars for several decades. However, the new global digital connectivity- and transmission of values are believed to be associated with theoretical implications that may upend important concepts and perspectives in existing theories in the International Business literature (Luo, 2022). As such, the internationalization of digital firms has gained increasing attention amongst scholars due to their significance for economic development, trade, competition, and globalization (Buckley *et al.*, 2017). Many researchers have studied the unique characteristics of digital firms' facilitating internationalization, though, missing out on putting it in context of the challenges and costs they are faced with (Rong *et al.*, 2022). Digital firms appear to have the most dominating and influential position in the future business environment (Steenkamp, 2020). Understanding the costs, challenges, and driving factors of digital firms' internationalization is critical for investors, managers, and other actors seeking to capitalize on the opportunities which the digital economy presents.

1.2 Problematization

The literature on firm internationalization of firms is extensive in the fields of International Business and International Entrepreneurship, addressing various types of firms (Johanson & Vahlne, 2009; Oviatt & McDougall, 2005). The significance of institutional contexts, firm-specific advantages, and industry factors as influencing factors on the internationalization of firms has been highlighted broadly by researchers in the field of International Business (Rugman & Verbeke, 2004; Dunning, 1988). Similarly, the role and characteristics of entrepreneurs, recognition of opportunities, and constraints of resources have been emphasized as driving factors of the international expansion of firms in the field of International Entrepreneurship (Oviatt & McDougall, 1994; Zahra, 2005). Although providing solid foundations, these frameworks often fall short to capture the specific challenges encountered by digital firms due to a lack of granularity in context of this type of firm. General patterns of internationalization, such as relationship networks and modes of entry, have been researched by Scholars, though, a lack of attention has been paid to the unique features associated with digital firms (Chandra & Coviello, 2010; Jones *et al.*, 2011).

Benefiting from their unique characteristics, digital firms distinctly distinguish themselves from traditional brick-and-mortar enterprises. Digital firms are often characterized by creative business models and an ability to rapidly access and scale globally from firm inception (Bouncken *et al.*, 2019; Drori *et al.*, 2019). Moreover, leveraging digital platforms, technologies, and networks have been observed as often being involved in the internationalization strategies of digital firms (Autio *et al.*, 2018, Keupp & Gassmann, 2009). Operating in the virtual realm, digital firms rely on the internet, digital platforms, and cloud computing to deliver products and services (Brynjolfsson & Saunders, 2010). Whilst relying on these technologies, digital firms leverage the digital infrastructure throughout their value chains (Monaghan *et al.*, 2020), argued to facilitate rapid scalable operations at low-cost and, thus, enabling digital firms to quickly spread and penetrate new markets internationally with low requirements for investments in physical infrastructure (Boudreau & Lakhani, 2009; Monaghan *et al.*, 2020). Additionally, digital firms possess intangible assets that easily can be replicated, modified, and transferred across markets (Eisenmann *et al.*, 2006; Monaghan *et al.*, 2020). The intangibility of digital firms' assets, coupled with their ability to generate and leverage network effects, enable these firms to scale fast and gain competitiveness in foreign markets (Parker *et al.*, 2016). Consequently, researchers have argued that digital firms have particularly good opportunities to internationalize rapidly and be "born global" since they are

likely to face lower liability of network outsidership and have better accessibility to international business networks (Boudreau & Lakhani, 2009; Monaghan *et al.*, 2020; Parker *et al.*, 2016).

Whilst the unique features of digital firms have been suggested to bring about opportunities in the international business environment, they may also imply costs and challenges (Hennart, 2019; Nambisan, 2022; Shaheer & Li, 2020; Verbeke & Hutzschenreuter, 2021; Rong *et al.*, 2022). As stated by Rong *et al.* (2022), whilst digital firms have been suggested to have extra good opportunities to internationalize and be born global, their ability to internationalize may have been overestimated. Recent findings suggest that digital firms may encounter challenges and costs in foreign markets due to variances in market characteristics internationally and, thus, need to consider local factors when internationalizing (Jean & Tan, 2019; Nambisan, 2022; Verbeke & Hutzschenreuter, 2021; Rong *et al.*, 2022).

Recently, Rong *et al.* (2022) developed a theoretical framework, Liability of Ecosystem Integration, for understanding the challenges and costs digital firms face when internationalizing due to market and industry characteristics, and how it impacts the internationalization of digital firms. However, whilst the framework presents an outlined description of what the challenges and costs are and the roots of cause, it falls short of explaining how they can overcome them and facilitate successful internationalization. More specifically, the framework falls short in explaining the underpinning activities and capabilities of digital firms through which they can facilitate overcoming the challenges and costs associated with local market contexts and thus facilitate successful internationalization. As such, this study sets out to increase our understanding of how digital firms, based on internal activities and capabilities, can overcome the challenges and costs associated with the Liability of Ecosystem Integration, and thus facilitate successful internationalization.

1.3 Purpose and research question

The purpose of this study is to examine the internationalization of digital firms and how they overcome the Liability of Ecosystem Integration. In particular, the focus of the study is to explore what activities, and underpinning capabilities, digital firms can deploy to overcome the challenges and costs associated with the Liability of Ecosystem Integration and thus facilitate successful internationalization. The aim of the study is to contribute to the literature on digital firms in the research-fields of International Business and International Entrepreneurship by examining the costs and challenges associated with digital firms'

internationalization, and the underpinning key drivers of overcoming them. The findings of the study are analyzed through a Liability of Ecosystem Integration lens, as described by Rong *et al.* (2022).

Drawing on previous literature from the research-fields of International Business and International Entrepreneurship, this study aspires to shed light on the strategic considerations underpinning digital firms' internationalization process. Furthermore, the study seeks to improve the understanding of key determinants impacting the international success of digital firms and address the discrepancy between academic literature concerning the facilitators and the challenges and costs of digital firms' internationalization process. To achieve the purpose of the study, the main research question guiding the research process is stated as follows:

How can digital firms facilitate successful internationalization in context of associated challenges and costs?

The Liability of Ecosystem Integration is a relatively new concept that is yet to be verified and accepted on a wider scale. As such, part of the research process is to verify the assumptions made under the concept given the circumstances of this study. Consequently, to answer the research question above, the following sub-research questions were formulated:

What are the challenges and costs associated with the internationalization of digital firms?

How do digital firms overcome challenges and costs associated with internationalization?

What underpinning capabilities facilitate successful internationalization of digital firms?

By exploring the factors, the study strives at contributing with valuable insights related to internationalization of digital firms that may be of use for digital firms aspiring to internationalize or that are operating internationally, as well as other stakeholders and policymakers striving to facilitate growth of digital industries.

To summarize, by providing empirical evidence and theoretical insights, this study aims to make contributions to the literature on strategies and practices of digital firms' internationalization, primarily in context of the research-fields of International Business and International Entrepreneurship. Additionally, findings may potentially have practical implications in context of international business management and industry policymaking.

1.4 Delimitations

The mobile game industry is a highly digitalized industry that has been at the forefront for the past two decades when it comes to the rise of digital firms, justifying the delimitation of choosing mobile game firms as research objects. Furthermore, the research is delimited to mobile game firms from the United States, classified as SMEs (Small and Medium sized Enterprises). Accordingly, the findings and insights derived from this study have a contextual validity to digital firms in the mobile game industry and the conditions prevailing for firms in the United States. Furthermore, the research is delimited to the perceptions and interpretations of the respondents representing the research objects (the digital firms) that have undergone internationalization.

2. Literature review

2.1 From traditional to digital firms

Firm internationalization is a topic that has been researched and theorized extensively by scholars in the field of International Business (IB). Common amongst more traditional IB theory is the view on challenges and costs associated with firms entering, expanding, and operating in foreign markets, argued to be caused by a lack of local knowledge in foreign markets within the firm (E.g., Hymer, 1976; Johansson & Vahlne, 1977). Hymer (1976) argues that firms' lack of local knowledge in foreign markets must be compensated and outweighed by firm-specific advantages that generate economic rents for firms to successfully internationalize. Aligning with Hymer's (1976) theory of firm-specific advantages, Johansson & Vahlne (1977) developed the Uppsala internationalization process model, arguing that firms enter foreign markets incrementally to avoid liabilities of foreignness whilst developing (local) knowledge facilitating further foreign market commitments.

Empirical findings of firms internationalizing early, rapidly, accelerating, and with rather little friction (Rennie, 1993), as compared to the incremental or gradual internationalization processes proposed by other more traditional research (E.g., Johanson & Vahlne, 1977), triggered an extensive research stream on born global firms and international new ventures (INVs) (E.g., Knight & Cavusgil, 1996; Bell *et al.*, 2001; Gabrielsson, 2005). Characterized by successful instant significant international presence (Knight & Cavusgil, 2004; Knight & Liesch, 2016.), born global firms and INVs challenged the views and arguments of existing theories on firm internationalization, including the original- and revised internationalization process models. Whilst aligning with internationalization network theories concerning the role of up-stream inter-organizational relationships (Coviello & Munro, 1997; Coviello, 2006), the literature on born global firms and INV was distinct as entrepreneurial characteristics (Knight & Cavusgil, 1996; Zhou *et al.*, 2010) and marketing activities (Cavusgil & Knight, 2015; Hennart, 2014) were increasingly acknowledged as strong influential forces on firm internationalization. Furthermore, as compared to more traditional brick-and-mortar firms, born global firms and INV tended to be more usual in high-technological industries (Coviello & Munro, 1997; Autio *et al.*, 2000).

Criticized for not explaining the rapid internationalization of new types of firms sufficiently, such as born global firms and INVs, Johansson & Vahlne (2009) refined the Uppsala internationalization process model. Supported by, at the time, contemporary complementary

research and theoretical advancements concerning (business) networks in context of internationalization (Johanson & Mattsson, 1988; Coviello & Munro, 1997; Chetty & Campbell-Hunt, 2004; Oviatt & McDougal, 2005; Coviello, 2006; Freeman & Cavusgil, 2007), the main argument of the refined internationalization process model was that costs and challenges associated with internationalization derives from an inadequate position in the business network(s) (Johanson & Vahlne, 2009). As such, investments to build relationships with relevant actors, thus establishing a network insider position, must be made to overcome the Liability of Outsidership. Furthermore, as compared to the original model, a more rapid processes of committing to foreign markets was acknowledged depending on the current quality and associated content of the business network (Johanson & Vahlne, 2009). Nevertheless, a gradual internationalization process of firms was assumed to prevail as relationships and business networks developed slowly through social processes. The model has been reflected upon and revised since the 2009 version (E.g., Johanson & Vahlne, 2011; Vahlne & Johanson, 2017; 2020), however, the 2009 version has remained the most influential and widely accepted one in IB literature (Hult *et al.*, 2020).

Digital technologies have disrupted and rapidly changed societies on a global scale for the last three decades, especially since the introduction of the internet. The implementation of digital technologies has radically changed the business environment, argued to have improved the conditions of firm cross-border activities and facilitated internationalization (Coviello *et al.*, 2017). Characterized as firms that (1) “*builds and leverages digital infrastructure*”, (2) “*relies on digital infrastructure to accrue communication, collaboration and/or computing capabilities*” and (3) “*are digital from inception*” (Monaghan *et al.*, 2020), the digital firm has received growing amount of attention amongst scholars within the field of IB, IE (International Entrepreneurship), and IM (International Marketing) as digitalization has emerged through societies on a global level. Yet closely related to born global firms and INVs, in terms of early and rapid internationalization, features associated with the digitalized business model of digital firms, in which value is created, distributed, and captured, has been argued to hold practical and theoretical implications for firm internationalization (Monaghan *et al.*, 2020; Nambisan *et al.*, 2019). Paul & Rosado-Serrano (2019) argue that due to the characteristics of digital firms, in terms of technological resources and capabilities, the chance of them being born global (digitals) is higher, as compared to more traditional firms. As argued by Steenkamp (2020), digital (software) firms appear to have the most dominating and

influential position in the business environment in the future based on contemporary financial valuations of firms and brands.

2.2 Digitalization as a facilitator of internationalization

Researchers have addressed digital firms in various studies and articles in context of different theories. Drawing on the Eclectic paradigm, as described by Dunning (1980), researchers have, based on empirical findings, argued that because of digital connectivity with various stakeholders, digital firms have low incentives to physically invest in international markets (Cahen & Borini, 2020; Katsikeas *et al.*, 2020). As suggested by Coviello *et al.* (2017), rather than acquiring physical assets through Foreign Direct Investments (FDIs), digital firms tend to focus investments on acquiring human capital which do not demand FDIs in the same manner as physical assets. As such, digital firms may encounter lower liabilities of outsidership as the required physical FDIs may be lower, as compared to traditional firms (Coviello *et al.*, 2017). Furthermore, Cohen & Borini (2020) argue that developing digital capabilities is critical for digital firms to successfully internationalize online without entering foreign markets via equity modes. In context of the original Uppsala model (Johanson & Vahlne, 1977), researchers have argued that rapid internationalization of digital firms is more likely to occur as they are subject to lower, or less, liabilities of foreignness (Yonatory, 2017).

Many researchers have studied how digitalization facilitates international operations. Jean & Kim (2020) studied Small-and-Medium sized Enterprises' (SMEs) digital capabilities and their effect on export capability. Findings from the study indicated that by developing digital capabilities with the purpose of adjusting, modifying, and innovating their business models, firms may improve their export performance (Jean & Kim, 2020). The targeted research sample of the study only included manufacturing SMEs however. Furthermore, Steenkamp (2020) describes how digitalization has enabled new ways for firms to develop and manage brands globally. Digital technologies may be leveraged by firms to communicate and engage with various actors, more directly and instantly, thus facilitating brand management and, consequently (rapid) internationalization. On a similar note, Vadana *et al.* (2020) studied how the degree of digitalization in firms value-chains affects (degree of) internationalization and international marketing. Empirical evidence of the study indicated that less foreign assets were required for firms with high degrees of digitalization in their value-chains as foreign assets could be leveraged more efficiently due to the technological affordances of the firms (Vadana *et al.*, 2020). As such, firm digitalization was suggested to facilitate internationalization by improving efficiency, affordability, and international opportunity

recognition abilities (Ibid.). These studies have generally pointed attention to digitalization and the impact on international operations on a general level without necessarily targeting digital firms.

2.3 Digital firms

Verbeke & Hutzschenreuter (2021) points out that internationalization through digital assets is associated with challenges and costs. Whilst facilitating internationalization, the digital assets often require consideration of, and adaptation to, the local contexts in order to constitute firm-specific advantages in foreign markets (Ibid.). As such, depending on the current state of the firm, in terms of resources and capabilities, expansion into foreign markets may be associated with varying levels of challenges and costs depending on market characteristics.

Several researchers have addressed digital firms providing digital platforms. Brouther *et al.* (2016) studied the internationalization of digital firms providing digital platforms and concluded that such firms encounter liabilities of user-network outsidership and may thus have difficulties to expand into foreign markets (indicating that firms may not automatically enjoy network effects globally). As such, network externalities may be location-bound to specific markets impacting the costs and challenges of expanding into different markets. Chen *et al.* (2019) studied ibusiness firms, firms providing user network platforms, and drew similar conclusions. However, the authors suggested that firms can mitigate the challenges and costs associated with foreign market expansion through strategic international market selection based on the likelihood of enjoying network effects in those markets (Chen *et al.*, 2019). Furthermore, Chen *et al.* (2019) demonstrated that network externalities may not be location-bounded as market specific institutional characteristics become influenced by users and actors in other markets without involvement by the firm. Consequently, as argued by Guillén (2021), network effects of digital platform providers can be geographically restricted to local and regional areas, as well as being unrestricted and apply globally. It reveals that the challenges and costs digital firms encounter when internationalizing varies between firms and markets and may be a result of internal and external contextual factors. Nevertheless, these observations are based on firms providing digital platforms, that hold unique characteristics relative to digital firms in other industries and with distinctly different business models.

Jean & Tan (2019) studied Chinese digital firms and the drivers of successful internationalization. Findings of the study revealed that by leveraging their technological

affordances, digital firms can mitigate liability of foreignness and the liability of outsidership by developing strong institutional capabilities, in terms of networking capabilities in the political and social spheres and business model innovation capabilities, (Jean & Tan, 2019). However, the authors concluded that differences in institutional environments between foreign markets may constrain digital firms' ability to expand into those markets depending on the institutional capabilities developed and possessed by the firm (Ibid.). As such, the study indicates that digital firms may be required to consider and adjust to the local context in foreign markets and build capabilities to adopt and consequently expand successfully internationally. Furthermore, aligning with Wentrup's (2016) findings, the authors emphasize the significance of an online-offline balance in the configuration and employment of institutional capabilities.

Several researchers have recently suggested that digital firms may encounter obstacles to internationalization, both in the home- and foreign markets, due to institutional characteristics in the markets (Hennart, 2019; Nambisan, 2022; Shaheer & Li, 2020). Drawing on the argumentation by Banalieva & Dhanaraj (2019), Hennart (2019) argues that market-specific institutional factors, e.g., such as firm reputation, may impede internationalization of digital service multinational corporations (MNCs). As such, digital firms' potential performance in foreign markets may vary between markets depending on local contexts and how they evolve in the dynamical external environment (Hennart, 2019, Chen *et al.*, 2019). Similarly, Nambisan (2022) emphasizes the significance of local (formal) institutional environments of foreign markets in context of firms' digital innovative efforts in the international business environment. Shaheer & Li (2020) studied internationalization of digital firms providing applications on App Store and concluded that distances under the CAGE framework acts as barriers to internationalization in foreign markets as those distances may impact the willingness to adopt applications amongst users. Hence, despite being available globally, global market expansion and penetration may not occur automatically (Shaheer & Li, 2020). However, the authors suggest that by engaging with users in co-creating processes, these obstacles may be diminished and overcome as it facilitates adaptation of offerings to local contexts (Shaheer & Li, 2020).

The studies by Hennart (2019), Nambisan (2022), Shaheer & Li (2020), and Jean & Tan (2019) draw attention to and highlight the significance of local contexts and market specific characteristics in foreign markets. Despite the technological affordances of digital firms, suggested to facilitate internationalization, there may still be varying costs and challenges

associated with expanding into different markets depending on the local contexts of those markets.

To overcome these challenges and costs, researchers have suggested that digital firms often are required to engage with the local environment to obtain local knowledge and integrate with actors in local ecosystems. Nambisan (2022) emphasize the role of demand-side actors for MNCs digital innovation and highlights that the local culture amongst those actors needs to be considered to develop a strong strategy facilitating continuous exchange processes with local actors and, thus, co-creation and co-innovation. Verbeke & Hutzschenreuter (2021) holds the same positioning arguing that digital firms are often required to engage with local stakeholders in foreign markets to obtain local knowledge and complementary assets as to leverage their firm-specific advantages. Li *et al.* (2019) argues that for digital platforms to success in foreign markets, they often are required to be integrated in the local environment of external actors such that new modified ecosystem is built. Similarly, based on empirical observations, Zeng *et al.* (2019) suggest that digital platforms have a higher probability to succeed internationally if the business model is adopted according to the local contexts in foreign market, facilitated through transmission of internal and external knowledge.

Closely related to internationalization of digital firms, Mihailova (2023) examined international scaling of digital firms in “*cultural industries*” including, amongst other, game development firms. Findings from the explorative qualitative study revealed that to achieve realized scaling, digital firms adapt their business model in foreign markets (Mihailova, 2023). Furthermore, business model adaptations in the foreign markets were observed to be based on iterative processes of knowledge accumulation, derived from exchange processes with local stakeholders (Ibid.). Hence, dynamic capabilities, as described by Teece (2010), was highlighted as a critical factor for the success of international scaling. Linking these findings to internationalization, it seems that digital firms’ ability to consider and integrate with local environments is key for successful international expansion.

As stated above, digitalization as a facilitator of internationalization has been addressed extensively in IB and IE literature, though, recent findings suggests that research needs to draw closer attention to the costs and challenges associated with local contexts that digital firms face in foreign market during internationalization as the literature on this topic is rather scarce. Most previous studies addressing these challenges and costs draws on established and more tradition internationalization theories and outlines contextual factors impacting foreign market success, though, without conceptualizing the internationalization process of digital

firms in a more comprehensive manner. However, Rong *et al.* (2022) addressed this issue and developed the concept of *Liability of Ecosystem Integration*. According to the authors, as compared to more traditional theories including the Liability of Foreignness and Liability of Outsidership, the Liability of Ecosystem Integration conceptualize liabilities of which, particularly, digital firms face in foreign markets (Rong *et al.*, 2022). However, the theoretical framework was developed based on empirical observations of six large digital multinational enterprises operating in different industries. The Liability of Ecosystem Integration framework needs further examination and exploration, as well as verification of its ruggedness across industries. As such, this study sets out to explore the internationalization of digital firms in light of the Liability of Ecosystem Integration framework.

3. Theoretical framework

3.1 Liability of ecosystem integration

A distinction between the Liability of Ecosystem Integration, the liability of foreignness, and the liability of Outsidership should be made. The essence of Liability of Foreignness and Liability of Outsidership is that foreign entrants typically need to bridge economic- or psychic gaps. Whilst the Liability of Foreignness argue that these gaps are bridged by gaining host country-specific knowledge, the Liability of Outsidership theorize that these gaps are bridged by investing in gaining relationship-specific knowledge through business network relationships. Liability of Ecosystem Integration, however, argues that investments in co-development of local ecosystems is required, involving business-specific users, complementors, and institutional actors. As opposed to merely bridging economic- and psychic gaps by investing in and gaining market- and relationship-specific knowledge, it entails stimulating collaborative approaches to establish conducive environments for businesses to thrive in.

The level of Liability of Ecosystem Integration that firms encounter is contingent on the attributes of its business model and the industry in which it operates across three dimensions; the level of integration with local (1) users' behaviors and lifestyles, (2) complementors, and (3) institutions. These attributes influence firms' internationalization in terms of success and spatial concentration.

Integration with users' behaviors and lifestyles

The first dimension of Liability of Ecosystem Integration involves integration with users. When introducing a new offering, typically, foreign entrants lack the necessary user base, networks, and in-depth knowledge of local users' behaviors and lifestyles to encourage appropriate user interactions. Active engagement with their user base is often a crucial factor for born digitals that can determine their success. Ultimately, integrating with users' behaviors and lifestyles can improve businesses' ability to develop viable and sustainable business models. Furthermore, this approach entails more than simply understanding tastes and preferences of users, it involves discovering and stimulating behaviors leading to co-creation and co-innovation as well.

The costs and challenges of promoting user interaction stem from the liabilities of user integration. Promoting these user interactions differs across digital industries in terms of costs

and challenges. Whilst user interactions may be complex and require high customization in some industries, it may be simpler and more suitable for standardization in other industries.

Three assumptions are made under this dimension affecting the level of Liability of Ecosystem Integration. Firstly, the level of Liability of Ecosystem Integration increases as the importance of offline activities increases in digital services. Offline activities refer to the non-digital activities that users need to participate in as part of the utilization process of a service. However, some digital services can be utilized by users entirely online, such as e.g., music streaming. Secondly, the level of Liability of Ecosystem Integration increases as the geographical proximity required by users increases. Geographical proximity refers to the physical distance between users and supplier as an order is placed. Some users may require a short distance if, for example, they expect delivery the next day. Thirdly, the level of Liability of Ecosystem Integration increases as the cultural proximity required by users increases. Cultural proximity required by users refers to users hopes or expectations that the digital service follow their cultural norms such as, for example, social customs and language.

Integration with complementors

The second dimension of Liability of Ecosystem Integration involves integration with complementors. To form a viable digital ecosystem, born digitals are often dependent on complementors providing complementary products and services. For the born digital, this involves establishing and fostering the development of complex complementor networks over time that supports production, delivery, and co-innovation of the offering.

Due to their lack of established connections, limited understanding of industry characteristics, and potential legitimacy inadequacies in foreign local markets, born digitals may encounter obstacles when attempting to catalyze ecosystems of complementors, referred to as complementor integration liabilities. The level of complementor integration liability differs across digital industries as some require more extensive and complex complementarities.

One assumption is made under this dimension. The level of Liability of Ecosystem Integration increases as the dependency on offline complementors increases. The dependency on offline complementors refers to the extent to which the firm is dependent on external complementors for non-digital joint development and co-innovation of and within an ecosystem.

Integration with institutions

The third dimension of Liability of Ecosystem Integration involves integration with institutions. Despite the ongoing movement towards increasing global mobility, institutions have remained relatively immobile, as compared to the global market for resources and factors. Interacting and integrating with local institutions often constitutes highly significant abilities for born digitals, deterministic for their success. Foreign entrants often have limited connections, potential legitimacy inadequacies, and lack in-depth knowledge in local markets, and are thus likely to encounter costs and challenges associated with these issues.

Consequently, born digitals frequently need to engage with local institutions involving political-, legal-, and social-, aspects and, as such, includes both formal- and informal institutions. The institutional integration liabilities stem from interaction and integration with local institutions.

One assumption is made under this dimension. The level of Liability of Ecosystem Integration increases as the required integration with host-country institutional support increases. Host-country institutional support refers to the interactions with, and co-development of, the formal and informal institutional environment, including government regulations and social legitimacy.

Industry maturity as a moderating factor

The Liability of Ecosystem Integration framework makes two assumptions concerning industry maturity as moderating factors of firm internationalization. Firstly, the Liability of Ecosystem Integration framework assumes that the negative association between the intrinsic level of Liability of Ecosystem Integration and firms' internationalization performance is stronger with more mature industries. As such, it is less likely that internationalizing firms' performance will be strong in more mature markets. Secondly, the Liability of Ecosystem Integration framework assumes that the negative association between the intrinsic level of Liability of Ecosystem Integration and global industry concentration becomes stronger with more mature industries. As such, it is less likely that a high global market configuration prevails in more mature industries.

Liability of Ecosystem Integration-attributes' impact on firm internationalization

The Liability of Ecosystem Integration framework makes two assumptions concerning the impacts of Liability of Ecosystem Integration -attributes on firm internationalization. Firstly, digital firms are less likely to pursue market-seeking internationalization when the level of Liability of Ecosystem Integration is high. Secondly, when expanding abroad, digital firms

achieve less competitive success when the level of Liability of Ecosystem Integration is high. As such, firms with strong ESA facing low levels of Liability of Ecosystem Integration are likely to pursue global market-seeking internationalization. Firms with medium ESA facing medium levels of Liability of Ecosystem Integration are likely to pursue multi-domestic market-seeking internationalization. Firms with weak ESA facing high levels of Liability of Ecosystem Integration are likely to pursue a restricted multi-domestic market-seeking internationalization focusing on foreign markets more similar to their home market. Consequently, the Liability of Ecosystem Integration framework assumes that as the level of Liability of Ecosystem Integration increases, the level of global market concentration decreases. As such, in industries with high levels of Liability of Ecosystem Integration, it is less likely that a high level of global market concentration will prevail and, consequently, that a global monopoly scenario arises.

3.2 Dynamic capabilities

Dynamic capabilities are strategic and organizational processes that allow and enable firms to adapt, integrate and reconfigure their competencies and resources in response to changes in the external environments (Teece, 2010). In other words, dynamic capabilities refer to firms' ability to respond to changes in the external environment by effectively managing and leveraging their resources. Teece (2010) dynamic capabilities depend on three managerial activities, namely sensing, seizing, and transforming. Sensing refers to internal activities within the organization to identify and assess opportunities in the external environment. Seizing refers to the organizational activities related to mobilization of resources and capabilities to capture value from opportunities arising. Transforming refers to the organizational activities of continuous renewal.

Sadeghi *et al.*, (2023) provides the concepts of Knowledge Capability Upgrading and Adaptive Capability. Knowledge Capability Upgrading refers to firms' ability to acquire knowledge, learn, and adjust existing knowledge in response to changes of contingencies (Sadeghi *et al.*, 2023). As such, Knowledge Capability Upgrading can facilitate successful internationalization as it enables firms to, for example, learn about new markets, stay up to date with market trends and the competitive landscape, and adapt to regulations (Ibid.). Adaptive Capability refers to firms' ability to adjust their resources, activities, and strategies to meet changes in the external environment. As such, Adaptive Capability can facilitate successful internationalization as they enable firms to, for example, respond to changes in markets, seizing opportunities, and navigating cultural differences (Ibid.). Although not

explicitly stated, it can be argued that Knowledge Capability Upgrading and Adaptive Capability manifests Dynamic Capabilities, as described by Teece (2010), as they share similarities and builds on the same underlying principles of as Dynamic Principles.

4. Research methods

4.1 Research strategy

This study is based on an ontological position of constructionism. Constructionism, as an ontological position, views social phenomena and categories as socially constructed (Bell *et al.*, 2019). Constructionism challenges the objective view of reality of which objectivism is based on. Furthermore, constructionism views knowledge indeterminate and, to a degree, subjective. As such, specific social realities are presented by researchers as social phenomena and categories are produced and continuously revised. Organizations are regarded as socially constructed entities that are made real by, and depend on, the understandings and actions of humans. Thus, since internationalization of digital firms was the phenomenon studied, an ontological position of constructionism was suitable for this study.

This study is based on an interpretivist epistemological position. Interpretivism is concerned with addressing the why and the how of social actions, as well as understanding human behavior (Bell *et al.*, 2019). Constructionism, asserting that reality constitutes of human actions and sense-making, underpins interpretivism. Interpretivism refers to theories concerning how humans can obtain knowledge of the world and holds that reality and knowledge is socially constructed by humans. As such, knowledge mainly relies on interpretations of the meanings human attach to phenomena. Central to interpretivism is to analytically disclose meanings of findings, whilst demonstrating how these findings compose to generate outcomes that are observable. This study focused on humans' sense-making in ongoing situations and was thus interpretive in nature.

To fulfill the aim of this study, a qualitative phenomenological methodological approach was applied. Methodologies can be seen as being based on different epistemological foundations, which in turn are based on different ontological foundations (Bell *et al.*, 2019). Qualitative methodology commonly relies on the interpretivist epistemological stance, which in turn is typically rooted in the ontological perspective of constructionism. Usually, qualitative methodology, as opposed to quantitative, does not emphasize quantification and quantitative measures. Rather, qualitative methodology emphasizes words and images, or other expressions expressed in qualitative terms (Bell *et al.*, 2019). Furthermore, qualitative research emphasizes a view of social reality as an emergent property of individuals' creation that constantly shifts. A qualitative methodology allows for social and cultural variables to be accounted for when attempting to understand and interpret the meaning of the studied interest

(Eriksson & Kovalainen, 2008). Qualitative methodology is suitable when studying social phenomena by collecting non-quantifiable in-depth information (Saunders *et al.*, 2009) and is the preferred choice when attempting to answer ‘what’, ‘how’, and ‘why’ (Eriksson & Kovalainen, 2008). Thus, a qualitative methodology fitted this study well as in-depth data of non-quantifiable characteristics, derived from human representatives of the firms, intended to address the ‘how’ and the ‘what’.

According to Patel & Davidsson (2011), the aim of a phenomenological approach is to examine how phenomena in the world are perceived by respondents. As such, a phenomenological approach suited this study to examine the internationalization of digital firms, addressing the ‘how’ and the ‘what’ of the research questions, relying on the respondents’ perceptions of the world.

Predominantly, qualitative methodology emphasizes an inductive approach to the relationship between research and theory (Bell *et al.*, 2019). However, an abductive approach was applied, characterized as a combination of deductive and inductive reasoning (Eriksson & Kovalainen, 2008). Abductive reasoning can be understood as a combination of inductive- and deductive reasoning (Bell *et al.*, 2019). Abductive reasoning recognizes the dyadic relationship between empirics and theory (Dubois & Gadde, 2002). Interpretivist epistemology forms the foundation of abductive reasoning as it allows for subjectivity on the researchers’ behalf (Alvesson & Kärreman, 2011). As such, abductive reasoning allows data collection to be influenced by preconceived theoretical understanding. Consequently, an abductive approach aligned well with the epistemological- and ontological positioning of this study and was suitable to guide the empirical process such that relevant aspects were addressed.

Before collecting data, a literature review was conducted, forming the basis of the theoretical framework, which guided the data collection process.

4.2 Research Design

To explore the internationalization of digital firms, a multiple case study research design was undertaken. The case study design may serve several purposes in research depending on its characteristics. Some argue that *exploratory* case studies should map out themes of which subsequent research can explore, thus acting as preliminary research in advance of wide-scale research (Bell *et al.*, 2019). *Descriptive* case studies, on the other hand, have been argued to be preferred when expanding in themes and trends already discovered (Ibid.). One may also,

according to Flyvbjerg (2006) use case study research to test theory as to whether, or to what extent, they stand true in particular cases.

Representative cases were used to exemplify the everyday conditions of the organizations studied to explore their internationalization process. The aim of undertaking the multiple case study design was to capture the unique features and complexities of digital firms' internationalization to generate an intensive examination of the phenomenon. As an extension of the case study design, the multiple case study design allows for in-depth exploration of digital firms' internationalization, as well as comparison across firms, which can facilitate identification of commonalities, differences, and patterns in the empirical data (Bell *et al.*, 2019).

4.3 Data collection

4.3.1 Primary Data - Sampling method

Primary data was collected through first-hand qualitative interviews for this study. The qualitative nature allows for more rich and detailed information to be obtained, as suggested by Bell *et al.* (2019). Furthermore, primary data collection through interviews is advantageous when searching for new knowledge and in-depth insights based on the experiences and perceptions of respondents that provide the data (Adams *et al.*, 2007). As such, given the explorative nature- and objectives of the study, qualitative interviews were selected as the method to collect primary data.

For this study, semi-structured interviews were selected as the primary method for the interviews. Semi-structured interviews allow researchers to attain in-depth insights from spontaneous and open discussions, based on the experiences and perceptions of respondents, without losing the benefits associated with structured (Bell *et al.*, 2019). As such, the method provides a harmony between flexibility and structure, thus facilitating exploration whilst maintaining consistency across interviews (Ibid.). An interview guide (outlined in Appendix) was written before the interviews were conducted, providing a predefined framework for the interviews. Respondents were encouraged to express their experiences and perceptions through open-ended questions, facilitating rich data to be collected. Depending on the respondents' responses, questions were modified and adapted by the interviewer during the interview, spurring a discussion in which the subject matter was explored in-depth.

4.3.2 Primary Data - Selection of firms and respondents

With a phenomenological approach, it is of importance that respondents had experienced the phenomenon studied (Creswell, 2007). For this study, internationalization of digital firms operating in the mobile-game industry was the phenomenon studied. Consequently, two requirements had to be satisfied for respondents to be selected. Firstly, respondents were required to represent a digital firm operating in the mobile-game industry that had undergone internationalization. Secondly, respondents were required to have been involved in the firm from, or close to, its inception to ensure that they had comprehensive knowledge and understanding of the firm throughout its internationalization.

The selection process of respondents started with a search for digital firms in the mobile-game industry, with international activities, using records of firms with games published on digital mobile-game market platforms provided through online websites. Once identified, firms of interest were contacted by e-mail, which amounted to 33 firms being contacted. The aim of the initial e-mail was to establish whether there was an interest in participating amongst the firms. Thus, a detailed description of the study, including objectives of the study, the role of and expectations on participants, and requirements of participating, was provided as an attached document in the e-mail. It resulted in five firms that were interested in participating and satisfied the requirements to participate. All five firms participated in the research project, however, one of the participating firms did not meet the requirement of providing a respondent that had been involved in the firm from, or close to, the inception of the firm. As such, data collected from this particular respondent was excluded from the research project, resulting in four cases being studied.

Empirical saturation is achieved when new information or insights cannot be gained through collection of more data and is important to consider as it signifies that enough data has been collected to understand the phenomenon researched to draw conclusions with confidence based on the available data (Bell *et al.*, 2019, Saunders *et al.*, 2016). Though, the number of participants required to achieve empirical saturation in qualitative research is not clear (Ibid.). The firms selected to be studied originated from the United States and were in the size of SMEs, based on the categorization terminology determined by the European Commission (n.d.), thus being similar in firm characteristics to ensure credibility (Saunders *et al.*, 2016). For each firm studied, the size of the respondents was one, adding up to a total sample size of four respondents for the study. The roles of the respondents in their respective firm are outlined below.

<i>Respondent</i>	<i>Role in the firm</i>
A	Chief Technical Officer
B	Game Development Manager
C	Creative Director
D	Strategy Manager

4.3.3 Primary Data - Interview process

With the consent of the firms and the respondents, the interviews were recorded to facilitate accurate interpretations and diminish the risk of incorrect representations of the material. Interviews were conducted through video-chat calls exclusively, which could have had a negative impact on the quality of the interviews since certain features associated with interviewing in person could suffer, as described by Bell *et al.* (2019). However, the quality of the interviews was perceived as satisfying and no difficulties or obstacles with apparent significant impact on the quality of the interviews did arise. The interviews were conducted and transcribed in English.

The date and time of the interviews were scheduled one week in advance at the latest. The time difference between the interviewer and the interviewees was considered, and the time of the interviews were determined based on the preferences of the interviewees to facilitate participation. These interviews were preliminary scheduled in conjunction with the first interview. Interviews were scheduled and conducted and outlined below.

<i>Firm</i>	<i>Respondent</i>	<i>1st interview</i>	<i>Time of the session</i>
Alpha	A	23-04-19	40 minutes
Beta	B	23-04-21	30 minutes
Charlie	C	23-04-25	45 minutes
Delta	D	23-04-26	50 minutes

4.3.4 Secondary Data – Database and Data collection

A systematic review was used for the database and data collection of the literature review, using predefined categories when searching and selecting appropriate articles from academic journals (Bell *et al.*, 2019). The systematic review included articles from selected databases such as, *Journal of World Business*, *Journal of International Business Studies*, and *Journal of*

International Management. *Google Scholar*, provided by Google, and the search engine *Super Search*, provided by the University of Gothenburg library, were used to search for data. Additionally, *Google Bard*, provided by Google, and *Chat-GPT*, provided by Open AI, was used to search for relevant data as a complement to *Google Scholar* and *Super Search*.

4.4 Data analysis

The qualitative methodology deployed in this study implies that bundles of data is generated which, once attained, may be problematic to analyze for the purpose of identifying relevant aspects and perspectives relative to the purpose and research question(s) of the study (Bell *et al.*, 2019). Approaching the analysis in a systematic and structured may diminish this problem by making it easier to understand the meaning and content of the data.

In this study, the thematic analysis method was deployed for analyzing the collected data. The thematic analysis method can be used in various research settings with different outsets relating to the research design. (Nowell *et al.*, 2017). The method involves “*identifying, analyzing, organizing, describing, and reporting*” themes or patterns within a set of data (Nowell *et al.*, 2017, p. 2). The method has been used widely in research to approach qualitative data as it is argued to be advantageous for uncovering themes and patterns within a set of data (Braun & Clarke, 2006). The qualitative data collected derives from the experiences and perceptions of the internationalization process of the firms shared by the respondents in the interviews. As such, the thematic analysis method was selected as it allows for a rigorous and systematic exploration of those shared experiences and perceptions with the purpose of identifying themes and patterns.

The thematic analysis method is a process involving several stages which were followed accordingly. The stages include data familiarization, initial code generating, search of themes and patterns, refining and reviewing themes, defining and naming themes, and interpretation and validation of findings (Braun & Clarke, 2006).

The first stage involves familiarization with the data. To become familiarized with the data, the interviews were transcribed and read thoroughly to gain a general understanding of the data and its content. With the gained understanding of the data, the second stage of the process, generating initial codes, was conducted. It involved establishing meaningful units of information that came to constitute the main blocks further on throughout the analysis. Predominantly, these blocks followed the structure of the semi-structured interview guide. Consequently, the fourth stage was undertaken in which themes and patterns were searched

for based on an examination of the codes generated in the previous stage. Through an iterative process, the themes were reviewed and refined based on the contrasts and relationships between them. Next, the themes were defined, named, and described, supported by revised quotes to maintain consistency throughout the study. Lastly, findings were interpreted and validated in light of the theoretical framework and objectives of the study. Given that the research was conducted by a single researcher, potential uncertainties could not be discussed within a research team. As such, the accuracy of the representation of the experiences and perceptions of the respondents relied on the interactions between the researcher and the respondents. Hence, efforts were made to facilitate close and continuous interaction with respondents throughout the analysis process to receive feedback and input on the researchers' interpretations.

The deployment of the thematic analysis method facilitated a systematic and structured approach for analyzing the qualitative data. Digital firms' internationalization was explored comprehensively based on the themes and patterns uncovered through the experiences and perceptions shared by the participants.

4.5 Research quality assessment

Ensuring the validity and reliability of findings in a study is critical to assure its quality and integrity. As such, quality assessment is an integral part of research. Different criteria for evaluating quality in research are subject to discussions in terms of their relevance.

Nevertheless, considering multiple perspectives through various criteria is important.

According to Bell *et al.* (2019), in context of qualitative studies, the traditional criteria of reliability and validity may have limited applicability and rather be more suitable in context of quality assessment in quantitative studies. Lincoln and Guba (1985; 1994) provides alternative criteria, including trustworthiness and authenticity, which they propose are more suitable for research quality assessment in qualitative studies as these criteria acknowledge the possibility of social reality having multiple truths. For this study, the trustworthiness criteria were deployed to assess research quality, ensuring the credibility, transferability, dependability, and confirmability of the findings (Bell *et al.*, 2019). By integrating these criteria, the study strives at achieving high research quality by acknowledging the importance of capturing multiple perspectives and the unique nature of qualitative studies. Ultimately, the deployment of the trustworthiness criteria aims at contributing to generating insights that are valid and reliable.

Credibility is of great significance in qualitative studies in terms of representing data and perspectives of participants with accuracy. The respondent validation technique, as described by Bell *et al.* (2019) was employed to ensure credibility. As such, respondents confirmed the accuracy of the findings from the interview which they participated in, as interpreted and formulated by the researcher.

Findings from qualitative studies are often context-specific, causing generalization to be challenging and the issue of transferability complex (Bell *et al.*, 2019). Nevertheless, detailed descriptions of relevant contextual factors can enhance the transferability of the findings as it provides information useful for understanding how the study can be applicable in other contexts and studies. As such, thick descriptions of relevant aspects of the participating firms and respondents representing the firms, as well as the procedures employed to collect data, were provided throughout the study.

Dependability, analogous to the concept of reliability, refers to the stability of data over conditions and time (Bell *et al.*, 2019). To ensure dependability, records of all research phases were kept. To facilitate consistency between interviews and the topic of discussion during them, interview guides were used. Furthermore, discussions about topics that were not touched upon in interviews that were conducted before the interviews in which they were discussed resulted in a second interview with the respondents that had not discussed the topic during the first interview.

Confirmability addresses the concern of objectivity, ensuring that findings are grounded in the collected data and not a result of the researchers' subjective perceptions and biases relative to the data (Bell *et al.*, 2019). To ensure confirmability, participants providing the data were engaged to verify the researchers' interpretation and formulation of the data as presented in the findings.

4.6 Ethical considerations

When conducting research, ethical considerations are of utmost importance, as emphasized by Bell *et al.* (2019). According to Bell *et al.* (2019), research ethics can be broken down into four fundamental principles. The first principle, avoidance of harm, encompasses the responsibility of researchers to prevent harm to participants of the study, including both physical and mental harm. Furthermore, avoidance of harm entails safeguarding participants' personal development and future career prospects. Informed consent, the second principle, highlights the requirement for researchers to provide participants with information concerning

research objectives in a comprehensive manner. Thus, participants are empowered to make rational decisions concerning involvement in research. Privacy, the third principle, recognizes the subjective nature of privacy concerns and individuals' right to privacy. Researchers need to acknowledge that privacy breaches can occur in different circumstances, causing a need for researchers to approach each participant cautiously and with consideration. Preventing deception, the fourth principle, aligns closely with the principle of informed consent. Preventing deception refers to the requirement of accurately informing participants concerning the details of the research, and that deception should be justified and managed carefully if employed to attain more accurate findings.

Several measures were implemented to ensure adherence to these ethical principles. Participants were contacted via email, where a detailed description of what participation would imply. It included information about what questions would be asked during the interview, under what circumstances, and conditions they had an influence over during the interview and throughout the research process. Thus, participants were empowered to make an informed decision whether to participate or not and prepare in advance. At the beginning of each interview session, the information provided in the mail that was sent in advance was explained and agreements were made with the participants concerning confidentiality and consent to record the interview. In light of the confidential agreements, all participants, organizations, and other sensitive information pertaining to the organization was kept confidential or excluded from the study. Furthermore, to ensure transparency, the role of the participants throughout the research project was outlined and associated expectations. To facilitate that the participants would meet the expectations of participating in the project, regular interactions were scheduled to ensure continuous exchange between the researcher and the participants throughout the research process. These interactions were also utilized to facilitate continuous discussions with participants with the aim of satisfying the ethical principles.

5. Findings

5.1 Firm Alpha

5.1.1 Firm description

Firm Alpha, as described by respondent A.

Founded in 2009, firm Alpha is an established actor in the mobile game industry, specialized in development and publishing of puzzle games. They deliver games worldwide and have a strong focus on supplying challenging puzzles. Their portfolio consists of a wide range of puzzle games offering thought-provoking challenges. Through intuitive controls, strategic gameplay mechanics, and captivating visuals, their games are enjoyed by a wide set of players across demographic categorization. Whilst they had an innovative focus in the early years concerning the development of puzzles, they have shifted focus towards publishing well known puzzles already existing and leveraging their market knowledge instead.

Their revenue streams are based on in-game purchases and in-game advertisements. By implementing both monetization models, the firm can balance offering enjoyable experiences that are free whilst providing additional features for customers willing to make purchases in the applications. As such, the firm could generate revenue stream steadily whilst maintaining player satisfaction and retention rates.

Firm Alpha experienced an early expansion internationally and were able to establish an international presence quickly and eventually become active on a global level. As they recognized the potential of operating internationally, the firm targeted regions strategically where there was high demand for mobile games. Today, the firm has games published on Android and IOS, available in markets on six continents.

5.1.2 Adapting game design and content

Adapting to local cultural environments has been a challenge for firm Alpha with a significant impact on their success when internationalizing. In the experience of the firm, customization and modification of games has been a key determinant for their success in foreign markets. Several elements of their games have been taken into consideration to customize and modify their games to better align with local preferences.

Matching the user interface and progression of the difficulty level, amongst other elements, with users' preferences across markets has been key for the international success of our games and our firm.

Moreover, respondent Alpha highlights that the more culturally distant markets have been in comparison to their home market, in terms of users' preferences, the more challenging and resource demanding has it been to customize and modify games to acquire and withhold users in those markets.

To customize and modify their games and thus adapt to local cultural environments, firm Alpha employed two core activities. Firstly, the firm employed quantitative data analysis processes based on user generated data. However, in the experience of the firm, some elements of the games were not appropriate to adapt based on quantitative data analysis processes as they were more complex and would not be efficient to manage that way. As such, secondly, the firm conducted qualitative market research processes through which local users' preferences were studied, enabling the firm to adapt their game design and content in a more proactive manner, as compared to adapting based on quantitative data analysis processes.

Take the elements I mentioned earlier. Users' preferences concerning progression of difficulty level is quite straight forward and easy to analyze based on data. User interface, on the other hand, is more qualitative in nature and consequently more difficult to analyze based on raw data. As such, we have spent more time on qualitative market research to familiarize ourselves with the cultures and preferences of foreign users and develop our games accordingly so that they will feel more familiar with the user interface when playing our games. Once a satisfying user interface had been established, we could move on towards more quantitative approaches and incremental improvements.

Whilst the more culturally distant markets were more challenging for the firm to adapt to, as the firm internationalized and successfully penetrated foreign markets, the more easily were the firm able to cope with this challenge. According to Respondent Alpha, they were able to take benefit of the knowledge gained along the internationalization process in terms of what elements of the games to customize and modify, and how to analyze and interpret data in quantitative data analysis processes.

As we expanded internationally and targeted more foreign markets, we learned about the significance of different elements of our games in relation to local preferences and how to approach them. You could say that we have built a type of formula to enable alignment with the different preferences across markets.

More recently, the firm has had difficulties maintaining their market share and the total number of users has declined in some markets. Respondent Alpha stated that they believe that a stiffened competitiveness in the industry has made it more difficult to serve a variety of markets as other actors are more knowledgeable and embedded in some markets and the characteristics of them.

5.1.3 Adapting language

In addition to adapting game content to local cultures, firm Alpha have been faced with linguistic barriers when entering new foreign markets and the challenge of making games understandable due to the different languages spoken across markets.

We were required to ensure that the gameplay and mechanics could be understood by players for them to enjoy it.

Translation activities were performed by external parties hired by the firm. According to respondent A, these activities have not been associated with any significant challenges or difficulties. Moreover, firm Alpha addressed the issue of linguistic barriers across markets by pragmatically translating games to languages in order of the number of potential users speaking the language. As such, the internationalization path of firm Alpha, in terms of target markets, was heavily influenced by the cost of translating the games.

Translating games to different languages can be complex and resource demanding. We choose to translate our games into languages depending on the size of the population speaking the language, of course taking the general attractiveness of those populations and markets into consideration.

To improve the odds of meeting the requirements of making their games understandable to users who spoke languages in which translations had not been made, firm Alpha strategically designed the user interface and game play tutorials with pedagogically visualizations as complements to written text. Thus, users have been better able to understand and play firm Alphas' games without having access to a direct translation in their native language.

5.1.4 Adapting monetization model

Adaptation of the monetization model has also been a challenge for the firm and its international operations. Respondent A explained that users behave differently across markets when it comes to how they interact with advertisements and how they perceive and act upon in-game purchases offered in games.

Players' willingness to engage with advertisements or to make in-game purchases is influenced by economic and cultural factors. We have had to consider factors such as user gaming behavior, purchasing power and payment preferences when analyzing and adapting our monetization strategies in the different markets.

To understand these behaviors and preferences, the firm has partially relied on quantitative data analysis processes based on user generated data, and partially on qualitative market research processes based on secondary data sources through which they have familiarized themselves with behaviors and preferences of local users in foreign markets.

5.1.5 Technological infrastructure

Building the technological infrastructure necessary to support the localized versions proved to be a significant challenge as firm Alpha internationalized and developed modular games to align with the cultural differences across markets. The firm experienced difficulties managing back-end code as games became increasingly modular.

In the beginning of our international operations and foreign market penetration efforts, we did not have an established plan on how we would design the back-end architecture which became problematic as the code and the complexity of it increased.

The inadequate and complex back-end architecture caused problems managing code. Consequently, maintaining and further developing games became increasingly resource demanding, impacting internationalization of the firm negatively as it became more costly to operate and adapt to a multitude of informal institutions.

The inadequate and complex back-end architecture caused problems managing code. Consequently, maintaining and further developing games became increasingly resource demanding, impacting internationalization of the firm negatively as it became more costly to operate and adapt to a multitude of informal institutions. As such, firm Alpha dedicated resources to develop a better back-end architecture design.

We realized that it was crucial to create a solid back-end architecture to manage the local versions as we needed seamless delivery of localized adaptations and updates across countries.

In addition to improving the back-end architecture for delivering the game, the firm also made efforts to reduce the complexity of the architecture concerning data reception from user generated data. Thus, data analysis became less costly as parts of the data analysis process were automatized.

5.1.6 Adapting marketing and promotion:

In addition to the challenges associated with adaptation of the games, firm Alpha also encountered challenges associated with adaptation of marketing and promotional activities to local contexts.

When approaching specific regions and markets, adapting marketing activities to those particular local areas had a great impact on the acquisition of new players. The challenge lay in customizing advertisements to local preferences without incurring extensive costs.

Due to financial restraints, the firm aimed at customizing marketing campaigns in foreign markets at low cost at the early stages of internationalization. As such, the firm managed such activities internally and relied heavily on data analysis to target markets effectively.

Nevertheless, respondent Alpha highlights that staying updated on market trends and continuously gaining market insights has been a constant challenge. Furthermore, identifying and evaluating the different advertisement platform networks has been challenging as some are more advantageous in certain markets or regions. Additionally, as these advertisement platform networks varies in their technical requirements and integration processes, the firm incurred costs to ensure compatibility and enable integration with different advertisement platform networks.

5.1.7 Regulatory frameworks

Firm Alpha experienced the regulatory frameworks concerning marketing and advertising as challenging when internationalizing. Since regulatory frameworks varies across markets, having implications for how marketing and advertising can be conducted, the firm had to keep track of the regulatory frameworks in markets where they wanted to conduct marketing activities.

Each market has its own rules on advertising. Certain issues, such as promotion to children, can be sensitive and require regulatory navigation.

Whilst the firm acknowledges this issue and familiarized themselves with the regulatory frameworks of some markets as they entered foreign markets, the process of doing so was rather resource demanding. Respondent Alpha explained that they had to prioritize how they distributed their resources and that prioritized developing their games and their content to generate revenue. As such, the firm based their advertising and marketing on the guidelines and principles provided by the digital marketing platforms on which they had published their games on.

The digital market platforms provide a lot of support for publishers of smaller size and with financial constraints. By following their policies and guidelines, we have been able to conduct marketing and promotion activities at a low cost without becoming subject to any lawsuits.

The regulative frameworks across markets concerning digital payments and transactions have also been a challenge for firm Alpha to ensure compliance with as they have operated internationally. For example, adherence to jurisdiction concerning value-added tax and sales tax has imposed costs as they can differ across markets. Furthermore, as currency exchange and conversion rates can affect the price paid by customers from in game purchases, the firm has had to ensure accurate and transparent payment systems.

With growth and increased revenues, the firm could dedicate more resources to keeping track of the regulatory frameworks by hiring consultant firms with expertise competence. Though, doing so is still resource demanding and the firm has tried to conduct marketing and promotion based on a framework that is viable across all markets, with room for localization to the local context, to lower their expenses.

5.2 Firm Beta

5.2.1 Firm description

Firm Beta was founded in 2018 and is specialized in the development and publishing of hyper casual games. Their portfolio consists of a few games designed for instant entertainment played in shorter periods. Their core focus lays on creating “addictive” easy-to-play games, often featuring intuitive controls, intriguing visuals, and fast-paced challenges to keep players wanting to come back for more. To generate revenues, firm Beta primarily relies on in-game advertisements and in-game purchase options through which players may improve the gameplay or unlock game features.

Firm Beta has so far primarily concentrated their internationalization efforts on the North American and European markets and established a foothold in these markets within the mobile-game industry where they have launched games on both the Android and IOS platforms.

5.2.2 Adapting game design and content

Respondent Beta emphasized the challenge of adapting their games in accordance with the local contexts and users' preferences and behaviors across different regions and markets.

Since preferences vary between populations, our games are perceived differently across markets, just as preferences vary depending on age for example. So to make people want to play our games, we have to customize our games to correspond with their preferences.

As such, customization of games to align with local contexts has been a critical factor for successful internationalization in the experience of firm Beta. Several parameters of the games related to customization in accordance with local cultural environments have had a significant impact on the success in foreign markets.

We have had to consider and customize several elements of the games carefully and with high precision. What works in one local setting may not work as well in other local settings. Amongst other things, we have considered the gameplay mechanics, visuals, and the narratives which have been crucial for the success in different markets.

In firm Betas' experience, cultural adaptation of the games has acted as a challenge both for market expansion and market penetration purposes during the internationalization process. In their view, adaptation to the local cultural environment is a critical factor that continuously needs to be considered and acted upon. Respondent Beta explained that the competitive nature of the mobile game industry makes continuous efforts in terms of cultural adaptations a requirement for them to be successful internationally.

The more corresponding our games are with the preferences of a population, the more likely it is that we will be successful in that market. Since the market keeps changing, both in terms of games that are supplied and the games that players demand, we must adapt accordingly and make sure that our games correspond with those changes to stay competitive.

Due to the cultural differences across markets, the firm has restrained their internationalization efforts. According to respondent B, the firm has restricted themselves to markets in the west (North America and Europe) as users are more similar across those markets and require less adaptation as opposed to markets in other regions. As such, the firm has been able to focus their game adaptation efforts on more fine-grained issues which they believe will be advantageous in the long term.

To cope with the challenge of adapting games to align with local cultures, market research was perceived as a core activity to understand the expectations and preferences of players in different markets. was a challenge with considerable impact on the success of the firm.

We needed to invest time and resources in conducting market research to improve our games and their resonance with local audiences. It involved studying player preferences, behaviors, and current trends in the market to customize our games accordingly.

Market research has primarily been conducted through quantitative data analysis processes based on user generated data, deriving from users playing their games. This type of data was used to better understand the preferences and behaviors of users across markets. Based on the insights gained through the data analysis, games were customized and modified accordingly and analyzed once again through repetitive trial-and-error processes. According to respondent B, the challenges of this process were threefold. Firstly, as the data analysis depended on the firm generating data, they were required to acquire users playing the games which was challenging especially in the beginning. Secondly, once they had data, the challenge was to analyze and interpret the data such that modifications and customizations of games resulted in the desired outcome. Thirdly, with the gained insights from the data analysis process, the challenge has been to manage the knowledge internally and leverage it throughout their organization. As described by respondent B.

The knowledge gained from one setting can often be transferred to another. The challenge has been to make the most of our findings by translating improvements and implementing them from one game to another.

5.2.3 Adapting language

Alongside the challenge of adapting game design and content to local preferences in foreign markets, firm Beta experienced language translations as a critical component to succeed in some markets.

Nevertheless, whilst firm Beta experienced that some markets had a high requirement for translation, other markets had a lower requirement for translation as users generally tended to be familiarized with the English language to a higher degree. Respondent B explained that this had a significant impact on the internationalization of the firm in terms of pathway and continuous strategy in how markets have been targeted.

The costs of translating and adapting the games to various languages were high relative to our revenue streams and overall budget at the initial stage of our internationalization. It forced us to manage our expenses associated with localization and strategically approach markets so that cost-efficiency could be ensured.

According to respondent B, the firm targeted markets in which they had success without adapting the language. Though, as the firm generated revenues and the cost of providing translations decreased relative to their resources, they started to target markets based on their general market attractiveness and provide translations. The firm hired translation service providers to translate game content. Although the process of identifying suitable parties has implied transaction costs, the relationship and cooperation with has not constituted any significant challenges in the experience of firm Beta.

5.2.4 Local marketing and promotion

Respondent B emphasized the significance of their marketing activities as it generated new users and, consequently, user data to be used for data analysis for game customization and modification.

You could say that our marketing reinforces our ability to succeed. The better our marketing is, the more users we will acquire that in turn generates user data, helping us to understand their preferences and improve our games accordingly.

The firm experienced marketing as a significant challenge across markets when internationalizing. As a result of the cultural differences across markets, localized marketing strategies could have a significant impact on the efficiency of their marketing efforts to acquire new users in foreign markets.

We found it effective to localize our marketing based on the behaviors of users across markets. The accumulated impact of a number of what seem to be small changes could have a significant impact on the results of our advertisements.

To localize advertisement and marketing content, firm Beta implemented quantitative data analysis processes through which marketing efficiency was analyzed through repetitive trial-and-error processes. According to respondent B, the challenge of this process involved analyzing and interpreting the data such that localization of the advertisement and marketing content resulted in the desired outcome.

Just as with the process of localizing our games based on data analysis from user generated data, the core issue was to make sense of the data revealing our marketing quality and come to the right conclusions of why some things worked in certain markets but did not work in other markets.

In addition to localizing advertisement and marketing content, firm Beta incurred costs adapting their marketing communication channels during the internationalization process. Respondent B stated that the firm integrated with several advertisement platform networks to increase their user reach internationally and improve cost efficiency of their marketing efforts. Integrating with new advertisement platform networks has been associated with costs as the different advertisement platform networks are associated with different programming languages and logic. According to respondent B, the cost efficiency of firm Beta integrating with new advertisement platform networks has been dependent on the employees' programming competencies and their capabilities of learning new programming languages.

5.3 Firm Charlie

5.3.1 Firm description

Firm Charlie was founded in 2014 and has developed and published an adventure game series. The game series was initially launched as a mobile game on Android and IOS platforms but was launched for computer devices as well within the first two years of operations. The core focus of their game series has been on creating new and innovative gaming experiences, primarily through unique game mechanics.

The firm achieved a rapid internationalization process during which they were able to expand internationally across several continents within the first years of operations without specific emphasis on particular regions or markets. Rather, markets were approached based on a more global navigation with few elements of market specific customizations.

In terms of monetization, firm Charlie generates revenue from upfront game purchases exclusively. To keep generating revenues, the firm emphasized continuing developing new game launches within the series, characterized by unique and innovative gameplays and game mechanics.

5.3.2 Game development

Respondent C stated that game development has been one of the main factors contributing to the success of firm Charlie, regardless of their international operations. As stated in the firm description, the strategy of the firm has been to develop games with unique and innovative gameplay and game mechanics. However, as the firm internationalized and gained users across the world, they acknowledged the human capital they potentially could access that could be used for game development and innovative processes, respondent C explained.

Players are more than just passive consumers of a product today. The ease of engaging with them and accessing their perspectives and ideas makes them valuable human capital that can, and often do, provide valuable insights and ideas on how to improve and develop our games.

Given the diversity of the firms' users in terms of perspective and ideas, and the potential benefits it could have for innovation, respondent C explained, firm Charlie has aspired to engage with users from various regions and markets. As such, one of the main challenges for firm Charlie to facilitate successful international operations and longevity of the firm has been to engage and interact with users. Though, local informal institutions have acted as barriers to access the human capital of users in certain markets. For example, language spoken amongst users, or preferred channel/forum of communication for discussions, has been challenging to deal with. According to respondent C, the key to overcoming these barriers has been to enable engagement with users by adapting their qualitative data analysis processes to the behaviors of users, and other informal institutions, across markets.

We have tried to stretch our international reach by establishing a presence on a multitude of different platforms with different target audiences. It has been challenging and especially time consuming, yet viable using technologies that are quite accessible for anyone today.

5.3.3 Local marketing and promotion

Breaking into new markets and gaining recognition through marketing and promotional activities has been perceived as key activities for firm Charlie and important factors for

successful internationalization. Due to differences in user preferences and behaviors across markets, the firm has localized such activities to better align with the local contexts which, in their experience, has been challenging and required a lot of resources to be dedicated for that cause.

It took a lot of time and effort to develop a presence and establish a customer base in the different regions and markets as we internationalized. Localizing our marketing to resonate with local audiences has been of great importance, though it has implied costs.

Investments in marketing- and promotional campaigns were seen as incredibly important for generating interest and raise awareness of their games. In some markets, the firm managed marketing activities themselves. According to respondent C, quantitative data analysis processes have been deployed to increase their understanding of how to localize their marketing campaigns and improve its efficiency across markets. However, in other markets which the firm perceived as more culturally distant, the firm hired local marketing agencies to manage marketing and promotion activities such as producing advertisements, optimizing digital market platform listings with keywords in local languages, and integrating with advertisement platform networks. Whilst the firm could have approached marketing agencies in the home market, the firm primarily chose to contract local agencies in the foreign markets.

It is difficult for us to identify and assess the competencies of marketing agencies regarding specific foreign markets. We reasoned that local agencies in the foreign markets could be assumed to have the right competencies and insights concerning local users' behaviors and preferences.

The relationships involved collaborative processes in which the firm and the foreign agencies would partially work together. Respondent C stated that the collaborative processes with foreign agencies implied challenges.

There were instances where we had difficulties collaborating with the agencies. They could have working processes that were different from ours and what we were used to, and the time differences has implied unusual working hours.

Respondent C stated that flexibility in how they work has been critical for firm Charlie to facilitate productive working processes with foreign actors. Given the variance of how firms work across markets, the firm had to learn about and adapt to the specific conditions and

assumptions made in different markets so that the relationships with foreign actors would be constructive and productive, respondent C explained.

Additionally, in terms of promotion, the firm reached out to local content creators on social media platforms with hopes of them promoting their game on their channels. Identifying suitable content creators with high reach amongst the targeted audiences in foreign markets has been difficult, however, the cost of doing so has been low and the potential benefits have been more of a bonus, respondent C explained.

5.3.4 Adapting language

According to respondent C, accurate and engaging translations were deemed important for successful international expansion and penetration of markets as language barriers presented challenges for communicating with players in the games.

Our games are built on informative and engaging communication with the players which made it crucial to carefully translate information and narratives. It involved translation of text and voiceovers as both may have an immersive impact on the gaming experience. The costs of the audio voiceovers were especially high as local professional voice actors were hired to ensure capturing correct pronunciations and accents.

Firm Charlie hired external actors for translation tasks. Moreover, respondent C stated that translation activities, involving external actors in foreign markets, could be challenging at times as it required cooperative processes with people from different cultures and international backgrounds.

It was not always easy to cooperate with the other parties. Even though we had a clear view of what the end-results would look like, the end-results were not always what we had imagined. As always, there are two sides to the same story. As with the marketing agencies, we had to be flexible in how we approached and worked with these people.

5.3.5 Local external environmental analysis

Respondent C stated that a key factor, and a critical challenge, for firm Charlie's successful internationalization and long-term international operations has been the deployment of continuous external local environmental analysis. Respondent C explained that keeping updated on news and trends in the markets has been extremely beneficial to identify

challenging issues and opportunities to act upon in a timely manner. Amongst other things, the firm has analyzed market trends across markets and regions and searched for market leads.

In terms of analyzing market trends, the firm has deployed analysis of trends in the market by, for example, analyzing data provided by digital market platforms concerning what games are trending in different markets and regions. In terms of analyzing market leads, the firm was, for example, able to identify an increased demand amongst users in Asian markets as their game had received attention on social media platforms. A content creator with a large audience in those markets had played, and thus promoted, their game on a social media platform channel which had spurred an interest amongst the audience. Noteworthy is that firm Charlie reached out to that content creator and was able to obtain information concerning his audience characteristics. Consequently, the firm changed their internationalization strategy somewhat and increased priority of targeting suitable markets in the Asian region based on that information. Thus, the firm was able to leverage on the opportunity that had evolved naturally externally of the firms' direct involvement.

5.3.6 Regulatory frameworks

Respondent C explained that data protection and privacy has been a major concern of firm Charlie as they have operated internationally. According to respondent Charlie, the variety in the regulatory frameworks across markets and the fact that it is continuously evolving makes it a challenge to operate internationally.

To cope with this issue, firm Charlie outsourced tasks related to data management to an organization specialized in international data privacy and cybersecurity management. The firm has not encountered any legal issues due to inadequate compliance with regulatory framework related to data privacy and protection. However, in firm Charlies' experience, outsourcing data management practices through an external actor as to facilitate regulatory compliance in their international operations has presented challenges as well. According to respondent Charlie, the firms' data handling practices suffered somewhat due to the external actor and its ability to respond to firm Charlies' needs.

Our relationship with and the communication between us and the contracted organization was a bit insufficient which caused problems at times.

As such, in addition to the financial costs of outsourcing the tasks related to data privacy and protection, the firm dedicated resources to improve their relationship and joint working

processes with the contracted organization and thus constituted an additional cost when operating internationally.

5.4 Firm Delta

5.4.1 Firm description

Founded in 2016, firm Delta is a developer and publisher of a fantasy card game. Their game offers players the chance to build decks and engage in offline and online battles. With intriguing card mechanics, engaging gameplay, and visual arts, the game has had a world-wide appeal amongst players who enjoy strategic card battles.

Deltas' revenue streams are generated through upfront game purchases, as well as in-game purchases for optimization or customization of the gaming experience. The firm internationalized immediately after the publishing of the game and set their sight on the global market seeking to attract and acquire players from diverse regions.

Today, the firm has published their games for Android, IOS, and Microsoft (PC) devices, offered in markets on six continents.

5.4.2 Adapting game content and design

Firm Delta has had a global approach in their game development in which a single version of the game was to fit all markets. Developing the game to be appealing world-wide was experienced as a considerable challenge given the cultural differences and potentially contradicting preferences across markets internationally. This issue was present from the start of the game development process and has been a challenge ever since to facilitate successful international operations and continuous market expansion- and penetration.

Cultural references are common in fantasy genres. We have been faced with the challenge of making our narrative, artworks, and characters appealing and relatable to players around the world with different backgrounds and cultures. This has been extremely challenging, and a lot of work has been dedicated to balancing the game and how it is perceived across markets.

Respondent Delta described how the creation and continuous development of the game has been a process of capturing different cultures such that users around the world would feel familiar with the game and be appealed from it whilst keeping a balance as to not make it unappealing for users in some markets and regions.

In the initial game development process before launching the game, the firm dedicated much time and resources to market research conducted internally. The firm also hired a US game localization firm, specialized in certain regions, to enhance the games' compatibility with certain cultures of which the firm had little knowledge about.

We had little knowledge about certain markets that we culturally perceived as very different from that of ours. With all the investments that had been made, it was very important for us not to impair our performance abroad due to our own lack of knowledge or ignorance. Localization firms have had a great impact on the development of our game and our performance as they have contributed knowledge and insights into cultural aspects that we would not have considered.

Firm Delta internationalized immediately once the game had been launched officially on digital market platforms and was sold to users in various markets across multiple continents. However, continuous development of the game to maintain and improve its appeal amongst users with various cultural views and characteristics, across new and existing markets, has been crucial for the success of the firm and a constant challenge. Through different types of communication channels, at different stages of the internationalization process, engagement with players has provided the firm with insights of local players behaviors, preferences, expectations, and desires. It has involved both quantitative data analysis generated from players, as well as more qualitative interactive interactions between and amongst players and the firm.

All types of information hold value, whether it is pure quantitative data or derives from discussions in forums. The difficulty is to evaluate the information and balance it in the larger context.

Based on user generated data, quantitative data analysis processes have been conducted to study user behaviors, used to identify issues for changes and improvements, as well as evaluation of changes and improvements. The firm also conducted qualitative data analysis processes concerning user preferences. Such processes have been based on communication and interaction with and between users where users have been able to express preferences and ideas on how to develop the game. Respondent Delta explained that the firm used data derived from communication and interaction channels of which they have control over, and channels external actors are in control over as they are both likely to contain information of value for the firm. Identifying such channels has been a challenge, as well as interpreting and

evaluating the meaning of it. Furthermore, respondent Delta stated that the firm has experienced more difficulty obtaining qualitative data from certain parts of the world due to linguistic differences. Hence, the qualitative data that the firm has been able to acquire has been of risk of not representing all markets, thus being biased, which has been problematic for decision making in decision processes that make use of such data.

As both the quantitative and qualitative research processes described above rely on users to interact with the game, the firm has experienced it more difficult adapting their business in a way that facilitates market penetration in markets where they have had a low number of users so far. Respondent Delta stated that the lack of information from such markets, concerning user preferences and behavior, makes the process of adapting their business to those markets more difficult as there is a lack of evidence of what issues to address and what measures to implement. To resolve this issue, firm Delta has implemented focus groups and hired foreign localization firms for consultancy in those specific markets.

The localization firms were hired to access market specific knowledge to identify issues and how to address them in cases when the firm perceived the market as culturally distant and difficult to understand, or when performance had not matched expectations. According to respondent D, working with foreign localization firms was challenging due to two reasons. Firstly, the local informal institutions, in terms of cultural differences and communication barriers, making the foreign localization firms acted as barriers to collaborate. Secondly, the issue of trust became more prominent in these relationships, as compared to the relationship with the US localization firm. Respondent D explained that these issues caused the firm to dedicate resources to improve their ability working with foreign firms under different institutional conditions and enabling building trust and stronger relationships with such firms.

Focus groups, in which users from target markets participate in discussion and evaluation processes concerning the game, have been used both to identify and address issues, and verify the outcome of potential measures. Respondent Foxtrot highlights the importance of the focus groups, representing different markets, as the firm has been able to identify issues and measures whilst being able to verify them and estimate the outcome in different markets before implementing the measure in full scale. It is especially important as measures may have different outcomes across markets. Thus, measures are at lower risk of being based on biased data before implementation. However, running focus groups and hiring of localization firms has been costly which has caused firm Delta to restrain their use of it.

Whilst the firm experienced difficulties penetrating some markets as they internationalized, other markets were not experienced as equally challenging despite having to make adaptations to the local context. Furthermore, as perceived by respondent D, working with foreign firms in culturally distant markets has been associated with varying levels of difficulties and costs. Respondent Delta explained that the diversity of their employees could be a reason for this phenomenon.

We have had a diverse team with various backgrounds who worked with the development of our business. I believe that we have benefited from it as they have contributed with a wide set of knowledge and perspectives based on their own experiences and perceptions. As culture is such a big part, their cultural knowledge has most certainly made our international activities more frictionless at times and better enabled us to work with foreigners.

5.4.3 Adapting language

Translation of the game into different languages has been a crucial determinant for the success of the firm in foreign markets.

Each card in our game provides detailed descriptions of its associated meaning, essential to understand and play the game. Hence, it was crucial to provide precise translations of these descriptions, capturing their meaning. It required close collaboration with professional translators who in addition understood the logic of the game.

Given the magnitude of accurate translations and its importance for firm performance internationally, firm Delta decided to outsource the task of translating the game into different languages. However, this process has been somewhat challenging. Whilst the firm was able to translate the game into several languages at launch of the game by outsourcing the job to one firm only, additional firms had to be hired for other languages. Finding suitable translators was in itself a challenge as the firm needed to ensure that the translators had the ability to translate the content without jeopardizing its overall essence or particular nuances. However, the firm has been able to find translators fulfilling their requirements within the US.

5.4.4 Building player communities

According to respondent Delta, the firms' player acquisition and retention rates have been highly dependent on the quality of the player community. Thus, establishing and nourishing strong player communities across regions and markets has been a key issue for the firm.

Interaction and engagement within a community is something that is highly valued by our players that grows their interest for the game. To build strong communities across regions and markets, we have had to tailor our strategies depending on the local cultural contexts and structures.

Firm Delta outlined two components that contributed to overcoming the challenge of building strong player communities. Firstly, enabling and facilitating players to engage and interact with the firm and with one another through different communication channels has been of great importance. The firm established multiple communication channels on digital social media platforms, and on other online websites, through which the firm has been able to communicate and interact with users, and users have been able to communicate and interact with one another. These communication channels have served as forums through which users have been able to engage socially and discuss issues with one another with the firm acting as a moderator. Though, given the linguistic barriers across markets, the firm experienced difficulties building strong player communities in locations where a low percentage of users spoke English.

As we nourish conversations and discussions on forums by providing interesting topics, players will not engage if they do not understand what is being discussed.

To overcome this issue, firm Delta created multiple accounts on digital social media platforms targeting different regions and markets. These accounts have partially been managed by employees within the organization, and partially by local external actors in foreign markets specialized in digital marketing and, or social media management. Respondent Delta stated that the firm has preferred to manage their communication channels internally within the organization as their control over the communication channels might decrease if external actors manage them instead. Though, in regions or markets where it has been difficult to manage it internally, the firm has outsourced the task to external actors. Secondly, digital content creators have been of crucial importance for the development of player communities.

Our player communities are strengthened by content creators. They spur an interest amongst our players and act as promoters that can enhance both awareness and engagement.

As such, a crucial component to facilitate the formation of strong player communities internationally has been to reach out to digital content creators with the purpose of

encouraging them to play the game and make content of it on their platform channels. Moreover, respondent D explained that these platform channels can provide insights about users' preferences as engaging discussions amongst users about the games are common in these platform channels. Though, respondent Delta stated that digital content creators' audience reach is often restricted by the language spoken on their platform channels. As such, the firm has strategically reached out to various digital content creators with complementary audience characteristics as to facilitate more spatially comprehensive player communities. However, respondent Delta highlights that the influence of digital content creators and the longevity of their influence on contributing to player communities is out of their control and difficult to predict.

We can encourage digital content creators to play our game, though, the extent to which they decide to play the game and make content out of it is out of our control. We have quite a passive role in this situation where we basically just have to hope that external actors on these platforms positively contribute to the development and strength of our community.

5.4.5 Regulatory frameworks

The variance in regulatory frameworks has, according to respondent D, been a challenging issue for firm Delta as the firm internationalized. It has included aspects such as, for example, local regulations concerning censorship and cross-domestic trade, However, respondent D emphasized the challenges firm Delta has been faced with concerning data privacy and protection, prominent since inception of the internationalization process and throughout their international operations.

The diverse regulatory frameworks across countries are challenging to navigate and manage, though, a must as the requirements of the different regulatory frameworks can be conflicting with one another.

According to respondent Delta, the issue of data privacy and protection is particularly complicated when dealing with data flows crossing borders since it must comply with regulations in the destination country and the country where the data is sourced from. As such, it may be challenging for organizations operating internationally to maintain a consistent level in their data management throughout the organization and their international operations.

Firm Delta recognized this issue early and approached it proactively when internationalizing. The firm had thoughts on outsourcing data protection and privacy tasks to an external

organization. Thus, the firm would be able to access expertise knowledge that was up to date with regulative changes and best practices internationally. However, due to the risk of losing control to the external organization and the financial costs of contracting an external organization in the long-term, the firm chose to manage it internally. This has been one of the core challenges for firm Delta as they have had to ensure compliance with foreign countries regulatory frameworks to enter markets, as well as assuring that they are updated on regulatory changes in markets they already have entered. Furthermore, to facilitate compliance amongst employees in their activities and, the firm has implemented training and educational activities focused on data management, which has incurred costs. In addition to implementing measures to comply with these regulatory frameworks, the firm has experienced it challenging to establish processes for monitoring of their practices.

Since the different regulatory frameworks have different implications for our procedures, we also need to adapt the processes around it, including monitoring procedures.

6. Analysis

6.1 User Integration

All four firms have experienced challenges and costs associated with the local informal institutions in foreign markets as they have internationalized. For firm Alpha, the local informal institutions have imposed challenges and cost for the firm as they have had to adapt several elements of their business model including game design and content, language, monetization model, and marketing and promotion as to align with the preferences and behaviors of local users. For firm Beta, the main challenges and costs imposed by local informal institutions includes adaptation of game design and content, language, and marketing and promotion to better align with the preferences and behavior of local users across markets. For firm Charlie, the main challenges and costs imposed by local informal institutions includes adaptation of language and marketing and promotion to better align with the preferences and behaviors of local users across markets. For firm Delta, the main challenges and costs imposed by local informal institutions includes adaptation of game content and design, language, and building player communities.

The empirical findings indicate that digital firms are faced with challenges and costs during the internationalization process due to local informal institutions across markets. The differences in local informal institutions across markets seems to make adaptations of the digital firms' business models, to resonate with the preferences and behaviors of local users, necessary to succeed in foreign markets and successfully internationalize. In the experience of all four firms, their ability to adapt their offering in accordance with the local context, in terms of local preferences and behaviors, have a significant impact on their success in foreign markets.

These findings align with the concept of Liability of Ecosystem Integration, as proposed by Rong *et al.* (2022), in terms of integrating with users' behaviors and lifestyles and the user integration liability. As the firms have internationalized, their success has been dependent on adapting to the local contexts in foreign markets. However, due to a lack of knowledge of local users' behaviors and lifestyles, local networks, and a local user base, the firms has struggled to do so and, ultimately, faced challenges and costs to adapt their business models to succeed in the foreign markets. As such, the user integration liability, as described by Rong *et al.* (2022), has imposed challenges and costs for the firms and their internationalization efforts. Though, the findings indicate that the user integration liability neither derives from a

requirement for offline procedures, nor a requirement for close geographical proximity, as none of the challenges and costs experienced by the firms can be linked to these categories of liabilities, as described by Rong *et al.* (2022). Rather, findings of the study appear to indicate that the user integration liability derives from a requirement for cultural proximity. This phenomenon may be explained by the fact that the business models of the firms studied are fully digital and, thus, do not require offline activities or close geographical range.

To adapt their business models to the local informal institutions across markets and facilitate successful internationalization, the firms have highlighted several activities and capabilities through which they integrate with users' behaviors and lifestyles.

Quantitative data analysis processes

All four firms have deployed quantitative data analysis processes, based on local user generated data, to better understand the preferences and behaviors of users across markets and, thus, adapt their business models to better align with local contexts in foreign market. These quantitative data analysis processes have been deployed for adapting several elements of the firms' business models throughout the internationalization process. Firm Alpha deployed quantitative data analysis processes to adapt game design and content, monetization model, and marketing and promotion to the local contexts across markets. Firm Beta deployed quantitative data analysis processes to adapt game design and content and marketing and promotion to the local contexts across markets. Firm Charlie deployed quantitative data analysis processes to adapt marketing and promotion to local contexts across markets. Lastly, firm Delta deployed quantitative data analysis processes to adapt game content and design to the local contexts across markets. As such, findings indicate that digital firms can facilitate internationalization by deploying quantitative data analysis processes to integrate with local users and overcome user integration liabilities.

The empirical findings of the study indicate that one of the main determinants of digital firms' ability to overcome user integration liability by deploying quantitative data analysis processes is their ability to analyze and interpret data. As exemplified by the case of firm Beta, one of the main challenges of conducting quantitative data analysis processes and drawing benefit from it to facilitate internationalization is to analyze and interpret the data accurately. In the experience of firm Alpha, adapting to local contexts across markets through quantitative data analysis processes became easier and less resource demanding as they internationalized and gained knowledge of what to analyze, and how to do it. In other words, the firm was able to

improve their ability to analyze and interpret data and adapt their business model across markets. This could be interpreted as the firm learning how to integrate with users and overcome the user integration liabilities.

Furthermore, firm Beta experienced two additional determinants of importance associated with their ability to overcome user integration liabilities by deploying quantitative data analysis processes. Firstly, the challenge was to initiate and accelerate generating user data through user acquisition in new markets that could be used for quantitative data analysis processes and, consequently, business model adaptation to local market contexts. Similarly, firm Delta experienced difficulties adapting their business model to better align with new markets due to a lack of understanding of local users' preferences and behaviors. As firm Beta, firm Delta also emphasized the challenge of generating user data in new markets for quantitative data analysis processes. As such, the firms' ability to facilitate internationalization through deployment of quantitative data analysis processes are indicated to depend on their ability to initiate and accelerate generating local user data through user acquisition.

Secondly, firm Beta witnessed that the challenge was to internally manage the insights and accumulate knowledge from the quantitative data analysis processes to draw benefit from it throughout the organization and their international operations. On the same note, in the experience of firm Alpha, facilitating internationalization by conducting quantitative data analysis processes became easier with experience as the firm was able to learn how to approach the matter and apply their learnings as they continued entering and targeting new markets during the internationalization process. Consequently, the firms' ability to facilitate internationalization through deployment of quantitative data analysis processes are indicated to depend on their ability to internally manage the obtained insights and accumulated knowledge within the organization and apply it throughout their international operations and continued internationalization efforts.

An interesting observation was that respondent A stated that firm Alpha have had difficulties competing in some foreign markets in more recent years due to hardened competition. As suggested by Rong *et al.* (2022), the maturity of the industry has a moderating factor on the level of Liability of Ecosystem integration. As such, the hardened competition may have caused a higher level of user integration liability. Consequently, even if firm Alphas' ability to facilitate successful international operations through deployment of quantitative data analysis processes has remained the same, or perhaps even improved, the increased level of user

integration liability may have caused higher requirements on the quality of the quantitative data analysis processes.

Qualitative data analysis processes

Two out of the four firms studied, firm Charlie and firm Delta, deployed qualitative data analysis processes, based on engagement with local users through online forums, to better understand the preferences and desires of users and, thus, facilitate successful internationalization and international operations. One of the four firms studied, firm Alpha, had conducted qualitative market research processes to better understand the local preferences and behaviors of users. Though, in contrast to the qualitative data analysis processes deployed by firm Charlie and firm Delta, firm Alphas' qualitative market research processes has not involved engagement with local users. Lastly, firm Beta has not deployed qualitative data analysis processes. Nevertheless, findings indicate that digital firms can facilitate internationalization by deploying qualitative data analysis processes to integrate with local users and overcome user integration liabilities, as described by Rong *et al.* (2022).

The purpose of firm Charlies' and firm Deltas' deployment of qualitative data analysis process through engagement with users has, however, been somewhat different. Whilst firm Delta deployed qualitative data analysis processes through engagement with local users to adapt their game design and content to better align with local contexts across markets, firm Charlie deployed qualitative data analysis processes through engagement with local users to access human capital and, thus, improve their ability to develop and innovate their game. This could stem from the fact that firm Delta experienced adaptation of game content and design to local contexts across markets as a significant challenge during their internationalization process whilst firm Delta, on the other hand, did not.

Nevertheless, despite being somewhat different in their purpose, the two firms experienced similar challenges associated with their ability to deploy qualitative data analysis through user engagement and, thus, facilitate user integration were highlighted by the two firms.

Respondent C stated that firm Charlie experienced difficulties gaining access to human capital internationally due to barriers in terms of variances in local informal institutions across markets. Moreover, respondent C stated that the key was to adapt to those local informal institutions by, for example, becoming active on platforms, preferred by users in some markets, on which qualitative data was generated by users. Similarly, respondent D stated that the challenge of conducting qualitative data analysis processes has been to identify sources of

qualitative data, and to enable analysis of it due to informal institutional conditions, such as, for example, linguistic differences. As such, digital firms' ability to facilitate internationalization through deployment of qualitative data analysis processes may depend on their ability to identify sources of qualitative data across markets and analyze and interpret the data influenced by local informal institutions.

Moreover, firm Delta experienced difficulties drawing benefit from conducting qualitative data analysis processes in markets with low number of users and, thus, adapting their business model to those markets as the it was experienced with a lack of data to analyze. As such, firm Delta deployed qualitative analysis processes by implementing focus groups with users representing such markets. Thus, digital firms' ability to facilitate internationalization through deployment of qualitative data analysis processes may depend on their ability to generate qualitative data.

To summarize, the findings of the study indicate that digital firms face challenges and costs during the internationalization process due to variances in local informal institutions across foreign markets. As such, digital firms face challenges and costs during the internationalization process associated with user integration liabilities, in the cases of the study due to the requirement for cultural proximity, as described by Rong *et al.* (2022). Furthermore, the findings of the study indicate that quantitative data analysis processes is one of the core activities through which digital firms can integrate with users and thus overcome the user integration liabilities, as described by Rong *et al.* (2022). Their ability to do so could be dependent on their ability to initiate and accelerate generating user data through user acquisition, analyze and interpret data, and manage the insights and accumulated knowledge within the organization to draw benefit from it throughout their international operations and internationalization efforts. Lastly, the findings of the study indicate that qualitative data analysis processes are one of the core activities through which digital firms can integrate with users and thus overcome user integration liabilities, as described by Rong *et al.* (2022). Their ability to do so could be dependent on their ability to identify sources of qualitative data, generate qualitative user data, and analyze and interpret qualitative data influenced by local informal institutions across markets.

6.2 Complementor integration

All four firms studied have either temporarily or permanently integrated with complementors providing complementary services. Firm Alpha and firm Beta integrated with complementors

providing translation services and advertisement platform networks. Firm Charlie integrated with complementors providing localization competencies concerning marketing and promotion, as well as translation services. Firm Delta integrated with complementors providing translation services and localization competencies concerning adaptation of game design and content.

Firm Alpha and firm Beta has experienced costs integrating with different advertisement platform networks during the internationalization process and operations in foreign markets as it has required identifying and evaluating advertisement platform network options, as well as adaptation to the technical requirements associated with integrating with the advertisement platform networks. As such, the firm has encountered obstacles and incurred costs to integrate with complementors and form an ecosystem when internationalizing, aligning with the complementor liability, as described by Rong *et al.* (2022). However, Rong *et al.* (2022) argues that complementor liabilities derives from a lack of established connection, limited understanding of industry characteristics, and potential legitimacy inadequacies in foreign markets. Moreover, Rong *et al.* (2022) suggest that the level of liability of ecosystem integration increases as the dependency on offline complementors increases.

Though, the findings of the study did not indicate that these underlying issues caused obstacles when integrating with complementors. Rather, findings indicate that obstacles to integrating with complementors derive from a need for technological adaptation to comply with the technological requirements. Additionally, given that the technological adaptation to integrate with the complementors providing advertisement platform network did not require non-digital joint development within the ecosystem, the findings indicate that the Liability of Ecosystem Integration may increase as the dependency on online complementors increase, in addition to offline complementors.

Firm Beta highlighted the capabilities of their employees, in terms of programming, to facilitate cost efficient integration with advertisement platform networks. For both firm Alpha and firm Beta, the integration with these advertisement platform networks have relied on technical adaptation to satisfy the technical requirements of those platforms. As such, findings of the study indicate that digital firms' ability to integrate with complementors for online activities and overcome complementor integration liabilities, as described by Rong *et al.* (2022), may depend on the technical capabilities of the firms.

Firm Alpha, firm Charlie, and firm Delta integrated temporarily with external actors for translation activities. These activities incurred costs to the firms, aligning with the suggestion concerning dependency on offline complementors and its impact on the Liability of Ecosystem Integration, as described by Rong *et al.* (2022). However, the temporality of the integration with these complementors reveals that there does not exist a dependency on these complementors for the production, delivery, or co-innovation of the offering. As such, the challenges and costs from integrating with these complementors cannot be assumed to derive from the complementor integration liability as it requires a dependency on the complementors, as described by Rong *et al.* (2022).

However, firm Charlie and firm Delta temporarily integrated with external actors in foreign markets for marketing and promotion activities and activities related to adaptation of game design and content. Firm Charlie hired local marketing agencies to manage marketing and promotion activities in foreign markets perceived as more culturally distant. The firm hired agencies in foreign markets as they would be more knowledgeable concerning users' behaviors and preferences. Firm Delta hired a domestic and foreign localization firm for consultancy in their game development processes before launching of the game and during the internationalization process, providing knowledge of cultural aspects across markets and how to approach them. As such, the firm gained perspectives of users' behaviors and preferences in foreign markets. In the case of both firms, the purpose of the temporary integration with complementors was to gain access to foreign market knowledge concerning user behaviors and preferences, associated with overcoming user integration liabilities as described in section 5.1. Similarly, Firm Alpha and firm Charlie hired external actors, specialized in international regulatory compliance issues, to manage regulatory compliance internationally. As such, findings indicate that complementor integration may be an alternative activity through which digital firms can overcome user integration liabilities and institutional integration liabilities, as described by Rong *et al.* (2022).

From another perspective, the dependency requirement associated with the complementor integration liability, as described by Rong *et al.* (2022) can be interpreted less binary, and instead as more of a scale. With such a perspective, despite the temporality of the integration with complementors in the case of firm Alpha, firm Charlie, and firm Delta, a dependency on those complementors cannot be excluded. As such, the challenges and costs associated with integrating with these complementors can derive from the complementor integration liability, as described by Rong *et al.* (2022).

As stated above, firm Charlie hired local marketing agencies to manage marketing and promotion activities in foreign markets perceived as more culturally distant with the purpose of accessing knowledge concerning users' behaviors and preferences in foreign markets. Additionally, firm Charlie hired translation service providers. Firm Delta hired localization firms for consultancy, also with the purpose of accessing insights and knowledge about users' preferences and behaviors in foreign markets, as well as translation service providers.

Respondent C highlighted the firm being flexible and able to adapt to the specific conditions of the relationship, in terms of informal institutional conditions minting the external actors, as important for the success of the relationships and, thus, integrating with the complementors. Respondent D highlighted that the performance of these relationships was dependent on the firms' ability to work under different institutional conditions and enabling building trust and stronger relationships with such firms. Moreover, respondent D stated that the firms' cultural diversity amongst its employees could have contributed to their ability to work and integrate with external complementors internationally across markets and institutions. Consequently, based on the reasoning outlined above, findings of the study indicate that digital firms' ability to integrate with complementors and overcome complementor integration liabilities, as described by Rong *et al.* (2022) may be dependent on their ability to adapt to the informal institutions minting foreign complementors and the relationships with them.

To summarize, findings of the study indicate that the Liability of Ecosystem Integration may increase as the dependency on online complementors increases, in addition to offline complementors. Furthermore, findings of the study indicate that digital firms' ability to integrate with complementors providing online complementarities and, thus, overcome complementor integration liabilities, as described by Rong *et al.* (2022) may depend on their technical capabilities. Moreover, findings of the study indicate that complementor integration may be an alternative activity through which digital firms can overcome user integration liabilities and institutional integration liabilities, as described by Rong *et al.* (2022). Lastly, findings of the study indicate that digital firms' ability to integrate with complementors as an alternative activity to integrate with users may depend on their ability to adapt to informal institution minting relationships with such complementors.

6.3 Institutional integration

Three of the four firms studied had experienced challenges and costs associated with local formal institutions in foreign markets during internationalization. According to the firm

Alpha, firm Charlie, and firm Delta, the variance in regulatory frameworks across markets has constituted a challenge as they have had to interact with local institutions, incurring costs to the firms, and thus enabled ensuring compliance with the different regulatory frameworks across markets. Firm Alpha and firm Charlie hired external actors, specialized in international regulatory compliance issues, to manage regulatory compliance internationally, incurring the firm with costs. Firm Delta managed challenging regulatory frameworks in foreign markets internally and incurred costs as they implemented training and educational activities amongst employees and developed and performed monitoring processes to ensure compliance with regulatory requirements. As such, the findings of the study align with the concept of Liability of Ecosystem Integration, as proposed by Rong *et al.* (2022), in terms of institutional integration liabilities, as the firms has been required to integrate with host-market institutional support.

All three firms highlighted the importance of learning about and staying up to date with regulatory frameworks. As such, findings of the study indicate that digital firms' ability to integrate with local institutions and overcome institutional integration liabilities, as described by Rong *et al.* (2022) may depend on their ability to learn and stay up to date with local formal institutions.

6.4 Dynamic capabilities

As outlined above, the case firms' ability to overcome user integration liabilities through quantitative and qualitative data analysis processes depends on their ability to initiate and generate user data, identify sources of data, analyze and interpret data potentially influenced by local informal institutions, and manage insights and accumulated knowledge within the organization. Furthermore, digital firms' ability to overcome complementor integration liabilities depends on their technical capabilities and their ability to adapt to informal institutions minting such complementor relationships. These abilities can be summarized under the concept of dynamic capabilities, as described by Teece (2010), as they involve internal activities to identify and assess opportunities (sensing), mobilize resources and capabilities to capture value from opportunities (seizing), and enable continuous development and adaptation (transforming). As such, the findings of the study indicate that dynamic capabilities can facilitate successful internationalization of digital firms.

As revealed above and in section 6.1-6.3, the findings of the study indicate that the activities deployed by the firms to facilitate successful internationalization involved, and was dependent

on, their ability to acquire new knowledge, learning about markets, and staying up to date with local formal and informal institutions. These abilities align with the abilities described under the concept of Knowledge Capability Upgrading, as described by Sadeghi *et al.* (2023). Moreover, the findings of the study indicate that the activities deployed by the firms to facilitate successful internationalization involved, and was dependent on, their ability to respond to changes in markets, navigating cultural differences, and seizing opportunities. These abilities align with the abilities described under the concept of Adaptive Capability, as described by Sadeghi *et al.* (2023). As such, the findings of the study indicate that Knowledge Capability Upgrading and Adaptive Capability are underpinning capabilities that can facilitate successful internationalization of digital firms.

7. Conclusion & Future research

7.1 Research questions

How can digital firms facilitate successful internationalization in context of associated challenges and costs?

In the following sections, the main research question of the study, as outlined above, will be answered through the answers provided for the three sub-research questions of the study, as outlined below.

What are the challenges and costs associated with the internationalization of digital firms?

How do digital firms overcome challenges and costs associated with internationalization?

What underpinning capabilities facilitate successful internationalization of digital firms?

7.1.1 Challenges and costs associated with internationalization of digital firms

What are the challenges and costs associated with the internationalization of digital firms?

Based on the findings of the study, the internationalization of digital firms is associated with three categories of challenges and costs. Firstly, digital firms face challenges and costs during the internationalization process associated with adapting their business models to local informal institutions across foreign markets of which the firms lack knowledge of. These challenges and costs can be summarized under the requirement for cultural proximity and user integration liabilities, calling for user integration during the internationalization process of digital firms. However, as the case firms of the study had fully digital deliveries of their offerings, and users of the case firms were able to consume the offering without participating in offline activities, challenges and costs associated with offline importance and the requirement for geographical proximity cannot be assumed to not prevail during the internationalization process of digital firms in general.

Secondly, digital firms face challenges and costs during the internationalization process associated with integrating with online complementors providing complementarities for the creation, delivery, and co-innovation of offerings. These challenges and costs can be summarized under the dependency on online (or offline) complementors and complementor integration liabilities. However, since the case firms of the study primarily integrated with complementors involving online creation, delivery, and co-innovation processes, as opposed to offline processes, challenges and costs associated with dependency on offline

complementors cannot be assumed to not prevail during the internationalization process of digital firms in general.

Thirdly, digital firms face challenges and costs during the internationalization process associated with adapting their business models to, and ensuring compliance with, local formal institutions across foreign markets of which the firms lack knowledge of. These challenges and costs can be summarized under the requirement for integration with host-market institutional support and institutional integration liabilities, calling for institutional integration during the internationalization process of digital firms.

7.1.2 Overcoming challenges and costs associated with internationalization of digital firms

How do digital firms overcome challenges and costs associated with internationalization?

Based on the findings of the study, digital firms overcome challenges and costs associated with internationalization through four core activities. Firstly, digital firms deploy quantitative data analysis processes through which they integrate with local users and thus overcome challenges and costs associated with user integration liabilities. Secondly, digital firms deploy qualitative data analysis processes through which they integrate with users and thus overcome user integration liabilities. Thirdly, digital firms integrate with online complementors through which they integrate with local users and institutions and thus overcome challenges and costs associated with user integration liabilities and institutional integration liabilities. Fourth, digital firms deploy learning and knowledge updating activities to integrate with local formal institutions and thus overcome costs and challenges associated with institutional integration liabilities.

Digital firms' ability to overcome user integration liabilities through quantitative and qualitative data analysis processes depends on their ability to initiate and generate user data, identify sources of data, analyze and interpret data potentially influenced by local informal institutions, and manage insights and accumulated knowledge within the organization. Digital firms' ability to overcome complementor integration liabilities depends on their technical capabilities and their ability to adapt to informal institutions minding such complementor relationships. Digital firms' ability to learn and stay up to date with local formal institutions.

7.1.3 Underpinning capabilities facilitating successful internationalization of digital firms

What underpinning capabilities facilitate successful internationalization of digital firms?

Based on the findings of the study, Dynamic Capabilities, including both Knowledge Capability Updating and Adaptive Capability are underpinning capabilities that can facilitate successful internationalization of digital firms.

7.1.4 Conceptual model

Based on the findings and the analysis of the study, a conceptual model was constructed, outlined in Figure 1. To summarize it, when digital firms internationalize, they are faced with challenges and costs associated with user integration liabilities, complementor integration liabilities, and institutional integration liabilities. To overcome these challenges and costs, digital firms integrate with users, complementors, and institutions. Note that user integration and institutional integration can be achieved through complementor integration. Digital firms’ ability to integrate with users, complementors, and institutions depends on their Dynamic Capabilities, involving both Knowledge Capability Updating and Adaptive Capability. Consequently, digital firms’ ability to overcome challenges and costs associated with user integration liabilities, complementor integration liabilities, and institutional integration liabilities depends on their Dynamic Capabilities. Thus, digital firms can facilitate successful internationalization through utilization and improvement of their Dynamic Capabilities.

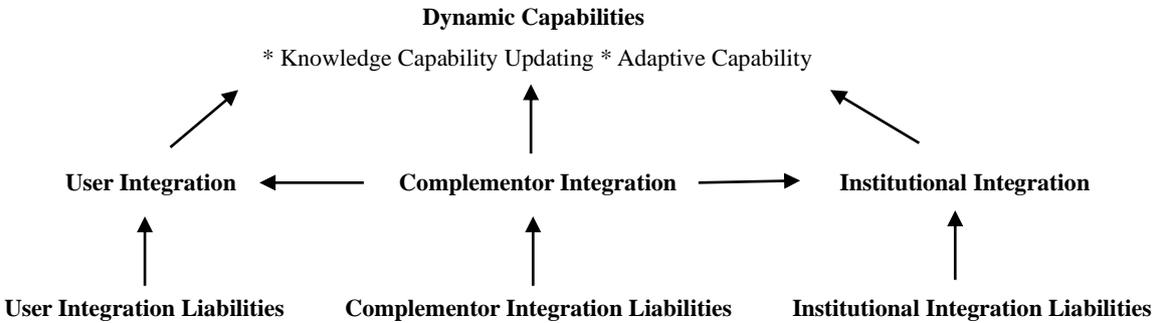


Figure 1: Conceptual model

7.2 Theoretical & Practical contributions

The Liability of Ecosystem Integration framework suggests that the level of Liability of Ecosystem Integration digital firms encounter is contingent on the attributes of its business model and the industry in which it operates across three dimensions, influencing firm internationalization in terms of success and spatial concentration (Rong *et al.*, 2022). The findings of the study indicate support for the arguments made under the framework concerning the requirement for cultural proximity and user integration liabilities, and the

requirement for integration with host-market institutional support and institutional integration liabilities. The findings of the study indicate support for the arguments made under the framework concerning complementor integration liabilities as well, though pointing to dependency on online complementors, as opposed to offline complementors, as a determinant of the level of Liability of Ecosystem Integration. Moreover, the findings of the study indicate that the success of internationalization is influenced by the attributes of digital firms' business models, supporting the assumptions made under the Liability of Ecosystem Integration framework, as described by Rong *et al.* (2022). Additionally, the findings of the study provide weak indications that the spatial concentration of internationalization is influenced by the attributes of the industry in which digital firms operate, supporting the assumptions made under the Liability of Ecosystem Integration framework, as described by Rong *et al.* (2022). Finally, the findings of the study provide indications that Dynamic Capabilities, as described by Teece (2010), involving both Knowledge Capability Upgrading and Adaptive Capability, as described by Sadeghi *et al.* (2023), holds prominent roles in digital firms as capabilities underpinning successful internationalization.

The conclusion of the study highlights the importance of local factors when digital firms internationalize, supporting the arguments of previous research (E.g., Jean & Tan, 2019; Nambisan, 2022; Verbeke & Hutzschenreuter, 2021; Rong *et al.*, 2022). Additionally, based on the conclusion of the study, one may argue that the key characteristics of digital firms facilitating rapid internationalization are related to Dynamic Capabilities and their potentially natural ability to develop and utilize Dynamic Capabilities. This insight may be of value for practitioners as to re-evaluate and further develop current approaches and strategies in the internationalization process, and future international operations.

7.3 Future Research

As stated in the introduction chapter, the influence and importance of digital firms in the business environment and society in general has been increasing for the past decades, and the trend will most likely continue in the same direction. Understanding the challenges and costs of digital firms as they internationalize, and how to address them, is of importance as to facilitate successful internationalization of digital firms providing utilities in society.

This study encompasses empirical findings of digital firms from a single industry, and from a single country. The industry characteristics and, possibly, country of origin of the firm could have influenced the empirical findings. Several components of the Liability of Ecosystem

Integration framework were not analyzed thoroughly as the findings did not allow it. As such, suggestions on future research are to study digital firms in other industries and with other countries of origin which could enable deeper analysis of additional components of the Liability of Ecosystem Integration framework.

In particular, an interest for future research is to examine the conclusion of the study, and the application of it, in other industries. As stated, the empirical findings of this study are narrow in scope. As such, to gain a more comprehensive understanding, recommendations for future studies are to broaden the scope to encompass various industries and firms from different markets, as well as approach the research from new perspectives in terms of, for example, identifying differences between firms or industries.

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Appendix 1 – Interview Guide

Background

Can you introduce yourself, your position, and your role in the firm?

Challenges and costs

Can you describe the challenges and costs the firm faced during the internationalization process?

Were there challenges and costs associated with local market characteristics as the firm internationalized?

Addressing the challenges and costs

Can you describe how the firm addressed the challenges and costs?

What activities were deployed to address the challenges and costs?

Can you describe important elements of the activities through which the challenges and costs were addressed? Were there any specific capabilities or abilities facilitating the activities?