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**International Business in the Digital Age:
Global strategies in a world of national institutions**

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Abstract

Digital technologies are changing how businesses strategize and organize internationally. They not only enable cost reduction in businesses crossing national boundaries, but also enable novel types of products and business models. Yet, barriers to cross-border businesses persist or even re-emerge, such that the study of international business remains important in the digital age, but may have to shift focus. We argue that businesses operating internationally develop digital business strategies that are interdependent with their internationalization strategies. In doing so, they have to account for differences across national contexts including informal institutions, formal institutions, and resource endowments. We offer a conceptual framework linking external and internal antecedents to digital business and internationalization strategies. We focus in particular on three digital strategies: owning digital platforms, use of digital platforms, and transforming traditional businesses for the digital world. On this basis, we discuss the contributions of the papers in this special issue and conclude by outlining an agenda for future research.

Key Words: Digital economy, digital transformation, platform strategies, digital marketing, institutional framework

1. Introduction

Digital technologies are changing the way international business (IB) is conducted. Internally within multinational enterprises (MNEs), digital technologies enable the disintermediation of processes, enabling them to become faster, cheaper and more responsive to changing needs. Externally, changes in government laws and regulations, a renewed focus on social concerns, and changes in buying behaviors (recently propelled by the Covid-19 crisis) create new opportunities to deliver digital technology-based solutions for production, purchasing, communications, marketing and logistics across national borders. Businesses are thus developing digital strategies to create new business models and shifting costs and activities from their own firm to complementors, customers and other stakeholders at home and abroad.

Digitalization is changing businesses not only in technologically advanced nations but also in emerging economies, providing opportunities for catching up on business creation and expansion (UNCTAD, 2017). Despite inequalities in the access to technologies, even in developing countries digital technologies enable firms to disrupt sales and distribution systems, change consumer buying behavior, and alter demand for products and services. Firms may benefit from digitalization through, for example, greater access to resources, increased market reach, and faster/more effective communications. But downsides also exist through the faster erosion of competitive advantage, new sources of risk, and a shift in power to buyers and platforms (Jean, Kim & Cavusgil, 2020; Verbeke & Hutzschenreuter, 2021).

Despite these changes, scholarly understanding of how digitalization impacts IB has not kept pace. Traditionally, IB theory explores international strategies such as location choice, speed of internationalization, entry mode choice, the international transfer of knowledge, as well as the performance of international operations. Only recently have IB scholars focused their attention on the influence of digital technologies on these international activities (see the review by Chabowski & Samiee, 2020). Thus, there is a need to assess the suitability of existing theories, and where appropriate to develop new concepts to extend or modify them. We take the perspective that digital technologies allow mature and new firms to expand internationally, capturing opportunities in foreign countries without the same financial burdens and risks traditionally associated with foreign investments (Brouthers et al., 2022). We argue that digital technologies lead businesses to reconsider the arguments that shape their internationalization strategy. On the one hand, digitalization facilitates IB by drastically reducing transaction and

coordination costs, thus facilitating globally integrated business models. In fact, many entrepreneurs of “born digital” firms start from a “global by default” mindset (Birkinshaw, 2022). On the other hand, most digital firms still have to deal with national formal and informal institutions that they may be able to leverage to create an advantage, but that may also become an obstacle to implementing a global business model. Moreover, national endowments with resources supporting digital businesses shape decisions about where firms locate which activity.

Our paper offers three sets of contribution to the literature. First, we begin to develop theory to explain how and why national context still matters in the digital age, suggesting that historic and new contextual factors impact digital internationalization strategies in different ways. Second, we outline three strategies that different firms may develop to enhance their competitive position in a digital world, and discuss their interdependence with internationalization strategies. This analysis includes both traditional firms (often referred to as brick-and-mortar firms), born digital firms whose business models from the outset rely on digital technologies for their competitive advantage, and digital users (firms and individuals) who use digital channels to engage with business partners (or customers) around the world. Third, we offer an integrative framework and suggestions for future research that may serve to guide future scholarly endeavors at the interface of digital and international business.

We proceed as follows. In the next section, we introduce our organizing framework for structuring discussions on IB in the digital world. Then, we discuss aspects of the national business environment that impact both traditional and born-digital businesses, focusing on specific aspects of informal institutions, formal institutions, and national resource endowments. On this basis, we explore the challenges and opportunities of three types of firms participating in the digital transformation of the global economy – namely digital platform firms, users or complementors of international digital platforms, and traditional firms transforming for the digital age. We then introduce the papers in this special issue and identify directions for future research to advance our understanding of IB in the digital world.

2. What is “IB in the digital world”

The Internet and related digital tools have increased our ability to collect, store, analyze, and share information, thereby reshaping how goods and knowledge spread across national boundaries. They enable new models of IB and transformation of traditional MNEs.

In particular, digitalization provides new opportunities for firms to engage with foreign customers and to reduce capital investments needed to effectively compete in a foreign market. For example, virtual entry modes such as firm-specific websites or complementor in a platform enhance exporting opportunities, vastly increasing the potential scope of customers a firm can reach (Brouthers, Chen, Li & Shaheer, 2022). Industry 4.0 related technologies enable the collection and analysis of large volumes of data on factory operations and value chains, thereby transforming internal and inter-firm coordination mechanisms (Dachs, Kinkel, & Jäger, 2019; Lee Kim, Choi, & Jiménez, 2023; Strange & Zucchella, 2017). Virtual communication tools enable instant cross border information sharing via for example social media or video conferencing. Augmented reality or additive manufacturing (also known as 3D printing) enable firms to serve foreign markets without establishing physical facilities in the country (Laplume, Petersen & Pearce, 2016).

The challenge for IB scholars thus is to integrate strategizing on digital technologies and on internationalization (Figure 1). Many traditional research questions in IB thus merit revisiting (Brouthers et al., 2022). For example, historically, non-equity modes of doing business, such as exports or licensing, have been basic building blocks of IB (Czinkota & Johnston, 1983; Young et al., 1989). Recent advances in the digital economy have led to dramatic reductions in transactions costs that international businesses have historically been struggling with thus enhancing opportunities for firms to engage with non-equity modes (Birkinshaw, 2022; Hennart, 2022). As a consequence, the relative importance of geography in shaping international trade has been reduced, although it continues to play a substantive role in explaining patterns of trade (Hortascu, Martinez-Jerez & Douglas, 2009; Kim, Dekker & Heij, 2017).

**** Figure 1 about here ****

Similarly, businesses have been sourcing raw materials and intermediate products abroad for centuries. Yet, in recent decades, the sourcing of knowledge and knowledge-based assets has become more important (Cantwell & Mudambi 2005; Luo & Tung, 2017), and this trend has been accelerated by the advent of digital technologies. For example, digital communication channels have reduced the costs of recruiting and interacting with employees based in other countries to the extent that it is now feasible to recruit individuals based in other countries in a phenomenon known as ‘work from anywhere’ (Choudhury et al., 2021). It is even feasible (and

cost efficient) to tap into human capital in distant locations for specific projects, such as logo designs (Kumar, Deodhar & Zaheer, 2023).

Beyond the transformative reduction in transaction costs, digitalization enables entirely new technologies and social activities, of which Table 1 gives some examples. Technologies such as video streaming or augmented reality enable formats of product and service delivery that have not been feasible before the digital age. New types of social activities leverage digital technologies, such as social networks, e-sports (Lin, Xu & Xie, 2023) and crowdfunding (Kumar et al., 2023) to create opportunities for entirely new types of business.

**** Insert Table 1 about here ****

For some firms, known as digital firms, digital technologies are at the core of their business model. These include firms providing physical products/services via digital ecosystems (including the sharing economy) as well as firms providing digital products or services within a digital ecosystem (Mahnke & Venzin, 2003). Digital products here are understood as products that exist without a physical form, such as apps, software, and social media. With the help of digital technologies, some traditional physical products have been converted or replaced by digital products, including music (records and CDs), photos, greeting cards, or design. Beyond digital products, additive manufacturing even replaces the transfer of physical products with transfers of software codes that then are used locally to ‘print’ the physical product.

One of the most visible icons of the digital world is the emergence of digital platforms, referred to here as interfaces that facilitate multilateral transactions and exchanges among users and providers of complementary products and services, i.e., “complementors” (Li, Chen, Yi, Mao, & Liao, 2019). Digital platforms can potentially transform entire industries by creating new forms of inter-firm cooperation with platform-centered ecosystems (e.g., Kretschmer, Leiponen, Schilling, & Vasudeva, 2022) and network effects that can be international (Brouthers et al., 2016). Some platforms (e.g., social networks like Facebook) operate entirely on data flows and digital products; they can technically serve foreign markets without a local presence. Other platforms operate as multi-sided markets for goods or services that have to be physically delivered (e.g. Amazon, Alibaba). They bundle physical assets and operations with Internet communications, and require a local presence in foreign markets (Birkinshaw, 2022) to support the delivery of physical products or services required in the country – with notably exceptions in the tourism industry (e.g. Airbnb, Booking.com) and some export-oriented e-commerce

Platforms (Alibaba Express, Shein.com).¹ This distinction is important for analyzing the challenges digital platforms face when aiming to internationalize their scope.

Figure 1 outlines how these novel aspects of strategizing interact with the external and internal factors that continue to shape strategy. As we detail in the next section, the national environment in each country of operations influences digital strategies of firms. In terms of organizational characteristics, a key distinction is between digital firms that develop a digital strategy from scratch, and mature firms that start from their existing structures and resources. With respect to organizational heritage, emergent factors shaping digital strategies are the access to complementary digital resources, and existing IT infrastructure that may actually become a source of inertia as shifting from one software platform to another requires considerable organizational change.

3. The International Business Environment in the Digital World

At the early stages of the Internet, many observers predicted a diminishing role of nation states as digital communication and digital products could cross national boundaries seemingly unconstrained (e.g. Kotha, Rindova & Rothaermel, 2001; Quelch, 1996). Indeed, leaders of companies born in the digital age often adapt a ‘global by default’ mindset (Birkinshaw, 2022; Nambisan & Luo, 2022). However, arguably, national influences on IB never really went away (Kobrin, 2001). Recent years have seen the re-emergence of national factors in shaping businesses, even in the digital economy (Stallkamp & Schotter, 2021).

IB scholars have a long tradition of studying national contingency factors affecting businesses, and cross-border transactions in particular. However, these contingencies may have to be reconceptualized for the digital world. For example, digitalization is triggering social changes that may influence informal institutions, and alerts law makers to (perceived) gaps in their regulatory frameworks that they aim to remedy, thus changing formal institutions or attempting to control access to national digital endowments like the internet and social media. Here we explore key informal institutions, formal institutions, and resource endowments of the digital age.

¹ The apparent paradox of direct-to-consumer shipping from China to the USA (rather than using local warehouses) is in part explained by the institutions governing global postal services. The fee scale that national postal services pay each other under the rules of the Universal Postal Union set in 1969 favor developing countries. In consequence has long been cheaper to post a small parcel from Beijing to New York than from Los Angeles, though these rules were modified somewhat in 2019 (Cumming-Bruce, 2019).

3.1. Informal institutions

Informal institutions are defined as the typically unwritten but socially shared rules and constraints that generate social behavior expectations (Dau, Chacar, Lyles, & Li, 2022). These include shared norms, customs, traditions, sanctions, and reward structures (Helmke & Levitsky, 2004; North, 1990). Every society has norms and traditions with which members of the society have to align. Informal institutions serve as the invisible threads that connect the fabric of social groupings, making them a critical element in the study of IB, but also challenging to capture both theoretically and empirically (Dau et al., 2022). In recent years, this includes, in particular, expectations of appropriate social and environmental practices that all businesses have to address. For internationally operating businesses, this implies some degree of adaptation in each of the countries where they operate (Kostova & Roth, 2002). Such adaptation includes for example culturally sensitive marketing practices, standards for protecting the local environment, and respectful treatment of the labor force.

In the digital economy, such informal institutional pressures persist but have become more diffuse because internationally operating firms are simultaneously exposed to institutional pressures from multiple countries (which may not be aligned). At the same time, certain changes in norms may disseminate quickly across the Internet, but not necessarily across groups within the same society. For example, TikTok, a social networking app, rapidly diffuses content among teenagers and young people, including over 100 million users in the US alone. Yet, its diffusion across age groups in its home country China, with its Chinese version of Douyin, has not been as successful. Below we discuss three aspects of informal institutions particularly relevant for the digital economy: social trust, attitudes to technology, and general norms and values.

First, **social trust** within a society and towards foreign partners may be of particular importance with respect to service providers on the Internet because Internet transactions are normally not embedded in social relationships, which weakens many informal enforcement mechanisms. For example, Clemons et al. (2016) find that differences in social trust across nations translate into variations in online shopping behaviors. Moreover, cultural differences have been observed to influence online lending (Burtch et al. 2014) and the adoption of mobile payment systems (Kumar, Nim & Agarwal, 2021; Pelletier, Khavul & Estrin, 2020).

Internationally operating digital businesses may be particularly concerned about the association

of trust and national identity, which contributes to preferences for domestic service providers as observed in studies of cross-border e-shopping (Kim et al., 2017) and online programming (Gefen & Carmel, 2008). In this issue, Kumar, Deodhar and Zaheer (2023) explain this phenomenon by focusing on cognitive biases that lead firms sourcing creative services online to prefer providers from their own or nearby countries.

On the other hand, digital technologies accelerate the growth of global virtual teams and communities of practice. Extant research suggests that despite cultural diversity, such virtual teams and communities can actually be fairly successful at developing trust (Bouncken & Barwinski, 2020; Breuer, Huffmeier, Hibben & Hertel, 2020). Along these line, in this issue, Lin et al (2023) show how e-sport teams create cognitive common ground that helps leveraging cultural diversity to enhance team performance.

Second, societies vary in their **attitudes to new technologies**, including pace of technological change and protection of personal data, which in turn affect how and how quickly consumers engage with new technologies (Smith et al., 2013). In this issue, Madan, Savani and Katsikeas (2023) show that people's responses to data breaches in the digital space are associated with traditional concepts of national culture, specifically power distance and uncertainty avoidance. Such national variations in consumer attitudes can be expected to influence cybersecurity protocols firms adopt, and the ability of digital businesses to internationalize.

Third, **national cultural traits** are likely to influence interactions in digital space as they influence traditional communities. For example, Thompson and Brouthers (2021) find that both between- and within-country cultural differences significantly impact the effectiveness of online advertising and consumer clicking and sharing behavior. More specifically, the pace of adoption of new technologies is likely related to cultural traits such as uncertainty avoidance, which shapes not only digital entrepreneurship but also platform users' willingness to experiment with new offerings and adopt new technology, and hence their behavior in online markets (Park & Jun, 2003). Such cultural differences challenge the ability of digital businesses to successfully expand in foreign markets.

Informal institutions also indirectly affect businesses by shaping political processes that lead to the creation of formal institutions. In spheres of rapid social change, social norms may precede formal regulations as politicians react to social pressures to create the types of formal institutions discussed in the next section. In other situations, formal and informal pressures are in

conflict, for example when formal rules are viewed as unduly protecting privileged interest groups to the detriment of other social groups (Estrin & Prevezer, 2011). For example, formal rules for licensed taxi drivers create barriers to entry, which some view as excessive and thus support digital businesses such as Uber or Lyft undermining the supposedly privileged traditional taxi drivers. Where formal institutions for digital transactions have not yet been developed, informal institutions may have a more prominent role, enabling and facilitating international business transactions (Li et al., 2019).

3.2 Formal institutions

Formal institutions include the laws and regulations that govern business transactions (North, 1990) and have been widely explored in the IB literature (Doh, Rodrigues, Saka-Helmhout & Makhija, 2017; Meyer & Peng, 2016). Such formal institutions, notably legal frameworks, are defined by national authorities or their sub-entities; only in a few exceptions do nation states coordinate their legal frameworks internationally through for example the WTO or the EU. This means that firms operating on the Internet find themselves confronted with a range of barriers arising from differences in national regulations (Stallkamp, 2021). Many digital firms aiming to develop globally integrated operations thus view legal and regulatory differences as obstacles to their international expansion, and hence complain about being ‘locked out’ by national rules (Cusumano, 2014).

The reassertion of national sovereignty vis-à-vis global companies was to be expected (and predicted, e.g. by Kobrin, 2001). What businesses may see as opportunities to overcome bureaucratic obstacles may be seen as legal loopholes by national authorities and policy makers (and as unfair advantages by local businesses that have to follow all the laws of the country). Many institutions have been developed in the pre-digital age, and do not fit the demands of a digital economy. Thus, the regulatory framework is co-evolving with the digital economy as policy and law makers respond to activities they observe in the digital economy.

*** *Insert Table 2 about here* ***

Many spheres of national law potentially affect digital businesses (Table 2). First, in the sphere of **employment law**, critical questions pertain to the status of employees, i.e. when are

workers employees under the law, and when are they independent contractors for whom minimum wage and various other labor standards do not apply? For businesses contracting large numbers of low or medium skilled people, these are critical questions. For example, to what extent is the competitive advantages of Amazon based on paying less to warehouse workers and delivery drivers than usually unionized (at least in Europe) traditional retailers do? To what extent is the advantage of platforms such as Uber based on individuals offering services earning less than national labor standards would require? The more protection of employees is embedded in national institutions, the more likely new forms of organizing labor using digital platforms is conflicting with both formal institutions and interest groups operating under these institutions.

Second, **consumer protection** and health and safety standards apply to all businesses. Yet, digital platform businesses have been able to circumvent certain rules, e.g. non-discrimination standards, by referring decisions to algorithms or to platform service providers. Thus, for example, males representing the ethnic majority in their location may consider it safe and cost-effective to travel using Uber, but it is less clear that this applies to other demographics, or for travelling with children (Ferguson, Gosk & Schapiro, 2019; Tang, Guo, Tang & Wang, 2021). Further, manufacturing and selling of counterfeit products has become easier with the growth of digital platforms. For examples, Alibaba faced serious allegations of selling counterfeits across its various websites (Jin, Yang & Hosanagar, 2022).

National and local legislators thus have introduced laws to extend the protection of potentially vulnerable users buying products and services through digital platforms. Legislators in several countries have put pressure on retail platform firms such as Amazon or Alibaba to prevent the sale of fake brands or illegal products. Other examples of online service providers facing national regulation to protect consumers include financial services, online gambling, or the sale of weapons or prescription drugs.

Third, nation states (and their sub-entities) levy various **taxes** on businesses and citizens, including corporation tax and sales or value added tax. This creates considerable challenges for digital businesses that operate across national borders (Kobrin, 2001; Olbert & Spengel, 2017). Digital businesses have been adept at minimizing their tax burden (Ting & Gray, 2019), for example by registering their business in a jurisdiction with low corporation tax, paying high brand license fees to units in a low tax jurisdiction, or using other transfer pricing schemes (Nebus, 2019). Such practices have consequences for the tax burdens of other citizens and

businesses in these countries (i.e. immobile people and assets get taxed higher, while mobile assets may be moved to low tax locations), and potentially increase social inequality within countries. Thus, national legislators have amended tax rules. For example, online shopping platforms collect VAT or sales tax on behalf of governments, as otherwise their shipments would be held up in customs to pay taxes and fees.

Fourth, **privacy** laws protect individuals from uses of their data by third parties and from undue exposure to the public. For example, the EU introduced the General Data Protection Regulation (GDPR), which establishes extensive protection of personal data. GDPR applies to all businesses collecting data on individuals in the EU, including firms without a physical presence in the EU that collect data from website users in the EU (Marelli & Testa, 2018). Globally operating digital companies such as *Facebook* and *Google* thus have been repeatedly in conflict with EU authorities over their handling of user data (Water, 2018; Kuchler, 2018). Data protection regulation has also been enacted in California, while other jurisdictions contemplate similar actions. Globally operating businesses, such as banks, prefer globally standardized processes, which implies that these national rules potentially affect businesses far beyond their national boundaries.

Fifth, most countries have **copyright** laws regulating what can be shared in public. For example, pornography or advertising for harmful substances such as cigarettes or alcohol are regulated to a great extent in many countries. National regulators aim to prevent foreign Internet content providers from bypassing such regulation. In authoritarian states, such censorship can include, for example, critique of government policies or political leaders and the sharing of facts that contradict the authorities' worldview. Companies such as Google and Yahoo have in view of such restrictions decided that they cannot provide their services in China as the national rules on censorship and data sharing conflicts with their corporate values (Stevens, Xie & Peng, 2016).

Sixth, nation states prohibit certain international transactions in the interest of **national security** (Hasnat, 2015; Luo, 2021). Traditionally such rules applied to military equipment and to technologies of direct or indirect use for the military. However, the concept has been broadened over the past decade to include for example data of interest to the military, including data on people, infrastructure (5-G networks) and geography (Hasnat, 2015; Lai, 2021). At times of war, national security is enforced and applied particularly selectively and rigorously. Digitalization creates new challenges to the enforcement of such regulations given the ease with which users

can access information from almost any location online (Luo, 2021). In response to these challenges, countries such as China have introduced digital firewalls that inhibit access to websites based outside the country while countries like the US and UK restrict the nationality of investors in digital infrastructure projects.

Seventh, **competition law** for digital economy firms has moved up the policy agenda around the world (Philippon, 2021). This includes the approval of M&As in the digital economy. For example, competition authorities are concerned about the wave of acquisitions of technology start-ups by leading players in the digital economy, such as Google, Meta and Amazon (Argentesi et al., 2020). These firms have in recent years acquired many young technology start-ups complementing their product offerings, thus enabling them to gradually expand their market power into related business segments. In other cases, known as ‘killer acquisitions’, dominant firms acquire a potential competitor before they even emerge (Cunningham, Ederer, & Ma, 2021). National and EU competition authorities are in the process of developing criteria for assessing such M&As, and these initiatives are not always aligned (Jenny, 2021).

Similar controversies have emerged with respect to the implementation and enforcement of rules to ensure fair competition in view of dominant firms in the digital economy (Jacobides & Lianos, 2021; Jenny, 2021; Khan, 2017). Notably, digital platform firms may attain overwhelming market power vis-à-vis platform users. Competition authorities may not object to such market power when their competitive advantages are developed organically and driven by innovation. Yet, they still monitor platforms to prevent practices with anti-competitive effects. For example, in many locations, businesses like Uber or Amazon may have monopolistic bargaining power vis-à-vis small businesses, drivers, or delivery staff. Thus, in 2021, the US government took several initiatives to reduce the power of firms to limit the efficiency of labor markets through anti-competitive practices (Cater, 2021). Meanwhile, the Chinese authorities have taken measures to constrain the power of Alibaba, Tencent and other digital economy firms dominating their market segments (Chorsempa, 2021).

Finally, **intellectual property rights** (IPR) are usually defined under national law. This means that the IPR to a brand, an image or a song may be held by different entities in different countries. The result is that companies using a brand or trademark globally may face problems in countries where someone else already registered the same name, image or song. Thus, companies such as Spotify or Netflix need to negotiate with right holders in each country to attain the rights

to broadcast a song or a movie; they cannot simply offer their services internationally based on the rules and IPR in their home country (Athreye, Piscitello, & Shadlen, 2020).

3.3 National resource endowments

In addition to informal and formal institutional differences between countries, countries vary in the availability and organization of resources accessible to businesses. Businesses providing digital products may be less concerned about traditional infrastructure, but they depend on resources such as technological infrastructure, innovation and entrepreneurship eco-systems. However, firms selling physical products via online channels still depend on transportation infrastructure such as roads, railroads, and ports, as they rely on these resources for the execution of their strategy, especially the speed and quality of product delivery.

First, the deployment of digital technologies depends on a nation's **technological infrastructure**, such as access to mobile phones, wireless networks, and broadband – also known as digital infrastructure (Andrews, Nicoletti & Timiliotis, 2018), which vary considerably across and within countries, notably being weaker in many emerging economies (other than China). On the other hand, weaknesses in traditional infrastructures may provide opportunities for digital service providers to leapfrog stages in economic development; for example, mobile money services are adopted rapidly where they fill a gap in existing banking infrastructures (Kumar et al., 2021; Pelletier, Khavul & Estrin, 2020). As a result, the way firms employ digital technologies to provide digital products and services varies across countries.

A related question is how resources are organized, which organizations control resources, and how they coordinate among each other. Is critical digital infrastructure controlled by competing private firms, de-facto monopolistic firms, or government agencies? For example, high market concentration in telecom services in the US lead to higher charges for basic digital service in the US than in many other countries (Philippon, 2019). Elsewhere, governments own or tightly regulate telecom infrastructure, which may result in biases in favor of domestic service providers. Thus, businesses expanding abroad need to not only identify and evaluate the quality of resources available, but also assess the key players in the local ecosystem and develop appropriate partnering strategies to access complementary resources.

Second, several studies of the internationalization of digital businesses highlight the importance of **innovation and connecting with local entrepreneurial ecosystems** (Sussan &

Acs, 2017). Such knowledge clusters help sharing new ideas, recruiting talent, identifying potential new competitors, and acquiring new innovative resources. Countries with more active entrepreneurial ecosystems and digital human resources tend to be more receptive to new technologies and digital innovations (Sahut, Iandoli & Teulon, 2021; Grimpe et al., 2023). Hence, country differences in innovation and entrepreneurial resources can provide either barriers or opportunities for the expansion of firms relying on digital technologies.

4. Exemplar digital international business strategies

Firms engaging in the digital economy internationally have to develop both their digital business strategies and their internationalization strategies. IB scholars have extensively analyzed internationalization strategies; yet in the digital economy these strategies are interdependent with the strategies that firms develop with respect to digital technologies and business models. Thus, in this section we explore three common strategies for the digital economy: the internationalization of digital platforms, the use of digital channels for international sales and marketing, and the digital transformation of traditional MNEs. As illustrated in Figure 1, the opportunities and challenges for firms contemplating these strategies vary not only with their national context (as discussed in the previous section) but with their organizational heritage. In particular, firms pursuing a digital strategy from the outset face fewer challenges in organizational transformation yet may face greater barriers from national contexts.

4.1 Internationalization of digital platforms

Platform businesses rely on networks of complementors. Therefore, when expanding into a foreign market, they need to attract a critical mass of users and complementors in the host market. Yet, this task faces several challenges. First, their new business models may not be immediately understood by users or service providers in the host market, which results in a deficit in cognitive legitimacy (Garud, Kumaraswamy, Roberts, & Xu, 2022). They also need to engage different groups of stakeholders with divergent values or interests (Logue & Grimes, 2022). Thus, a platform operator may experience a liability of foreignness abroad because it lacks knowledge about local users, has to overcome cultural distance and communication barriers, or even faces regulatory discrimination in the foreign market. Recent studies show that the network effects of platform participation vary by country-level institutional and cultural factors (Chen, Li,

Wei, & Yang, 2022; Kumar, Nim, & Agarwal, 2021). In addition, in new foreign locations, weak or peripheral network positions of a platform in the host country may lead to a liability of outsidership, which further hinders access to local users and complementors (Brouthers et al., 2016; Li & Fleury, 2020).

These issues may not be sufficiently addressed by conventional IB theories. Internalization theory suggests that the growth of MNEs is driven by the exploitation of firm-specific advantages by combining them with local advantages in host societies within the boundaries of the MNE (Buckley & Casson, 2020; Narula, Asmussen, Chi & Kundu, 2019). In the case of digital platforms, a key competitive advantage is their large user base and complementary assets owned by external complementors rather than the platform company itself (Li et al., 2019). However, these complementors often are not internationally transferable. What is transferable are digital assets such as data analytics and software along with a reputation that may precede direct market entry. To compete successfully (i.e. profitably) in a foreign market, these digital assets need to be combined with local complementors in each local market. To reach a critical mass of users, platform companies have to accumulate and manage numerous complementors and users, which is quite different from traditional practices of managing local suppliers and customers of a foreign subsidiary (Brouthers et al., 2022).

The platform literature has begun to provide insights on these issues. For instance, platform companies such as Uber may leverage their user base in a yet unregulated market to lobby regulators to design the regulatory framework in their favor (Birkinshaw, 2022; Garud et al., 2022). Moreover, Chen and colleagues (2019) suggest that to mitigate the liability of outsidership, platform companies can first penetrate high clout countries and then expand on a wider scale. High clout countries are those with greater economic power and social connectivity relative to other countries. Having established operations in such high clout countries can encourage user participation elsewhere in the world. Platform companies also have to pay close attention to the evolution of their platforms and user preferences in the host market. For example, they may face a tradeoff between innovativeness (quality) and size (quantity) and the ecosystem. Although network effects generally increase with the number of complementors, a congestion cost—that is, the presence of too many complementors—could discourage their innovation and therefore reduce the quality of the platform (Panico & Cennamo, 2022).

Platform owners compete with rival platforms as well as with traditional non-platform firms in the host market. Dushnitsky, Piva and Rossi-Lamastra (2022) identify several archetypes of platform strategies based on the pricing and design of the platform and propose that a platform firm's choice of strategy is a function of environmental factors such as users' preference heterogeneity and information asymmetry regarding offerings' quality. But to gain competitive advantages, entrants may have to differentiate themselves from incumbents. Many platform markets rapidly concentrate leaving only one or two dominant platforms accumulating a large number of users and complementors, thus creating high barriers to entry. To overcome these barriers, Khanagha, Ansari, Paroutis and Oviedo (2022) propose a mutualistic strategy in which a new platform first complements the existing dominant ones, and then gradually gains support from target members while neutralizing resistance from other key actors. This approach could reduce the competitive tension between new and incumbent platforms and help new entrants gain a competitive position in the host market.

Digital platform entrants also face competition from non-platform incumbents. For instance, a ride-hailing platform also competes with the traditional taxi industry in the host country, whereas a digital commerce platform serves the same market as offline brick-and-mortar stores. The entry of a foreign platform can trigger strategic responses by incumbent traditional firms. For example, Chang and Sokol (2022) find that following the entry of Airbnb into Taiwan, high-quality hotels further increase the prices and investment in quality, hence repositioning themselves into a higher end of the market. Entrants thus need to constantly monitor the competitive actions and counteractions of their digital and traditional rivals to make timely adjustments.

Finally, platform companies differ from traditional companies in the governance of their ecosystem, which carries critical implications to their internationalization process. Traditional companies usually feature clear boundaries and hierarchical structures, but the function of a platform requires coordination of multiple semi-autonomous participants whose interests are not all aligned. The platform thus needs to set up rules regarding platform access and control, create incentives to direct participant behavior, design structures and interfaces to facilitate efficient communication, balance competition with complementors on the platform, and manage the ever-increasing interdependencies and risks (Kretschmer et al., 2022). These decisions require critical trade-offs. For example, open platform access can increase network effects, but it may also raise

quality concerns, reduce complementors' incentive to innovate, and eventually lower platform quality (Boudreau, 2010; Zhang, Li, & Tong, 2022). Designing appropriate governance structures is even more challenging in international contexts, because both the number and diversity of participants increase greatly.

Moreover, global platforms are embedded in more complicated relationships due to their connections with both home- and host-country users, partners, and regulators. These dependencies expose them to multiple sources of risk, such as reputational, operational, legal, and digital security risks (Luo, 2022; Nambisan, Zahra, & Luo, 2019). Managing these risks requires a combination of global standards and modular structures allowing for flexibility and cultivating fluid and loosely coupled relationships (Kretschmer et al., 2022; Nambisan & Luo, 2021). In summary, successful internationalization requires platform companies to create and continuously upgrade their ecosystem-specific advantages which enable them to co-create value with external partners and to keep interests aligned (Li et al., 2019).

4.2. Users of international digital platforms

The Internet, and digital platforms in particular, has empowered countless firms to internationalize rapidly. Thus, born digitals have become a common phenomenon in contemporary business (Monaghan et al., 2020). For example, traditional small and medium sized exporters can leverage digital platforms as alternative channels to connect with foreign buyers. In addition, firms selling digital products – such as software (Wentrup, 2016), mobile apps (Chen et al., 2019), and digital platform services (Jean & Kim, 2020) – can distribute their products entirely through digital channels, and thus penetrate international markets and acquire foreign customers rapidly (Chen et al., 2019; Shaheer et al., 2020).

While digital channels create major opportunities, they also create critical challenges for the growth of small and medium-sized firms. First, digital platforms attract many users on both sides, and therefore create far more intensive competition than traditional markets. For example, more than 100,000 different sellers supply the electronics category at Alibaba.com, and they offer seemingly very similar products (Anwar, 2017). As another example, millions of apps have been launched on Android or iOS platforms, yet less than 5% survive after their launch. Thus, Jean and Kim (2020) find that exporters' ability to leverage a platform to internationalize depends on the competitive intensity on the platform.

Second, the effectiveness of digital platforms as channels for internationalization may be affected by institutional differences between home and host countries. Recent studies highlight how firms use digital platforms as signaling mechanisms which help reduce information asymmetry and signal product quality and credibility (Deng et al., 2021; Lanzolla & Frankort, 2016; Lehdonvirta et al., 2019). Institutional environments shape the nature and availability of information and hence the extent of information asymmetry, which in turn, determines the value of platforms as signals. For example, Jean and Kim (2021) find that exporters make more use of services offered on digital platforms to signal their capabilities and credibility when facing high formal institutional distance and hence high information asymmetry between home and host countries. Similarly, signal credibility is more important when differences in uncertainty avoidance are large.

Third, the integration of online and physical channels may shape the effectiveness of firms' use of the Internet as a marketing channel. Traditional exporters may experience virtuality traps when relying too much on digital internationalization and lacking physical presence in foreign markets. For example, Sinkovics, Sinkovics and Jean (2013) show that the use of the Internet as an alternative to a physical market presence does not lead to higher export performance. Moreover, traditional firms adopting digital platforms as part of their foreign distribution channels face potential channel conflicts between direct online exports and their traditional foreign distributors (Houghton & Winklhofer, 2004). Thus, exporters adopting digital platforms experience weaker export performance due to conflicts with established distributors (Jean et al., 2020).

In summary, while digitalization makes initial entry easier for many firms, traditional exporters using online channels such as digital platforms as alternative international marketing channels still face significant challenges due to competition, institutional differences and lack of physical presence. Successful (i.e. profitable) internationalization in most cases requires digital users to understand institutional differences in foreign markets and to develop adaptive strategies and non-digital resources to complement their digital resources.

4.3.Digital transformation of traditional businesses

Digital transformation affects not only digital firms but all firms. The concept of digital transformation has recently gained much attention among strategy scholars (Furr, Ozcan & Eisenhardt, 2022), yet it represents different challenges in different industries and no generally

agreed definition exists. Fitzgerald, Kruschwitz, Bonnet & Welch, (2014: 2) consider digital transformation as “the use of new digital technologies (social media, mobile, analytics or embedded devices) to enable major business improvements such as enhancing customer experience, streamlining operations, or creating new business models.” Furr et al. (2022: 3) use the term more broadly to capture “the adoption of novel strategies and business models that are enabled by a myriad of new information technologies.” Some firms have found digital transformation to be an easy process that improves performance, while many others have found it difficult and fraught with problems (Fitzgerald et al., 2014; Kane, Nanda, Phillips & Copulsky, 2021).

Digital transformation encompasses not only the adoption of digital technologies but more importantly changes in business processes and practices that help firms compete in the digital world (Fitzgerald et al., 2014; Kane et al., 2021). Its implementation requires new sets of capabilities that enable not only organizational change processes, but new processes to employ digital technologies to create and appropriate more value for the firm (Day & Schoemaker, 2016; Fitzgerald et al., 2014; Matarazzo, Penco, Profumo & Quaglia, 2021). Extant research highlights that although technology is an important part of digital transformation it is not the main one (Hanelt, Bohnsack, Marz & Antunes Marante, 2021; Kane, Palmer, Nguyen-Phillips, Kiron & Buckley, 2017). Talent management, corporate culture, strategy, company leadership, and organizational structure all play important roles in the digitization of a company (Kane et al, 2021). Digital transformation requires firms to make changes to their inherited processes, organizational culture, and business models (Fitzgerald et al., 2014; Hanelt et al., 2021; Matarazzo et al., 2021). In this issue Grimpe, Sofka and Kaiser (2023) highlight the important of providing digital knowledge opportunities in retaining subsidiary level digital human resources.

Businesses operating in multiple countries face even greater challenges during digital transformation, for several reasons. First, they need to resolve differences between existing international knowledge and new knowledge created with digital technologies – including information overload (George & Schillebeeckx, 2022; Yu, Flecher & Buck, 2022). Second, they need to coordinate transformation in multiple business units across multiple national contexts, which increases the complexity of the process (George & Schillebeeckx, 2022). The more geographically diversified a firm is the greater are such challenges. In particular, digital transformation can trigger internal political tensions between business units located in different

countries. An effective way to lead such change is to appoint a Chief Digital Officer to provide centralized guidance on implementing digital solutions throughout the organization and can help MNEs deal with contextual differences between countries and disagreements between business units (Firk, Hanelt, Oehmichen & Wolff, 2021).

Successful transformation requires specific digital transformation capabilities (Kane et al., 2017). Day and Schoemaker (2016: 65) report that an organization with “transforming capabilities is one where agile, entrepreneurial mindset is actively cultivated within, with a broad expansive approach to external network-building as well.” They suggest that digital transformation requires renegotiating the external environment and the company’s ecosystem. In this process, digital transformation capabilities provide existing firms with the continuous strategic renewal of processes, procedures, and organizational structures needed to be responsive to the fast-changing digital environment. Yet several authors (Fitzgerald, et al., 2014; Firk et al., 2021; Kane et al., 2017) suggest that most firms fail to develop the managerial and technological capabilities needed to realize the potential of digital technologies.

Building on the dynamic capabilities concept researchers are beginning to identify specific capabilities that firms need to be successful at digital transformation. Dynamic capabilities are innovation based and provide the capacity to create, extend, and modify a firm's resource base (Schilke, Hu & Helfat, 2018). The dynamic capabilities framework has become one of the most active research streams in the strategic management and IB literatures. Yet, the development of dynamic capabilities for digital transformation and value creation in digital contexts has received limited attention (Day & Schoemaker, 2016; Matarazzo et al., 2021). Recent studies link dynamic capabilities and digital transformation and suggest that digital transformation capabilities need to help firms to (1) navigate innovation ecosystems, (2) redesign internal structures, and (3) improve digital maturity (Warner & Wäger, 2019). Specifically, dynamic digital transformation capabilities need to enable four clusters of activities: sensing, learning, integrating, and coordinating (Matarazzo et al., 2021) or nimbleness, scalability, stability, and optionality (Kane et al, 2021).

The main purpose of digital transformation capabilities is to manage a wide range of tensions arising from balancing internal and external collaboration, redesigning flexible and manageable governance structures, and integration externally recruited and internally promoted employees (Hanelt et al., 2021; Matarazzo et al., 2021). However, so far, little empirical

evidence exists to guide organizational develop or successfully employment of digital transformation capabilities (Magistretti et al., 2021; Warner & Wäger, 2019) and to balance conflicts arising from differing institutional contexts and inter-unit interests within the MNE. One exception in this issue is Tatarinov, Ambos and Tschang (2023) who identify the actions of international partners as a key component of international digital transformation efforts.

5. Papers in this Special Issue

The papers in this special issue address a wide variety of phenomena enabled by the digitalization of business (Table 5). Three papers analyze challenges of digital transformation in mature organizations and ecosystems: the impact of Industry 4.0 (Lee et al., 2023), solving wicked problems (Tatarinov et al., 2023) and management of digital human resources (Grimpe et al., 2023). Three papers analyze digital strategy from a platform user perspective, exploring how individuals and teams engage with partners around the world, including e-sport teams (Lin et al., 2023), crowdsourcing (Kumar et al., 2023) and cybersecurity (Madan et al., 2023).

**** Insert Table 3 here ****

Corresponding with the variety of phenomena, studies in this special issue vary in their unit of analysis from individuals, to teams, and to units of the MNE. The theoretical contributions arising from these studies are in defining or refining constructs capturing aspects of IB that can be integrated into theories of IB. Thus, traditional theories are viewed as applicable to the new context, but need suitable interpretation and refinement to explain novel phenomena and relationships. An important opportunity arising in the digital economy is the emergence of datasets at the level of transactions that enable more fine-grained theorizing and testing of the modes of IB.

The three papers on aspects of digital transformation explore different settings. First, Lee, Kim, Choi and Jiménez (2023) analyze the Industry 4.0-orientation of MNEs as a driver of external business relations at the subsidiary level. They find that Industry 4.0-orientation increases the external/total ratio of both sales and purchasing of MNE subsidiaries. This suggests that Industry 4.0 helps firms develop certain digital capabilities that in turn enhance their ability to coordinate value chain relationships without owning the upstream/downstream partner. In other words, these Industry 4.0 related capabilities help reducing market transaction costs. Lee et al. furthermore find that these relationships are amplified by both advertising and R&D intensity at both HQ and subsidiary level, with 6 of their 8 moderators being significant. Their theorizing

offers explanations on what kind of relationships benefit more or less from complementary resources. An interesting methodological innovation is their use of content analysis of companies' annual reports to capture industry 4.0 actions rather than intentions as had been common in earlier research.

Second, Tatarinov, Ambos and Tschang (2023) analyze how organizations related to the United Nations implement digital solutions to address wicked problems in their ecosystems, such as supporting refugees or empowering impoverished communities. These organizations face challenges implementing and scaling novel digital solutions not only internally but throughout their ecosystems of external partners in developing economies. Tatarinov and collaborators conduct four in-depth qualitative, longitudinal case studies of such digital innovation projects. These projects employ technologies such as shared platforms, artificial intelligence, blockchains, and geospatial mapping. Theoretically focusing on the evolution of the ecosystems, the authors highlight distinct roles and configurations of different partners in the processes of scaling digital solutions, and identify properties of digital solutions, such as modularity, generativity and affordances that help overcome traditional replication-adaptation dilemmas in scaling. They infer that properties of both the digital solution and of ecosystem are key to explaining processes of implementing digital solutions. Moreover, their typology of four different types of international scaling highlights variations in ecosystem versatility and local adaptations of the digital solution.

Third, Grimpe, Sofka and Kaiser (2023) analyze the challenges MNE subsidiaries face in managing their digital human capital, that is employees with specialized skills related to digital technologies. They focus on the retention of individuals embodying digital competences and argue that they are motivated not only by financial incentives but by learning opportunities offered to individuals within the subsidiaries. Integrating the concept of subsidiary-specific advantages into theoretical arguments of voluntary employee mobility, Grimpe and collaborators argue that the opportunities for acquiring new skills in subsidiaries with advanced digital expertise will reduce the odds of employees leaving the organization. They test their theoretical predictions for employees in MNC subsidiaries in Denmark. They find enhanced retention effects in subsidiaries with an internationally diverse workforce or possessing patented technologies, factors that enhance learning opportunities. On the other hand, the effect is reduced in locations where other employers offer alternative career development opportunities.

Three papers analyze individuals and teams interacting with the digital economy. Again, the variety of phenomena leads to a variety of theoretical approaches and study designs, including analyses of interesting novel datasets. First, Lin, Xu and Xie (2023) analyze the role of cultural diversity in a new form of virtual team, namely multi-locational teams of e-sports players competing in global competitions. Specifically, they analyze games played by professional teams in the League of Legends. They argue that e-sports communities create cognitive common ground, which enables the teams to overcome the frictions that traditionally inhibit the effectiveness of multicultural teams. They find empirical support for their argument as diversity in the cultural backgrounds of team members is associated with better team strategies. This effect is enhanced by contextual pressures such as time constraints, social visibility and outcome pressures, all of which increase the benefits by activating digital-based shared identities unrelated to national cultural differences.

Second, Kumar, Deodhar and Zaheer (2022) analyze how a key concept of IB, the liability of foreignness, applies in purely digital transactions. They study crowdsourcing of creative work, a context where conventional sources of liability of foreignness such as regulatory barriers and a need for local knowledge do not apply because digitalization can mitigate traditional transaction-based frictions. However, other barriers to sourcing across borders arise from the cognitive nature of creative work. Specifically, Kumar and collaborators argue that the cognitive home-country biases of providers of creative work conflict with solution-seekers' cognitive home biases. These biases manifest as liability of foreignness, reducing the likelihood of foreign providers' work being selected as winners. Furthermore, they argue that foreign providers gain international experience in prior online contests, and observe host peers in a live contest, which reduces the effect of liability of foreignness due to the conceptual expansion of providers' creative consideration sets. Similarly, the seeker's cognitive openness associated with technologies or with a physical international presence reduces the negative effect on providers' success. Their empirical analysis utilizes a novel type of dataset of paired transaction level observations from an online platform with solution-seeker firms in 102 countries and work providers in 124 countries.

Finally, Madan, Savani and Katsikeas (2023) use an experimental study to examine how aspects of culture influence individuals' attitudes to cybersecurity. They argue that individuals vary in their responses to data breaches they experienced based on their individual characteristics

and national value systems, specifically, power distance and uncertainty avoidance. They test their ideas in multiple studies using archival and experimental data. They find that in countries with high power distance, users are more willing to continue using an internet service after a data breach, which they attribute to an association between power distance and the belief that the business, rather than they themselves, owns the data. Further experiments show that users with high power distance beliefs are more likely to continue using a service despite data breaches. In addition, prompting study participants to believe that they (not the business) own the shared data attenuates this effect, while high uncertainty avoidance mitigates the effect.

6. Directions for Future Research

Our review of the field in conjunction with the six papers in this special issue suggests a new research agenda for IB scholars (Table 4). We first review challenges arising from the impact of digital technologies on traditional research questions of IB scholarship. We suggest that each of these challenges raises higher level questions regarding a) managing international processes, b) balancing tensions between global integration and local responsiveness, and c) potential dark sides of digitalization. Then we turn to the continued impact of national contexts on global business in the digital world.

**** Table 4 about here ****

6.1. Digital platform operators

Firms operating digital platforms face significant challenges building complementary ecosystems when they take their business into new geographies because of the sheer number of actors involved. Their internationalization thus raises many research questions. First, they go through major learning processes enhancing their ability to coordinate the activities of and their relationships with external partners (Helfat & Campo-Rembado, 2016). A distinct characteristic of platforms is that the malleability of digital innovation allows for platform designs, governance rules and ecosystem scope to be altered after the platform has been launched (Helfat & Raubitschek, 2018; O'Mahony & Karp, 2022). This renders experimental learning very valuable. Platform owners can identify the best approach to improving complementarities within the

platform as they go along. Such learning is often initiated in selected markets where a platform owner can continuously run randomized controlled experiments to explore the outcomes of proposed changes (Eisenhardt & Bingham, 2017). This corresponds to some extent to asset-augmenting investment and the reverse knowledge transfer in traditional MNEs. However, so far, we know relatively little about international learning processes of digital platforms; future research thus ought to examine the new patterns of learning by and within digital platforms and their implications for platform owners' integrative capabilities.

Second, digital platform operators, like traditional MNEs, face choices between global integration and local responsiveness (Bartlett & Ghoshal, 1989). For instance, on a social network, user interaction and the content provided and consumed may transcend national boundaries. Such firms may seek to build an integrated global ecosystem that maximizes network effects and draws users from many countries. Yet, advertising revenues – the most important revenue stream for platforms such as Facebook or Google Search – are inherently local to the users' location. Moreover, due to the variations in formal and informal institutions, digital platforms characterized by fragmented local markets may have to configure their governance structures and ecosystem design for local market conditions (e.g., local drivers in the case of Uber; and local logistics and payments in the case of JD.com).

Third, while scholars have explored the opportunities of platform globalization, their potential dark side has received far less attention. Dominant platforms potentially create negative social externalities through, for example, market dominance or spread of false news. Yet, so far, we observe a lack of conversation between two prominent areas of IB research, digitalization and corporate social responsibility (Yi, Li, & Chen, 2023). The *social impact* of platforms depends on the specific governance rules and technical designs that global platforms deploy in establishing and enforcing ecosystem-wide social norms (Asmussen & Fosfuri, 2019). Platforms, and social networks in particular, facilitate not only the dissemination of information, but also of ideologies and values. In an optimistic scenario, they may help the diffusion of digital sustainability practices (George, Merrill, & Schillebeeckx, 2021). Yet, in a less optimistic scenario, they may disseminate extremist ideologies and accelerate a race to the bottom of standards.

The social impact at national level moreover depends on how ecosystem governance interacts with national institutions. Global platforms usually aim for globally integrated standards, yet may face idiosyncratic expectations from host-country platform participants. Social

responsibility scholars pay much attention to the balance between integration and responsiveness in MNEs (Durand & Jacqueminet, 2015). How global platforms orchestrate social practices and externalities within networks of highly diverse stakeholders remains to be investigated. Moreover, a key question to be explored is how host country institutional environments influence the social impact of platforms.

6.2. Users of international digital platforms

For firms and individuals using digital channels to reach international customers and suppliers, several research directions arise. First, while digital technologies offer alternative marketing tools, many firms still rely on traditional international marketing channel and communication tools such as trade shows or foreign distributors. The question thus arises how and why costs and benefits vary between traditional and virtual marketing channels with respect to foreign customer acquisition and international performance. For example, how do exporters manage channel conflicts with existing foreign distributors when using digital marketing channels in the same country (Houghton & Winklhofer, 2004). Moreover, how do firms' use of alternative channels contribute to export performance under different formal and informal institutional environments? How do alternative digital technologies such as digital platforms or owned websites impact key performance outcomes such as foreign customer acquisition and export performance (Jean & Kim, 2020; Jean et al., 2021)?

Second, while digital platforms as international marketing channels enable firms instantaneously to enter multiple foreign markets, they face the challenge of creating integrated marketing strategies that balance standardization and adaptation in both traditional and virtual arms of their businesses. To date, most research on the standardization versus adaptation question (Katsikeas, Leonidou, & Morgan, 2000; Sousa, Martinez-Lopez, & Coelho, 2008) considers companies operating in the physical marketplace. Future research can analyze how companies can successfully balance adaptation and standardization when adopting digital platforms as alternative international marketing channels.

Third, future research should also explore the dark side of using digital channels for international marketing. Many firms have withdrawn from digital platforms after unsatisfactory performance outcomes due to fierce price competition and increasing platform costs. Thus, future work may explore drivers and contingencies of firms' discontinuation of digital channels in

international marketing. Moreover, we encourage future research to extend and contextualize *ecosystem level impact* in the asymmetric relationship between focal MNEs and their startup partners, who benefit from growth opportunities but may experience one-sided dependencies in the longer run (Buckley & Prashantham, 2016).

6.3. Digital Transformation

Many mature MNEs face the challenge to transform their brick and mortar operations to the digital world. So far, only a few studies analyze how firms can best implement digital transformation, which technologies are most useful, what capabilities enable the process, and how to manage the process (e.g. Firk et al., 2021; Fitzgerald et al., 2014). Hence, the first research challenge is to better explain change processes associated with digital technologies.

One advantage traditional MNEs have over new entrants is their existing networks of international buyers, suppliers and partners which they can draw on for knowledge, resources and innovation. By transforming these networks through the application of digital technologies traditional MNEs may create further advantages. Research analyzing the digital transformation of MNE networks may help explain how to best take advantage of existing network relationships, how to expand them to other foreign markets, and how to leverage these networks to increase the firm's competitive advantage.

Future research on how traditional domestic firms can use specific digital technologies to increase their ability to compete in international markets would be of interest not just to firm managers but also to policymakers. Specifically, such research should explore how digital technologies can be used to transform existing domestic operations to broaden their appeal for international customers.

Second, digital technologies enable new forms of coordination between geographically dispersed business units and teams. Thus, MNEs are reassessing the traditional tensions between global integration and local responsiveness (Nambisan & Luo, 2022). On the one hand, digital technologies provide decision makers at headquarters with far more detailed data on their global operations, thus enabling higher degrees of central decision making and control. Doing so, however, might undermine entrepreneurial initiatives at lower levels of the firm, such as foreign subsidiaries and their sub-entities. On the other hand, making global data available to innovative managers throughout the organization may trigger rich innovation. Moreover, virtual teams

enable smooth cooperation between individuals associated with different units of the MNE. Thus, for example, Birkinshaw (2022) questions whether traditional concepts of headquarter-subsidary relationships are still applicable in the digital age. How MNEs manage the renewed tensions between global and local decision-making thus raises many important research questions.

Relatedly, digitalization is likely to lead to changes in the geographic footprint of the MNE. For example, Industry 4.0 technologies enables more geographic fine-slicing of value chains, and hence greater spread of productive activity (Strange & Zucchella, 2017). At the same time, these technologies enable more effective fully automated factories, which could lead to more ‘backshoring’ as production activity is moved from Asia to Europe (e.g. Dachs et al., 2019). Moreover, additive manufacturing in combination with digitally-transferable designs enable production of smaller batches close to customers, and hence possibly reducing shipments of physical products around the world and enabling enter into smaller markets. Overall, the implications of introducing these and other digitally enabled business models for the organizational structures and geographic footprint of MNEs are not yet well understood.

Third, future research ought to examine the potential risks associated with digitalization in the MNE (e.g., Jean et al., 2020; Verbeke & Hutzschenreuter, 2021). Several papers in this special issue touch on potential roadblocks to making digital technologies work within global operations. In this issue, Madan, Savani and Katsikeas (2023) analyze how differences in culture influence reactions to data breaches. Similarly, language differences might impede the use of certain digital technologies or result in misinformation or mis-communications, thus reducing the benefit of such technologies for a mature firm. Another risk is that suppliers of digital technologies gain bargaining power vis-à-vis traditional firms, thus undermining their profitability. Risk management thus has to be a core element of digital transformation, and future research out to help explain how firms can best manage these risks.

6.4 The international environment of the digital economy

Many early commentators on the Internet predicted a diminishing role for nation states. Yet recent evidence suggests that this is – with notable exceptions such as e-sports – not the case. Recent geopolitical tensions accelerate the reassertion of national sovereignty, though they may not be the primary cause (Luo, 2021; Meyer & Li, 2022). However, it is not well understood how and why national contexts create barriers or opportunities to the global digital economy. Thus,

research challenges arise regarding the types of barriers that inhibit the internationalization of digital businesses and the opportunities that differences between countries provide. Table 5 formulates questions arising from the different aspects of the national business environment for the three types of firms discussed above.

**** Insert Table 5 here ****

First, with respect to formal institutions, fine-grained understanding of specific rules and regulations is important for the success of IB by digital firms. Yet, most IB studies tend to analyze formal institutions at high levels of aggregation rather than the specific rules that apply in a specific industry. Thus, to enhance our understanding of the success factors of digital business along any of the types discussed above, a clear understanding of the specific relevant regulatory environment, and the interactions between digital businesses and the regulators, is key.

Second, we lack understanding of how and why informal institutions impact the introduction of digital technologies in both traditional and new digital businesses. Values and norms influence consumer behavior, and thereby impact the ways firms use digital channels in interacting with consumers in different countries. However, to our knowledge, little research has analyzed the impact of informal institutions on organizational processes underlying digital transformation or the growth of platform businesses.

Third, national endowments with digital resources and supporting infrastructure, especially telecommunications, are important for the development of digital IB. Above, we anticipated likely changes in the organizational structures and geographic footprint of MNEs. The presence and accessibility of complementary and reliable digital infrastructure is likely important. Yet, we know relatively little on the how and why.

7. Conclusions

Digitalization changes many strategic and operational aspects of IB at the ecosystem, firm, team and individual level. This introduction could only touch on some of the many issues arising. We found that theories of IB can explain major aspects of digital strategies, but scholars face challenges in interpreting and operationalizing key theoretical concepts in the digital economy. Often high-level abstract concepts apply. Yet, to enhance our understanding of actual business challenges, operationalization is key, and these operationalizations may have to be different than for traditional businesses, as we discussed notably for the formal institutions (Table 1).

Moreover, when it comes to explaining new business models and their impact on firms, competition, and society more generally different types of research questions and new theories may be called for.

Beyond businesses in a narrower sense, many of the challenges discussed in this paper also apply to not-for-profit organizations such as non-governmental organizations and multilateral organizations, as illustrated by Tatarinov and collaborators (2023). Digital technologies provide opportunities for societies to address – in collaboration with businesses – the grand challenges global society faces, such as poverty, pandemics and climate change. Thus, as a final note, we encourage IB scholars to relate their understanding of IB and digital technologies to develop new approaches to solving societal challenges.

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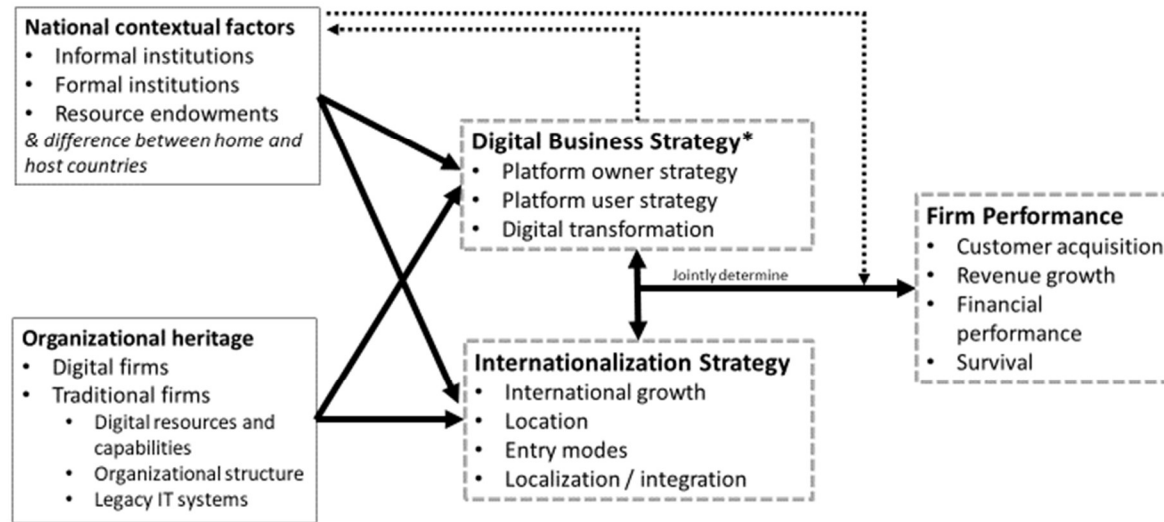
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Figure 1: Digitalization of International Business



* Not all strategies are applicable to all firms

Table 1: Examples of Innovation enabled by Digitalization

	Innovation	Applications in IB
Technological innovations	<ul style="list-style-type: none"> • Audio/video streaming (e.g. Spotify, Netflix) 	<ul style="list-style-type: none"> • Delivery of songs, movies, or music internationally
	<ul style="list-style-type: none"> • Industry 4.0 and Internet of Things (IoT) 	<ul style="list-style-type: none"> • Enhanced efficiency of coordination of activities within global value chains
	<ul style="list-style-type: none"> • Video conferencing software (e.g. Zoom, Teams, Tencent Meeting) 	<ul style="list-style-type: none"> • Multi-locational meetings with employees or customers
	<ul style="list-style-type: none"> • Artificial intelligence (e.g. IBM Watson, Amazon Web Services) 	<ul style="list-style-type: none"> • Analysis of (potential) customers in foreign countries. Better matching of product mix in different countries.
	<ul style="list-style-type: none"> • Additive manufacturing (3D printing) (3D Systems, Stratasys) 	<ul style="list-style-type: none"> • Localization of manufacturing of single products in multiple countries.
	<ul style="list-style-type: none"> • Augmented reality (Apple, Alphabet) 	<ul style="list-style-type: none"> • Maintenance services to remote locations
Social innovations	<ul style="list-style-type: none"> • Social networking (e.g. Facebook, LinkedIn, WeChat) 	<ul style="list-style-type: none"> • Instant communications over long distances. Improved customer feedback and input to new innovations.
	<ul style="list-style-type: none"> • Crowdfunding (e.g. Kickstarter, Indiegogo) 	<ul style="list-style-type: none"> • Accessing funding from dispersed micro-investors
	<ul style="list-style-type: none"> • Online gaming (Tencent, Activision Blizzard) 	<ul style="list-style-type: none"> • Games based on an interface located in another country
	<ul style="list-style-type: none"> • e-sports (TSM, FaZe Clan) 	<ul style="list-style-type: none"> • Competition of international teams with other international teams

Table 2: National law and regulation impacting digital businesses

Sphere of formal institutions	Concerns	Examples
Employment	<i>When is a contractor an employee? What are the minimum standards (work hours, pay etc) for employees?</i>	<ul style="list-style-type: none"> • Employment status of delivery drivers for online shopping sites (Amazon, T-Mall), car sharing (Uber, Lyft) and food delivery platforms (DoorDash, Deliveroo).
Consumer protection	<i>What is the liability of the platform operator for faulty products delivered via the platform, or for outright fraud by platform users?</i>	<ul style="list-style-type: none"> • Fake brands sold via Alibaba Express or Amazon • Sexual harassment by Uber or Lyft drivers • Rules aimed at preventing addiction to gambling
Taxation	<i>Where is corporate tax due for services delivered across borders? Do platforms have to ensure platform users pay taxes they are liable for?</i>	<ul style="list-style-type: none"> • Amazon warehouses serving multiple countries • License fees paid to Regional HQ in low tax location
Privacy	<i>What rights do individuals have on their personal data? What are companies allowed to do with data collected from consumers?</i>	<ul style="list-style-type: none"> • Facebook collecting user data and using them for third party targeted advertising (incl. political)
National security	<i>What spheres of the economy does the government consider national security?</i>	<ul style="list-style-type: none"> • Tiktok access to data of US-based users • Geographic data in China – BMW navi system must licence from local partner
Censorship	<i>What is illegal to say in public? What is illegal to promote?</i>	<ul style="list-style-type: none"> • Historical facts and political opinions (Facebook, Google and others in China) • Advertisement for harmful substances or activities (alcohol, gambling, pornography, guns)
Competition policy	<i>What criteria apply to M&A of digital firms? What practices of dominant platforms represent abuse of market power?</i>	<ul style="list-style-type: none"> • Approval of acquisition of start-ups by big-5 digital firms • Google search prioritizing services of associated firms
Intellectual property rights	<i>How can we globally utilize IP rights that are defined nationally and owned by different rights holders?</i>	<ul style="list-style-type: none"> • Spotify and Netflix streaming music or videos need to negotiate with rights holders in each country

Table 3: Papers in this special issue

Authors	Digital economy phenomenon	Focal theoretical constructs	Unit of analysis	Data	International context
Lee, Kim, Choi & Jiménez.	Industry 4.0 (Internet of things)	Industry 4.0 orientation	subsidiary of the MNE	archival, firm level	Korean MNEs
Tatarinov, Ambos & Tschang	digital solutions (blockchain; geospatial data engagement platform; AI platform)	scaling, ecosystem, wicked problems	innovation project	qualitative data of four innovation projects	UN-related organizations operating in multiple developing countries
Grimpe, Sofka & Kaiser	digital human capital	digital human capital; employee leaving a firm	individual employee	employer-employee register data (national database)	Denmark
Lin, Xu & Xie	e-sports	cultural diversity, shared identity in cyberspace	virtual team	online team game outcomes	global
Kumar, Deodhar & Zaheer	crowdsourcing	liability of foreignness	solution seekers on a digital platform	transaction level data from a major platform	global
Madan, Savani & Katsikeas	attitudes to data breaches	power distance, uncertainty avoidance	individual user of digital services	experimental	national stereotype scenarios given to subjects in experiments

Table 4: Exemplar research questions for different types of firms

	International digital platform operators	Users of international digital platforms	Digital transformation of traditional MNEs
Processes of internationalizing digital business	<i>How do new patterns of learning more applicable to digital platforms influence platform owners' integrative capabilities and internationalization processes?</i>	<i>How do differences in costs and benefits between traditional and new type of virtual marketing channels influence foreign customer acquisition and international sales growth?</i>	<i>How can MNEs best take advantage of existing network relationships, expand them to other foreign markets, leverage them to increase the firm's competitive advantage?</i>
Balancing global integration vs local adaptation pressures?	<i>How does the geographic scope of externalities influence platform owners' choices with regard to pursuing global integration or local responsiveness?</i>	<i>Future research can focus on how companies can successfully balance the adaptation and standardization when adopting digital platforms as alternative international marketing channels.</i>	<i>Where do MNEs start, develop a plan of action, manage transformation (both internally and externally), and bring employees, customers, and other stakeholders along the journey?</i>
The potential dark side of digital IB?	<i>How do specific governance rules and technical designs that global platforms deploy influence ecosystem-wide social norms?</i>	<i>How do firms internationalizing via digital platforms manage risks such as fierce price competition, increasing platforms costs and channel conflicts with existing foreign distributors?</i>	<i>How can mature MNEs protect themselves against risks in the digital economy, such as cybersecurity?</i>

Table 5: Exemplar research questions on digitalization and the international business environment

	Digital transformation of traditional MNEs	International Digital platform operators	International Marketing by platform users
Formal institutions	<i>What changes in traditional national regulatory institutions facilitate or hinder digital transformation?</i>	<i>What formal institutions – and how – facilitate or hinder development of globally integrated digital platforms?</i>	<i>What formal institutions – and how – facilitate or hinder foreign market entry using digital channels?</i>
Informal institutions	<i>How do informal institutions facilitate or hinder digital transformation?</i>	<i>What informal institutions – and how – facilitate or hinder development of globally integrated digital platforms?</i>	<i>What informal institutions – and how – facilitate or hinder foreign market entry using digital channels?</i>
National resource endowments	<i>Which aspects of national resource endowment are most critical to facilitate digital transformation? Which endowments create barriers?</i>	<i>Which aspects of national resource endowments are most critical to facilitate the effectiveness of globally integrated digital platforms?</i>	<i>Which aspects of national resource endowments are most critical to facilitate foreign market entry using digital channels?</i>