



A Look into the Future: The Impact of Metaverse on Traditional Theories and Thinking in International Business

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Received: 5 May 2023 / Revised: 28 June 2024 / Accepted: 2 July 2024 / Published online: 16 July 2024
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Abstract

Recent advances in technology (e.g., the Internet of Things, Augmented Reality, Virtual Reality, Cloud Services, Artificial Intelligence, and Blockchain), the shift towards digital products, and the increased use of digitalisation by firms have enhanced consumers' experience and transformed how companies operate, create products/services, and offer value to multiple stakeholders on a global scale. These technological innovations have led to the phenomenon known as the Metaverse. The Metaverse does not refer to any one type of technology but is a broad (and often speculative) shift in how we interact with different technologies in the same space. In the context of International Business (IB), the recent emergence of Metaverse appears to make geographical, sectoral, and operational barriers less relevant, raising complex questions about how current IB theories can explain the world-spanning, sectorally fluid, and centrifugal behaviour of firms in the era of digital globalisation. In this paper, we obtain a critical understanding of the important opportunities and challenges that the Metaverse and the fluidity of digital technologies bring to the IB field. Specifically, we discuss how traditional theories can be effectively utilised to explain firms' internationalisation, and adapted to reflect the new technological era. We propose a framework for new approaches to IB research to help advance research on Metaverse and IB, which can provide important opportunities for future work in this field.

Keywords Metaverse · Digitalisation · Emerging technologies · Digital globalisation · IB theory · Internationalisation

1 Introduction

The traditional business environment has undergone significant changes at national and global levels over the past two decades. The accelerated development of the internet infrastructure and the World Wide Web system of networks has transformed existing business models and facilitated the creation of new ones, thus presenting firms with significant opportunities for resetting, scaling up, and internationalising their business models. In particular, there has been a move away from an industrial-based economy to one based on information. This transformation has variously been described as the Information and Communications Technologies (ICT) revolution, the Fourth Industrial Revolution (Industrial Internet of Things and advanced manufacturing), and Web 3.0 (the web of knowledge connections, often referred to as the Semantic Web), Web 4.0 (the Mobile Web), and Web 5.0 (the Symbiotic Web). These all continue to change how businesses operate, make, and distribute their offerings, affecting how they create value, expand to new markets, and interact with multiple stakeholders (Bourlakis et al., 2009; Lazarova et al., 2023).

The digitalisation and e-commerce era has seen a reduction in transportation and communication costs and the facilitation of market information flows; these have affected bilateral and multilateral trade and investment, and also our understanding of the internationalisation of firms (cf. Parente et al., 2018; Zeng et al., 2021). A central tenet of this rapid change is the power of the algorithmic function. This combines with cyber-physical modes of intervention and data usage to transform the creation and enhancement of products and services in global marketplaces. In the transformed digital market environment, firms of every size are under extreme pressure to innovate or exploit recent technological advances in order to survive, remain agile, amend, and scale up their business models. This pressure has been further exacerbated by the COVID-19 pandemic, which required firms to rejuvenate their business models by adopting digitalisation to remain competitive (e.g., Amankwah-Amoah et al., 2021; Khan et al., 2023; Saridakis et al., 2022; Saridakis, 2023). This technology trend will remain in the post-COVID-19 period. As artificial intelligence (AI), quantum, cloud and edge computing, data analytics, mobile, blockchain, and reasoning technologies all push towards the creation of a Symbiotic Web (Web 5.0), firms are likely to be left with no alternative but to join the new technological trajectories and develop the dynamic capabilities and organisational agility necessary for operating effectively in the current business environment.

It is arguable that the recent change of Facebook's company name to 'Meta' and Microsoft's release of Mesh for Teams are signals of a new era of augmented reality (AR), which is already being operationalised by a number of high-profile firms (e.g., BMW, Coca-Cola, Dolce & Gabbana, Estée Lauder) and which is epitomised in the 'Metaverse'¹. This is a term we first encounter in the novel *Snow Crash* by Neal Stephenson (1992) but which now describes a 'three-dimensional space representation based on virtual and augmented reality' (Kraus et al., 2022, p. 53). The Metaverse is an extension of the rapid change process affecting how businesses operate and

¹ It comes from the prefix 'meta', which means 'beyond' in Greek, and 'universe', which can be used as a representation of a space (derived from the Latin word *universum*).

interact with their customers. This change process spreads across various operational dimensions, incorporating what products and services will be offered and how they will be made, marketed, and distributed in a global virtual space (Sweet & Daugherty, 2022). Defined as a mixed reality in which augmented and virtual realities are amalgamated (Dwivedi et al., 2022), Metaverse technology allows people to communicate and interact with each other in real time through 'digital avatars' (Miao et al., 2022). Purdy (2022) argues that the Metaverse is restructuring the current business environment in significant ways, such as in the acquisition of training and skills through artificial intelligence and gamification, and the geography of sourcing ideas, data, goods, and services. Many firms are now viewing the Metaverse as an innovative collaborative workplace for global work (Wakefield, 2023).

Although research in international business (IB) has acknowledged the recent advances in technology and their consequential effects on the internationalisation strategy of firms, their discussions have focused on two separate spaces: one that is physical (or offline) and one that is online (Bourlakis et al., 2009; Brouthers et al., 2016; Banalieva & Dhanaraj, 2019). In the Metaverse environment, these two separate spaces are being considered as one, as the boundaries 'between physical and digital space are somewhat blurred from the current perceptions' (Dwivedi et al., 2022, p. 2). These digital developments are generating new experiences for individuals and altering how businesses, consumers and society are likely to operate, function, and interact with each other, 'evoking more fundamental change even in firms' business models' (Haefner et al., 2023, p. 2; Mishra et al., 2020). Banalieva and Dhanaraj (2019, p. 1373) suggest that previous IB research that examines the effect of the internet on firms' internationalisation has focused on service firms such as Airbnb and Facebook, which 'are light on physical assets'. The new business reality imposed by the Metaverse and emerging technologies incorporates cyber-physical dimensions or integrated human-digital interfaces, challenging the traditional theories and models used in the IB and management field².

The aim of this perspective paper is to examine what are the characteristics of these new emerging technologies that will disrupt or even destruct (in a Schumpeterian manner) the traditional management, and the processes and outcomes of entrepreneurship and innovation (Nambisan et al., 2019; von Briel et al., 2018) inherent to international business activities. In particular, we need to understand whether the Metaverse will create disturbance in the traditional types of competitive advantage of local firms against global rivals, and how foreign and local firms can use the technologies alongside traditional international business and marketing practices to be more influential in their global operations. This implies that 'new avenues for IB research and theorization' (Ghauri et al., 2021, p. 6) are needed. As Luo (2021, p.1) argues, 'digital globalization requires an important paradigmatic shift regarding some fundamental issues in international business'.

²The concerns and challenges arising from new technologies that go beyond the business context have been debated across various disciplines, such as philosophy, sociology, and political science, for some time. Numerous insightful books have been written on the subject, although a detailed discussion of them is beyond the scope of this paper. Some of these key books include Aldous Huxley's 'Brave New World' (1932), George Orwell's '1984' (1949), Robert Nozick's 'Anarchy, State, and Utopia' (1974), and, more recently, Nick Bostrom's 'Superintelligence: Paths, Dangers, Strategies' (2014).

A recent review by Ahi et al. (2022), for example, suggests two important implications for IB research that considers the effects of digital technologies. First, the IB field is dominated by studies that investigate the ‘role of the internet in firm internationalization’ (Ahi et al., 2022, p. 6), without necessarily considering the implications of that role in a globalised world. Second, most of the research in this area focuses on examining the effect of these technologies on firms’ behaviour in the international market in general, rather than examining in detail how an individual technology (Banalieva & Dhanaraj, 2019) or a cluster of related technologies affect international business, organisation structures, and business processes including innovation and sustainable outcomes. In this paper, we explore the evolution of international business theories in relation to how recent technological advancements, specifically the Metaverse, influence the internationalisation of firms. We also examine the extent to which the existing theoretical models of internationalisation can account for the Metaverse phenomenon, and where they may need to be revised.

The rest of the paper is organised as follows. In the next section, we review existing theories in the IB field that aim to explain firms’ internationalisation behaviour in the Metaverse environment of emergent technologies. To this end, we discuss how the development of ICT has changed how firms expand their businesses abroad, and how this is captured in the IB theoretical literature. Next, we discuss new trends in technology and how firms utilise technological opportunities in their operations and internationalisation processes. Finally, we provide a critical perspective on whether traditional IB theories are still applicable and adequate for explaining firms’ internationalisation behaviour. We conclude by providing a framework for potential avenues for future research.

2 The Metaverse Environment and its Implication for International Business

2.1 Metaverse and Emergent Metaverse Realities

Enabled by a range of digital technologies, the Metaverse has the potential to transform the economy and create new opportunities for entrepreneurship and innovation for firms of all sizes, enabling them to challenge established market shares and improve their internationalisation prospects. For example, the Metaverse can enable enterprises to innovate in the design and delivery of products and services by transcending the resource constraints that physical products entail. It can also address environmental challenges, facilitate knowledge creation and information sharing across societies, create new and faster pathways for wealth generation, and envision a more advanced business world that is inclusive and accessible for all. Specifically, the emergence of the Metaverse economy is enabling the creation of new enterprises that can bridge the gap between virtual reality and the real world (see, for example, Google Tilt Brush, Google Earth VR, HoloLens), where digital currencies and non-fungible tokens (NFTs) add functionality. The other major disruptive feature of the Metaverse is its ability to enhance the prospects afforded by digital technologies by letting both the user and producer move between their personal and work environ-

ments, blurring the way in which goods and services are made and consumed for different purposes. This is sometimes in a 'free innovation' environment, in which innovations are exploited and distributed by consumers as a 'free good', leading to enhanced social welfare (von Hippel, 2017). The major disruptive changes brought by the Metaverse are shaping the international business management practices of multinational enterprises (MNEs). For example, it is the virtual operating space of the Metaverse that enables it to close the boundaries between MNEs, their global value chain (GVC) partners, and their stakeholders, which allows for better stakeholder engagement and a recombination of resources on a global scale (see also interesting discussions in Stephens et al., 2024).

While scholars are becoming interested in understanding the efficacy of the Metaverse in human resource and marketing management (Dwivedi et al., 2022; Purdy, 2022), a review of the extant literature indicates that they have paid scant attention to its role and implications for IB. This novel technology is giving new firms the opportunity to enter the marketplace, with new jobs and roles emerging in a hybrid or fully virtual space (Purdy, 2022); this raises ethical, legal, privacy, and security concerns that ought not to be ignored as the market develops (Dwivedi et al., 2022). In short, we can argue that these developments point to a possible holistic shift in how business is conducted in both real and virtual spaces, and that different opportunities for innovation, including technological and organisational forms, might permeate the realities of business operations today and in the near future.

It is estimated that the global Metaverse market will grow to 280 billion dollars by 2025, by which time the global market for Metaverse-related virtual reality will have reached a value of 338 billion dollars (Jeon, 2021). Hence, firms have started to speculate on how the Metaverse might affect their future performance and are looking for ways to adjust their existing business models and operations (Dwivedi et al., 2022). In particular, large MNEs are throwing their significant resources and capabilities into the Metaverse arena in order to gain the competitive advantages of being a first mover in a promising and profitable new technological era.

Recent examples of how various MNEs have made innovative and creative use of the Metaverse include Disney's patenting partnership with Metaverse to offer a virtual reality theme park; Nikeland (Nike's metaverse sports space), which has been visited by nearly 7 million people; Warner Bros have hosted a party in Roblox; Gucci has sold a digital version of its Dionysus Bag on Roblox marketplace for more than the price of the real version (Charlton, & April, 2022); Samsung is hosting events in virtual customer engagement settings; Adidas has partnered with Bored Apes Yacht Club, an online community based on non-fungible tokens (Goldberg & Schär, 2023); Siemens has started offering VR product designs; MondoDx, a Brazilian company, has created the first XR platform for online shopping, where customers can visit the virtual reality store, try on products, and speak to shop assistants (Christensen & Robinson, 2022); and IMVU, an avatar-based social network platform that enables its users to create and sell virtual products, is generating revenues of more than 7 million dollars per month (Purdy, 2022).

2.2 Linking Metaverse to International Business

It is evident that the Metaverse has started moulding the way large and small enterprises operate by offering novel business opportunities, such as personalised experience-based interactions for customers' engagement in a virtual space. Furthermore, it is providing the opportunity for employees to conduct meetings without being present at a physical location. For example, JP Morgan has created a virtual office environment using Metaverse (Goldberg & Schär, 2023). Such Metaverse initiatives are allowing consumers to use virtual reality tools to replicate the feelings of being in a physical space. This could have implications for the training and development of employees of global companies which operate across different markets, in that knowledge can be transferred across borders using a single interface in which the stakeholders connect in virtual space. It has been suggested that Metaverse will affect the global trade environment in that consumers will be able to access a globally unified market using their avatar (Forbes, 2021). Metaverse may also impact global trading through the automation of supply chains, access to global markets, data integration across global platforms, the customisation of products, and connecting global stakeholders (Forbes, 2021).

Traditionally IB research has focused primarily on the flow of tangible products, services, transactions, and operations of large and small firms across physical and national borders (e.g., Brouthers et al., 2016; Brouthers et al., 2022; Nambisan et al., 2019). Influenced by economic theories, the IB arena has absorbed notions of competition for such goods and services by firms in what Teece (2023) refers to as 'relevant markets'. However, the move from physical products to digital ones, and the application of AR to enhance consumers' experience naturally opens up questions about how MNEs can create and offer value to consumers. This, in turn, has 'considerable implication for IB and for the continued relevance of IB theories' (Nambisan et al., 2019, p. 1465). In today's digitally-enhanced world of IB, we are witnessing an 'ecosystem to ecosystem' competition (Teece, 2023) suggesting complex interactions with multiple partners and complementors in a platform-based ecosystem where everyone can easily become a competitor.

Recently it has been argued that the digital transformation of firms is affecting the way in which their internationalisation process unfolds in terms of entry mode strategies, the pace of internationalisation, the location of internationalisation, and the access to local resources and competencies (e.g., Coviello et al., 2017; Feliciano-Cestero et al., 2023; Stephens et al., 2024; Vadana et al., 2021). The transformation is likely to affect firms' business models as 'it will re-conceive the interaction among consumers, businesses, and suppliers' (Feliciano-Cestero et al., 2023, p. 2). Consequently, it can be argued that the erosion of traditional market boundaries and the associated market competition analytics renders obsolete the focus on 'relevant markets' (Teece, 2023). IB tends to depend on the early theorising about the entry barriers to international markets and industry, discounting the effects of 'isolating mechanisms' derived from advanced capabilities, higher tolerance levels of causal ambiguity, or switching costs and patenting (Rumelt, 1984, as cited in Teece, 2023). This gap in IB theorising is now compounded by questions about the assets used in international business activity. We tend to refer to both physical and digital assets.

Critically, the preponderance of data generation and usage, enabled by digital technologies, has led to the acceptance of a somewhat fuzzy notion of data as an asset or significant resource for firms and their internationalisation strategy.

Luo (2021, p.1) remarks that ‘the new global normal poses myriads of complex questions within existing IB theories and research’ that need to be answered. Now that the Metaverse has been inserted into the IB context, it is important to examine whether current IB theories explain the behaviour of virtual firms. What will be the locational advantages of such firms that cross national borders? How will these firms manage their international activities as members of ecosystems that can themselves cross borders? How can international firms effectively utilise the Metaverse environment to manage their operations in foreign markets in terms of multiple stakeholders’ engagement and the customisation of offerings through recombination of resources and capabilities? Are regulation and governance mechanisms likely to have different impacts on firms selling digital versus physical products? What would be the nature of firm-specific advantages in the Metaverse world? In the next section we offer a critical perspective in the IB field regarding firms’ internationalisation in the advanced technological era of Metaverse.

3 The Evolution of Internationalisation Theories Until the Internet Era

3.1 Traditional Theories of Internationalisation

The start of the IB field can be traced back to the works of Vernon (1966), Dunning (1958), and Rugman (1980), which represent the first step in modern IB thinking. This line of analysis focused on the country’s specific advantages (CSAs) and how their interaction with the firm’s activities initiates firms’ internationalisation. Thereafter, Hymer (1960) took the firm’s specific advantages (FSAs), transferred through physical or technological channels, as the unit of analysis of the internationalisation process of firms. It has been implied that when firms have specific competitive advantages, the ‘liability of foreignness’ will be minimised, allowing firms to reduce the risk, uncertainty, and lack of knowledge associated with foreign markets (Carlson, 1975; Dunning, 1988; Hymer, 1960; Zaheer, 1995). Hence, it was argued that sequential internationalisation, as a consequence of the incremental learning process and through learning by doing, could minimise the uncertainty and risk that arose from the firm’s lack of market knowledge. In the modern era, the international business opportunities created by the Metaverse will interact with traditional concepts such as liability of foreignness. But such challenges are likely to be minimised since the Metaverse has the potential to reduce geographic and economic distance, thus facilitating the ease of doing business and market entry. However, digitalisation challenges, such as ethical concerns over data protection, privacy, and cybersecurity may augment the firm’s liabilities and add to the problems of legitimacy.

Since the 1970s there has been general agreement that the international expansion of firms is complex, occurring in a gradual process rather than being based on a single set of decisions or isolated events (Jones & Coviello, 2005; Welch & Paavilainen-

Mäntymäki, 2014). The two most widely used and cited internationalisation theories that emerged during that time are the Innovation-related internationalisation model (I-Model) and the Uppsala Model (U-Model), both of which are ‘stage models’.

The innovation-related model which was developed in the early 1980s (e.g., Bilkey & Tesar, 1977; Cavusgil, 1980, 1982; Reid, 1981) argues that the ‘internationalization process of the firm is linked to the adoption of an innovation’ (Welch & Paavilainen-Mäntymäki, 2014, p. 7). (Cavusgil, 1982, p. 276). This model was regarded as a variance-based model, unlike the U-Model, which was considered to be a process model. The U-Model developed by Johanson and Vahlne (1977) suggests that firms’ internationalisation occurs in a sequential process, in which firms first expand to nearby geographical markets that tend to have characteristics similar to those of the home country. In their pursuit to exploit opportunities abroad, firms should account for the risks of operating in an unknown foreign environment. The model suggests that to reduce this risk, the firm’s first step in internationalisation will be to enter a closer market with minimum psychic distance. According to Rugman et al. (2011), the accumulation of knowledge and experience that firms gain from operating in international markets will allow them to reduce and overcome their liability of foreignness. To this end, firms begin to increase their geographical expansion to distant foreign markets. Anderson (1993) argues that the U-Model and the I-Model can both be viewed as behaviour models because of the gradual and incremental patterns of internationalisation. This gradual process is attributed to a firm’s lack of experiential knowledge, particularly in overseas markets, and to the risk and uncertainty associated with international expansion. However, both models have been widely criticised. For instance, the I-Model does not explain why firms internationalise or how do so over time, while the U-Model does not discuss the concept of ‘opportunity identification and development’. Hence, it has been argued that their empirical application has ‘become highly deterministic over time, limiting its predictive value’ (Surdu et al., 2021, p. 1048).

Another widely adopted paradigm that has been used to explain the internationalisation behaviour of firms is the Eclectic Paradigm (Dunning, 1977, 1979, 1988). The eclectic paradigm, also referred to as the OLI framework, implies that firms internationalise when they have ownership, location, and internalisation advantages. The framework stresses the role that is played by firms’ resources and capabilities in the internationalisation decision-making process. According to Dunning (1977), firms may have two distinct competitive advantages over their competitors, which will aid their internationalisation process. The first advantage is the firm’s ownership of specific and distinguished intangible resources (which is considered a type of FSA), and the second is the ‘ownership of complementary assets (such as the ability to create new technologies)’ (Cantwell & Narula, 2001, p. 157). Internationalisation occurs as a result of these two specific advantages. The stream of research that applies to Dunning’s (1977) work also integrates Penrose’s (1959) theory of firm growth and the neo-classical trade theory to examine how multinational firms choose their international location for investment and expansion (Narula, 2012; Narula et al., 2019).

Later, the focus in the literature shifted to explicating the role of networks in the internationalisation process of firms. Networks have been defined as a ‘structure where a number of nodes are related to each other by specific threads’ (Håkansson

& Ford, 2002, p. 133). The network theory of internationalisation, ‘strongly influenced by the stage models’ (Welch & Paavilainen-Mäntymäki, 2014, p. 8) and which emerged as an extension of the U-Model, implies that firms/actors can expand to international markets through their network’s position by gaining access to critical resources and knowledge needed for internationalisation, identifying international entrepreneurial opportunities, and building reputation and credibility. These opportunities will allow them to gain the ‘benefit of insidership’, by using knowledge and information exchange to reduce the liability of foreignness associated with new foreign entry (Dana et al., 2000; Ghauri et al., 2014; Idris & Saridakis, 2018; Johanson & Vahlne, 1993; Ribau et al., 2015). The network theory emphasises the importance of external relationships and establishing non-economic relationships between firms, supplementing the Resource Based View (RBV) and Knowledge Based View (KBV), which highlight the importance of accumulated resources and knowledge (Lee et al., 2001). Interpersonal social or business networks, whether located locally or internationally, have been proven to be important network forms of internationalisation (e.g., Chandra et al., 2009; Ellis & Pecotich, 2001; Idris & Saridakis, 2018; Zhang et al., 2016).

Previous research has showed that the size and the intensity of the network play a critical role in firms’ internationalisation because these attributes present different opportunities to access and transfer knowledge (Hughes et al., 2019). However, it has been implied that ‘gaining a insidership position is time-consuming’ and that networks are not static but change over time (Johanson & Johanson, 2021, p. 1629). Although the network model of internationalisation is ‘dynamic and time-sensitive’, it does not directly consider the ‘temporal nature of business encounters’ (Johanson & Johanson, 2021, p. 1629). Similarly, networking advantages have tended to concentrate on what individual firms can appropriate from networking effects and rather less on the need to manage network resources outside the firm (this being especially pronounced in global networks) jointly and severally with network member firms or the whole network. In the digital space of networked platform firms, the mix of physical and digital spaces in which users and producers mingle is dependent on increasing numbers of varied users. The network externality effect of match-making one set of users and producers is dependent on the growing participation of a different set of users and producers (Mitra, 2020). The Big Tech firms might be seen to derive exponential gains from the lock-in effects but as Teece (2023) argues, networking effects may not be the most important factor in sustaining their ostensible advantage. This is more likely to lie in their superior, innovative products (e.g., Google’s search engine, Apple’s iPhone) and in recognising the impact of unforeseen or dispersed competition (e.g., Apple’s competition with Google in phone software and with Microsoft in search and cloud computing) even as they face competition from other platforms and niche small players (Teece, 2023).

A review of the previous literature implies that other theories from the management and economics field (e.g., the RBV) have been applied to explain the internationalisation behaviour of firms. For instance, the traditional research in IB has argued that internationalising firms (e.g., MNEs) will face significant barriers when expanding to foreign markets because of the liability of foreignness. To reduce this barrier, the RBV has been applied to emphasise the characteristics of firm-level

resources and capabilities, such as organisational practices (e.g., Zaheer & Mosaikowski, 1997), which allow firms to overcome the liability of foreignness (Peng, 2001) when expanding to international markets.

Table 1 below summarises the different strands of traditional IB theories and the uncertainty associated with internationalisation. The International Product Life Cycle Theory suggests gradual foreign expansion aligned with the product life cycle; the Eclectic Paradigm discusses the leveraging of the firm's specific advantages as well as those of the location. The Foreign Direct Investment theory emphasises large firms' ability to exploit a host country's advantages, while the I-Model and U-Model both emphasise firms' slow internationalisation process through learning, in which firms adopt a risk aversion approach to foreign expansion. The network model stresses

Table 1 Key traditional international business theories

Theory	Description	Key Authors
International Product Life Cycle Theory	Based on the concept that markets are imperfect, it suggests that firms start by producing and selling their product domestically, and then gradually expand their markets by exporting to other countries as the product moves through its life cycle.	Vernon (1966).
Eclectic Paradigm	Firms internationalise by leveraging their ownership advantages and choosing an international market that offers a location advantage and internalisation advantage.	Dunning (1977).
Foreign Direct Investment Theory	'Explains that the MNE is a creature of market imperfections. The MNE has the ability to use its international operations to separate markets and remove competition, or to exploit an advantage. Control over the use of assets transferred abroad is required by the MNE in order to minimize risks and to achieve monopolistic power' (Dunning & Rugman, 1985, p. 229).	Hymer (1960).
Innovation–internationalisation Related Model	The internationalisation decision is considered as a firm innovation. Firms start to expand abroad by filing an export application, then they export regularly to closer countries, and ultimately to more distant countries.	Bilkey and Tesar (1977); Cavusgil (1980); Reid (1981).
Uppsala Model	Firms expand internationally in a gradual and incremental process by increasing their commitment in the foreign market and their knowledge of foreign markets.	Hult et al. (2020); Johanson and Vahlne (1977, 1990, 2009); Vahlne and Johanson (2017); Verbeke (2020).
Network Theory	Firms expand abroad through their position in a network relationship (either social network or business network).	Andersson and Mattsson (2006); Johanson and Johanson (2021); Johanson and Mattsson (1988).
RBV	MNEs face significant liability of foreignness, which they can overcome by using their specific advantages (i.e., resources and capabilities). These resources and capabilities have been referred to in previous research as administrative heritage, organisational practices, and bargaining power.	Bartlett and Ghoshal (1989); Collis (1991); Moon and Lado (2000); Tallman (1991, 1992); Zaheer (1995); Zaheer and Mosaikowski (1997).

the importance of leveraging firms' relationships with network partners, while the RBV discusses firm's usage of specific advantages arising from rare, valuable, and inimitable resources and capabilities to overcome competition in the foreign market (cf. Barney, 1991). It should be noted that the internationalisation process has mostly been investigated from the perspective of large firms which have sufficient resources to overcome the liability of foreignness.

The internet and online platforms revolution that started in the early 1990s came to reshape the boundaries of the firm (Stallkamp & Schotter (2021) provide interesting discussions). It thus questions the applicability of the existing internationalisation theories to the interpretation of the international markets in which physical goods (tangible elements) and digital/experiential goods (intangible elements) are traded. Since the traditional U-model does not account for the dynamism of the firm's surrounding environment, its practical application in the advanced technological era in which MNEs operate is somewhat limited. For example, the internet allows firms to reach a larger pool of customers to whom they can quickly promote their products and services, building reputation and brand loyalty and thus overcoming the liabilities of newness (Autio & Zander, 2016; Chen & Kamal, 2016; Reuber & Fischer, 2011). We now therefore review the theories of internationalisation that emerged around the onset of the internet era.

3.2 Internationalisation Theories around the Start of the Internet Era

By 2000, the world had entered a new millennium characterised by increased use of ICTs, which changed the way in which businesses across the world operated (Rao, 2001). From the 1990s until the turn of the century, the world's spending on digital industries and digital business models quickly increased, reaching more than 2 trillion dollars in 2000 and thus giving rise to digital globalisation. Practitioners and academics had already begun to question the role played by ICT, and its impact on businesses and on the conduct of international business, especially through the spread of e-commerce (Alcácer et al., 2016). There was much speculation about how growth in ICTs would fundamentally change how businesses would operate with their suppliers, customers, and other firms in a 'seamless web that would cover the entire world' (de la Torre & Moxon, 2001, p. 617). The so-called information and communication age was changing the modus operandi of international business activities and erasing the geographical boundaries in which these activities were supposed to operate (Alcácer et al., 2016). During that period, research investigated these new phenomena, examining the external and internal attributes that allowed firms to accelerate their internationalisation. The literature highlighted the roles played by advances in ICTs and the introduction of the internet, the globalisation of markets, the founders' previous international experience and their international entrepreneurial orientation, as well as the liberalisation of foreign markets (e.g., Efrat & Shoham, 2012; Etemad, 2004; Knight & Cavusgil, 2005; Knight & Liesch, 2016; Luostarinen & Gabrielsson, 2006; McDougall et al., 2003; Wiedersheim-Paul et al., 1978).

Technological changes in the global business environment enabled firms to speed up their internationalisation process in a way that the stages and traditional internationalisation theories could not explain (Prange & Verdier, 2011). New and young

entrepreneurial firms heralded their presence in the 1990s through rapid international expansion, marking the need for new internationalisation theories to explain their behaviour. Different explanations started to emerge (Ribau et al., 2015). The first notable contributions to the field came in the form of Rennie's (1993) Born Global (BG) firms, and Oviatt and McDougall's (1994) International New Ventures. The literature began to extensively research how these new types of firms could, despite their liabilities of smallness and foreignness, expand rapidly and extensively across national borders from or near their inception (Knight & Cavusgil, 2004). Hence, a stream of research began to emerge in the International Entrepreneurship (IE) field to investigate why BGs' internationalisation behaviour was not consistent with previous internationalisation models (such as the gradual and slow process of internationalisation) (Hennart et al., 2021). It has been implied that the emergence and development of new technologies, the use of networking opportunities, the acquisition of resources, and the global mentality of the founders are among the factors that have enabled these firms to internationalise more rapidly than their counterparts (e.g., Cavusgil & Knight, 2015; Gerschewski et al., 2015; Knight & Cavusgil, 2004; Mort & Weerawardena, 2006).

Although this stream of research has advanced our knowledge regarding the factors that have allowed these types of firms to become global from their inception, Hennart et al. (2021, p. 1666) suggest that 'empirical investigations comparing BGs to non-BGs have uncovered other significant variables, such as a global niche positioning' as well as the firm's business model (e.g., Cannone & Ughetto, 2014; Hennart et al., 2021). Also, globalisation, which is best understood as a 'process towards deepening of economic interdependence between institutions and/or countries' (Dunning, 2000, p. 21), is, in the 21st century, being significantly driven by the flow of knowledge, information, and data rather than by physical products, thus presenting firms with significant opportunities for scaling up their business models. In the following section, we examine the internationalisation process in the digital era and the role of the Metaverse in shaping it.

4 Internationalisation Theories in the Digital Era

4.1 Internationalisation at the Beginning of the 21st Century

Emerging digital technologies are changing economies, societies, and businesses (Hervé et al., 2022), and are affecting every industry and how firms operate on a global scale (Ahi et al., 2022). These emerging technologies are not only reducing the costs associated with the firm's internationalisation, but their application is also having a significant impact on international business activities (Ahi et al., 2022; Ghauri et al., 2021; Luo & Zahra, 2023; Strange & Zucchella, 2017), confirming that phrases such as 'country of origin' and 'location of headquarters' may no longer matter. As Ohmae (1990, p. 94) remarks, 'the products for which you are responsible and the company you serve have become denationalized'.

Digitalisation, which can be defined as the continuous adoption and application of the new emerging digital technologies by firms, has been investigated in previ-

ous research in the management and IB fields. Significant advances in innovation involving digitalisation have emerged during the past few years and are restructuring the international business environment (Bergamaschi et al., 2021). For example, companies have been provided with the opportunity to increase their competencies and access to resources in foreign markets (Charalabidis et al., 2015), identify new market opportunities (Watson et al., 2018), reduce distance (Sinkovics et al., 2013), reduce transaction costs (Yamin & Sinkovics, 2006), and reform trading boundaries (Chen & Kamal, 2016).

Recently, Dagnino and Resciniti (2021, p. 968) have attempted to provide a definition of digital internationalisation, regarding it as ‘the ways with which the design and implementation of digital transformation path and the application of digitalization processes and tools may help firms of all sizes thrive in international and global contexts’. Previous research has examined how digital technologies have enabled and supported firms’ different internationalisation steps. For instance, Katsikeas et al. (2020) examined the resources and capabilities needed by a firm for the marketing strategies at each stage of its internationalisation using digital technologies. It can be argued that digitalisation changes the way in which firms organise their resources, take decisions, and interact with each other (Luz Martín-Peña et al., 2018), and it has been considered to be the primary facilitator and an essential factor in firms’ internationalisation processes (Bergamaschi et al., 2021; Joensuu-Salo et al., 2018). For example, digital technology is found to play a significant role in enabling firms’ fast and accelerated internationalisation (e.g., Sinkovics et al., 2013; Zhang et al., 2013) by changing firms’ traditional entry modes (which include exporting and licensing) to ‘virtual presence entry modes [that] do not require the firm to set up operations of any kind... in the foreign market’ (Brouthers et al., 2022, p. 8) In addition, digitalisation provides firms with enhanced capabilities through which they can face the intense competition of the global marketplace. Through digital capabilities, firms can better understand the global consumer’s behaviours, wants, and needs; for example, digital platforms including social media provide firms with a wealth of data (Katsikeas et al., 2020).

Data and its movement in cross-border activity is central to our understanding of digitisation in IB, given that the new developments in digitisation, machine learning, and cyber-physical forms of production (where machines work as co-producers with humans across borders) all require data inputs. In today’s digitally globalised environment, data is critical; it is needed for the production process, for the marketing of products or services, and to inform the business strategy for internationalisation. In other words, data is not simply a means of production, it is also an asset for value creation and capture. It can be traded and used as a means through which GVCs are organised and services are delivered. Physical cross-border business is also facilitated by data exchange. With the rise of critical new technologies such as artificial intelligence, cloud computing, IoT, and additive manufacturing, data is very much at the centre of the new and fast-growing production and service supply models. In effect, a new form of mobilisation of data-based resources is leading to the creation of new channels of production, storage, distribution, and sales of goods and services, in which the entire ecosystem of firms is part of the dynamic process of data generation and exchange. Indeed, we could argue that it is not just the individual firms but

the business ecosystem (local and global) that is now demonstrating a high level of entrepreneurial capability (Pruthi & Mitra, 2023).

Overall, digitalisation is ‘rewriting the fundamental rules of internationalization’ (Shaheer, 2020, p. 1), having to an extent reduced the geographical and psychic distance barriers associated with firms’ internationalisation (Katsikeas et al., 2020), thus enabling firms of any size to start and develop their exporting activities in a more efficient and easier manner. It can be inferred that with the rise of digitalisation, the liability of foreignness (a concept that has been much explored in the IB field as a barrier to internationalisation) and the risks associated with expanding abroad and establishing a network in the foreign markets are diminishing barriers to internationalisation. According to Yamin and Sinkovics (2006, p. 342), by ‘launching websites, firms virtually and instantaneously “enter” multiple foreign markets’. It has been implied that internationalisation for born-digital firms is not an incremental and a slow process; instead, these firms have the ability to access global resources and make radical digital innovation accessible by the whole world simply through a ‘few clicks’ on the keyboard. Mobile applications, streaming services, online games, and social media platforms operate their entire value chains online (Shaheer, 2020), which means that the traditional thinking that firms must establish a strong position in their domestic market before they internationalise may no longer be applicable in a global competitive era. However, firm capabilities remain important. These are not something a firm is ‘born with’ (Teece et al., 1997); they are acquired over time. Hence, it is important that firms build knowledge and develop key capabilities in a digital venue, specifically when the Metaverse is incorporated in a strategic mix of activities involving business transactions across borders.

As indicated by Kshetri and Dwivedi (2024), there are a number of factors that contributed to the significant growth of immersive technologies such as AR, VR, and Metaverse in international business. For instance, the significant advances in ICTs such as advances in graphics processing unit (GPU) in the newly released Meta Quest 3 is faster than the previously released versions of the Meta Quest will bring new opportunities for developers to make significant advances (Bezmalinovic, 2023). In addition, the costs of immersive technologies devices are decreasing which will enable firms, especially small and medium-sized enterprises (SMEs) to have the ability to develop their businesses on the Metaverse. Moreover, the recent development in generative artificial intelligence will have significant impact on immersive technology such as the Metaverse. For instance, it has been suggested that the creation of a virtual space with the aid of AI will be possible and although for the current period this is applied in the gaming sector, soon it will be extended to every industry from shopping to creating e-government (Kshetri & Dwivedi, 2024). It is predicted that the Metaverse will ‘facilitate cultural, trade, and people-to-people exchanges between’ nations such as South Korea and Vietnam (Kshetri & Dwivedi, 2024, p. 203; Park, 2022) as the South Korean government are already leveraging the use of Metaverse to create a ‘sustainable Metaverse industrial ecosystem’ (Kshetri & Dwivedi, 2024, p. 203).

Digitalisation is not without its challenges. One of the perennial problems in the international business domain, and especially in less-developed markets, is the search for a skilled technological partner who can install the equipment for foreign market

operators (Oliva et al., 2022). Hence, firms adopting Metaverse need to consider upgrading and developing the skills of their foreign market operational partners, there can also be challenges regarding data protection, privacy concerns, and marketplace deceptions (Ford et al., 2023; Mustak et al., 2023), which signify the role of trust between buyers and sellers operating in the Metaverse environment. Multinationals are also often affected by bilateral relationships between home and host markets, and digitalisation exacerbates the susceptibility to cybersecurity issues (Kshetri, 2005). As a result of differences in national regulatory policies, firms adopting the Metaverse need to be cognisant of policies such as consumer protection laws, laws regarding the use and governance of consumer data, and the implications of moral concerns about doing business across borders. In this context, several studies have discussed the negative effect of digital transformation on firms' internationalisation process (e.g., Hannibal & Knight, 2018; Nambisan et al., 2019). For instance, although technology is considered to be a valuable resource for businesses, previous studies have noted that when technology is not successfully embedded within the internationalisation process, it can affect the firms' performance or even prevent the internationalisation process (e.g., Feliciano-Cestero et al., 2023). Holmberg and Holmström-Szugalski (2017) argue that increasing changes in the e-commerce environment, combined with greater uncertainty, open up access to invalid and false information, which presents many obstacles to firms' internationalisation process. Moreover, it has been implied that the 'digital risks perceived in domestic markets may not be universally applied, making handling digital transformation even more complex' (Feliciano-Cestero et al., 2023, p. 10). Therefore, it can be argued that although digitalisation has reduced the liability of foreignness for firms by bypassing language and cultural barriers and increasing access to information, it has generated other sorts of internationalisation challenges related to differences in technological regulations and institutional arrangements between host and home countries; these amount to another form of liability of foreignness. For instance, Patil (2019) has argued that the firm's digital transformation has created new internationalisation barriers such as financial barriers, and consumer trust and commitment, 'which can be a challenge due to the nature of digitalised environments, issues related to the regulatory environment (e.g., Brexit), and data protection laws (e.g., General Data Protection Regulation)' (Feliciano-Cestero et al., 2023, p. 10).

4.2 Internationalisation in the Metaverse Era

According to the internalisation theory, firms internally organise their value chain activities to develop and exploit their FSAs in foreign markets by internalising their key know-how rather than trading it in the market through licensing or other means (Buckley & Casson, 1976, 2009; Hennart, 1982; Rugman, 1981); they can thus bypass market imperfections and the opportunistic behaviour of actors. However, the new internalisation theory points out that firms' internationalisation is best understood by the integration and utilisation of both FSAs and CSAs (Narula & Verbeke, 2015; Rugman & Verbeke, 2003), thus requiring firms to internalise their intangible assets. In this context, Narula and Verbeke (2015, p. 1615) have argued as follows: 'bundles of CSAs and FSAs as a starting point for the analysis, but with the combination of

international business opportunities and the MNE's resources reservoir, subjected to a dual Coasean and Penrosean assessment, leading ultimately to an appropriate level of entrepreneurial resource orchestration that will in turn affect both business opportunities and the firm's resource reservoir in the next period'. With the rise of digital technologies and the Metaverse, firms might find it challenging to recombine, exploit, and protect their FSAs across different markets. Thus, in the Metaverse environment firms need to integrate technological assets into digital platforms, which they can then exploit along with human capital across national borders and create value (Banalieva & Dhanaraj, 2019).

Previous eras of the business environment were centred around the notion of 'reality', which has been defined as the 'actual, physical world that exists that we navigate everyday' (Farshid et al., 2018, p. 659). Although previous waves of digitalisation have seen ICTs advance significantly, business activities were still based on this reality because a significant portion of the transaction takes place in the reality space (Farshid et al., 2018).

However, the third wave of digitalisation is ushering in a different business and international business landscape (Legner et al., 2017). The IoT, big data, 3D printing, self-governing robots, augmented and virtual reality, cloud computing, digital security, simulation, and blockchain and NFTs are marking the beginning of the Fourth Industrial Revolution or Industry 4.0 (e.g., Ahi et al., 2022; Liboni et al., 2019; Luo & Zahra, 2023; Sony & Naik, 2020). Figure 1 presents some of the key underpinning technologies that populate the digital environment and drive the digitisation process that is creating the new data-driven assets of digital firms. Hence, it can be argued that 'in a digital firm, the nature of the offer, the distribution channels, the structure of the value chain, the pricing strategy (and even the currency itself i.e., cryptocurrency) may differ fundamentally from those of a traditional MNE' (Coviello et al., 2017, p. 1152). Firms that can engage global stakeholders on a single platform can be more responsive to the contemporary requirements of the foreign markets. This may allow such firms to effectively develop value propositions and foreign market positioning in line with the changing requirements in a way that traditional MNEs, which have internalised their assets for value creation across foreign markets, cannot. In the Metaverse era, the advantages developed in the firm's home market, based on intangible assets such as web-traffic and reputation, may be leveraged and adopted by firms in foreign markets (Kotha et al., 2001). Such emerging technologies and the rise of platform MNEs with both direct and indirect network effects (Zeng et al., 2019) present a more revolutionary global business environment, with important implications for the value creation and capture by MNEs as well as their broader impact on multiple stakeholders (Lazarova et al., 2023; Luo & Zahra, 2023; Nambisan & Luo, 2022). In such contexts, Metaverse and Industry 4.0 technologies offer firms new routes to mobilise resources on a global scale, recombine firm-specific and country-specific advantages, alter their business models, products, service offerings, and operations, as well as transform their GVCs (Nambisan & Luo, 2022; Strange & Zucchella, 2017).

Thus, emergent technologies can impact the theory on foreign direct investment which postulates that MNEs undertake value chain activities via the production of networks (Dunning, 2012). In this regard, the Metaverse represents a new form of

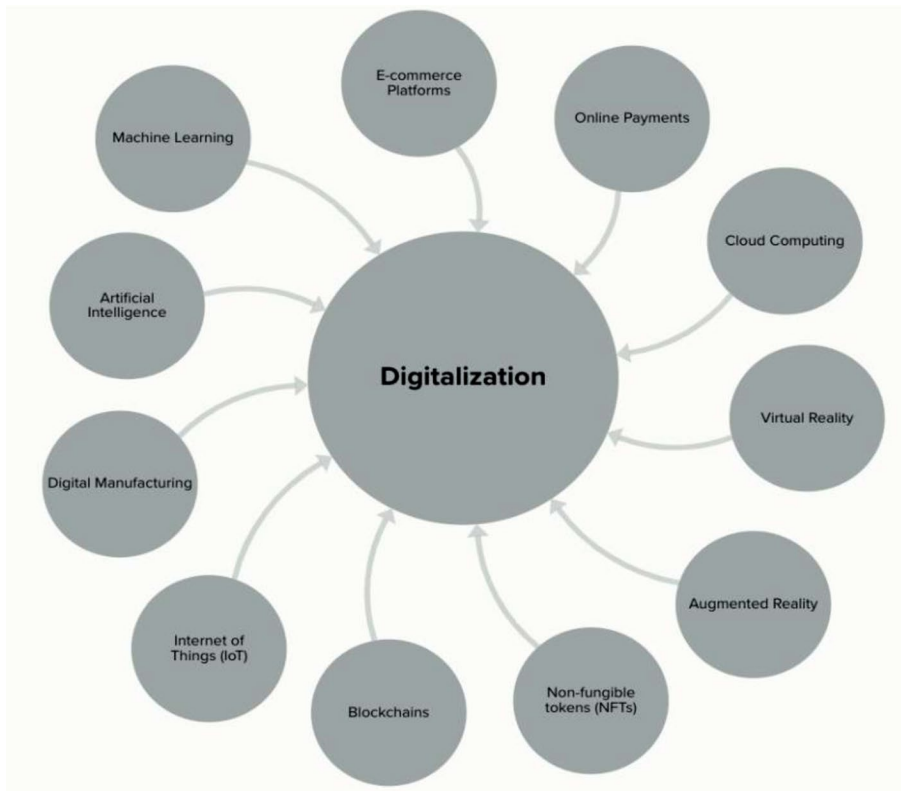


Fig. 1 Key technologies in the digital environment. *Source Authors' own work*

network creation for value chain activities, whereby upstream and downstream partners can interact for production-related activities without the need for an intermediary (Yao et al., 2022). This emergent technology enables value chain partners to acquire and share knowledge in real time (Queiroz et al., 2023), extending the current IB literature in terms of the knowledge transfer between value chain partners at different stages of GVC activity. Accordingly, the Metaverse sets new trends for entrepreneurial international business through e-commerce activities (Knight & Khan, 2022) because firms can rapidly scale up their value offerings on a global scale.

According to Coviello et al. (2017), digitalisation has the potential to affect a firm's internationalisation process and behaviour in terms of speed, timing, location, entry mode, and learning and knowledge transfer. From the theoretical perspective, traditional and digital firms will internationalise for the same logic: to increase their profitability through the exploitation of their firm-specific resources in the foreign markets. We could argue that it is also plausible that the adoption of Metaverse by MNEs can help them build FSAs due to the edge digitalisation offers for enhanced global customer engagement and experience. It is also possible that Metaverse may provide firms with CSAs, as some countries may be more receptive to digital trading and retailing compared with others that have limited internet penetration. End-user adoption of the emerging technologies may however present a key challenge,

especially in developing markets where diffusion of the innovation process may take longer. Although traditional and digital firms are inherently different, they will both experience some internationalisation barriers. For instance, Uber encountered various host country regulations when expanding abroad and had to withdraw from multiple markets. Therefore, whether a firm is traditional or digital, its internationalisation strategy will require it to combine its FSAs in more effective and efficient ways in order to achieve success in the foreign markets (Coviello et al., 2017; Hennart, 2009; Verbeke, 2013). Country-specific regulations may play a role here due to data protection policies and attempts to ensure that access to intelligent market information does not result in unethical practices (Hazan et al., 2022). Firms can navigate such challenges by working closely with foreign market regulators as well as by remaining alert to the strategies implemented by their foreign counterparts who are adopting the Metaverse in their businesses. Furthermore, there can be challenges in terms of firms' adoption of emerging technologies, particularly in the developing markets where firms are often late adopters and there is a lack of access to technical support and training (de-Oliveira & Rodil-Marzábal, 2019; Khan et al., 2023; Xie et al., 2021). This can lead to difficulties in terms of reaching foreign customers, as well as in partnering with the firms based in emerging markets. However, a recent study by Khan et al. (2023) suggested that firms can navigate such challenges by working with technology developers who make support and training available to emerging market firms, which can help them cope with the psychological barriers to adopting emerging technologies.

In the past, the internationalisation of firms emphasised 'the actual process of FSA transfer' (Coviello et al., 2017, p. 1154), and production and the concept of exchange. However, in this technologically advanced era, the phenomena of exchange has moved from a production-based approach to more of a 'business exchange'. As clarified by Coviello et al. (2017, p. 1154), the 'nature of exchanges being transacted is even more revolutionary' than that suggested by Vahlne and Johanson (2017) from the network perspective. As implied by Dodgson et al. (2015), in this digitalised world, both the transaction and the exchange have been digitised thanks to the dematerialisation of the financial currency used in the transaction (such as in the use of cryptocurrency) (Coviello et al., 2017, p. 1155). For example, augmented and virtual realities are technologies with a 'high share of hardware components and extended network connectivity' (Ahi et al., 2022, p. 2). Augmented reality (AR) is a combination of the actual and the digital world, while virtual reality (VR) offers '3-D virtual representations of the actual world of objects within it' (Farshid et al., 2018, p. 659). These new emerging technologies are offering significant opportunities for firms to change how they serve their consumers, interact with them, offer them new and significantly higher experiential value, provide training opportunities for their employees, and 'manage their global value chain' (e.g., Ahi et al., 2022, p. 2; Porter & Happelmann, 2017). For example, since the Metaverse allows consumers to be placed in a quasi-real virtual environment, it may allow them to better engage with products (e.g., in virtual trial rooms) and freely customise their wants as per their requirements. In such a virtual setting, the localisation of products can be spontaneous. But such developments may require firm-specific resources and the ability to engage stakeholders in the entire GVC to redesign value propositions and market

positioning, which may also create pathways for international growth and market receptivity.

Moreover, in the context of international business, the traditional Transaction Cost Theory (TCT) suggests that firms should minimise their costs associated with their international business activities. When applying TCT to explain the internationalisation behaviour of digital firms, Andersen (2005) suggests that for firms who use export intermediaries to enter foreign markets, the traditional role of the export intermediary has changed to include activities such as managing the marketing channels for which virtuality cannot substitute. A recent study by Büchel and Spinler (2024, p. 11) which is based on the opinions of Metaverse experts, suggests that ‘in 2035, intermediaries exist mainly in the form of platforms for digital products, as suppliers and buyers gain increased market power because physical constraints do not exist’. In addition, experts suggest that in the Metaverse context, platform business models will become more dominant in order to connect directly with the target consumers in the digital space, and that the role of traditional intermediaries in the foreign market will be minimised, and transactions might even ‘bypass large institutions acting as intermediaries’ (Büchel & Spinler, 2024, p. 12). However, one may argue that while digitalisation has reduced the costs associated with internationalisation, such as those of traditional intermediaries, other types of costs have become apparent, including the cost of devices required to access Metaverse services. Although AR and VR devices, which are prerequisites for Metaverse applications, are becoming more affordable, they are still considered expensive, particularly for firms with limited financial resources or those from developing economies (Kshetri & Dwivedi, 2024). Therefore, it may be suggested that the costs incurred during the internationalisation process in the Metaverse era differ from those associated with the Transaction Cost Theory (TCT) perspective, such as acquiring information and intermediaries.

RBV theory can be applied to suggest that digital transformation offers firms significant opportunities through international knowledge sharing and creation of innovation (Kotabe et al., 2007), as well as the development of new sets of digital capabilities. For instance, Jean et al. (2010) extended the concept of RBV to empirically examine the ‘value of information technologies and their potential to enable suppliers to configure their governance mechanisms to gain superior outcomes in cross-border relationships’ (Feliciano-Cestero et al., 2023, p. 5). However, the RBV is focused more on firms’ core competencies, and as a recent study (Büchel & Spinler, 2024) notes, in a digital virtual world such as the Metaverse, firms’ traditional core capabilities will be replaced by digital capabilities by 2035. Expert opinion indicates that the two parallel worlds, the digital one and the real one, are likely to coexist and complement each other. Since not all individuals will have the ability to coexist in the Metaverse, the firm’s traditional core capabilities will still be required in order to create products and services to serve consumers who do not engage with the Metaverse.

The dual world system referred to above finds complementary developments in the Metaverse in the form of two types of commerce: ‘(1) classical-oriented commerce that convinces through well replicated physical products and experiences, and (2) fully digital commerce, built upon purely digital products and services’ (Büchel & Spinler, 2024, p. 31). Therefore, it has been suggested that firms will need sufficient knowledge, skills, and digital competencies such as improved consumer interface

and data collection, in order to participate in Metaverse commerce. For instance, AI-based competencies will have a significant impact on consumers' engagement and hence will be crucial for a firm's operations in the Metaverse market. In addition, previous studies that have applied the U-model to digital firms claim that firms 'face different challenges when they internationalize compared with traditional firms' (Brouthers et al., 2016, p. 523). Furthermore, Chen et al. (2019, p. 172) argue that the internationalisation process of firms is not based on a firm's commitment to the foreign market but rather on 'users' collective interaction'. Hence, most discussions in IB research that underline the digitalisation and internationalisation of firms suggest that network interaction and 'diffusion-based user adoption processes' are key components of the internationalisation process for digital firms. In the context of the Metaverse and virtual reality, these virtual worlds could serve as 'knowledge generators and valuable strategic tools for internationalization' (Feliciano-Cestero et al., 2023, p. 7).

Environments associated with virtual reality provide businesses with considerable opportunities to obtain real-world data (Gomez et al., 1995), while allowing individuals the opportunity to be fully immersed in the digital world (Tredinnick, 2018). For example, the 'Met 360 project' by the Metropolitan Museum of Art in New York allows visitors to experience fully immersed virtual tours of the work of famous artists (Farshid et al., 2018). It has been suggested that the best VR experiences are those that provide individuals with fully immersed realistic images and sounds that imitate the real world. For instance, individuals can be in their homes and virtually experience 'what it is like to go skydiving, visit famous places, or fly through the Arctic' (Farshid et al., 2018, p. 660). This opens up avenues for redesigning the marketing mix for the foreign markets based on better market-based knowledge (Khan, 2020; Khan & Khan, 2021). For example, firms might use a particular pricing approach (e.g., market skimming) when they are offering an experience such as virtual tourism. In doing so, international business must be cognisant of the needs and segments of foreign markets to optimise value creation for the firm, its foreign customers, and other stakeholders. We foresee that the Metaverse will set new trends in international business practices. Notwithstanding such benefits, however, the Metaverse can also potentially create a virtual trap because firms that eschew on-site non-virtual means of learning about their target market might find that their information is incomplete or misleading (cf. Yamin & Sinkovics, 2006).

By the end of 2016, several MNEs in the Tech industry had begun to offer VR and AR products to the mass markets. For instance, Oculus, Samsung, Sony, and HTC moved away from targeting early adopters and developers, and started engaging mainstream consumers with their products. On 28 October 2021, Mark Zuckerberg, the CEO of Facebook, announced a change in the company name to 'Meta', signalling a new visionary era of a 3-D marketplace Metaverse based on AR and VR (Kraus et al., 2022). It is estimated that the Metaverse will become a substitute digital world that can be used for businesses and personal activities (Hall & Baier-Lentz, 2022). According to Purdy's (2022) article in Harvard Business Review, it is highly likely that through 'the emergence of 'Metaverse-native' enterprises,' companies 'could be conceived and developed entirely within the virtual, 3-D world' and that this new phenomenon will become very common in the near future. Moreover, it has been

implied that the Metaverse will allow individuals to capture the best digital shopping experience, such as testing new cars on the virtual racetrack of their choice, visiting new retail shops, virtually trying on new clothes, or having a personal shopping assistant in the digital world in the shape of an avatar. In addition, it is suggested that with the creation of the Metaverse, consumers have begun to accept the idea of digital products and to which they attach 'status symbols'; as such, the creation of virtual products such as jewellery, clothes, cars, and homes is no longer impossible (van Hooijdonk, 2021).

We argue that the Metaverse will open up avenues for new ways of IB practice. It has been suggested that the emerging phenomenon of platformisation—the move away from physical products to platforms—as the basis for offering value and the emergence of associated ecosystems as a major venue for innovation, value creation, and delivery have considerable implications for IB and for the continued relevance of IB theories' (Nambisan et al., 2019, p. 1465). The internationalisation process of a platform provider firm can be completely different from that of a traditional firm. For instance, a platform firm can internationalise by using a 'platform-ecosystem organisational form' where an affiliated third party (i.e., developers) can 'provide complementary offerings' (Yonatany, 2017, p. 3). These offerings can be much more targeted to foreign users since they have been created by third party affiliates who are familiar with their home markets. This will reduce, if not eliminate, firms' liability of foreignness, and reduce the psychic distance associated with the traditional models of internationalisation. For example, Facebook, which is a social media platform provider, 'has an ecosystem of third-party developers' (Yonatany, 2017, p. 3) all around the world. Hence, applications that are designed for a specific country are being developed and managed by developers in that specific country. Referring to Vernon's (1966) perspective of being close to R&D in the early stages of a new product, the Facebook example may also be a case in which local firms are better off adopting it compared with the foreign firms.

Nambisan et al. (2019) points to how digital platforms and ecosystems will extend traditional international business theories such as the eclectic paradigm (i.e., OLI framework), the internationalisation process models (i.e., U-Model) and international entrepreneurship theory, by providing firms with new ways to internationalise, create, and deliver value to new customers, and build knowledge and networks. For instance, in terms of the OLI framework, it has been stated that 'ecosystem-specific advantages and context-specific advantages are essential, creating new ways of international growth' (Nambisan et al., 2019, p. 1471). These digital platform ecosystems will act as a 'springboard' for new, small, and established firms alike to expand globally, gain access to essential resources, and reduce their disadvantages in their domestic market (Nambisan et al., 2019). In terms of traditional internationalisation process models such as the U-Model, Chen et al. (2019, p. 172) show that a firm's 'internationalization process depends critically on users' collective interactions, instead of being solely driven by the firms' market commitments', hence emphasising the role that is played by individual users (more generally the role of networks and ecosystem partners) as the foundation for initiating the internationalisation process of firms (Coviello et al., 2017). In addition, it has been implied while international experience will still play a critical part in firms' internationalisation, it is no longer a

pre-condition for internationalisation. A significant number of young and small firms can become ‘mini-MNEs’ through the use of a digital platform ecosystem or even by acting as complementors to large platform MNEs because they can thus reduce their international commitment. Through the use of the Metaverse, geographical trade boundaries may be reduced, opening up avenues for micro-multinationals, BG firms, and internationalising SMEs to capitalise on this technology for international growth. The Metaverse may also allow MNEs from developing markets to engage in internationalisation activities that contribute to their growth-seeking objectives and economic development. However, since firms from developing markets are often resource-constrained, it will be necessary for local institutions to support these firms in adopting the Metaverse technologies.

In their recent paper, Monaghan et al. (2020), considered ‘born digital’ firms, and discussed their internationalisation process by reference to the stage models (i.e., U-Model, and the network model) of Johanson and Vahlne (2009). Born digital firms are firms that connect to the worldwide markets in an instant, and they operate ‘in space’. The authors question, for instance, whether the assumption of the network model (i.e., firms are dependent on the resources of others, to which they gain access through their network relationship) also applies to born digital firms. The authors suggest that to a great extent, that assumption remains valid for the internationalisation of born digital firms since relationship building is important for firms, who benefit from ‘network embeddedness with network actors’. But they also argue that networks are ‘not relevant to born digitals, given that they can shift value-adding activities outside the firm’ (Monaghan et al., 2020, p. 15). Global market convergence (including the patterns of consumption) is of interest to international business (Ozturk et al., 2021), and so the use of Metaverse should allow born digital firms to engage their international stakeholders in GVC activities. It would also allow firms to develop digital connectivity and collaboration with their value chain partners (investors, suppliers, customers, distributors etc.), enabling agile decision making, global demand forecasting, and collaborative working in global markets. In addition, it has been suggested that digital assets (i.e., virtual and real) will be transferred between international stakeholders, and that blockchain technology will be the primary enabler of the digital marketplaces. The IoT provides the premise for the Metaverse to build a virtual digital world that can closely mimic the physical real world (Chen et al., 2020). It has potential to enable the Metaverse to achieve a deeper integration of the digital economy across different industries and countries. This integration could lead to a blurring of the traditional industry and country boundaries, resulting in a more coordinated global marketplace. Leveraging the technical advantages of the IoT, the Metaverse can achieve seamless global interconnectivity for doing international business.

Based on the above arguments, we envisage that within the next ten years, significant opportunities will be offered to the practice of international business, as is already becoming evident from the fact that multiple MNEs are investing in infrastructures related to the Metaverse, whether this is through merger and acquisition activities or through their own organic growth (Schmitt, 2022). Although it is yet to be seen how the virtual economy of the Metaverse will be developed, it is predicted that digital assets might be traded ‘across different platforms to create a global digital

market that transcends national borders', hence creating a single global virtual economy (Schmitt, 2022, p. 11).

5 Discussion and Conclusions: Towards a Framework for IB Research in the Era of the Metaverse

In this paper, we offered new thinking in the IB field regarding the recent emergence of the Metaverse, digitalisation, and their impact on firms' internationalisation behaviour and processes. Specifically, we discussed the role of the Metaverse, exploring how it might affect the current thinking in IB, which will need to explain the world-spanning behaviour of firms in the near future, and the increasing shift from physical to digital products together with the emphasis on enhancing users' experience. In doing so, we discussed traditional internationalisation theories such as the U-model, the network model, and the OLI paradigm, revisiting them from the perspective of the role played by growing advances in ICTs, which enable firms to internationalise faster, with less (e.g., financial) commitment, and despite having limited knowledge and expertise in the international markets. Although research in the IB field acknowledges the role of digitalisation, the IB field is dominated by studies that examine the 'role of the internet in firm internationalization' (Ahi et al., 2022, p. 6), without necessarily considering the implications of that role in a globalised world, or indeed the changing nature of firms and the trajectories of competition. Much of what we tend to rely on is the notion of static competition, which underscores efficiency in international business and pays insufficient attention to dynamic competition models based on innovation and the effectiveness of internationalisation strategies. In addition, a significant amount of research in this field has focused on investigating the impact of technologies on firms' activities in foreign markets in general, rather than on investigating the impact that an individual technology (Banalieva & Dhanaraj, 2019) or a cluster of related technologies may have on international business organisation structures, business processes, and business models, including innovation and sustainable outcomes.

5.1 Towards the Creation of an Alternative Framework for IB Research

This examination of trends and models allows us to suggest a set of building blocks that could help develop a framework for future IB research which explores the impact of the Metaverse and its set of digital technologies. While earlier work has examined the contribution of digitalisation to international business theories (Brouthers et al., 2016; Hennart, 2019, 2022, Tallman et al., 2018, Teece, 2023), there appears to be insufficient engagement with the wider impact of the Metaverse's emergent digital technologies on IB theories. Hennart (2019) has looked into digitalised service MNEs, Tallman et al. (2018) has examined the business models in global competition era, and Teece (2023) has presented implications for Big Tech firms. Extending this digitalisation stream of literature, the present study is positioned in the premise of how the Metaverse can inform IB theories and practice. Accordingly, we identify four distinct but related developments (or conceptual building blocks of learning and

adoption) in the evolution of IB, from which a research agenda emerges. We also present a brief initial scoping of managerial implications which could inform empirical research based on case studies.

5.1.1 Building Block 1: Analogue to Digital

The accelerated development of ICTs, and the recent emergence of advanced digital technologies and innovative business models have started to restructure the nature of the worldwide market system. In the past, the IB environment was characterised by its analogue focus on the flow of tangible products/services and operations across national borders, but ‘contemporary global business operations are increasingly characterized by digitization and the intangible flow of data and information, greater availability of key open resources’ (Nambisan et al., 2019, p. 1465) and the immediate access to information, knowledge, and expertise which enables small firms (e.g., BGs and international new ventures) to grow significantly by applying sophisticated technologies to their operations and thus creating competitive advantage. This has raised significant questions regarding the applicability of the current IB theories, and scholars have begun to call for a reassessment of long-held assumptions about the international business landscape in order to improve how IB theories fit these evolving realities (Knight & Liesch, 2016; Nambisan et al., 2019, p. 1465; Tallman et al., 2018). For instance, Banalieva and Dhanaraj (2019, p. 2) draw attention to the issue of how ‘digitalization alters internalization theory’s assumptions about the nature of FSAs and predictions about their governance in cross-border transactions’. The internationalisation process of digitalised service multinational corporations (DSMNCs) ‘is driven by technology and human capital’ (Hennart, 2019, p. 1388) where technology can be outsourced. This contradicts traditional theories which emphasise a hierarchical system that protects the firm’s core technology and specific advantages. Thus, Building Block 1 is a foundation area which offers significant opportunities for examining the boundary conditions and current assumptions of the existing IB theories. For instance, it opens avenues for testing internalisation theory because the Metaverse pushes firms to disaggregate their value chain activities to external network partners, effectively utilising complementary assets through resource recombination. These points are nicely summed up by Verbeke and Kano (2015, p. 418) who indicate that, ‘in contrast to conventional, mainstream internalization theory, the new internalization theory focuses on the dynamics of international governance, whereby value creation hinges on successful knowledge recombination and governance choices (e.g., foreign location and operating mode choices) that are assumed to change over time’. This suggests that the external governance of value chain activities will have a more central role in the Metaverse environment, along with the exploitations of internal FSAs by firms.

5.1.2 Building Block 2: The Digital Technology Space– Between the Physical and the Digital

Although the Metaverse is a new concept, it gained significant hype from the announcement of Facebook’s change of company name to Meta, which signalled a

new visionary period of a 3-D marketplace based on AR and VR (Kraus et al., 2022), IoT, and digital currencies. Several companies began investing significant amounts of money in the Metaverse by creating virtual reality theme parks, selling digital versions of their real products, and creating platforms on the Metaverse for users to shop and experience their products in the digital space. Therefore, although ‘the distinct lines between the physical and the digital are likely to be somewhat blurred from current perceptions’ (Dwivedi et al., 2022, p. 2) which will change consumers’ experiences and how businesses operate, function, and offer value in foreign markets, these new ways of doing business are accompanied by concerns related to cybersecurity, data protection, and privacy (Wang et al., 2023). This may challenge existing theories by adding complexities to the concept of the liability of foreignness, and by creating questions of about legitimacy and the ease of doing business. However, there are also opportunities to integrate and extend the current IB theories. For instance, scholars could draw upon insights from the information processing theory (Galbraith, 1973; Tushman & Nadler, 1978) and complex adaptive systems theory (Anderson, 1999; Nicolis & Prigogine, 1989), and combine these with internalisation theory to enable a clearer understanding of the organising logics of firms and the governance issues arising from operating in the Metaverse environment.

5.1.3 Building Block 3: The Digital Environment of the Organisation, Communities and People

The social media and the internet world of Metaverse has created a new class of ‘globalist’: an individual who exchanges data across borders. According to MGI (2016), it is estimated that around 914 million individuals globally maintain at least one international connection on social media platforms, and about 361 million people are engaged in international online trade. The numbers suggest exponential growth in individual-level internationalisation when we look at Facebook and other social platform users, especially in emerging economies. How does this phenomenon impact IB? There is the possibility of a structural shift in the methods and modes of international business and entrepreneurship. For example, da Fonseca et al. (2023, p. 674) argue that digital platform ecosystems (DPEs) are crucial in the recently developed international business context. Also, DPEs facilitate remote collaboration among market participants (Thomas & Autio, 2020), enabling joint value creation. As suggested in da Fonseca et al.’s (2023) work, this, in turn, produces a variety of both direct and indirect network effects involving a wide array of stakeholders not limited by sectoral or geographical boundaries. In such a context, the issue of power and governance will become central to dealing with “the winner takes all” market phenomenon that arises from dominant platforms. We also envisage that products, both old and new, can go viral on an enormous scale, especially as the digital provider and new customers come together on these platforms. Adele’s song ‘Hello’ picked up 50 million views on YouTube in its first 48 h, and 3.38 million copies of her album ‘25’ were sold in the United States in the first week of its release, which is more than any other album in history (MGI, 2016). We also foresee that individuals will find new ways to share information, learn, collaborate with other individuals, businesses, and social groups, and that as they promote themselves, they will acquire

new skills along the way. The appearance of the individual freelancer on the global stage is also part of the rise of the so-called ‘sharing economy’, in which the digital platforms, such as Facebook, LinkedIn, and Upwork, provide a platform for firms to share information, goods, services, and personal data, thus augmenting their IB strategy (Pruthi & Mitra, 2023). The outcome is a new expansion of the scope of IB, in which individuals as well as large and small firms play active roles in exploring opportunities for business as a way of life and co-creating value on a global scale. Thus, in the Metaverse environment, nurturing individual talent and the knowledge of virtual communities will combine with vast amounts of data to offer firms of all kinds vital opportunities for co-creating value on a global scale.

5.1.4 Building Block 4: Evolution of Theories

Although research in the IB field has discussed the role that digitalisation, and specifically platformisation, play in internationalisation and the firm’s behaviour, we argue that with the introduction of the Metaverse the future global and international business environment may look completely different from the one we currently have. However, certain assumptions of current IB theories and models can still explain the behaviour of firms’ internationalisation.

Our study opens up opportunities for extending existing theories in the context of digitalisation. As an example, Nambisan et al. (2019, p. 1471) note that the OLI framework can provide firms with new ways to expand their businesses abroad, and create and deliver their values (Nambisan et al., 2019, p. 1471). The ‘ecosystem-specific advantages’ of firms will play a critical role in this, allowing firms to find new ways for international growth. But these ecosystem-specific advantages might not be enough to enable firms to gain significant competitive advantages over their competitors. We therefore believe that FSAs are still valid, and that by combining FSA with ecosystem-specific advantages, firms (especially small and new ventures) can reduce their disadvantages at home and expand globally. We also argue that the RBV perspective is still relevant to Metaverse commerce as resources play a crucial role for firms to gain competitive advantages. However, we concur with Büchel and Spinler (2024, p. 31) that instead of firms’ traditional core competencies being replaced, ‘a new, additional and currently unknown set of core competencies is likely to emerge’. According to tech experts, these competencies are tied to advanced technological capabilities such as data collection, improved consumers’ interface, and advanced integration of AI for better consumer engagement. Crucially, networks are likely to play a significant part in firms’ operations in the Metaverse by enabling firms to internationalise faster through access to the knowledge and resources of diverse network partners. This new type of network, which differs from the traditional business and social media networks, operates in the space of a connected ecosystem which allows borderless and limitless collaborations between firms, business and social communities, and individuals. Community networks might play a crucial role in the Metaverse contexts, as individuals belonging to different virtual communities will be influenced by each other’s behaviour. For example, early adopters and influencers will have the power to influence consumers’ purchasing decision and behaviour. Although this is closely related to social media networks, communities in the Metaverse context are

more tailored to users' preferences and behavioural needs through the ability of AI to analyse users' behavioural data, leading to more personalised community engagement. This can in turn promote decentralised collaborative communities. Moreover, firms will have the ability to gain access to the worldwide pool of talent and know-how for recruitment or collaboration purposes, or indeed for developing new products and services. This will significantly allow firms to tailor their value offerings and international marketing practices in the foreign markets by providing a better user experience, customised offerings, new ways of marketing, and the delivery of personalised value globally.

Our study challenges the international product life cycle theory of Vernon (1966) and suggest that this needs to be validated in the context of Metaverse by resolving some pertinent questions. Will firms be systematic in selecting the Metaverse as their market, or will it be adopted as a global practice across markets? Will local and foreign firms be better able to connect in order to do business in the Metaverse or should firms play in their local markets given that the Metaverse is a set of emerging technologies at the early stage of the technology lifecycle? What role might cultures and industries play in this context? How can Metaverse create avenues for examining non-traditional entry modes, such as virtual presence across host markets (Brouthers et al., 2022) and how might this generate new pathways for doing international business (Hennart, 2022) based on FSAs (Hennart, 2019). As Hennart has pointed out, digitalisation often leads to less internationalisation, hence there is potential to examine how the Metaverse impacts the domestic and international diversification of firms. Furthermore, will local and foreign firms change their strategic mix to integrate the Metaverse, and will this lead to their greater or less internationalisation? Will the Metaverse drive down the cost of cross-border business activities or will there be additional costs related to cross-border coordination of extended network partners and different combinations of resources? These questions become potential areas for extending and building the theory in the given context.

Overall, our study offers several theoretical implications and contributions. First, our discussion extends the nascent scholarly research on the application of emerging digital technology (i.e., Metaverse) in the IB field. This is in line with recent research that shows potential differences, such as the liability of foreignness, as we compare a firm's physical borders with the virtual ones (Stephens et al., 2024). Specifically, this study shows how IB scholars can extend contributions to the key traditional IB theories in the era of doing business across borders through emerging technologies. Our study challenges the existing theories to extend their boundaries and validate their implications for digitalisation. Second, alongside the discussion of opportunities created by this set of technologies for doing international business, we explain how international businesses can navigate the challenges associated with the Metaverse for foreign market operations. Finally, in the Metaverse environment, speed and responsiveness will play vital roles in gaining competitive advantage; thus firms will need to develop digital capabilities and agility in order to become resilient to the effect of major changes.

5.2 Managerial Implications

The study also offers implications for policy and practice. First, international business practitioners should be cognisant of both the upsides and downsides of doing business in foreign markets through the Metaverse. Second, when adopting the Metaverse, they must be agile in terms of knowing the capabilities and receptivity of the host market operators and customers because in some emerging markets, their counterparts may be reluctant to adopt emerging technologies. It is also noteworthy that some of these emerging countries (e.g., China, Taiwan, and South Korea) could become technology leaders, indicating a need for reverse learning by countries in the West. Managers should build key capabilities (e.g., eco-system partnerships) that can help firms to adopt emerging technologies and keep pace with market trends. Third, technology developers and providers should offer facilities such as support solutions and training programs to laggard firms and markets. This will not only benefit the firms in terms of ease of adoption, but will also create value for the developers. Fourth, managers should educate the consumers about their data capture, usage, and protection policies. Finally, policy makers across countries should develop strong global regulations for data protection and privacy concerns, which will mitigate such challenges.

Funding Not applicable.

Data Availability This is a theoretical paper and does not use any data.

Declarations

Conflict of interest The authors have no competing interests to declare that are relevant to the content of this article. Also, this is a theoretical paper and does not use any data.

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