



Scale-ups and scaling in an international business context

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ARTICLE INFO

Keywords:

Scaling
Scale-ups
Growth
Internationalization
Business models
Replication

ABSTRACT

Scaling, the *persistent rapid growth to deliver a viable business model*, often incorporates an explicit international business dimension. However, research on the cross-border management and organization of scaling and scale-ups in international business has been limited. We therefore build on prior scholarly understanding to differentiate scaling in three settings – initiative, organization and ecosystem – and elaborate on their respective international business aspects. We are sensitive to different organizational purposes and their associated scaling for commercial and/or social impact. Our arguments advance the conceptual understanding of scaling in international business and offer an agenda for future research.

1. Introduction

Scaling is an important phenomenon in the international business (IB) context because many scaling endeavours have an explicit cross-border management and organization aspect. At the macro-level, scaling often enables access to international markets, new resources and strategic assets, thus bringing issues related to rapid international expansion and accelerated internationalization to the fore (e.g. Reuber et al., 2021). Indeed, scaling has become omnipresent due to the recent advancements in digitalization, which have pushed organizations to hyper-scale (Giustiziero et al., 2021), thus moving into and across international markets at a significantly accelerated pace (Birkinshaw, 2022; Monaghan & Tippmann, 2018). This also comes with increased complexity as many scaling efforts not only require cross-sector collaborations between organizations, governments and other public sector organizations, but also the creation of ecosystems that cross national boundaries (Tatarinov et al., 2022). Moreover, scaling is a necessity not only in for-profit settings but also for most not-for-profit and hybrid organizations, as growing social impact and tackling grand challenges often require scalable solutions that transcend international borders. For instance, it is now widely recognized that addressing the United Nation (U.N.) sustainable development goals requires not only innovating new solutions but scaling them broadly and rapidly to grow their social

impact (e.g. Shepherd & Patzelt, 2022). At the micro-level, most scaling endeavours involve an international business dimension because attaining the desired commercial and social impact objectives of scaling requires judicious attention to organizational design and transformation (DeSantola, 2021; DeSantola & Gulati, 2017; Ringov et al., 2022a). When scaling across borders, these internal factors have to accommodate the various dimensions of international management, such as replication-adaptation, coordination and control, as well as global and local value creation.

Despite these varied ways in which scaling involves cross-border organization and management, its investigation in IB is fragmented and nascent. So far, studies on scaling in IB have explored global scaling (Reuber et al., 2021), the scaling of social or hybrid enterprises across Sub-Saharan Africa and the bottom of the pyramid (Busch & Barkema, 2021; Chliova & Ringov, 2017), the scaling of innovative initiatives in the U.N. (Ambos & Tatarinov, 2022; Tatarinov & Ambos, 2022; Tatarinov et al., 2022) and multinational enterprises (Szulanski et al., 2016), as well as of digital enterprises (Mihailova, 2022; Stallkamp et al., 2022; Tippmann et al., 2022). Yet, what scaling means, especially in comparison to other IB concepts, and how scaling and its associated IB-dimensions are manifest in different organizational settings and for different organizational purposes remains an area wide open for exploration.

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<https://doi.org/10.1016/j.jwb.2022.101397>

Received 14 April 2022; Received in revised form 30 September 2022; Accepted 30 September 2022

Available online 19 October 2022

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In this paper, we seek to advance our conceptual understanding of scaling in an IB context. Building on prior studies (DeSantola & Gulati, 2017; Reuber et al., 2021), we define scaling as *persistent rapid growth to deliver a viable business model*. Building on this general definition, we begin by elaborating how scaling relates to adjacent IB constructs to enhance conceptual clarity and reduce the ambiguity that has so far hindered scholarly progress on this topic. We then elaborate on scaling in different settings by differentiating between the scaling of initiatives, organizations and ecosystems, and offer specific definitions that are sensitive to the IB-dimension for each. We also elaborate on typical manifestations of cross-border aspects for each setting and pay attention to commercial, social and hybrid missions and their associated drive for commercial and/or social impact through scaling. Finally, we highlight some promising areas for future research on scaling. This includes discussion on some ways in which important IB concepts and theories – including organizational tensions, rapid internationalization, knowledge and organizational learning, digitalization, business models, institutional theory as well as geopolitics and political strategies – can also be developed further by examining scaling. Overall, we hope this article stimulates systematic investigations of scaling in IB to advance a clear understanding of the phenomenon and its contingencies, as well as its antecedents, processes and outcomes.

2. Scaling vis-à-vis other IB concepts

Scaling is associated with entrepreneurial ventures (DeSantola & Gulati, 2017) as well as established businesses and organizations (Chandler, 1990; Penrose, 1959/1995). Our general definition of scaling in an organizational context as persistent rapid growth to deliver a viable business model implies some key characteristics that not only describe it as a construct, but also differentiate it from adjacent concepts in IB. Next, we elaborate on this definition and how it relates to other IB concepts.

In terms of *persistent rapid growth*, organizational scaling involves a process of delivering high growth over a period of time. While involving persistent rapid growth, it is important to note that the speed of scaling is a choice whereby deceleration or slowing down to adjust pace can be viable options (e.g. Kim & Kim, 2021; Monaghan & Tippmann, 2018; Ringov et al., 2022a; Stallkamp et al., 2022). In the context of for-profit scale-ups, and to differentiate start-ups from scale-ups, an often-used threshold is at least 20% growth per annum in revenue or employees over three consecutive years (OECD, 2007). Although this threshold is not a hallmark, it can offer an operationalization. Also, this persistent attainment of rapid growth over a period of time means that organizational scaling refers not only to a high-growth ambition, but includes its attainment, acknowledging that it is a time-bound and not indefinite process (Reuber et al., 2021). It is important to note that the growth associated with scaling often occurs in international markets due to the opportunities different environments offer. However, the general definition of scaling is agnostic as to whether the persistent rapid growth occurs in international or domestic markets.

In relation to delivering a viable business model, a *business model* refers to a “system of interconnected organizational activities” that creates value (McDonald & Eisenhardt, 2020: 484; Zott et al., 2011). A business model may concern the entire organization (e.g. Busch & Barkema, 2021; Chliova & Ringov, 2017; Tippmann et al., 2022; Winter et al., 2012) or just relate to the value creation of a specific division, project or initiative (e.g. Ambos & Tatarinov, 2022; Ringov et al., 2022b; Szulanski et al., 2016). A business model can be deemed *viable* once, often through experimentation and exploration to achieve product-market fit, a value proposition and delivery system to create and deliver that value has been established. Viability is not limited to financial outcomes, such as revenue or profit growth, but can also refer to organizational viability in the sense of a consistent operating logic that allows the initiative, organization or ecosystem to deliver economic and/or social impact on an ongoing basis. When scaling, this business

model is then *delivered* to an increasing number of users or customers, aligning with the ambition to deploy the business model at large scale (Dushnitsky & Matusik, 2019). This may involve reaching minimum efficient size to become a competitively sustainable business or a global market leader (Reuber et al., 2021) and/or enlarging social impact, if the purpose is a hybrid/social one (Ambos & Tatarinov, 2022; Chliova & Ringov, 2017). Given the internal orientation of scaling, it focuses mostly on organic growth (Shepherd & Patzelt, 2022). However, scaling may be complemented by inorganic growth, such as acquisitions and alliances (Piaskowska et al., 2021).

Overall, as scaling is not just about persistent high-growth but involves assumptions on how this growth is achieved and its outcomes, it becomes a distinct construct. When comparing scaling and rapid internationalization, scaling specifically involves the delivery of a validated business model. In contrast, internationalization is much broader, involving any kind of cross-border activity or activity in a foreign market. Also, scaling is often associated with a considerable degree of internal transformation, and even innovation, as the organization needs to put in place new resources, processes and structures that provide for persistent rapid growth. Moreover, the viability and replicability of a business model in different settings is central to scaling because viability means that the business model is ready to be exploited or leveraged, and replication is the mechanism that facilitates persistent rapid growth (Winter & Szulanski, 2001; Winter et al., 2012). Consequently, organizations that internationalize rapidly while still designing their business model (e.g. Ojala et al., 2018), or just rapidly internationalize different activities or practices, would not classify as scaling following our definition because there is no replication of a business model involved. It is important to note that even if scaling involves a network of global partners because delivering the business model requires external collaborators, the scaling definition still applies if there is an element of replication whereby some underlying knowledge or routines of the business model is exploited across settings.

As the replicability of the business model is central to scaling, it is also associated with the issue of replication-adaptation in an international context. Replication across countries likely faces pressures for local responsiveness (e.g. Busch & Barkema, 2021; Chliova & Ringov, 2017). Akin to the need to balance standardization-adaptation (Bartlett & Ghoshal, 1989) or global integration-local responsiveness (Devinney et al., 2000; Doz & Prahalad, 1991), scaling has to engage with these tensions. To elaborate, the ability to scale through replication in a new environment is often constrained by factors such as government regulation (Teece, 1998), incompatible technologies (Kogut & Zander, 1992), inadequate resources (Pfeffer & Salancik, 1978), or cultural differences (Hofstede, 2001). A ‘replication dilemma’ may emerge between the benefits of replicating a model exactly and the need to adapt it to the host country context (Reuber et al., 2021; Winter & Szulanski, 2001; Winter et al., 2012). While the replication dilemma is generic across internationally expanding organizations, the scaling context makes it unique because the pressure to achieve persistent rapid growth requires effective engagement with it so that the attainment of growth objectives is not compromised. This is particularly evident in contexts that require deeply locally embedded solutions: for example, when serving culturally sensitive consumer needs or when addressing the grand challenges of poverty or environmental challenges in institutionally diverse contexts (Chliova & Ringov, 2017; Tatarinov et al., 2022). Most prior IB research, that has noted replication-adaptation as the core tension to be managed for international organizations, was undertaken in established multinationals that sought steady-state growth in a pre-digitalization era. However, research on global scaling in the contemporary context of digital firms (specifically software as a service or SaaS firms) has established that the main tension related to a strong focus on replication to rapidly deliver the business model across many international markets, minimizing local adaptations, and entrepreneurship, to continuously innovate to remain competitive (Tippmann et al., 2022). This finding suggests that scaling in an IB context may reveal different tensions than

replication-adaptation as the core ones to navigate.

We wish to also point out that we see digitalization as an enabler, or indeed accelerator, of scaling in a cross-border context. To elaborate, digitalization has facilitated the capacity for scaling in international markets because the speed, fidelity and marginal cost of replicating digital processes and products as well the cost of coordinating and transacting across borders is greatly reduced. Also, many business models leverage the affordability of digital technologies to be more amenable to scaling in international markets, such as digital instead of physical offerings (Monaghan et al., 2020) and digital go-to-market approaches that may require less substantive investment in physical assets in foreign locations (Alcácer et al., 2016; Coviello et al., 2017; Hennart, 2014, 2019; Reuber et al., 2023). Digitalization – and the associated scalability of business models – may therefore ease limits to firm growth rates (Brynjolfsson et al., 2008; Giustiziero et al., 2021; Piaskowska et al., 2021; see also Penrose, 1959/1995) and propel rapid international growth (Monaghan & Tippmann, 2018; Ojala et al., 2018; Stallkamp et al., 2022).

3. Scaling in different organizational settings

In past IB research, scaling as a phenomenon has either been described as the growth of entrepreneurial firms (e.g. Coviello et al., 2017; Monaghan et al., 2020; Reuber et al., 2021) or from the perspective of the international expansion of a practice, product or service in the multinational corporation (MNC) (e.g. Jonsson & Foss, 2011; Szulanski & Jensen, 2006, 2008; Szulanski et al., 2016). The first perspective on scaling, focused on organizations, has started to develop a conceptual apparatus, including definitions and contingency factors of scaling (Busch & Barkema, 2021; Chliova & Ringov, 2017; DeSantola & Gulati, 2017; Reuber et al., 2021); the second perspective on the scaling of initiatives within organizations, here established MNCs or internationally operating organizations, remains more fragmented.

We propose that the distinction between scaling organizations (scale-ups) and scaling initiatives is important. Although we view scaling as an overarching concept, these different organizational settings present diverse opportunities and contingencies. Prior literature has not systematically discussed the varieties of scaling. In particular, it has neglected that scaling, especially given digitalization, often relates not only to organizations or initiative but also ecosystems (Nambisan et al., 2019; Tatarinov et al., 2022). We therefore include the scaling of ecosystems as another important setting that warrants dedicated examination.

Next, we elaborate on scaling in these different settings,

distinguishing between initiatives, organizations and ecosystems. In addition to these different organizational settings, the contingencies of scaling may further vary according to the underlying organizational mission, including commercial purposes, which is the focus of most prior research, and hybrid and social purposes, which receive increasing research attention due to the importance of scaling for social impact. While scaling for commercial purposes has clear revenue or profit growth objectives, social impact metrics associated with hybrid and social missions may be less concise and use a range of measures (e.g. Rawhouser et al., 2019), making them difficult to compare across initiatives, organizations or ecosystems. Moreover, when scaling for social impact, the object is often not financial viability, but organizational viability in the sense that scaling supports self-sufficiency or at least reinforces the organizational model (e.g. Seelos & Mair, 2007). For each of these scaling settings - initiatives, organizations and ecosystems - we note typical manifestations of cross-border business activity and are sensitive to these different organizational purposes. Table 1 summarizes our arguments.

3.1. Scaling initiatives in established multinational organizations

Scaling initiatives refers to an *entrepreneurial initiative that rapidly grows to a viable business model across multiple international locations within an established multinational organization*. Instead of scaling an entire business, the scaling of initiatives involves the replication of specific knowledge of a valid business model, or part thereof, across country borders to achieve persistent rapid growth. This may involve new products or processes that are generated in a multinational corporation's strategy process (Jensen & Szulanski, 2007; Lechner et al., 2010; Tippmann et al., 2012) or by intrapreneurial activities of sub-units (Ambos et al., 2010; Birkinshaw, 2000; Szulanski & Jensen, 2006).

Prior IB literature has highlighted the challenge of replicating or locally adapting products as they scale internationally (Jonsson & Foss, 2011; Szulanski & Jensen, 2006; Venaik et al., 2004) and emphasized the market embeddedness of subsidiary initiatives (Andersson, Forsgren, & Holm, 2002; Cantwell & Mudambi, 2005; Meyer & Li, 2022). While the literature on subsidiary initiatives notes that initiative outcomes may remain local or create value for the global organization, scaling initiatives (according to our definition presented above) involves a rapid growth that propels them to a state of viable business model in multiple locations. This conceptualization of initiative scaling is closely tied to the coordination and control challenges of the MNC, where initiatives are often pursued by entrepreneurial, but semi-autonomous, subsidiary managers (Nohria & Ghoshal, 1997) and where internationalization

Table 1
Scaling in different organizational settings.

	Scaling initiatives	Scaling organizations	Scaling ecosystems
Definition in IB context	Entrepreneurial initiative that is rapidly and persistently grown to a viable business model across multiple international locations within an established organization	Persistent rapid growth of an entire organization to deliver its viable business model across different international markets	Persistent rapid growth of an ecosystem to deliver a viable business model across different international contexts
Replication dilemma	Driven primarily by the need for product or process adaptation to local needs and the ability of the MNC to integrate the new initiative in its (international) units	Replicability of the business model mostly faces limits of institutional differences to establish a viable organizational model in different countries	Bottlenecks and liability of ecosystem integration in local markets may require local responsiveness to reconfigure ecosystem in different locations
Internal transformation	Often in the form of bottom-up or dispersed innovation with transformation potential for the overall MNC	Internal transformation as a growth and learning process	Complemented by external transformations due to increasing number of users, complementors and partners
Specifics of scaling in an IB context	<ul style="list-style-type: none"> Impact of scaling initiatives on local/global value creation Bargaining between headquarters and subsidiaries about legitimacy and the resources to realize the initiative Potential power struggles between peer units Timing, interdependence and context-dependence of practices and knowledge transfer methods 	<ul style="list-style-type: none"> Business model design and architecture which facilitate simultaneous replication across international markets and local adaptation Speed and scope of scaling across borders Internal factors, such as organization design, management team, professionalization, and organizational culture, motivation and objectives are central to international scaling Scaling may involve different entry modes 	<ul style="list-style-type: none"> Institutional differences require ecosystem versatility Reconfiguration of the ecosystem with local and global partners

involves a learning process (Johannson & Vahlne, 1977). In this MNC setting, scaling is often accompanied by a bargaining process between the headquarters and subsidiaries (Ambos et al., 2010; Balogun et al., 2011; Mudambi & Navarra, 2004) about the initiative's legitimacy and the resources to realize it as well as potential power struggles between peer units (Birkinshaw & Lingblad, 2005).

While the body of knowledge on the scaling of initiatives comes from MNCs with a for-profit background, we have recently seen an increasing focus on scaling for social impact (Shepherd & Patzelt, 2022). In fact, scaling is imperative to addressing the sustainable development goals as the underlying challenges are often deeply locally embedded but in need of global solutions. Focused on the scaling of initiatives in established international organizations, Ambos & Tatarinov (2022), for example, found that scaling of technology initiatives within the U.N. followed two different pathways, either from country to country, or via headquarters.

3.2. Scaling organizations

The international scaling of an entire organization refers to its *persistent rapid growth to deliver its viable business model across different international markets*. The international scaling of an entire organization may be driven by market seeking motivations to rapidly expand the user or customer base in multiple countries. Such international scaling may involve a few country markets (e.g. a social enterprise introducing cross-national projects in Latin American markets; Ambos et al., 2020; Chliova & Ringov, 2017) or global scaling across many markets and multiple regions (e.g. Qualtrics rise to become global leader in experience management software; Tippmann & Monaghan, 2018; or Zoom's rise to become the leading video conferencing platform). In such situations of market seeking motivations, rapid international growth makes a considerable, and often rising, contribution to persistent rapid growth. Scaling organizations often balance local and global value creation: There are situations where the persistent rapid growth occurs in a single market by replicating the business model domestically, but the organizational scaling of the activity system of the business model has a cross-border element. For example, Rent the Runway, the largest shared designer closet of women apparel in the world that disrupted the fashion industry by allowing subscribers to rent outfits or buy re-sale items, currently offers its products and services only in the U.S., but sources its designer wear internationally and scaled international R&D operations focused on engineering and data analytics. So, the value proposition is delivered within a single country, but the delivery system of the business model is international.

When scaling an organization across locations, a central coordination and control tension arises between the need to leverage the knowledge and preserve the interdependencies embedded in its existing, successful business model by standardizing and replicating it in new locations and the need for adaptation to account for the context-specificity of knowledge and its obsolescence or value-variation over time (Kostova & Roth, 2002; Levinthal & Marino, 2015; Sørensen & Stuart, 2000; Szulanski & Jensen, 2008; Terwiesch & Xu, 2004; Williams, 2007; Winter et al., 2012; Zollo & Winter, 2002). On one hand, standardization and replication ensure effective knowledge transfer, preserve internal fit, consistency and economies of scale across locations (Helfat & Peteraf, 2003; March et al., 1991; Szulanski & Winter, 2002) and enable scaling speed across international markets (Tippmann et al., 2022). On the other hand, local adaptation allows for greater external fit between the business model of the focal organization and the new contexts it is scaling into (Henderson & Mitchell, 1997; Nelson & Winter, 1982; Tushman & Anderson, 1986) as well as its ability to maintain its external fit with the context over time (Siggelkow, 2001, 2002). The need and pressure for business model flexibility and adaptation increases with the spatial and temporal variation in the environments the organization is operating in or intends to scale into. The study by Mihailova (2022) on the international scaling of born digital firms in cultural industries, for example, unpack the mechanisms of

business model adaptations as the organizations scale across markets. While there are strong reasons to expect the classic tension between standardization and adaptation to manifest in scaling organization, in the context of global scaling of digital SaaS firms, Tippmann et al. (2022) find that the most pressing tension related to the need for replication and entrepreneurship, with these globally scaling digital businesses seeking to minimize local adaptation. Delivering on replication enabled frictionless rapid international growth and delivering on entrepreneurship allowed innovation to remain competitive in dynamic global markets.

While the above mentioned issues of coordination and control are common in big established MNCs, they provide additional challenges for new entrepreneurial organizations that have to tackle the obstacles of entrepreneurial growth and internationalization at the same time. Internal factors, such as organization design, management team and organizational culture (e.g., DeSantola & Gulati, 2017), as well as the characteristics of the scaling process are central to the ability of organizations to scale internationally. Organizational design facilitates scaling when it allows for 'freedom within constraints.' Given not all elements of a business model may be equally relevant to all local contexts, organizations increasingly opt for designing business models that distinguish between required (universal) and optional (context-specific) elements in order to facilitate international scaling (Ansari et al., 2010; Jonsson & Foss, 2011; Levinthal & Marino 2015; Ringov et al., 2022b) and may follow a strategy of 'replicable innovation' for global scaling (Tippmann et al., 2022). Moreover, especially in younger scale-up ventures, the scaling process needs to be supported by increased professionalization, definition and formalization of management roles, paths and transitions (DeSantola & Gulati, 2017; DeSantola et al., 2022). In addition, organizational design needs to support the allocation of non-scale-free resources (Levinthal & Wu, 2010; Wu, 2013), such as management time and attention, so as not to constrain the speed or deteriorate the quality of scaling. Relatedly, scale-ups need to judiciously manage relevant features of the scaling process such as the speed and scope/breadth of scaling (Kim & Kim, 2021; Ringov et al., 2022a), including the selection and penetration of international markets (Monaghan & Tippmann, 2018; Stallkamp et al., 2022), and the types of knowledge transfer methods used in the process of scaling and the timing and context of their deployment (Busch & Barkema, 2021; Sutter et al., 2014; Szulanski et al., 2016). This also includes selecting appropriate entry modes, with typical ones used by scaling organizations including exporting, franchising and foreign direct investment.

The objectives of organizations scaling internationally can vary substantially between for-profit, hybrid and non-profit organizations. In for-profit organizations, the objective of scaling is typically economic value creation and capture via the attainment of economies of scale (Knudsen et al., 2014), increased legitimacy and brand differentiation (Zimmerman & Zeitz, 2002), pre-emption of would-be imitators (Eisenmann et al., 2006), and/or enhanced ability to successfully compete with more established rivals (Schilling, 2002). The objectives of scaling can differ in hybrid organizations (André & Pache, 2016; Chliova & Ringov 2017; Mair & Seelos, 2017), i.e., organizations that "straddle the well-established categories of business and charity" (Battilana et al., 2015: 1658), because they are driven by dual motivations - that of social impact and that of economic profitability or at least sustainability (Austin et al., 2006; Mair & Marti, 2006) - and trade-offs frequently exist between their social impact and profit objectives (Kistruck et al., 2013; London et al., 2010; Rangan & Gregg, 2019). Successful exemplars, such as Aravind Eye Hospitals in India and BRAC in Bangladesh, have fuelled enthusiasm. For example, by replicating established templates with only minor adaptations, BRAC has grown to become the largest NGO in the world to target the bottom of the pyramid, serving 135 million people in 11 countries, with an astounding 70% of its activities being financially sustainable (Davis, 2013). Likewise, Aravind Eye Hospitals have famously adopted a 'McDonald's approach,' reaching a scale that allows them to conduct as many as 60% of the number of eye surgeries that the UK's National Health Service conducts

each year, at a fraction of the cost (Rosenberg, 2013).

Yet, organizations that also have a prosocial mission (Chliova & Ringov, 2017; DeSantola, 2021; Giudici et al., 2020; Miller et al., 2012) may also opt to prioritize scaling deep over scaling up (Kim & Kim, 2021), i.e., prioritize gradual, yet long-lasting growth deeply rooted in and meaningful to specific communities and beneficiaries over quick and broad geographical coverage as in the frequently evoked image of ‘going viral’ and ‘blitzscaling’ in entrepreneurship practice. The founders and top management of hybrid and non-profit organizations may be more intimately connected and committed to specific locations and could have fewer options for exiting their programs without destroying social value (Kayser & Budinich, 2015). This may limit the scope and speed of their international scaling. Likewise, some founders of hybrid and not-for-profit organizations tend to adopt a ‘small is beautiful’ mindset (Schumacher, 2011), believing that scale will greatly decrease the quality of their offering, as organizational structure and bureaucracy could reduce the personal attention and commitment that can be channelled to each project and beneficiary (Kayser & Budinich, 2015).

Overall, studies on hybrid organizations and social enterprises have offered new insights on scaling, some bound to single-country settings (Dacin et al., 2011; Tracey et al., 2011); and others focused on the international dimension and context. Further integration of this literature and IB scholarship can shed new light onto the coordination challenges between local responsiveness and global integration that scaling hybrid enterprises and non-profits internationally might pose, enriching both this literature and IB scholarship (Ambos et al., 2020).

3.3. Scaling ecosystems

Following the definition of an ecosystem as a “group of interacting firms that depend on each other’s activities,” (Jacobides et al., 2018: 2256-7), we refer to the scaling of an ecosystem as *its persistent rapid growth to deliver a viable business model across different national contexts*. Depending on the emphasis, the ecosystem may relate to the business ecosystem of the participating organizations and their environment, the innovation ecosystem of a new value proposition and actors supporting it, or the platform ecosystem centred on how actors organize around a platform (Jacobides et al., 2018).

The international scaling of an ecosystem may be evident in each of these ecosystem types and value creation may be split between local and global partners. For example, it has been found that the business ecosystem at the local, national and transnational level, and the possibility of scaling various elements of the ecosystem itself, influence the speed of scaling organizations (Busch & Barkema, 2021; Chliova & Ringov, 2017) and digital solutions (Tatarinov et al., 2022). In relation to an innovation ecosystem, this focuses on collaborative arrangements across interdependent actors, especially end users and complementors for innovation creation and commercialization. This is relevant to scaling as the networks required for a fast-paced roll out of an innovative value proposition may not only be international or virtual, thereby stretching geographic boundaries (Huang et al., 2017; Iyer et al., 2006), but may require a fast-paced development to catalyze rapid growth. In terms of platform ecosystems, there is a lot of anecdotal reference to the scaling of platforms, including Amazon, Alibaba, Facebook and Zoom, to mention a few. In terms of scholarly work on the international scaling of platforms, studies have examined the extent to which externalities in user networks of digital platforms are location-bound or non-location bound (Brouthers et al., 2016; Chen et al., 2019; Shaheer et al., 2020; Stallkamp & Schotter, 2021). If non-location bound network effects are evident then platform scaling more easily stretches geographic space, thereby enabling international scaling speed and global value creation.

While the focus of ecosystem scaling may be on the business, innovation or platform ecosystem, the underlying theme of these settings in an IB context is the system of users, inter-organizational and multilateral relationships and dependencies between actors as they organize and coordinate around the persistent rapid growth of delivering a value

proposition locally and globally. These actors may be located in the home country, but more often are located in foreign markets and may operate themselves internationally or transnationally. The ecosystem may include powerful orchestrators or smaller players participating through architectural openness (Thomas et al., 2014). This provides significant challenges to coordination and control within organizations that play central roles in ecosystems in different countries, as well as for the coordination of partners that may differ in each location.

If initiatives and organizations are embedded in ecosystems, an ecosystem may be a source of advantage; however, an ecosystem also faces particular challenges when replicating it across international markets. Bottlenecks to ecosystem scaling can arise from weaknesses in local infrastructures and lack of complementary assets (Li et al., 2019), and ecosystem scaling may have to contend with a ‘liability of ecosystem integration’ in international markets due the need to invest in the co-development of a local ecosystem of users, complementors and institutional partners that align on a shared objective (Rong et al., 2022). Responding to these replication challenges may involve local adaptations to the ecosystem instead of standardized replication. Moreover, scaling an ecosystem is often underpinned by increasing networks and interdependencies among users, complementors and partners. The transformations to an ecosystem as it scales, including challenges of coordination and control, may have a pronounced external dimension that often stretches across national borders.

Compared to the scaling of initiatives and organizations, there are fewer insights on the international scaling of ecosystems. In the context of scaling for social impact, often resource-constrained social enterprises are involved that have to scale across countries with diverse local needs. It has been found that heuristics of partner selection and partner engagement in national and international locations were instrumental to such scaling because it enables them to reach more countries and to embed more deeply into local communities (Busch & Barkema, 2021). Focused on ecosystem dynamics as the U.N. seeks to scale digital solutions internationally, Tatarinov & Ambos (2022) observe that ‘ecosystem versatility’ is critical in that many aspects in the configuration of actors in which the digital solution is embedded are location-specific, therefore requiring adjustment as they are scaled. This is an important finding as it demonstrates the need for the U.N. – as a powerful, transnational ecosystem orchestrator – to partner with different local complementors across countries.

When differentiating between the scaling of initiatives, organizations and ecosystems, it becomes evident that some settings have received more research attention than others, both generally and with reference to the IB context. Further, the contextual differences between scaling for a commercial, hybrid or social purpose have been examined to varying extents. For scaling studies with an IB focus, Fig. 1 summarizes the current state of the field by positioning examples from past research. Building on these insights, we elaborate on the most promising avenues for future research on scaling in IB next.

4. The path forward: International business dimension in scaling

The cross-border aspects in the management and organization of scaling warrant further theoretical and empirical attention. Many viable research opportunities emerge by treating scaling as a phenomenon in its own right (Section 4.1) and by applying and extending established theories through the investigation of scaling (Section 4.2).

4.1. Developing theory on scaling in international business

It has been argued that digitization has created a need for developing theory on the new phenomena that we observe rather than trying to shoe-horn them into existing theories (Birkinshaw, 2022). Similarly, we see such theory development opportunities for scaling in IB, especially because many scaling endeavors leverage digitality, thereby creating the

<i>Scaling focus</i>	Ecosystem	Digital platforms and ecosystems as shaping international scaling (Nambisan, Zahra, & Luo, 2019) Cross-country externalities in user networks (e.g. Chen et al., 2019; Shaheer et al., 2020; Stallkamp & Schotter, 2021)	Scaling of ecosystem influences speed of scaling of organizations (Busch & Barkema, 2021)	Ecosystem versatility as driver of scaling speed (Tatarinov et al., 2022)
	Organization	International scaling of IKEA (Jonsson & Foss, 2011) and digital businesses (Stallkamp et al., 2022; Mihailova, 2022) Navigation of ‘replication dilemma’ (Winter & Szulanski 2001; Ringov et al. 2022b), speed of scaling (Ringov et al. 2022a; Buege & Ozcan, 2021), and global scaling paradox (Tippmann et al., 2022)	Social organization and their use of bricolage in resource-constraint contexts (Busch & Barkema, 2021) Template development and replication across the base of the pyramid (Chliova & Ringov, 2017)	--
	Initiative	Scaling of franchise in host markets (Szulanski & Jensen, 2006; Jensen & Szulanski, 2007)	--	Social innovation in the United Nations (Tatarinov & Ambos, 2022)
		Commercial	Hybrid	Social
<i>Purpose</i>				

Fig. 1. Example studies on scaling in IB context.

possibility for an unprecedented international reach and quick attainment of international scale.

In terms of some specific under-explored scaling phenomena that warrant theory development, it is noteworthy that, to date, the scaling of organizations has received more attention compared to the investigation of the scaling of initiatives and ecosystems in an IB context (see Fig. 1). Similarly, more insights exist on the cross-border aspects of scaling in a commercial context compared to hybrid and social ones (see Fig. 1). As environmental and social agendas move towards the core of the strategy of most organizations and as progress towards attaining the U.N. sustainable development goals is becoming more urgent than ever, it would be interesting to explore the role of these objectives in all types of international scaling.

Another area that offers future research avenues relates to a deeper examination of the antecedents, process and outcomes of scaling in an IB context. For example, scaling is conceptualized as an activity unfolding over time, but very few studies have yet taken a longitudinal perspective in an international context (for an exception, see Tatarinov et al., 2022). Process questions are particularly interesting as scaling is a phase with multiple pathways (DeSantola et al., 2022); there may also be series of transformations with different triggers and plateaus that can be further explored. Moreover, there is a bias towards investigating situations of successful scaling, perhaps due to the allure of examining prominent initiatives, organizations or promising scale-ups. This means that the variation in international scaling outcomes requires further investigation, including performance outcomes such as growth, impact, profitability, and survival, as applicable. While IB theory would have noted the performance-reducing effects of rapid internationalization (e.g. Jiang et al., 2014; Vermeulen & Barkema, 2002; Yang et al., 017), similar studies are needed on scaling. Given the frenzied pace of scaling,

there are inefficiencies (e.g. Dierickx & Cool, 1989; Ringov et al., 2022a), but it will be interesting to investigate the overall performance effects of different speeds of scaling in internationalization, noting that digital resource bundles afford scalability (Giustiziero et al., 2021; Piaskowska et al., 2021), including in international markets (Monaghan et al., 2020).

Moreover, each scaling setting – initiatives, organizations and ecosystem - offers exciting research opportunities in its own right. In relation to the cross-border aspects of scaling initiatives, there is ample potential to integrate key IB variables, such as variations in country context into the conceptualization of scaling. For example, scaling to institutionally close settings will allow for more replication potential, while distant contexts – especially when the size of the market/opportunity warrants it – will require or benefit from more locally adaptive elements in scaling. Research has already shown that digital solutions have the potential to ease the classic replication-adaptation dilemma in international settings (Tatarinov et al., 2022), but more insights on the balance between global-local pressures in scaling is needed. Further, it would be important to uncover which elements in the institutional context, such as regulations, government support, or cross-sector collaboration opportunities facilitate scaling, and how these may lead to organizational learning and even the development of new (dynamic) capabilities (Zollo & Winter, 2002). Despite extensive knowledge on corporate entrepreneurship in MNCs (Birkinshaw, 2000), we know little about how organizations use coordination and control mechanisms to support (or hinder) scaling efforts of initiatives for global scaling. With respect to the international scaling of organizations, promising aspects include how organizations learn about and manage speed of scaling, organization design, and nonmarket strategy considerations. Last but not least, promising aspects in the scaling of ecosystems include

ecosystem resourcing, leverage to exercise influence, and governance (e.g. Thomas et al., 2014, 2022). In an IB context, these relate to cross-border activity to ensure persistent rapid growth, such as increasing institutional complexities as the ecosystem may quickly stretch across more and more countries.

Last but not least, there are opportunities to explore multi-level effects across the three scaling settings that we have differentiated. In this article, we largely treated the scaling of initiatives, organizations and ecosystems separately, but they may be nested with interdependencies. For example, an established MNC seeking to scale new initiatives may do so by developing a platform ecosystem. The same may be the case for a scaling organization. Therefore, interesting questions related to the scaling of ecosystems involve micro-level mechanisms in terms of the number and composition of actors as well as their transformation as the ecosystem grows rapidly.

4.2. Promising theoretical perspectives

In addition to deepening and broadening the scaling phenomena that are being explored in IB, there is great potential in connecting scaling research to prior theories. Building on prior theories not only allows exploring different aspects of scaling, but also gives an opportunity to break new grounds by extending prior theories by exposing them to the unique features that scaling in an IB context involves.

In terms of theories that lend themselves to the investigation of scaling in IB, we focus on a selected few, i.e., the theories that emerged as most promising to us based on the early insights on the scaling of initiatives, organization and ecosystems. These include theories on the management of organizational tensions and paradoxes, rapid internationalization, knowledge and organizational learning, digitization, business models, institutional theory, and geopolitics and political strategies. We elaborate on the various research opportunities next, and Table 2 summarizes them.

It has been established that scaling involves the navigation of tensions. However, there are different insights emerging with respect to the types of tensions that are most salient and therefore require management intervention. Some studies note the tensions between replication and adaptation, with adaptation referring to local responsiveness to country differences (e.g. Jonsson & Foss, 2011); other findings suggest that such local adaptations, at least during initial global scaling, are minimized and that the core tension revolves around replication and entrepreneurship to continuously generate replicable innovations in dynamic environments (Tippmann et al., 2022). Future research could therefore establish how context-specific tensions can be managed effectively in international scaling.

Given that scaling involves rapid growth sustained over a period time, it is promising to extend prior theory on rapid internationalization. One interesting avenue is to focus more on the pacing, or micro-level adjustments, of internationalization speed (e.g. Monaghan & Tippmann, 2018), and to take into account different ways how internationalization speed manifests, such as speed of learning and speed of commitment (e.g. Chetty et al., 2014). Also, many scaling endeavors show not only rapid but exponential international growth rates. It would therefore be interesting to consider how the foundational theory of firm growth (Penrose, 1959/1995) and concepts that focus on the inefficiencies, such as time-compression diseconomies (Dierickx & Cool, 1989), can be applied and potentially extended to account for the challenges and enablers of scaling in an international and digital (rather than industrial) context (Giustiziero et al., 2021; Piaskowska et al., 2021). Moreover, leaders may experience substantial pressure to deliver on ambitious rapid growth targets during scaling, which may highlight issues of responsible management and ethical leadership.

Scaling is also likely to require rapid learning (Ott & Eisenhardt, 2020) and the management of unlearning (Ringov et al., 2022a), which highlights the value of the knowledge and learning perspectives on scaling (e.g. Shepherd & Patzelt, 2022). Yet, insights on how knowledge

Table 2
Promising research avenues on scaling in an international business context.

Theory area	Future research avenue
Organizational tensions	<ul style="list-style-type: none"> • What are the loci of organizational tensions in international scaling? • Are tensions in international scaling context-specific, and if so, what are the core influencing contingencies? • What are the most effective strategies and practices for managing tensions in international scaling?
Rapid internationalization	<ul style="list-style-type: none"> • How to operationalize speed in international scaling and its impact? • Under what circumstances does international scaling warrant pacing behaviors and variation in scaling speed? How are they realized and what is their impact? • Whose speed matters? How do scaling speeds at different levels of the organization affect international scaling processes and outcomes? • What are the challenges and enablers of international scaling?
Knowledge and organizational learning	<ul style="list-style-type: none"> • Enablers and process of rapid learning in international scaling • Sourcing, integration and recombination of local and global knowledge • Learning how to navigate/balance the different dimensions, objectives and tensions of scaling • Learning how to scale rapidly without compromising core organizational processes • Local and global innovation for and during international scaling
Digitalization	<ul style="list-style-type: none"> • How does digitalization influence international scaling at the level of initiatives, organizations and ecosystems? • To what extent does digitalization allow for traditional liabilities associated with internationalization to be overcome? • How, and under what circumstances, are new liabilities, e.g. liability of disruption or liability of technological leverage, manifest in international scaling? • How does the interplay of digital and physical, online and offline business model elements affect international scaling?
Business models	<ul style="list-style-type: none"> • How are different aspects of the value proposition and delivery system of the business model amenable for international scaling? • What are the business model related challenges to scaling in IB and how can they be overcome? • What are the key enablers of or barriers to business model scalability in the international context? • How does location flexibility influence business model design and exploitation during scaling?
Institutional theory	<ul style="list-style-type: none"> • What are the most prevalent institutional aspects impacting international scaling? • How does international scaling navigate cross-country institutional differences? • What are cross-country similarities and differences in scaling behavior and scaling processes? • What are the strategies of institutional entrepreneurs that enable or constrain international scaling? What are the relevant institutional fields?
Geopolitics and political strategies	<ul style="list-style-type: none"> • How does international scaling respond to and influence geopolitics? • What political strategies support scaling in a globalizing vs. deglobalizing IB context? • How do stakeholders' political views affect international scaling? • How to facilitate ecosystems dependent on cross-sector collaboration between public-private and local-global actors? What is the role of regions and regional strategies in international scaling?

gained from scaling can be integrated and managed in an organization at a fast pace is scarce. The Uppsala school of internationalization assumes “incremental” learning processes where knowledge gained in new markets needs to be absorbed and reflected upon before next steps are taken (Johansson & Vahlne, 1977). Research on early and rapid internationalization has established that fast-paced knowledge development may be needed (Freeman et al., 2010; Madsen & Servais, 1997; Monaghan & Tippmann, 2018), but we need to extend our theories for knowledge management and learning to account for continuously innovating business models during international scaling (Tippmann et al., 2022). As scaling in different contexts often involves collaboration with different partners and cross-sectors, learning from ecosystems players who operate on different logics becomes critical for scaling success. This may propel the scaling organization or unit into the role of an orchestrator responsible for the management global and local knowledge (Tatarinov et al., 2022). While learning from local partners has traditionally been achieved through subsidiary embeddedness, which requires the establishment of long-term, trusted relationships (Andersson et al., 2002), scaling organizations will have to find new ways of sourcing such knowledge in a rapid way.

As noted, digitalization is closely associated with scaling potential and success due to the capacity of digital technologies to enable scalable business models (Adner et al., 2019; Brynjolfsson et al., 2008; Piaszkowska et al., 2021) and to penetrate a large international market with less physical friction. Indeed, the technological affordances of digitalization provide a significant opportunity for scaling in an IB sense (Monaghan et al., 2020; Stallkamp et al., 2022), but assessing the impact of digital technologies at the level of the initiative, organization and ecosystem is warranted. Furthermore, while digitalization is often seen as a mechanism to overcome the liability of outsidership for international activity and can increase the resilience of organizations (Autio et al., 2021), this does not simply remove scaling challenges. While digitalization may alleviate some of the bottlenecks that would have traditionally constrained the ability to achieve persistent rapid growth, scaling is still faced with the inherent liabilities of international expansion and may be more at risk of liabilities of disruption (Marano et al., 2020) or the liability of technological leverage (Chalmers et al., 2021). Understanding the multifaceted role of digitalization in scaling must consider the different levels of operation, but also the combination of existing and new challenges.

The business model concept has gained prominence in IB scholarship (e.g. Hennart, 2014; Tallman et al., 2018), and is also central to our definition of scaling. We therefore see many opportunities for a fruitful application of a business model perspective to scaling (e.g. Mihailova, 2022). Among these is the exploration of how different aspects of the value proposition and delivery system of the business model are amenable for international scaling, i.e., to examine their ‘scalability’ as an enabler of international scaling and as factor that needs continuous attention. There are also issues related to the ‘space-place’ relationship’, location flexibility as well as centrifugal forces (pushing for international dispersion) and centripetal forces (pushing for co-location) of different business model elements (e.g. Autio et al., 2021; Monaghan et al., 2020). All these factors may enable or constrain international scaling and offer future research opportunities. Relatedly, the business model may be amenable to be delivered through a large proportion of remote and hybrid working across international borders. As such, scaling organizations may lead the way in adopting new organizational models due to their demand for talent, their willingness to experiment and less rigidities that may hinder. It would be valuable to explore more how different international organizational models enable scaling and their associated implications for coordination and control across borders.

As scaling fundamentally navigates local demands and global opportunities, international scaling will be influenced by external factors, such as institutional differences. Many of the most prolific commercial scaling firms have originated from Western, resource-rich

entrepreneurial ecosystems, such as Silicon Valley (Saxenian, 1996), in part due to the institutional supports available in the local environment or entrepreneurial ecosystem (Autio et al., 2014; Autio et al., 2018; Spigel, 2017). These supports may aid an aggressive and rapid geographic expansion. Conversely, the examination of scaling of social and hybrid enterprises has been focused on economically challenged locations (Chliova & Ringov, 2017; Kim & Kim, 2021). Given the role of the external context, institutional theory remains a core theoretical perspective amenable to scaling research. For example, there is growing evidence of scaling supports and scaling heuristics being applied across different institutional jurisdictions and cross-country locations (Busch & Barkema, 2021), yet systematic differences across institutional contexts and resource mechanisms warrant exploration. This research context also calls for a critical assessment of the ethics involved in scaling. Some initiatives that created positive social impact in a specific community had detrimental collateral effects when beings scaled (Voegtlin et al., 2022). Future research can explore more scaling strategies at the bottom of the pyramid, across emerging markets and in heterogeneous international resource contexts considering also the social impact and ethical consequences of scaling.

Relatedly, all international organizations are exposed to geopolitics and, given the intensity of scaling, the effect of this exposure may be heightened. For example, firms such as Airbnb and Dropbox, that have successfully scaled, have a unique relationship with host country stakeholders (Marano et al., 2020). The dynamics of the business-government relationship, in addition to the role of government intervention in supporting, or indeed restricting, scaling is a fruitful area of research. Moreover, scaling may be more sensitive to the current international geopolitical landscape and questions related to these issues, including populist and de-globalization sentiments (Casson, 2021; Witt, 2019), post-pandemic management (Delios et al., 2021), political strategies (Hartwell & Devinney, 2021), and disruptions to integrated global strategies and value chains (Meyer & Li, 2022). These issues all warrant exploration in the context of international scaling.

5. Conclusion

Scaling in an IB context has the potential to extend and revolutionise existing theories, in addition to providing novel theoretical explanations for new phenomena. As illustrated above, cross-border management and organizational coordination are inherent aspects of scaling that warrant further exploration. In this article, we offered some conceptual foundations on scaling and scale-ups in an IB context. We also outlined some guideposts for the broad range of scaling-related phenomena and theoretical intersections with various areas of IB scholarship that offer future research opportunities. We therefore hope that this perspective article will spur further research and debate on scaling and scale-ups in an IB context.

Acknowledgments

We are very grateful for the comments by Stav Fainshmidt and three reviewers on an earlier version of this paper. Authors are listed in alphabetical order except for the lead author.

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