
International Entrepreneurship and Digitalization of micro-small and medium-sized enterprises

An extended abstract

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Introduction

Companies and society are developing at the heart of transformations and all institutions are facing a fundamental need for radical changes in their structure and operating methods (Malik, 2016). With the advent of digital technologies, a new industrial revolution is emerging and future progress is part of disruptive changes (Schwab, 2017). Represented by the integration of these so-called digital technologies into all digitalizable aspects of daily life (Gray and Rumpe, 2015), digitalization leads to radical transformations in systems and processes as well as in management methods and the workforce. In this context, the use of digital technologies is an important issue for the economic development of our societies (Reuber et al., 2018). Micro-small and medium-sized enterprises (MSME) internationally engaged benefit from these technologies because their use opens boundaries and presents new opportunities to succeed in foreign markets. Furthermore, companies are now able to digitalize their internationalization process by integrating new technologies into the value chain and managing the massive amount of data. By reducing operating costs and improving exchanges with all ecosystem stakeholders - including customers, partners, suppliers and distributors - digital infrastructures play an

increasingly important role in company growth (Reuber and Fischer, 2011, 2014; Nambisan, 2017). However, current internationalization theories and models are not adapted to the MSME actual models. Scientific debates emerge from these currents of thought and constitute the starting point of our research. In view of the above, our paper aims to study digitalization through the perspective of small companies internationalizing. The combination of International Entrepreneurship and digitalization research fields offers new empirical data and new perspectives on traditional internationalization theories, which still consider these two domains separately. By exploring a phenomenon which could play an essential role in the future of international societies (Manyika et al., 2016), our study aims to provide a new dynamic for contemporary research on globalization (Delios, 2017). On the basis of a literature review, our conceptual paper is built through different theoretical foundations. The research process is divided into four distinct parts. The first step is an in-depth literature review on the companies' internationalization. The evolution of this research stream raises questions about the digital context in which all organizations, and more specifically small structures, are emerging. These findings are the starting point for the second part, which aims to clarify conceptual notions about digitalization and to introduce the structural and strategic challenges facing companies. The third part links the two research themes and explains the emergence of digitalization in the internationalization process. The results of this section have identified some criticisms about theoretical models of internationalization and have also justified the introduction of the digital context into international entrepreneurship theories. Finally, the fourth part formulates a synthesis of the results of four research articles in International Business field (table 1) that jointly addressed the links between the two topics concerned. This analysis identifies a plethora of synergies between the dimensions (table 2). To conclude, we discuss the results and the managerial implications. Suggestions for future research on this subject are also highlighted.

Literature review

Over time, theories suggest different internationalization approaches. Although these theories coexisted and evolved in the literature for several decades, the stage model is often criticized and the scientific community is starting to relativize its universality (Welch et al., 2016; Knight and Liesch, 2016; Welch and Paavilainen Mäntymäki, 2014; Sullivan and Bauerschmidt, 1990). Even if Johanson and Vahlne have published numerous adaptations since their first writings (2006; 2009; 2013; 2013; 2017), the Uppsala Model (U-Model) is frequently reconsidered. After forty years of research, authors have recently published a new stage model version (Vahlne and Johanson, 2017), which opened a new debate for future research on international entrepreneurship and which falls within the digital context (Coviello et al., 2017).

The literature review also corroborates the need to conceptually clarify the notion of digitalization. Its perception differs from one field to another but its emergence manifests a new paradigm for the definition of a company's business model. By linking research work on information technology and business management, our full paper presents digitalization and introduces the main structural and strategic concerns at an organizational level. Firstly, scientists make a distinction between "digitization" and "digitalization". According to Tilson et al. (2010) digitization is a *technical process* that makes technologies digital while digitalization is "*a sociotechnical process of applying digitizing techniques to broader social and institutional contexts that render digital technologies infrastructural*". In other words, digitalization is the combination and application of digital technologies within an organization, economy and society. In the field of entrepreneurship, Nambisan (2017) suggests that these digital technologies are represented in three distinct but related phenomena: Digital artifacts as *a digital component integrated into a new product or service, which offers a specific functionality or value to the end user* – Digital platforms as *complementary offers hosted by a common and shared set of services including digital artifacts* – Digital infrastructure as *digital tools and*

systems that support the company through better computing, communication and collaboration capabilities. These infrastructures include, for example, SMAC technologies (social networks, mobile application, data analysis, cloud computing), 3D printing, Internet of things and online community platforms (crowdsourcing and crowdfunding).

Digitalization in internationalization theories

To understand digitalization from a perspective of a firm's internationalization, the paper details its emergence in the field and explain how the intensified use of Internet initiated digitalization and truly disrupted international trade over time. For decades globalization was defined through trade in goods and services between countries (Manyika et al., 2016). Although the dynamics of these flows are currently moderate, globalization is not slowing down. In contrast, huge data flows are constantly crossing borders and their volume has increased considerably. Consequently, globalization is evolving at the same pace as these exchanges of information and data across foreign markets. Digital infrastructures and platforms are mainly at the origin of these significant changes. They are creating new virtual market spaces and resizing all the business cross-border economies by reducing costs, shortening transactions and amplifying interactions.

20th century globalization	21th century globalization
Tangible flows of physical goods	Intangible flows of data and information
Flows mainly between advanced economies	Greater participation by emerging economies
Capital- and labor-intensive flows	More knowledge-intensive flows
Transportation infrastructure is critical for flows	Digital infrastructure becomes equally important
Multinational companies drive flows	Growing role of small enterprises and individuals
Flows mainly of monetized transactions	More exchanges of free content and services
Ideas diffuse slowly across borders	Instant global access to information
Innovation flows from advanced to emerging economies	Innovation flows in both directions

Source: Manyika et al., 2016

From a scientific point of view, the digital issue is raised in a counterpoint (Coviello et al., 2017) in regard to the latest U-Model version (Vahlne and Johanson, 2017). Because digital

trends strongly impact internationalization processes, it is important to challenge the universality of actual theoretical models. As Welch et al (2016) point out, in a modern digitalized world, it is difficult to accept costs or access to information as internationalization constraints. For many years, international and entrepreneurship research has been fundamentally influenced by the omnipresent effects of emerging technologies. According to Coviello et al. (2017), although the U-Model founders recognized their importance in transforming international trade, they have not explicitly addressed how these transformations impact the evolution of MSME beyond their borders.

Results synthesis

The review of the scientific literature demonstrates a growing interest in studying and linking these two research streams for future research. In the study, four scientific articles were selected, analyzed and synthesized (table 1). Published in scientific journals between 2016 and 2018, these papers focused mainly on the impact of digitalization on the internationalization processes of small firms. In general, digitalization impacts internationalization processes in terms of accessibility of resources, skills and competence acquisition, as well as learning and knowledge development in foreign markets. Other parameters, like location and entry mode choices or time and expansion rate, are influenced by the advent of digital technologies.

By linking the digitalization effects and internationalization criteria, the main key points identified through the four areas of research are presented (table 2). This overview also illustrates some opportunities outlined in the synthesis. Mostly supported by the digital infrastructures described by Nambisan (2017), these opportunities show a plethora of alternatives available to entrepreneurs for reconsidering their international activities. The integration of such digital infrastructures is a fundamental starting point. On one hand, it helps MSME in improving their business model efficiency and, on the other, it develops its own value proposition in foreign markets.

Discussion and final remarks

The literature review justifies the interest of jointly studying the International Entrepreneurship and digitalization research streams. International trades are transforming and dematerializing at the rate of digitalization. Results of the study exposed precious benefits for firms: it reduces transaction costs on a global scale; it dematerializes communication, distribution and production channels; it facilitates new data acquisition; it virtually reduces geographical distances; it encourages exchanges between local partners rather than countries and it opens borders to a multitude of new small and entrepreneurial firms. In the near future, entrepreneurs who aim to expand abroad will no longer care about country borders, suppliers or customer locations. They will focus only on their own value proposition which will make the difference on foreign markets. In these circumstances, linking the two research streams opens the door for developing new theoretical frameworks regarding the recognition of international business opportunities. By addressing the digital context, our article strongly contributes to extending scientific theories on the globalization of firms. It provides a state-of-the-art towards internationalization research and provides a better understanding of digitalization in international trade. From a managerial point of view, this study addresses digitalization issues involved at a firm's structural and strategic level. Linked with internationalization criteria, key points identified in the study show how MSME who want to expand into foreign markets could benefit from digital technologies. The faster a company understands the benefits of the use of digital infrastructures, the faster it can improve its decision-making processes and accelerate its internationalization speed (Neubert, 2018). In these circumstances, future research should collect quantitative and qualitative data to empirically study the effects of digitalization on internationalization processes. Such data would be valuable for a better understanding of how digital infrastructures will influence internationalization models and strategy. Besides, in the literature, the risks of digitalization in international trade are not addressed from a scientific

perspective. Although the research studied in the synthesis agrees that the use of digital tools has a positive effect on international expansion, its limits could be an avenue for future research. Another interesting research orientation is raised by Manyika et al. (2016) about emerging economies, where a multitude of niche markets are flourishing. In view of the above, research into international entrepreneurship has, therefore, many unexplored avenues of study regarding the digital context.

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Appendix

Table 1: Overview of selected papers used in the synthesis

Authors (year)	Title	Scientific review	Research objective	Theoretical framework	Key results
Brouthers et al. (2016)	Explaining the internationalisation of ibusiness firms	<i>Journal of International Business Studies</i>	In their paper, authors extend internationalization theories to digital firms. Based on a literature review and case studies, they examine and compare the internationalization process of such firms.	<i>Internationalization theories</i> <i>Social network theory</i> <i>Diffusion of innovation theory</i>	Authors suggest that thanks to the use of platforms, digital firms are less impacted by liabilities of foreignness. On the other hand, because their value proposition depends on a large user base, these digital companies suffer from a lack of relationship with existing networks. These firms are faced with more difficulties in developing potential collaborations across foreign markets (liabilities of outsidership). Based on a multi-case study, research develop new theory and testable hypotheses.
Autio and Zander (2016)	Lean internationalization	<i>Academy of Management Proceedings</i>	This research explores how digitalization impacts expansion processes of INVs. By focusing on their business operations, authors explain how the use of digital tools affects international trade.	<i>Transaction cost theory</i> <i>Foreign entry mode</i> <i>International Entrepreneurship</i>	Through several proposals, the researchers present the main effects of digitalization on the INV internationalization process. Their proposals suggest that digitalization mainly reduces geographical distances, vertical and horizontal assets specificity and cross-border information asymmetries. By linking lean entrepreneurship practices to digitalization, the authors formulate a new theoretical lens; <i>Lean Internationalization</i> .
Coviello and al. (2017)	Adapting the Uppsala model to a modern world: Macro-context and microfoundations	<i>Journal of International Business Studies</i>	This study is a counterpoint to the last U-Model version (2017). It considers two missing dimensions to the model: the impact of the digital context at a macroeconomic level and the role of decision-makers at a microeconomic level.	<i>International Business</i> <i>Entrepreneurship</i> <i>International Entrepreneurship</i>	Research results underpin the importance of studying digital context at a macroeconomic level to create and exploit new opportunities in foreign markets. Based on U-Model theory, the authors develop a three-level conceptual framework. This model integrates the macro and micro characteristics studied in their counterpoint.
Neubert (2018)	The impact of digitalization on the speed of internationalization of lean global startups	<i>Technology Innovation Management Review</i>	The research aims to demonstrate how the use of digital technologies in the expansion process accelerates the internationalization rate of Lean Global Startups.	<i>Lean Global Startup</i> <i>International market development processes</i> <i>Digitalization</i>	Results confirm a significant and positive impact of digitalization on the start-up internationalization process. The authors suggest that the integration of digital technologies allows companies to deploy new knowledge, to rapidly integrate relational network, to improve decision-making processes efficiency and, finally, to accelerate the speed of internationalization.

Table 2: Overview of digital effects and opportunities on internationalization process

Digitalization Internationalization	Digitalization effects on internationalization activities	Opportunities for defining new value proposition through digital use
Costs, accessibility, resources and competences	Distribution and production channels dematerialization and digital platforms <ul style="list-style-type: none"> • additional cost reduction for foreign operations • asset specificity attenuated • resource allocation in several markets • time saving on transactions • optimization of decision-making processes 	Alternative revenues through digital platforms and infrastructures
		Sharing skills and capacities between companies
		Open innovation / co-creation with partners and customers
		Investment in qualified human capital
Market knowledge (general and experience)	Deployment of user communities, data collection and new sources of accessible information <ul style="list-style-type: none"> • large information databases • exchange and processing of large amounts of data • online user community (discussion and feedback) • fast and efficient adaptation to markets • cross-border information asymmetry attenuated 	Regular market experiments for product and service adaptations
		Market attractiveness analysis
		Better targeted marketing and prospecting activities
		Data collection and use of predictive algorithms for modelling and interpreting these data
Distance and location (psychological and physical)	Border dematerialization and acceleration of internationalization operations <ul style="list-style-type: none"> • international activities managed from a distance • democratization of consumption • reduction of psychological distances • specificity related to location attenuated • multiplication of targeted countries • activities led by networks rather than countries 	Partnerships with local companies via platforms
		Production and distribution sites shared
		Licensing to local actors
		Local and niche market development
Relational competences and partner networks	Collective internationalization, local partners networks and direct interactions with consumers <ul style="list-style-type: none"> • larger market scope • fast interactions between partners • consumers integrated into ecosystem • faster internationalizing speed • better access to network skills and knowledge 	Data and skills sharing between actors
		Offers and customer experiences personalized
		Opinion leaders and change agent solicitation
		Online reputation through the use of multiple social networks and local mass media