

# Born Digitals: Understanding the Sustainable Competitive Advantage Across Different Markets



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**Abstract** Digitalization of business is one of the driving forces in today's environment and seems to be an irreversible trend. At present we can observe not only a digital transformation of firms but also the emergence of firms that are digital from inception. The born digital firms have characteristics that allow them to quickly expand on international markets and stay competitive for sustained periods of time. The purpose of this study is to analyze the characteristics of born digital firms that lead to sustainable competitive advantage and to develop a conceptual model that will serve as a basis for future research. Various sources of born digitals' competitive advantage are revealed, such as innovativeness, creativity, responsiveness, digital technology, and digital skills of their employees. One of the key findings is highlighting the role creativity plays in how responsive born digital firms can be in times of change, a characteristic that supports their sustainable competitiveness. The newly defined born digitals' characteristics and sources of competitive advantage should embrace the approach to their competitive advantage across different markets as a complex dynamic construct that is presented, which includes technology advantage, human capital advantage, but also differentiation advantage.

**Keywords** Born digitals · Digitalization · Competitive advantage

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# 1 Introduction

Digitalization is believed to have undermined the foundations of international business (Eden, 2016, Banalieva & Dhanaraj, 2019). In the current times, digitalization stands at the core of international business dynamics in highly uncertain environment. Digitalization is understood as “the process of transforming the essence of an organization’s products, services, and processes into Internet-compatible data packages that can be created, stored, and transferred in bits and bytes, along with the information associated with them, for marketing, sales, and distribution” (Banalieva & Dhanaraj, 2019, p. 1373).

The internationalization of entrepreneurial firms, supported by innovation and digital technologies, causes the rapid and continuous transformation of the global business landscape. Therefore, due to digital transformation, internationally active entrepreneurial firms are competing globally for the customer experience and therefore participate in changing the behavior of both virtual and off-line communities (Dambrin & Valck, 2007). Among those active entrepreneurial companies, one can identify born digital firms. Born digital firms can be defined as “the firms whose core value proposition is enabled by digital infrastructures” (Shaheer, 2020, p. 2). Born digital firms instantly access globally dispersed resources for the development of novel digital products that are made available to the whole world with just a few clicks (Shaheer, 2020).

Digitalization is a general trend proliferating across industries and geographies. It has the potential to create disruption in existing business models and fundamentally change the competitive positions of firms in different areas of economic activity, including international entrepreneurship (Reuber & Fischer, 2011; Vadana et al., 2019). Nevertheless, there is still little knowledge available to understand digitalization’s impact on internationally active entrepreneurial firms’ behavior. This fact highlights the importance of studying technologically innovative and digitally determined international entrepreneurship (Welter, 2005; Smolka & Heugens, 2020) in a scholarly setting. There is a lack of a conceptual frameworks for understanding how born digital firms achieve sustainable competitive advantage. Development of such a conceptual framework would be the first step to more focused research on entrepreneurial firms that are digital from inception. According to Banalieva and Dhanaraj (2019, p. 1383) digital service enterprises’ internationalization “remained underexplored and digitalization provides new ways to reconceptualize both theory and practice in this arena.”

In this study we will generate new insights for international entrepreneurship theory integrating entrepreneurial focus with strategic management’s position approach. Vadana et al. (2019) revealed the need for the application of strategic management and competitive position issues in international entrepreneurship and suggested future research directions toward internationalization strategy that born digital companies use and the role of internationalization strategy on international performance.

There are already many studies on the competitiveness of large enterprises (e.g., Porter, 1990a, 1990b, Dyer et al., 2008, Porter, 2011), but the topic of competitiveness of born digital firms is still subject to scientific discussions. Other perspectives are needed, as in recent works the born digital phenomenon has been analyzed through studying only large firms (Vadana et al., 2019). In this study, the competitiveness of enterprises will be understood as the enterprise's ability to build a competitive advantage and maintain this advantage in the long term. The sources of competitive advantage are resources or access to them, or the possibility of using extant resources effectively, for example, in the network in which the firm operates.

Thus, we formulate the following research questions: What are the contemporary global changes related to digitalization that affect the competitiveness of born digital firms? What are the idiosyncratic characteristics of born digital firms that potentially lead to sustainable competitive advantage?

The primary aim of this chapter is to analyze the characteristics of born digital firms that lead to sustainable competitive advantage and develop a conceptual model that will serve as a basis for future research.

The chapter contributes to international entrepreneurship theory development, particularly to the new phenomenon of international born digital firms and their competitiveness. In this sense, it reflects to the Baier-Fuentes et al. (2019) future research call to continue nurturing the theoretical foundations to give international entrepreneurship field the legitimacy. This is in line with Monaghan et al.'s (2020) research, in which the authors emphasized the impact of digital technologies on international environment in many ways, which might offer many opportunities for future research on firms that may be going digital, gone digital, or born digital.

The chapter is organized as follows. First, the study method is presented. Second, a description of the phenomena taking place in the macro-environment of enterprises in the recent period is introduced, with particular emphasis on changes in the technological environment and their impact on enterprises. Third, the review of the literature regarding digital internationalization and born digital firms is presented. Fourth, a conceptual framework for the analysis of the phenomenon is developed. Finally, the theoretical and practical implications of our work are discussed and the limitations of our study are highlighted while providing suggestions for future research directions.

## 2 Methods

We have conducted the theoretical research using the research conversation set by Matthews et al. (2018) and Thornhill (2018). We have conducted a literature review concerning born digital firms.

As digitalization of economy sped up recently and we find "born digitals" as a new phenomenon, we decided to restrict the literature review to the last 5 years (2016–2020). Later the period of analysis was extended to the current year as well.

Because we perceived born digital firms as new ventures within international environment for the first, we decided to check what was published on them in the most important journal within International Business field, i.e.: *Journal of International Business Studies*. Then we searched through Scopus, ProQuest, and EBSCO databases. We limited our search to peer-reviewed journal articles, English language, and full-text availability through filters. At first, we searched the term ‘born digital’. At the next stage we used terms “digital,” “digitalization,” and “digitally native.” All the search was done within the article title, abstract, and keywords. In each search we went carefully through top 50 search returns sorted by relevance reading through abstracts and selecting articles for further careful reading. Eventually we came up with six journal peer-reviewed articles. At the next stage we used the snowballing technique checking bibliographies of already identified articles on our topic and this way we included some more relevant peer-reviewed articles, one book chapter, three reports on digitalization of economy, and two texts from Financial Times.

### **3 Global Changes that Affect the Firms Nowadays: The Role of Digitalization**

Hard-to-predict critical events, uncertainties, and continually emerging crises that affect global and national economic, technological, demographic, political, and social well-being (Ahlstrom et al., 2020) are becoming extremely difficult challenges for internationally oriented firms, especially for small and medium-sized enterprises. The last few decades have been a period of major changes in the macro-environment of enterprises compared to even the first eight decades of the last century. The advancement of globalization, the development of the Internet, the development of the ICT sector – Information and Communication Technologies, changes in Central and Eastern Europe, the emergence of emerging markets, the rise of China’s political and economic importance, the development of nationalist movements in many countries, the development of terrorism, global warming, growth of public awareness of the need to protect the environment, and also the coronavirus pandemic are just some of the phenomena affecting consumer behavior and the way companies operate. Experts from the Boston Consulting Group (Kimura et al., 2019) indicate that in all areas of business there is a great deal of unpredictability in terms of economic and political factors, and this will continue in the near future. As a result, “competition is becoming more complex and dynamic, industry boundaries are blurring. Product and company lifespans are shrinking. Technological progress and disruption are rapidly transforming business” (Kimura et al., 2019, p. 1). Penetration of digital technologies into various industries has become a catalyst for merging different industries, thus leading to novel product solutions and business models.

One of the most dynamic phenomena affecting enterprises and the way they compete is the development of new technologies such as artificial intelligence or

blockchain and the digitalization of the economy (Nowiński & Kozma, 2017; Caputo et al., 2020). These factors affect all enterprises, in all industries, although the degree of digitalization of activities in individual industries varies. Experts from the McKinsey Global Institute estimate that the highest degree of digitalization is represented by industries such as media and finance, and the smallest by large areas of industrial production, including pharmaceutical production. At the same time, it turns out that the industries with the highest level of digitalization are characterized by the highest productivity gains (McKinsey, 2016). Interestingly, although the first cloud computing commercialization steps started globally a decade ago (Senyo et al., 2018), there is still great uncertainty regarding “how to handle digitalization challenges” (Laudien & Pesch, 2019).

Lansiti and Lakhani (2014) predict that “over time, digital technologies and the Internet of Things (IoT) will transform virtually every sector and every business” (p. 98) and “the ubiquity of digital technologies will have profound implications for the economy as a whole” (p. 99). Also Ng and Wakenshaw (2017) believe that the Internet of Things “will unleash limitless opportunities, both negative and positive, and can fundamentally transform institutions and other socio-technical structures” (p. 3). Also, Accenture in its studies draws attention to the growing importance of data analysis, artificial intelligence and other technologies of the future, such as the Internet of Thinking (Accenture, 2018).

In turn, experts from the Boston Consulting Group point out the need for dynamic learning based on artificial intelligence, sensors, algorithms, data, automated decision making, and digital platforms. In their opinion, this will require greater involvement in digitalization and building hybrid ecosystems based on digital and physical infrastructure. The latter action will apply to both traditional (bricks-and-mortar) and digital firms (Kimura et al., 2019).

Verhoef et al. (2021), speaking about the digitalization of business, distinguish three stages. The first one, consisting in digital mapping of data previously saved in an analogue format (in paper form), is called digitization. The second stage, consisting in the use of digital technologies in existing business processes, is referred to as digitalization of business processes. The third stage is digital transformation, which is a complete change covering the entire enterprise and leading to the creation of a new business model. It is therefore a strategic change aimed at increasing the company’s competitiveness (Verhoef et al., 2021).

Laudien and Pesch (2019) have conducted a 3-year-long (2014–2017) empirical qualitative research in order to understand the impact of digitalization on service enterprises’ business models, and have identified four business model archetypes of digital service enterprises:

1. Digital beginner service enterprise—its business model’s main purpose is efficiency.
2. Customization-focused service enterprise—its digital business model’s aim is to match customer needs.
3. Distance-bridging service enterprise—its digital business model’s purpose is an extension of the geographic scope.

4. Full-scale digital service firm—its business model’s main aim is flexibility and ability to respond to market needs.

The first two archetypes were more common in 2014; later on, closer to 2017 and later, the third and the fourth archetypes started to dominate (Laudien & Pesch, 2019).

Verhoef et al. (2021) list four digital assets and capabilities necessary in the digital transformation of an enterprise: digital assets, digital agility, digital networking capability, and big data analytics capability (p. 892). Digital assets are, e.g., the data storage, firm’s ITC infrastructure, and other accompanying digital technologies. Digital agility is “the ability to sense and seize market opportunities provided by digital technologies” (p. 893). Digital networking capability is the skill to connect remote network users and to provide them with an offer that meets their common needs. Big data analytics capability is self-explanatory, but it’s worth underlining that this ability is crucial to achieving full digital transformation (Verhoef et al., 2021).

Monaghan et al. (2020) draw attention to two features of digital firms: having digital infrastructure and relying on “digital infrastructure to accrue communication, collaboration and/or computing capabilities, capabilities that allow the firm to both create and sell its offering online through a digital business model” (p. 13). They emphasize that if a company sells physical products, even if its business processes are highly digitized, it cannot be considered a digital company (Monaghan et al., 2020).

Smailhodžić and Berberović (2021) highlight that in this changing environment even traditional companies go through the process of digital transformation and adopt new ways of applying digital solutions as well as develop digital business models in an effort to sustain competitiveness. The creativity of these solutions is a key feature of the digital firms, as the challenges they are responding to provide an ever-changing context to their effort, requiring new ideas and approaches.

Digital transformation of an enterprise does not always bring the expected results. In order for its effect to be better, experts from the McKinsey Global Institute (McKinsey, 2019) list five principles that must be met at the same time: full mobilization of the company, clear commitment to digital transformation showing that it is the company’s main organizational priority, allocating sufficient funds for it, employing technology specialists digital and data analysis led by CAO (Chief Analytic Officer), and CDO (Chief Digital Officer), as well as great flexibility in implementing transformation. McKinsey research shows that this is not an easy process and only 10% of companies manage to meet all five rules (McKinsey, 2019).

The digital transformation of enterprises therefore seems inevitable. According to the McKinsey Global Institute (McKinsey, 2016), the flow of data across national borders is rapidly increasing and globalization is increasingly taking a digital form. This, in turn, changes the structure of actors involved in globalization. The digitalization of the global economy has resulted in a greater number of countries and entities participating in it, especially small businesses and start-ups. As the authors of the McKinsey Global Institute report state, we are currently at the initial stage of the

“convergence of globalization and digitization” (McKinsey, 2016, p. IV), which opens up unlimited opportunities for us to act in the future. Already at the time when the McKinsey Global Institute report was written, data flows across borders generated greater added value than flows of goods and services, which is also confirmed by other reports on globalization (Altman & Bastian, 2019).

The 2017 World Investment Report on the digital economy shows that multinational enterprises (MNEs) that have undergone digital transformation are doing better in international markets than other multinational enterprises. However, 100 percent digital enterprises perform best (World Investment Report, 2017).

Digitalization creates new opportunities not only for companies but also for individuals, such as access to information, social networks, or financial resources, which in the case of entrepreneurial people can translate into setting up new enterprises (Fossen & Sorgner, 2019). At the same time, digitalization makes it easier for small and medium-sized enterprises to participate in the processes of globalization and thus increases competition in individual industries (McKinsey, 2016). These processes are slowly transforming the traditional economy into a digital economy. Small and medium-sized enterprises with limited financial, human, and other resources are forced to look for unconventional ways of operating in order to establish themselves and maintain in global value chains (Gao & Ren, 2020).

Eden (2016) identifies three characteristics of the digital economy: “mobility, network effect and data use” (p. 5). Digital products are mobile because the cost of their dissemination is close to zero, especially when compared to the cost of their production. “The network effect arises when the value of a product to its user increases with the number of other users of the product” (Eden, 2016, p. 5). Data usage is gaining in importance; and the costs of collecting, storing, and analyzing data decrease as the amount of data increases.

According to Mettler and Williams (2011), the digital economy creates many opportunities for small and medium-sized enterprises. Researchers mention network technologies, new online platforms, and network services that allow them to run their business processes at a low cost and operate in international markets from day one. They believe that in the future, the importance of small and medium-sized enterprises on international markets will increase in creating new jobs and meeting customer needs. However, this does not mean that large multinationals will lose their relevance. According to Eden (2016), small multinationals will successfully compete with large multinationals and, like them, will be able to achieve profitability.

Applying digital technologies and possessing dynamic capabilities does not, however, justify the success of these smaller firms. A strong market-oriented strategy is also required, built on capabilities related to the particular knowledge about the markets (Knight & Cavusgil, 2004). These firms can turn their knowledge and adaptability to local needs into a source of competitive advantage.

According to the World Investment Report, 2017 devoted to the digital economy, three-quarters of the world’s population uses the Internet and even in developing countries penetration is approaching 50%, in developed countries and emerging economies, almost two-thirds of the population make purchases online, the

administration of 90 countries offers one comprehensive public information portal and in 148 countries there is at least one online payment system (World Investment Report, 2017, p. 156).

Although the digitalization of human activities has been progressing for two decades, researchers in the field of International Business and International Entrepreneurship have only recently started to look at it closely. According to Verhoef et al. (2021) they only look at the areas of digital impact on business, while “the usage of new digital technologies can easily become the new norm and completely change traditional rules of doing business” (p. 891). New approaches to business emerge at unprecedented speed, and the new digital technologies have allowed social data (market networks) and intellectual data (market knowledge) about different markets to become available easier and quicker, making a positive impact on the firms’ attractiveness and decision-making capabilities (Piqueras, 2020). In this context, born digitals are inherently more agile and responsive than traditional businesses (Monaghan et al., 2020). Summarizing, technological advancement and falling cost of computing processing capacity, data storage, and connectivity speed, have fundamentally shaped and influenced business models, winning value propositions, and essentially, underpinned drivers of competition in many industries (Jameaba, 2020).

The analysis of the literature carried out by the authors of this study confirms the above opinion of Verhoef et al. (2021) and encourages to look closer at businesses using new digital technologies.

## 4 Born Digitals and Their Internationalization

Monaghan et al. (2020) define born digital firms as “digital from inception” (p. 13). This means that born digital companies have been creating and using digital infrastructure from the very beginning and fully rely on the Internet for their production, operating and delivery processes (p. 12). Their activities are based on a digital business model, which gives them great flexibility and scalability. This distinguishes them significantly from ordinary physical firms (bricks-and-mortar), which started the digitalization process sometime after their inception and, as previously indicated, cannot be considered as digital firms. Importantly, born digital firms are characterized by operating in the Internet, thanks to which they have immediate access to all markets in the world. This means that they are not only digital but also global from the very beginning. Monaghan et al. (2020) note that early and fast internationalization is intended in born digital firms. Of course, not all born digital firms have to be international from the outset. The research of Domurath et al. (2020) shows that some born digital firms undertook internationalization only 2 years after their inception.

Monaghan et al. (2020) distinguish a number of aspects of the functioning of born digital firms: direct engagement with stakeholders, automation, network effect, flexibility, and scalability. Digitalization gives these companies the possibility of



direct contact with their stakeholders and thus may bring the effect of being rooted in the network in which, for example, certain stakeholders already exist. It also gives the possibility of direct contact with users of their services around the world, thanks to which you can quickly acquire knowledge about individual national markets. Moreover, these contacts are quick and direct. Born digital firms achieve the benefits of increased productivity and efficiency thanks to the automation of business processes. Process automation also allows accelerating the interaction between the company and users thanks to the automation of trust mechanisms. These mechanisms allow saving time and reducing financial outlays for managing the company's operations, thanks to which it can accelerate the internationalization of the company (Monaghan et al., 2020).

The network effect, discussed earlier, gives born digital firms the ability to quickly create and coordinate user networks. Flexibility allows born digital firms to easily and efficiently configure and coordinate their international operations thanks to a physical infrastructure smaller than in the case of traditional companies. This also applies to various functions of the company, including human resource management. Scalability, on the other hand, is possible thanks to the almost zero cost of acquiring new customers and the ease of multiplying the way of operating in new markets (Monaghan et al., 2020).

Vadana et al. (2019) concentrate on value chains of born digital firms and state that born-digital firms are “a distinct type of internationalizing firm with an Internet-enabled, inward-outward digitalized value chain from day one or soon after inception (p. 212). Similarly, Monaghan et al. (2020) view born digital firms as undertaking internationalization immediately or almost immediately after their inception, and add that this process is “compressed in time, much wider in scope and requiring much less physical involvement” (Monaghan et al., 2020, p. 19) than in a case of traditional firms. The difference is that Vadana et al. (2019) distinguish between domestic and international born digital firms. However, in their study of 19 “unicorns” they have found out that most of them are international born digital firms.

The authors of the McKinsey Global Institute report (McKinsey, 2019) mention the growing importance of companies referred to as digital natives, which are actually digital start-ups. McKinsey experts estimate that digital natives can, on average, reach 12 percent of total revenues in the sectors in which they are developed. This seems little compared to the total, but at the same time a lot, when it turns out that their total digital revenues are at the level of the “digital” part of the revenues of enterprises operating in these sectors for years. At the same time, digital natives account for up to 30 percent of companies in the high technology industries. Moreover, digital natives achieve higher profitability than other companies in the industry. In all industries analyzed by the authors of the report, digital native firms were more agile, bolder in making investments, but also more often failed (McKinsey, 2019). Also, experts from the Boston Consulting Group notice the intensification of competition between traditional and digital native companies (Kimura et al., 2019).

The subject literature also applies to companies referred to as ibusiness firms. Brouthers et al. (2016), while analyzing the literature, found that individual authors

use very different terms to describe so-called “electronic business companies (denoted as E-business companies) as any firm operating online that provides its products/services to customers using the Internet and other computer-based information system (CBIS) technologies” (p. 513). Brouthers et al. (2016) mention such names as “pure internet firms,” “digital information good providers,” or “E-commerce corporations” (p. 514). However, they themselves use the term “ibusiness firms.”

Singh and Kundu (2002) identify e-commerce corporations and describe them as “small or medium-sized firms that strategically use the assets existing in the networks” in which they operate and which are competing on a global level from their inception.

On the other hand, Brouthers et al. (2016) consider that ibusiness firms constitute a specific group of e-commerce corporations “that use the Internet and other CBIS technologies to create special Internet-based platforms which allow users to interact with each other” (p. 514). At the same time, their offer is fully digitized and immediately available worldwide thanks to communication with customers via electronic networks. This does not mean, however, that their internationalization is automatically as immediate as the value co-created by network users in one market is not automatically transferable to the other. The internationalization of such companies requires the development of a network of users in a new market. Chen et al. (2019) confirm that a mere global presence thanks to an online business model does not automatically provide global sales coverage.

Internationalization could be accelerated by addressing the offer to global users, i.e., those who communicate across borders. However, as Ghemawat (2017) claims, there are relatively few such users. The authors of the McKinsey Global Institute report (McKinsey, 2016) also state that the world is still far from true globalization. In addition, language barriers restrict users from communicating across borders (Chen et al., 2019). The report prepared by DHL also confirms that, after all, globalization is not as advanced as we might think (Altman & Bastian, 2019).

Nevertheless, the internationalization of born digital firms is much easier than that of “traditional” companies, as it requires much less capital commitment. However, it must be remembered that their internationalization will depend on Internet development and accessibility of CBIS technologies on foreign markets (Brouthers et al., 2016). At the same time, Ojala et al. (2018) note that modern technologies can create both new market opportunities for digitized enterprises and limitations for their development on the global market.

The second characteristic of this process is its multidimensionality, and one of the important dimensions is the interactions of internet platform users. As noted by Chen et al. (2019) the “collective interaction of users may co-create the internationalization process” (p. 175).

Ojala et al. (2018) believe that digital platform operators undertake early internationalization in the same way as International New Ventures. They are prompted by the search for resources necessary for the commercialization of their venture or for overcoming technical difficulties (technical bottlenecks). However, it is worth noting that their pace of internationalization will actually be influenced by the

availability of resources and technology. The stage of early internationalization can be omitted if all necessary resources are available in the country of origin and there are no technical constraints. However, it should be remembered that commercialization on the market of the country of origin may be a prelude to internationalization and then globalization of the enterprise.

Banalieva and Dhanaraj (2019) prove that a born digital firm can become a multinational company by “granting consumers worldwide access to their products and services through online apps and expand digitally by entering host countries with digital network ecosystems.” (Banalieva & Dhanaraj, 2019, p. 1382). This way, internationalization would take place without investment in “physical” assets in individual countries, which so far is (or perhaps we should already say “was”) a condition for defining an enterprise as multinational, and the ratio of the company’s physical assets located abroad to domestic assets was used in determining the degree of internationalization of the enterprise.

According to Eden (2016) the digital economy creates enormous opportunities for many companies and makes the internationalization of enterprises a much easier task. Eden states that “small firms can now use Web-based platforms to deliver online business services and digital products to customers around the world, going global almost from inception” (Eden, 2016, p. 6). Advances and cost reductions in information and communication technologies were previously considered to be one of the main factors influencing the emergence of early-internationalized firms. Now, with the emerging digital economy, this factor has become even more important and it leads more and more often to the emergence of born digital firms.

## 5 Competitiveness of Born Digital Firms

Competitiveness remains one of the essential drivers of modern business, and the growing competition determines such relevance both between companies and between industrial sectors and even between countries. The concept of cross-border competitiveness has changed significantly in recent decades. It has been influenced by growing global companies - Facebook, Google, other technology oriented and financial sector’s corporations. Digital technologies have changed corporate governance models, and this makes it possible to set up management companies in countries with the best and most favorable business climate – laws, tax system, “rebates” from governments. Globally, the best examples of such cross-border competitiveness (excluding offshore areas) are Singapore and Hong Kong in Asia, and Dublin in Europe. Estonia and Poland are leaders in the Baltic Sea region. Firms from these regions become successful by using digital business models and expanding to other countries from their inception.

International strategies and actions of companies define their position in global competition. Focus of strategy is important to be able to define at which aspect to create an advantage. According to Banalieva and Dhanaraj (2019) the competitiveness of born digital firms can be viewed through the prism of their specific

advantages (Firm-Specific Advantages – FSAs). In the case of digitized companies, Banalieva and Dhanaraj (2019) distinguish two types of advantages: in the area of technology, where they emphasize the importance of key technologies for competitive advantage, and in the area of human capital, where they emphasize the importance of the advanced skills of employees. Richards, 2016 points out that such key technologies are, for example, “referral programs, fraud detection systems, prognostic tools and applications for predicting customer behaviour” (p. 12), and the advanced skills of employees are those in the field of operating these complex programs and data analysis and deep learning. Other examples of this type of skill include data management and data visualization skills. Moreover, scaling in big data analytics might be defined as separate firm-specific competitive advantage. Digitalization itself paves the way to the research and development (R & D) functional area in the organization. This creates a more intensive effect on testing of the products by employing techniques of big data analytics, virtual simulation, and experimentation, which results in the successful introduction of innovative products introduced into different markets with better efficiency and quality in short time (Oesterreich & Teuteberg, 2016).

It is necessary to have both advantages at the same time, because the mere acquisition of technology is not enough if no one or few people in the company know how to use it. A similar relationship occurs the other way around. Acquiring an employee or employees with specific skills without having technology that these employees could use will do nothing to the company. The importance of the skills of employees and managers seems to be confirmed by Eden (2016) who points out that intellectual property rights are gaining in importance in the digital economy, as value is mainly created at the stage of creating ideas and designing digital products and services. Meanwhile, finding employees with specific skills can be difficult. Anthony Goldbloom, CEO of Kaggle, which runs online data science competitions, believes that only 1% of people who use machine learning techniques have deep learning skills. At the same time, he notes that large companies are reluctant to hire the greatest talents in this area, due to their high financial expectations. However, he concludes that even if large corporations such as Walmart invest in digital technologies on a large scale, they will never become truly competitive with born digital firms (Richards, 2016).

According to Thornhill (2018) the best strategy nowadays is to “focus on delivering the best customer experience and the lowest price via an online platform” (p. 1) because thanks to the data collected about customers, it will be possible to tailor the offer exactly to their needs. Therefore, it can be said that the best competitive strategy will be an integrated strategy, and the new source of gaining a competitive advantage will be access to customer data. The technological embeddedness of born digitals alleviates the excessive need for traditional relationship building, easier access to customer data helps them overcome the liability of outsidership (Monaghan et al., 2020).

Meanwhile, according to Eden (2016) in the near future, the source of competitive advantage should be innovation and product differentiation, not cost reduction. Thanks to new technologies, micro-multinationals can build their global strategies

based on short series of customized products with high value for customers all over the world. This is also the opinion of the authors of the World Investment Report, 2017, who state that highly automated and digitized production carried out in short series favors greater variety and customization of products. This type of production also allows for better adaptation to fluctuations in demand caused by seasonality or changes in trends (World Investment Report, 2017).

In rapidly developing competitive environment, advancement and adaptation to the fast-changing technology make a firm to play dominantly over the competitors in making the production process quicker and safer within the manufacturing plant, achieve efficiency in distributed systems. Usage of information technology in the organization paves the way to the knowledge sharing network and this in turn enhances the organizational agility and exploits innovation capabilities (Dong & Yang, 2015).

Nowadays Internet of Things (IoT), communication technologies, and cloud computing platforms are three major technologies to realize the fine architecture of small and medium-sized enterprises, online business, remote working and disruptive platforms in the business world, and platform ecosystem (Jameaba, 2020).

The pressure for more adaptability and creativity is justified by the developing business environment supporting the disruption of extent competitive advantages of market leading firms in an increasing range of industries. Creativity and constant reinvention become the norm in the emerging digital business models (Smailhodžić & Berberović, 2021), which born digital firms master more naturally compared to the companies they challenge in existing markets.

The aforementioned publication by Thornhill is to some extent consistent with the views of Eden, as Thornhill cites an interview with Viktor Mayer-Schönberger, co-author (with Thomas Range) of the book entitled “Reinventing Capitalism in the Age of Big Data,” who believes that “innovation will increasingly result from feeding data into machine learning systems to understand consumers’ needs” (Thornhill, 2018, p. 1); and this, in his opinion, will hinder the creation of innovative start-ups. According to the authors of this study there is no such risk, because human ingenuity is so great that no artificial intelligence will be able to replace it. Also experts from the Boston Consulting Group believe that in the future companies will have to compete with their imaginations (Kimura et al., 2019).

Overall, the digital business models mitigate many of the barriers that hinder creativity in existing value chains (Fenwick, 2016). All the more, keeping up in the race for adapting the latest digital innovations is a challenging task even for born digital firms; hence, creativity plays an important role in their fundamental business model and daily operations (Medium, 2017). They tend to excel in providing creative and innovative responses to emerging challenges that conventional companies may not solve at all or even if they can they will do it at a much slower pace (Solomon, 2018).

## 6 Future Research Conceptual Model

In order to explore deeply the competitiveness of born digital firms we have developed a conceptual model – see Fig. 1. The conceptual model derives from a discussion of the literature above and is based first of all on Porter (1990a, 1990b), Eden (2016), Monaghan et al. (2020) and Banalieva and Dhanaraj (2019) works. It is supplemented with some of the findings of Singh and Kundu (2002), Knight and Cavusgil (2004) and Smailhodžić and Berberović (2021). The model will provide a framework for the future analysis of competitiveness of born digital firms.

In the conceptual model we consider the influence of macroenvironmental forces on born digital’s inception and its business model. The forces in power are mostly the rise of the three major technologies identified by Jameaba (2020), i.e., IoT, communication technologies, and cloud computing platforms, as well as Big Data Analytics, and also artificial intelligence, blockchain, and the digitalization of the economy (Nowiński & Kozma, 2017; Caputo et al., 2020).

The born digital’s business model is based first of all on digital technologies (Monaghan et al., 2020; Smailhodžić & Berberović, 2021) and Internet-based operations (Monaghan et al., 2020). We take the point of Monaghan et al. (2020) who say that born digital firms would build digital infrastructure and use it to run its business processes and to operate in the Internet which would allow them for greater flexibility (easier and faster configuring, reconfiguring and coordinating their operations). We add to this the strategic use of assets existing in the networks identified by Singh and Kundu (2002). Put together with the network effect they would make possible bigger and faster scalability of their businesses (Monaghan et al., 2020).

The born digital firms through their digital business model develop sustainable competitive advantages that allow them to achieve outstanding competitive position on their markets. Here we base the idea of competitive advantage on Porter’s works (Porter, 1990a, 1990b) but at the same time we agree with Eden (2016) that the two basic types of competitive advantage proposed by Porter (1990a, 1990b) born digital firms would rather compete on differentiation than costs (Eden, 2016) because digitalization allows all types of firms for minimizing costs which in fact eliminates the cost advantage. We also extend the set of possible competitive advantages achieved by adding a technology advantage and human capital advantage that

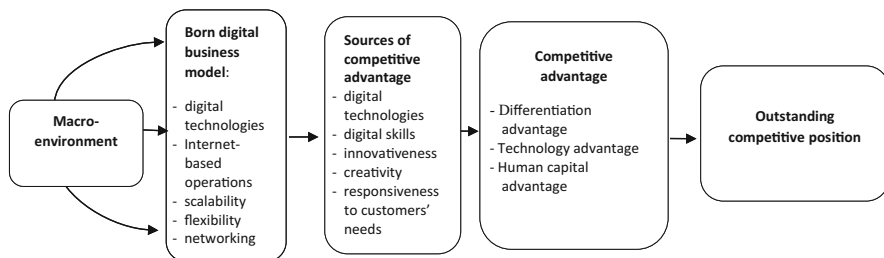


Fig. 1 Conceptual framework

Banalieva and Dhanaraj (2019) identify as firms' specific advantages of digitized companies. All the three types of advantage allow born digital firms to achieve outstanding competitive positions in their markets.

We see that the sources of these competitive advantages in born digital firms rely on their digital technologies (Monaghan et al., 2020) and on what goes together: digital skills of their employees and their innovativeness which transforms into innovativeness of their firms (Eden, 2016). Innovativeness would not be possible without creativity of their knowledge workers indicated by Smailhodžić and Berberović (2021) as a key feature of the digital firms. We also add here firms' responsiveness to customers' needs (Knight & Cavusgil, 2004) because innovativeness and creativity of employees make it possible and more to that responsiveness to customers' needs is also a direct result of born digitals' business models' flexibility.

Examining the idiosyncratic characteristics of born digital firms capitalizing from digitalization forms the basis of understanding the nature and extent of the competitiveness of born digitals.

## 7 Discussion, Conclusion, and Future Research Directions

The aim of this study was to analyze the characteristics of born digital firms that potentially lead to sustainable competitive advantage and to develop a conceptual model providing a framework for the future analysis of their competitiveness.

The analysis of the literature on International Business and International Entrepreneurship from the last decade, with particular emphasis on the previous 5 years, has shown that new digital technologies are changing global competition in a significant way. Experts on globalization and global competition are unanimous about the impact of technological progress, especially digital technologies, on business. Thanks to digitalization, not only new, strong competitors from emerging markets appear in many industries, but also young digital firms arise that threaten the powerful global companies investing in physical resources in individual domestic markets. Born digitals have an inherent ability to show more creativity and responsiveness to constantly changing challenges by applying digital technologies, such as IoT, communication technologies, and cloud platforms in their newest forms across their markets.

The systematic analysis of the subject literature showed that despite a very small number of publications on internationalization of 100% digital firms, their authors use various terms such as digital platforms, digital natives, e-commerce corporations, ibusiness firms, or, finally, born digitals. All these companies are characterized by 100% digital adoption, Internet-based digital product offering, and digital business model operation. Thus, on the basis of their presented characteristics, we propose to use the terms "born digitals" or "born digital firms" to denominate the above-mentioned categories of firms.

The theoretical implication of this chapter is that born digital firms' competitiveness lies first of all in their digitalization. Thanks to their business model supporting

creativity and responsiveness to customer needs they can understand better and adapt to more quickly and win in the marketplace. Moreover, sustainable competitive advantage of born digitals across different markets might be defined as a complex dynamic construct, which is based on their specific firm's advantages, such as technology advantage, human capital advantage but also differentiation advantage.

The managerial implications of our study are related to the decision makers of both born digital firms and those challenged by them. How born digitals succeed in the market, based on what factors, with what type of business models, is an important consideration for the success of these firms and also of those trying to fend off the challenge provided by them. The conceptual framework presented in our current work supports asking important questions related to understanding the competitive edge of born digital firms, while future studies using that framework will provide empirical assessment of the power of different elements and their interrelations.

Limitations of this study are in both the theoretical and empirical domains. Due to its exploratory nature, the study focused only on the analysis of the literature so far. As it is a conceptual work, there is no empirical validation of the framework presented.

This study needs to be extended in the future; thus, we elaborated future research directions. First of all, we considered only three data basis and there are more. Although they overlap with one another, applying the same search in more data basis may produce more results. Besides this, the future literature review should cover periods next to the considered here, as the discussions about born digital firms and other firms similar to them will certainly continue.

Future research may explore the differences between born digitals and traditional enterprises that expand internationally after some years of their establishment. According to Smailhodžić and Berberović (2021) creativity and constant reinvention are main engines in the emerging digital business models of born digitals' expanding abroad, when traditional firms rather use traditional business models. Based on the studies of Bergsten and Gertzell (2017), who analyzed potential differences of digital firms and traditional manufacturing firms, there are some differences especially in success factors between the two types. Such differences include firm's responsiveness to customers' needs, which we identify in our framework as a source of competitive advantage of born digitals. According to Bergsten and Gertzell (2017) customer-oriented strategy and large user base is very important for digital firms. This was also confirmed in our literature review, with reference to Monaghan et al. (2020) work. However, for traditional manufacturing firms, a large customer base may be detrimental to the quality of the distribution chain. Moreover, our literature review emphasized that one of the sources of born digitals' competitive advantage is innovativeness leading to technology advantage (Banalieva & Dhanaraj, 2019). It was confirmed in Bergsten and Gertzell (2017) study, by emphasizing that new ground-breaking innovations open up new types of products for digital firms, and innovations seem to be most beneficial for the digital firms. Differently, for manufacturing firms' e-commerce provides a way to reach global market and to reduce their costs. Thus, we make a call for research in terms of potential conflicts



and differentiation of born digitals, which use digital business models and expand to other countries from their inception, to the competitiveness of traditional enterprises.

The fourth suggested future research direction addresses the need to empirically analyze the born digitals and their competitiveness in different contextual settings and in particular industries. According to Vadana et al. (2019) country of origin and the dynamism of the industry may influence the evolution of born digitals. As Monaghan et al. (2020) stated there are advantages in identifying the firm-specific advantages of digital firms and the extent to which they are location (or non-location) bound and how they include ecosystem-specific advantages.

Future studies should cover the empirical testing of internationally-active born digitals, their strategies and business models. This is in line with call for future research which emphasizes the need of research, based on examination of internationalization strategies that born digital firms use and the role of internationalization strategy on international performance (Vadana et al., 2019).

To conclude, the suggested conceptual framework develops further understanding of the significant role of global changes to born digital firms' competitiveness and their strategic advantage in the digital era. It is expected that the outcome of this chapter would lead to the empirical testing of the suggested theoretical model in an effort to distinguish the competitive capabilities of born digital firms that lead to competitive advantage.

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