

# GLOBAL START-UPS AND BORN GLOBAL SPIN-OFFS: A MULTIPLE CASE STUDY

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## *Abstract*

*The paper aims to identify and analyze the major critical success factors at the base of the rapid internationalization of three different types of Born Global (BG) firms, namely start-up, academic spin-off and company spin-off. Based on a case study analysis, the findings show that the entrepreneurs' dynamic capabilities, their passion and propensity to take risks, previous international experiences, language skills, the presence of an experienced staff, the ability to nurture relationships and networks based on mutual trust and on the transfer of know-how represent the major key factors for internationalization. This study intends to strengthen the literature focused on the BG phenomenon. However, the empirical analysis was conducted on an exiguous number of enterprises, operating in the high-tech sectors and founded few years ago. In order to obtain more generalizable results, future research should also focus on companies active in the low-tech sectors and founded in less recent years.*

**Keywords:** Born global; Global Start-up; Born Global Academic spin-off; Born Global Entrepreneurial Spin-off; non-linear internationalization process; multiple case study.

## **1. Introduction**

Literature defines “internationalization” as a long and incremental process, through which enterprises gradually increase their involvement in the international markets (Johanson and Vahlne, 1977). However, this definition refers to the path followed by large companies and multinationals (Karra et al., 2008), on which scholars have mainly focused in the past their attention, by neglecting, in this way, the behaviors adopted by small and medium-size enterprises (SMEs). For this reason, in the last years, several researchers (Chen et al., 2009; Crick, 2009; Nordman, 2009) tried to fill this gap by analyzing new approaches, that SMEs can specifically adopt, in order to enter foreign markets (Cavusgil, 1994). One of these approaches concerns the Born Global (BG) phenomenon, which describes the early internationalization of those companies starting their expansion within few years from their inception (Rennie, 1993). According to this approach, these firms follow a different process with respect to the traditional

ones (Crick, 2009; Knight, 2015) and they are usually characterized by a low number of employees and limited resources, especially on the economic side. Furthermore, an emerging topic in the BG literature is currently focused on Born Global Spin-offs and Global start-ups, which are defined as SMEs “which choose to be extensively present in international markets right from –or very soon after– their birth” (Rialp et al., 2005, p. 135). For different authors (Rialp et al., 2005; Knight, 2015; Cavusgil and Knight, 2015; Knight and Liesch, 2016; McCormick and Somaya, 2017; Moen and Rialp-Criado, 2018), these firms are becoming ever more widespread and their growing relevance is “critically challenging traditional internationalization theory” (Rialp et al., 2005, p. 134). Moreover, their increasing significance, as a leading research topic, is confirmed by the inclusion of the BGs in some of the most comprehensive reviews focused on the SMEs internationalization literature (Zou and Stan, 1998; Coviello and McAuley, 1999; Fillis, 2001; Rialp et al., 2005). However currently, comprehensive explanations of this phenomenon are still required (Knight and Liesch, 2016). This means that both further theoretical efforts and new empirical analysis, concerning this phenomenon, have to be provided.

Starting from these assumptions, the objective of the paper is two-fold: [1] to strengthen the contributions focused on the BG phenomenon, by providing in this way a response to the call for more research into this topic; [2] to identify and analyze the main critical success factors explaining the rapid internationalization of this type of firms. In order to reach these objectives, a qualitative methodology has been adopted, based on the case-study analysis of three Italian companies (a start-up, an academic spin-off and a company spin-off), which have experienced a rapid process of internationalization.

Structurally, the paper is organized into the following sections: (ii) a literature review mainly focused on start-ups, spin-offs and the BG phenomenon; (iii) methodology; (iv) case studies’ description; (v) discussion of the results; (vi) conclusions.

## **2. Literature review**

### **2.1. Start-ups**

Usually, the term “start-up” is adopted to define any typologies of new and young enterprise or to identify a project with different evolutionary phases, born spontaneously in the high technology sector. Furthermore, it identifies companies born with the intent to develop products and create demand in new markets, through the organization of online activities and the adoption of online digital channels (Makowiec, 2016). Generally, most of these companies are small and suffer for the lack of resources and procedures, the dynamism of markets and technologies, and for the presence of different factors that can influence their development (Sutton, 2000). Moreover, they are also defined in terms of innovation, speed of growth, flexibility of the organizational structure, speed in the decision-making process and focus on the development of a single product (Paternoster et al., 2014).

Especially in terms of innovation, several studies (Ganitsky, 1989; Jolly et al., 1992; Rasmussen and Madsen, 2002; Ries, 2011; Taji and Tsuyuki, 2012; Paternoster et al., 2014; Makowiec, 2016; Melegati et al., 2016) identify different categories of innovation start-ups. A first typology is represented by the ‘*High-tech Startups*’ (Taji and Tsuyuki, 2012). These companies are defined as enterprises with a global vision and orientation, for which the global market represents the place where create innovation in order to achieve competitive advantages. They are also called ‘*Innate Exporters*’ (Ganitsky, 1989), since the highly technological character of their products encourages them to develop the internationalization process from their inception (Rasmussen and Madsen, 2002), through the creation of networks with specialized partners (Jolly et al., 1992).

Other studies (Paternoster et al., 2014; Melegati et al., 2016) focus their attention on the ‘*Software Startups*’, defined as “newly created companies with no operating history and fast in producing cutting-edge technologies” (Paternoster et al., 2014, p. 1200). Overall, the creativity, the flexibility, the reactivity to the external context, the product orientation, the reduced *time-to market*, the tendency to set short-and-medium terms goals, the absence of methodology and bureaucracy, the focus toward innovative segments of market, with a quick growth, and the scarcity of physical and economic resources represent the main features characterizing this type of firms (Paternoster et al., 2014).

Finally, Ries (2011) analyzes in his contribution the “*Lean Startups*”, defined as firms that follow “a hypothesis-driven approach to the evaluation of an entrepreneurial opportunity and the development of a new product for a specific market niche” (2011, p. 5). These enterprises try to speed up the cycle of their production and improve the quality of their products through innovations, the elimination of the wastefulness, experimentations, and customer’s product development (Ries, 2011). These peculiarities were also adopted in the analysis of other types of start-ups, specifically in the case of BG companies.

## 2.2. Spin-offs

The literature, focused on the spin-off topic, turns out to be very heterogeneous, since this particular type of business presents different models of creation, as well as, multiple degrees of independence, support of the head organization and technology transfer. Researches, conducted on spin-off companies, are usually based on case studies mainly developed in the United States (Tübke, 2004), with very few of them focusing on the European context.

From a conceptual perspective, spin-offs were defined as new businesses created by one or more individuals through the exploitation of the knowledge and experiences acquired during their previous occupation (Cooper, 1985). Moreover, Ahlström Söderling (1999) underlines how these individuals decide to leave their previous job with the intent to start a new business, in which the previous organization doesn’t have a dominant influence. Overall, in order to create a spin-off, three conditions become essential: [1] an organization from which to separate; [2] an entrepreneurial impulse from one or more people, who have easy access to methods, knowledge and relationships; [3] the presence of one or more customers who express the need to benefit from the products and/or services offered by the spin-off (Ahlström Söderling, 1999).

Additionally, a spin-off can originate as much from another company as from a public or private institution (Ahlström Söderling, 1999). In particular, Tübke (2004) distinguishes between *Corporate Spin-offs* and *Institutional Spin-offs*. The former is defined as “the division of an existing company into one parent company and one or more independent spin-off(s), which implies that the new product is in some way separated from the parent organization and a new economic activity is created around it” (Tübke, 2004, p. 3). These companies are extremely innovative, since they combine existing technologies and processes with a lean organization favoring the development of more innovative and customized products, at lower costs than their competitors (Tübke, 2004).

For what concerns the *Institutional spin-offs*, research mainly focuses its attention on three specific categories: [1] University spin-offs; [2] Research-based spin-offs; [3] Technology-based start-ups (Tübke, 2004; Mustar et al., 2006).

Primarily, the term “University Spin-off” identifies high-technology start-ups, created by university graduates or staff members, who bring university knowledge to market (Pirnay and Surlemont, 2003). In particular, the main characteristics of these companies are: relative lack of resources and experiences in fields other than the one of origin, such as management and marketing; fundamental importance of entrepreneurial skills and the ability to create

international network and a rapid process of internationalization, necessary to avoid the obsolescence of their high-tech products (Pirnay and Surlemont, 2003).

A similar definition is also adopted for the Research-based Spin-offs (RBSO), which can be conceptualized as new companies created through the transfer of technologies and knowledge of public research institutions (Smilor, 1990).

Finally, the Technology-based Start-ups are defined as a category of spin-off firms characterized by a direct ongoing intellectual property link with the parent university or other research agencies (Hanich, 2004). In particular, a significant share of capital on behalf of the main institution, the previous experiences of the entrepreneur, his ability to find the necessary resources and to create synergy and credibility through networks and strategic alliances represent the key prerequisites necessary for their development (Hanich, 2004).

### ***2.3. Linear and non-linear internationalization processes***

Several studies, in the field of International Business (IB), start from the assumption that the firms' internationalization process follows an incremental and linear trend (Andersen, 1993). In particular, the main models, based on this presupposition, are the Uppsala (Johanson and Vahlne, 1977) and the Innovation-related models (Bilkey and Tesar, 1977) – also known as stage models (Uner et al., 2013). The former describes a dynamic model which identifies four different sequences of incremental decisions, through which developing a gradual internationalization - irregular exportation, exportation via independent representatives, establishment of an overseas sales subsidiary, overseas production (Johanson and Wiedersheim-Paul, 1975), while the latter considers the internationalization as an innovative process, which is developed through learning sequences (Andersen, 1993). Even if both models analyze the exportation as the main entry mode in the international markets, they enumerate and describe the constituent stages differently.

However, in recent years, a new line of research, contracting these theories, has spread. In particular, by focusing on the SMEs literature, scholars identify new approaches that firms can adopt in order to enter foreign markets (Cavusgil, 1994). These approaches follow a non-linear internationalization process, which can be developed in three different ways: the “de-internationalization”, the “re-internationalization” and the “Born-again Global internationalization”.

Overall, the non-linear internationalization process - which represents “a process characterized by substantial increases and decreases in internationalization activity” (Vissak, 2010, p. 560) – can manifest in different times and markets and it can be induced by external or internal factors and subjects. According to Vissak (2010), the BG approach can be considered as a non-linear internationalization process, describing the path of those companies that internationalize their activities from their inception or in the first few years of their life.

### ***2.4. Born Global phenomenon***

The BG firms were described for the first time by Rennie (1993) as companies developing an early expansion in international markets within two years from their inception, by reaching the 75% of total sales with export.

Later, Knight and Cavusgil (1996, p. 1) define BGs as “small, technology-oriented companies that operate in international markets from the earliest days of their establishment”. In addition, other scholars define BG internationalization as a process developed between two or eight years from the firm's inception (Chetty and Campbell-Hunt, 2004), which allows reaching a percentage of export equal to the 50% of the total sales (Gabrielsson and Gabrielsson, 2003). Overall, from the literature emerges how a unique and unanimously shared definition of the BG phenomenon, does not still exist.

On the empirical side, several studies identified the key elements characterizing the BG companies, such as their global vision (Oviatt and McDougall, 1995), the proactive behavior in the research of new markets and the ability to develop dynamic networks and capabilities (Weerawardena et al., 2007) in order to achieve a competitive international advantage (Coviello, 2006).

In addition to these elements, Efrat, Shoham (2012) and Wictor (2006) underline, in their works, how the BG products are addressed to markets' niches and they are the result of dynamic capabilities and highly innovative competences in Research and Development (R&D), as well as in technology.

Furthermore, several scholars (Oviatt and McDougall, 1994; Rasmussen and Madsen, 2002; Gleason et al., 2006; Nordman and Melen, 2008; Nordman, 2009) identify specific categories of firms which engage in rapid internationalization processes, by addressing their products to global markets since their establishment. These categories (start-ups, academician and entrepreneurial spin-offs) present some common characteristics with BG companies, as well as relevant differences.

The first typology concerns the Global start-ups which represent a radical manifestation of BG companies (Gleason et al., 2006). Indeed, they are firms whose competitive advantages derive from their ability to coordinate several organizational activities, in multiple countries, since their establishment (Oviatt and McDougall, 1994). As well as the traditional BGs, they adopt a proactive behavior in the research of resources and markets at a global level, also exploiting international networks (Rasmussen and Madsen, 2002). Conversely, the coordination of different activities - such as R&D, import, subsidiaries etc., - represents the main difference they have with respect to BGs.

Instead, the Born Global Entrepreneurial Spin-Offs are firms established by businessmen, who leave their previous work with the aim of creating a new business, based on innovative products realized through the exploitation of specialized knowledge acquired at the international and technological field (Nordman, 2009).

Finally, the Born Global Academician Spin-Offs are companies founded by scholars, who decide to commercialize the products developed during their researches, by adopting the available technological resources (Nordman, 2009). In particular, these firms are characterized by reactive behaviours, the lack of international knowledge, the absence of specific strategies (objectives and target markets) and a decelerated internationalization process (Nordman and Melen, 2008).

### **3. Methodology**

To develop our analysis, a multiple case study (Yin, 2009) has been adopted, since it allows investigating a phenomenon inside its natural environment, as well as its evolution over time. In particular, the choice of this method is related to the opportunity to identify similarities and differences between cases, by obtaining reliable demonstrations (Baxter and Jack, 2008; Lewis, 2015).

The sample is composed by three companies located in different provinces of the Abruzzo region in Italy (Chieti, Pescara and Teramo). A unique region has been selected in order to avoid the influence of territorial factors, related to different levels of development, and in order to identify potential facilitators characterizing the investigated area. However, even if the sample is not sufficient to realize statistic generalizations, it allows developing theoretical ones for similar case studies.

For what concerns the firms' selection, the archive of the Chamber of Commerce of the Abruzzo region has been adopted. In particular, the study involves small independent firms

founded less than 20 years ago and operating in the high-tech or medium-high-tech sectors. Starting from a sample of fifty companies, three final firms have been selected on the basis of different parameters, such as the date of foundation, the size, the sector of origin, the condition of independence, the condition of start-up, entrepreneurial or academic spin-off, the speed of the internationalization process - 3 years from their inception, with an amount of sales equal at least at the 25% of the total turnover (Knight and Cavusgil, 1996) - and/or the coordination of multiple activities in different countries (Oviatt and McDougall, 1995).

In a second phase, semi-structure interviews have been addressed to the entrepreneurs or to the figures dealing with the international activities. The interview includes the request for information concerning the story and the structure of the company, the characteristics of the entrepreneurs, their backgrounds and their ability to create network and alliances, the production activity, the internationalization process (with specific reference to markets), the mode of entry and the year of reference. Every interview has been recorded and transcribed.

Finally, in order to respect the triangulation principle, further data were collected by analyzing the website of these enterprises, as well as the reports provided by them.

#### 4. Case studies

In this section the case studies will be presented. Table 1 resumes the main characteristics of the three investigated companies.

Table 1 - Companies' general characteristics

	<b>Firm A</b>	<b>Firm B</b>	<b>Firm C</b>
Typology	Innovative Start-up	Academician Spin-off	Entrepreneurial Spin-off
Year of Establishment	2014	2014	2015
Number of Employees	8	4	6
Turnover 2016	550.000 €	530.000 €	160.000 €
Products and Services	Software and Methodologies	Software, Hardware and R&D Solutions	Components of advanced material
Sector	IT (high-tech)	Biomedical (high-tech)	Metal-mechanic (medium-high-tech)
Company's headquarters	Vasto (CH)	Pescara (PE)	Mosciano S. Angelo (TE)
Other Offices	Turin (IT) Sao Paulo (BR) Nis (SRB)	-	-
Level of Technology and R&D	High	High	Medium-high
Organizational structure	Flat and Flexible	Flat and Flexible	Flat and Flexible
Decision-making Process (Speed)	Fast	Fast	Fast

#### **4.1. Firm A**

Firm A is born in 2014, as a result of the experiences collected, in the previous twenty years, by two of the four founders. The company is situated in Vasto, in the Chieti's province of the Abruzzo region and it is classified as innovative start-up in the IT sector. It develops and commercializes software supporting the management of people and processes. The headquarter of the company is in Vasto, while the commercial office is in Turin - in the Piemonte region, Italy. It also owns two subsidiaries, one in Brazil at Sao Paulo and the other one in Serbia at Nis. Born as a project, initially intended for an important Italian multinational active in the automotive sector, it soon expanded its customer portfolio by installing its software in the major venues of the bigger multinationals all over the world.

At the time of the interview, the company realizes seven products, in the form of modules addressed to big enterprises, as well as to single users.

For what concerns the internationalization process, it was started since the firm's establishment in 2014, when the founders decided to export the software in Serbia. Furthermore, it was motivated by the ambitious character of their founders, who wanted to acquire new market shares and reduce the risk associated with operating in a single market. In 2015, the firm started its business in the Brazilian market and simultaneously in Poland, reaching a percentage of foreign sales equal to the 25% of the total turnover, already from the first year. In particular, in Brazil through a partnership stipulated with an Italian multinational located in this market, the company started to develop the 50% of its activities.

In 2016, the firm started a "partnership program" to enable qualified organizations to sell its services to other companies in an exclusive way.

Finally, it also developed a collaboration with the University of Serbia in order to identify qualified professional employees to be inserted in the Serbian subsidiary.

Overall, the main foreign markets, served by the company, are Serbia, Poland, Brazil, France, India and China (from September 2017). These markets are constantly monitored with reference to political and legal barriers and the country-risk. These monitoring activities are important especially for markets as Serbia and Brazil, where the firm owns its subsidiaries. In particular, they are adopted in Serbia for the product development, while in Brazil especially for the commercial activities. In both cases they are managed by two local directing managers.

Moreover, the company addresses its products to market niches and it resorts to Italian representatives, through whom it develops contacts with foreign clients, especially multinationals. At the time when a collaboration with a partner starts, an employee is sent to the headquarters of the foreign company with the aim of installing the software.

In addition, the firm's flat organization generates a strong cohesion, by favoring the share of goals and values between shareholders, simplifying and speeding up the decision-making process, which is usually guided by the founders.

Overall, the internationalization process of this firm can be considered linear, since it has a stable position in every markets. Additionally, the fear to enter in foreign markets and the psychic distance do not obstacle the development of the internationalization process, thanks to the language and intercultural skills and knowledge owned by the internal staff.

Table 2 - Firm A: Internationalization characteristics

Typology of Firm according to BG theory	Global Start-up
First year of internationalization	2014
First market	Serbia
Markets	Serbia, Poland, Brazil, France, India, China
Linear internationalization	Yes
% of sales in the first 3 years from inception	25%
Strategy	Niche strategy
Mode of entry	Direct exportation, organizational unites abroad
Main global channels for the expansion	Multinationals

#### 4.2. Firm B

The second company was founded in 2014 by a Professor of the University of Neuroscience of Chieti-Pescara, with 15 years of experience in the infrared technology research. He is the chairman of the board of directors and he founded the company after obtaining a degree in physics and a PhD in biomedical technologies. He also worked as researcher in the United States of America for 5 years, but he did not develop other entrepreneurial experiences.

The firm is located in Pescara and it is active in the biomedical sector. The founder of the firm is also supported by two partners: an ex-accountant and an Italian Holding sub-entered in April 2017. Born as a university spin-off, today it has become an academic spin-off. In particular, by following the will of its founder to commercialize a finished product and to ensure a concrete transfer of know-how, as well as better future prospects for his employees, the company is addressed to both the domestic and the global market. Furthermore, it aims to offer unique innovations in the infrared technology sector, by proposing software, hardware and other complete solutions, along with support and training services.

From the international perspective, the internationalization process of company B started in January 2015, when the firm stipulated its first contract with a client in the United States of America (USA). After this stipulation, in April of the same year, one of its employees settled permanently in USA in order to take care of the firm's research laboratory. Through a partnership with an important American multinational, the firm's R&D activities were particularly developed. The company has also established, during the years, different collaborations with universities, national and international research institutions, consortia and American suppliers. Finally, the University of Pescara - which was one of the previous owners of the company - still holds the rights related to a patent and a software that has licensed to the company for commercial exploitation.

In particular, the internationalization process of firm B started as a consequence of the immaturity of the domestic market in relation to the firm's innovative products. Moreover, the company aimed to transfer know-how and knowledge in international markets. Through this international expansion, the firm was able to reach an amount of foreign sales equal to the 55% of the total turnover. The most important market is the North America, even if during the years the firm also entered in other ones such as France, Australia, Germany and recently Hong Kong. Overall, the internationalization process can be considered as non-linear because the firm has a stable position only in the USA, even if the psychic distance is not perceived as an obstacle. All the other markets are not systematically monitored, due to the lack of human resources to devote. Furthermore, the company prefers to invest in R&D rather than in marketing activities. Nevertheless, the abroad visibility of the firm is high. Similarly to company A, also in company

B the flat organization facilitates the speed of the decision-making process, which is guided by the founder.

Table 3 - Firm B: Internationalization characteristics

Typology of Firm according to BG theory	Born global Academician Spin-off
First year of internationalization	2015
Linear internationalization	No
First market	USA
Markets	USA, France, Germany, Australia, Hong Kong
% of sales in the first 3 years from inception	55%
Strategy	Niche strategy
Mode of entry	Direct and Indirect Exportation (Consortia); Partnership with an American Multinational
Main global channels for the expansion	Big Companies

### 4.3. Firm C

The third company is represented by an entrepreneurial spin-off born in 2015 in Mosciano S. Angelo, in the Teramo province. The firm's property is divided between the main founder – with ten-year experience in the field of classical composites and in the design of mechanical components - and the Abruzzo region. The founder is also the general director. After obtaining the diploma as accountant, he followed some marketing courses and collected several experiences before the establishment of his own company.

In particular, from 1997 to 2003, he worked as export manager for a company active in the food industry. Later, from 2003 he was hired as commercial director in a company specialized in the production of components for the chemical-mechanical sector, which sold its products in the European market. He decided to leave this last job in 2015, with the aim of founding his spin-off for the production of advanced components. However, he collected also several work experiences in different countries such as Canada, Tunisia and North America.

The firm operates in the mechanical sector, and it is part of an incubator of companies settled in the Abruzzo region and supported by a society specialized in the creation of new enterprises. The main objective, which has led to the firm's establishment, is to answer to specific needs expressed by the customers of the previous company, in which the founder worked in the past. At the beginning, the company operated as a supplier of multinationals, dealing with the movements of fluids. Then, it has expanded its services portfolio by entering in other sectors, such as the molding of standard and non-standard plastics and the food industry. Currently, it provides services in two different sectors: fluid handling and public transport (creation of advanced components and the offer of consultancy and designing services).

From the international point of view, in 2015 the company started to be a supplier of a Danish multinational, specialized in the production and commercialization of pumps, with which the firm has stipulated a partnership aimed at developing marketing activities for a certain period. This relationship turns out to be still strong and essential for the firm's growth.

In 2017, instead, the firm developed a direct contact with some clients of Austria, Switzerland, Spain, Germany and Netherlands, by employing its own managerial team. The served foreign markets are thus the same in which the Danish multinational company offers its products. By serving these markets, the company reaches a percentage of sales equal to 45% of

its total turnover. Currently the company is able to systematically monitor only the Italian market, although it is developing an effective strategy to directly enter into foreign markets.

The choice of direct exportations, mainly focused on market niches, mostly arises from the desire to gain greater experience and market share and from the excessive saturation felt in the domestic market.

Overall, the flat organizational structure of the firm makes decision making fast enough, and usually decisions are made by the entrepreneur. Finally, although the process of internationalization is still under development, as this is only the second financial year for the company, it turns out to be linear and the cultural distance does not represent an obstacle for the firm's growth.

Table 4 - Firm C: Internationalization characteristics

Typology of Firm according to BG theory	Born Global Entrepreneurial Spin-off
First year of internationalization	2015
First markets	Austria, Germany, Switzerland, Spain, the Netherlands, England
Markets	EMEA, North America, Asia (markets served by the multinational companies)
Linear internationalization	Yes
% of sales in the first 3 years from inception	45%
Strategy	Niche strategy
Mode of entry	Indirect Exportation (Trading company)
Main global channels for the expansion	Multinationals

## 5. Results and discussion

According to the previous considerations and results, it is possible to assume that the three analyzed firms are respectively a Global Start-up, a Born Global Academic Spin-off and a Born Global Entrepreneurial Spin-off.

In particular, firm A presents specific traits owned by different typologies of innovative start-ups: of the High-tech Start-ups, it takes the global market perspective and the highly innovative character of the proposed solutions (Taji and Tsuyuki, 2012); with the Software Start-ups, it shares the development of cutting-edge technologies, the flexibility and a specialized team, while at the same time it stands out for its proactive attitude and for the pursuit of a long-term oriented strategy directed to rapidly growing market segments (Paternoster et al., 2014). Moreover, the firm operates by following the lean approach (Ries, 2011), aimed at eliminating waste and losses through continuous innovation and measurement.

According to the definition of Pirnay and Surlémont (2003), firm B is a university spin-off, since it was founded by a professor and it includes other university staff members. In particular, the dynamic skills of the founder favor the internationalization process, through the sale of high-technology and innovative products in different foreign markets.

Finally, firm C is an independent entrepreneurial spin-off offering innovative and customer-oriented products. It exploits the advantages related to the flexibility of the lean organization (Tübke, 2004), by addressing its offers to several market segments, different from those served by the parent company.

### 5.1. The process of internationalization and the pursued strategies

All the investigated companies are young and internationalized within the first year of their activity. They offer their products in the global market and, for this reason, they cannot be

considered Born International, meaning companies that develop a quick internationalization inside their own continent (Sharma and Majkgård, 1999).

Moreover, in the case of firm B and C, it is more correct to talk about “born global” phenomenon. Indeed, BG companies are identified as small technology-oriented enterprises (Knight and Cavusgil, 1996), that develop their international process within three years from their inception, by reaching a percentage of foreign sales equal to the 25% (at least) of their total turnover. They are also recognized as companies developing a competitive advantage through the sale of their outputs in the foreign markets (Andersson and Wictor, 2003).

Instead, firm A can be considered as an International new venture (INV), since it develops its competitive advantage by adopting several resources, identified in the foreign countries, and by selling its products in different markets (Oviatt and McDougall, 1994).

However, within three years – two for the firm C – these companies achieved different percentages of foreign sales: 25% for firm A, 55% for firm B and 45% for firm C. Furthermore, their internationalization processes are based on different reasons: firm A and C decided to internationalize their activities in order to acquire new market shares and to find new opportunities. On the contrary, firm B decided to start its internationalization process after external solicitations and in order to transfer know-how and skills. In addition, at the beginning of their internationalization process, firm A and B entered in only one market, that are Serbia and USA. Later, firm B started selling their products also in additional markets, by sending its employees on-site. Instead, firm A first entered in Serbia and then in Brazil through the establishment of two subsidiaries. In these two countries the company coordinates the development of its products and the commercial activities through the adoption of two local directing manager. This is the reason why the firm can be considered a Global Start-up (Oviatt and McDougall, 1994).

On the other side, firm C started its internationalization process by collaborating with a Danish multinational and by selling its products in the main foreign markets of this company. In 2017, through the support of internal managers, the firm started to develop direct contacts with potential foreign customers.

Overall, although they differ for their importance, the foreign markets, served by these companies, are: Europe, East and South Asia, North and South America.

For what concerns the pursued strategies, some differences are visible: despite the enterprises turn to global niches, as Wictor (2006) theorized, firm A and C adopt a proactive behavior (Chen et al., 2009), by developing a systematic monitoring strategy in their markets. On the contrary, firm B mainly acts by responding to external solicitations, thus demonstrating a more reactive attitude, characterized by the absence of any strategy or regular monitoring activity in the served markets. Finally, while firm A and C are permanently present in the countries in which they entered, company B seems to suffer from the processes of de-internationalization, since it claims to be permanently present only in the North American market.

## ***5.2. Influencing Factors of Internationalization***

In the following subparagraphs, all the factors influencing the internationalization processes are summarized. In order to develop possible comparisons, among the three companies, more detailed information is included in Table 5, where the importance, expressed by the companies for all the elements considered in the analysis, is also displayed.

Table 5 - Success Factors Influencing the Internationalization process

Variables	Firm A		Firm B		Firm C	
	Start-up phase	Post-launch	Start-up phase	Post-launch	Start-up phase	Post-launch
Entrepreneurs/Interviewee characteristics	*****	*****	****	****	*****	****
Entrepreneurs/interviewee capabilities	*****	*****	*****	*****	****	*****
Proactive behaviour in the research of opportunities in international markets	*****	*****	*****	*****	****	*****
Global Vision	*****	*****	*****	*****	****	****
(Previous) Training and work experiences in international field	****	****	*****	*****	*****	****
Personal and Business Networks	*****	*****	****	****	****	*****
Technical knowledge	*****	*****	*****	*****	*****	*****
Resources held by the company	***	****	****	*****	***	****
Products' quality	**	*****	****	****	****	*****
Adopted Strategy	*****	*****	****	****	****	****
Domestic market characteristics	*****	***	***	***	****	****
Target markets characteristics	*****	***	***	***	****	****
Industry	*****	*****	****	****	****	****
New managers		*****			***	****
Cooperation between entrepreneur and managerial team	*****	*****			***	*****
Dynamic capabilities	*****	*****	****	****	****	****
Innovation	*****	*****	*****	*****	*****	*****
Research & Development	*****	*****	*****	*****	*****	*****
Technology	*****	*****	*****	*****	*****	*****
Marketing	**	*****	*	*	****	****
Production	**	*****	****	****	****	****

\*\*\*\*\* = very influential

\*\*\*\* = quite influential

\*\*\* = influential

\*\* = not very influential

\* = not at all influential

Empty cell = Not relevant

### 5.3. Entrepreneurs' characteristics and background

From the analysis, emerges how the internationalization processes of the investigated firms are guided by entrepreneurs with quite different professional and training paths, who own, in turn, many common peculiarities, such as perseverance, willingness to run risks and adaptability. Other important characteristics, concerning the entrepreneurs' figures, are represented by the passion for their job, their language skills and their innate global vision, even if for the firm B, this vision turns out to be short-term. Furthermore, all the entrepreneurs play a leading role in the process of defining objectives and implementing decisions.

With reference to the role played by the previous experiences, while the entrepreneurs of firms A and C possess previous experiences both at a corporate and at an international level, the founder of firm B owns consolidated international experiences, which have facilitated the process of internationalization. Overall, the experiences acquired in the international markets and the passion for their jobs, combined with the language skills, allowed these companies to grow rapidly.

Finally, for what concerns the main critical success factors, the passion for their jobs, the long-term international orientation, the adoption of the learning-by-doing philosophy, the removal of wastefulness and losses through the adoption of innovation, the focus on the quality, the assistance to clients and suppliers, the establishment of relationships, based on reciprocal trust, and the willingness to constantly improve themselves represent the main drivers, considered by the entrepreneurs of Firm A and C, as crucial for the development of their companies.

A strong international orientation in the short-term, the ethic and social responsibility, combined with the innovation and the continuous research constitute, in turn, the main key factors highlighted by the entrepreneur of Firm B.

Table 6 – Founders’ characteristics

Firm A	Firm B	Firm C
Previous experiences in international markets and in other companies	Previous experiences in international markets and in scientific research	Previous experiences in international markets and in other companies
Passion, Global Vision, Proactivity, Learning-by-doing	Passion, Global Vision, Reactivity	Passion, Global Vision, Proactivity, Perseverance
Focus on quality	Focus on quality	Focus on quality, innovation and relationships
Constant research of Innovation and relationships; Foreign language knowledge	Constant improvement in research	Foreign language knowledge
	Constant research of Innovation and relationships	
	Foreign language knowledge.	

**5.4. Human and financial resources**

The presence of a well-prepared staff, with strong language skills and a high level of specialization, represents one of the most crucial factors facilitating the companies’ international expansion. Although Andersson and Evangelista (2006) suggest the importance to assume employees prepared for the internationalization process, these figures are present only in Firm A and C. Furthermore, from the analysis emerges a difficulty in finding resources, especially on the human side. In particular, the entrepreneurs of firm B and C underline the complexity to find human resources with specialized knowledge (ex. marketing skills, management abilities).

From a financial perspective, the resources seem to be enough to support the international activities and, in all three cases, they are both internal (social capital) and external (especially bank loans) to the company, even if in the case of company C, the finding of external financial resources turns out to be more complex.

Table 7 - Human and Financial Resources' characteristics

	Firm A	Firm B	Firm C
Human Resources	Expert and ambitious team with knowledge of foreign languages	Dynamic team with interdisciplinary knowledge and foreign languages	Expert team with technical knowledge and foreign languages
Financial Resources	Sufficient; guaranteed by share capital and bank loans.	Sufficient; guaranteed by share capital and microcredit for enterprises.	Sufficient; guaranteed by share capital and other funds.

### 5.5. Relation, networks and alliances

Even if, among the three investigated companies, only firm C is part of an incubator of enterprises, all of them highlight the need to develop long-lasting networks and partnerships, based on mutual trust, in order to have access to resources, skills and opportunities (Coviello, 2006). Moreover, for the entrepreneurs, the professional relationships, developed during their previous careers, become crucial for the firms' international growth. In addition to the business relations, the entrepreneur of Firm B also underlines the relevance of the inter-personal relations, developed and consolidated during the years, in favoring the customers' loyalty, the transfer of knowledge/know-how and in exploiting the time advantage in terms of technology and innovations. Furthermore, all the three companies stipulate collaborations with global customers - multinationals in the case of firm A and C, large companies in the case of firm B - which allow them to enter the main foreign markets and to obtain further contacts with potential customers. Finally, all the companies develop collaborations with Italian and foreign universities.

Overall, all these relations are characterized by [1] closed collaborations aimed at transferring know-how and knowledge; [2] the acquisition of international patents and certifications in order to defend the knowledge resources from competitors; [3] the improvement of the degree of production quality.

Table 8 - Relation, networks and alliances' characteristics

Firm A	Firm B	Firm C
Solid relationships especially with multinationals; strong importance of previous professional relationships; Collaboration with a foreign university.	Solid relationships both personal and professionals; Partnership with an American multination for the activities of R&D and distribution; Collaborations with Italian and foreigner universities and research institutes; Participation in consortia.	Solid professional relationships; Partnership with a Danish multinational; Collaboration with (domestic) universities.

### 5.6. Characteristics and technological level of production

The investigated companies belong to different sectors, all requiring high levels of technological and knowledge resources, which are fundamental in order to favor the expansion in the international markets, facilitate the activities' management and development and to guarantee more flexible productive processes. The technological and R&D levels are

particularly high in firm A and B and less in firm C. Furthermore, for all the companies the necessity to develop a constant innovation becomes a key priority.

According to Rasmussen and Madsen’s theory (2002), the products of firm A and firm B appear standardized, while those of firm C combine standardization and adaptation. In particular, for what concerns firm C, the company manages every phase of the entire value chain, by collaborating with its clients and other partners. It is for this reason that the production process, even if supported by the ICT adoption, becomes particularly long. In order to develop in the future a more flexible structure, the founder considers [1] the possibility to relocate the production process in outsourcing in India or in the East of Europe (with the exception of the management of the most relevant phases, such as consulting, prototype design and distribution); [2] to invest in new machineries and technologies in order to support the entire production process.

Table 9 - Characteristics and technological level of production

Firm A	Firm B	Firm C
Flexible productive process; high level of research and technologic development: technologies as facilitators of [1] the expansion in international markets; [2] the development and management of the different activities.	Flexible production process; highly technological and innovative solutions; investments in R&D.	Management of the every phase of the entire value chain; collaboration with the clients and other partners; long production process; relevance of the ICT tools in the production process; necessity to invest in new machines and technologies.

**5.7. Perceived barriers**

Focusing on the analysis of the perceived barriers, the political-legal tariffs, the psychic distance with specific markets and the import duties represent the main constraints, identified by all the investigated firms, when entering in foreign markets. On the contrary, in the domestic market, the non-tariff barriers represent the major obstacles in the firms’ international development.

Finally, all the companies highlight, in their internationalization process, the excessive bureaucracy and the lack of support provided by national institutions, both at bureaucratic and financial levels.

Table 10 - Perceived barriers

	Firm A	Firm B	Firm C
Domestic markets	Huge bureaucracy; scarce support provided by national institutions.	Scarce support by national institutions.	Excessive bureaucracy
Foreign markets	Tariff barriers and import duties.	Tariff barriers and psychic distance perceived in specific countries.	Tariff barriers

## 6. Conclusions

The comparative analysis, between the results emerging from the case studies, demonstrates how the three investigated companies present not only similarities, but also some relevant differences in the development of their internationalization processes.

Firm A, which was identified as a Global start-up, sells its products in the foreign markets, where it coordinates different activities - such as commercial or product development - taking advantages by its skills and resources.

Instead, firm B is a Born Global Academician Spin-off founded in order to commercialize a finished product and the relative know-how at a global level. Conversely to the Born Global Academic Spin-off theories (Nordman and Melen, 2008), the company owns a high level of technological and international knowledge, which allows the development of a rapid internationalization process, despite the firm's reactive behavior and the absence of a specific strategy.

Thirdly, firm C is a Born Global Entrepreneurial Spin-off, developed through the proactive behavior, the high-technology knowledge and the long experience, in the international environment, acquired by the founder.

Although the literature (Rasmussen and Madsen, 2002) defines the Global Start-up as a typology of INV and the Born Global Spin-offs as two sub-typologies of BG firms, the investigated enterprises present several common aspects. For instance, all of them started their international process within three years from their inception, by achieving a percentage of foreign sales, equal or higher than 25% of the total turnover. Furthermore, even if different reasons guided their internationalization process, all of them are oriented to global niches, to which they offer standardized products (Firm A and B) and sometimes products adapted to the customer needs (Firm C).

In addition, in all the analyzed cases the ability to start a rapid internationalization was favored by the dynamic capabilities of the entrepreneurs, their passion and propensity to take risks, their previous international experiences and language skills. Also the presence of an experienced staff, the ability to nurture relationships, strong collaborations and networks, based on mutual trust and on the transfer of know-how, play an important role in the internationalization process of all the analyzed firms. For this reason, the psychic distance and the perceived barriers have not discouraged and slowed down the firms' internationalization impulse.

Overall, the analyzed organizations are small-size enterprises searching for external providers, who can help them in supporting the high costs of investments in innovation, technology and R&D, by compensating at the same time their lack of economic resources. These enterprises did not enter simultaneously in all the served markets and in some cases the internationalization was not a linear process. This confirms Vissak's results (2010), according to which the process of de-internationalization of firms is a path also adopted by BG companies.

The results also demonstrate how these companies, during the first years of their internationalization, preferred to combine direct exportations with entry modes requiring less use of resources, and to exploit collaborations with consortiums, multinational firms and other large companies acting as global customers or distributors of their products (Gabrielsson et al., 2008).

Finally, in relation to a possible stimulation function carried out by the specific geographical location of the companies, there do not seem to be any substantial external factors that have speeded up or otherwise facilitated the process of internationalization.

This study aims to strengthen the literature focused on start-ups and spin-offs born with a global orientation. However, the empirical analysis was conducted on an exiguous number of enterprises operating in the high-tech and medium-high-tech sectors and founded few years

ago. In order to obtain more generalizable results, future research should focus on companies active in the low-tech sectors and founded in older years. In addition, it might be relevant to conduct more in-depth analysis concerning the BGs' de-internationalization, the reasons encouraging this process and the different forms that it can assume.

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