

## **PHENOMENON OF BORN GLOBAL COMPANIES**

### **Systemic Factors for the Formation of a Born Global R&D Intensive Firm**

**Vytaute Dlugoborskyte and Monika Petraite**

*Kaunas University of Technology  
Donelaicio 73, LT-44029 Kaunas, Lithuania*

**crossref** <http://dx.doi.org/10.5755/j01.ss.80.2.4845>

#### **Abstract**

The paper aims at analysing the phenomenon of born globals in R&D intensive settings, where companies conduct international business at or near the founding of the firm and create new value for the market while transferring unique knowledge to innovative products or services through commercializing their R&D activities. Despite limited resources that usually characterize new entrepreneurial developments, these born global firms achieve substantial international sales from an early stage in their development. In many cases, knowledge intensity in these firms specifically gives rise to the emphasis on product quality and uniqueness. Born global firms rely on technological or scientific knowledge in order to develop competitive advantage which helps them project their business activities into world markets. On this basis, a born global R&D intensive entrepreneurial enterprise concept is highlighted in the article with the aim to disclose systemic factors for the formation of these companies. A comprehensive consideration of born global R&D intensive entrepreneurial enterprises is given, viewed from distinctive features of knowledge-based entrepreneurship and born global firms to their early internationalisation issues, considering conditions and factors causing such a pathway, to a theoretical grounding while creating a systemic factors portrayal for the formation of enterprises under study.

**Keywords:** born global, R&D intensive firm, knowledge-based entrepreneurship, enterprise.

#### **Introduction**

The development of knowledge economy, globalization, and an increasing role of technology and knowledge-intensive business (Javalgi, Gross, Joseph, and Granot, 2011) in the economy have turned the attention to the changing nature of entrepreneurship within new contextual settings (Garavaglia and Grieco, 2005). Namely, the notions of knowledge and knowledge economy have appeared to be essential while forming the concept of knowledge-based entrepreneurship by a number

of scholars in recent years (Kanellos, 2013; Cohendet and Llerena, 2006; Bishop, 2006; Witt and Zellner, 2005; Garavaglia and Grieco, 2005; Johansson, 2005). Knowledge-based entrepreneurship, as a distinguished form of entrepreneurship, is linked to the central role of creating new knowledge in value creation processes. Thus, entrepreneurship can be defined as the process of creating something new with value by devoting the necessary time and effort in knowledge intensive economic activities, taking economic, psychological, and social risks, and taking as a reward financial and personal satisfaction and independence (Kanellos, 2013). Knowledge-based entrepreneurship is referring to new and innovative firms with high knowledge intensity in their activities, involved in the process of transforming knowledge into innovation - new or significantly improved goods and services that may enter the market (Kanellos, 2013; Witt and Zellner, 2005; Johansson, 2005). A distinguished nature of the knowledge based entrepreneurial activity relates to its essential reliance on R&D as a core resource (Witt and Zellner, 2005; Garavaglia and Grieco, 2005), and its commercialization via entrepreneurial activities (Kanellos, 2013; Witt and Zellner, 2005; Johansson, 2005), and also deploying and maximizing R&D returns via development of new technologies (Witt and Zellner, 2005; Johansson, 2005). R&D globalization and speed of new technology development, the need to deal with extremely complex conditions in searching and exploiting the market, institutional and technological opportunities, the need to exploit R&D resources and their return globally (Petraite, 2010) lead to new approaches towards R&D based entrepreneurship, namely, to born global firms. The term "born global" is applied to firms that operate internationally from or near their inception. These firms do not seem to follow traditional internationalization theories, such as Uppsala Internationalisation Process Model which considers the internationalisation of firms as gradual and evolutionary (Eurofound, 2012; Dib, Rocha, and Silva, 2010). Rather, they follow an early and accelerated process of internationalisation.

The emergence of the entire born global phenomenon worldwide calls for the need to increase our understanding of its core features, core factors, and framework conditions

shaping its development, business and R&D development challenges within global settings, etc. Despite increasing studies of a globally born, the definition of it is still very much context and study goals related, dependent on the context, and thus evolving as a working concept (Gabrielsson and Kirpalani, 2012; Eurofound, 2012; Jones, Coviello, and Tang, 2011; Australian and New Zealand Academy of Management (ANZAM), 2009). Research efforts have been dedicated to the extraction of core characteristics of globally born R&D intensive firms, such as time span between founding and the start of international business operations, relevance of international activities to the business model design, geographic scope of international operations (Dib et al., 2010), firms' vision (Gabrielsson and Kirpalani, 2012) of the global market place and the management focus on global rather than local operations and networks. Nevertheless, most of the existing definitions still rely on trade internationalisation, and not on entrepreneurship theory, and define born global firms as being young enterprises that rapidly achieve a high percentage of exports (Eurofound, 2012). Studies based on a broader theoretical perspective allow the distinction of core characteristics of globally borns, such as high activity in international markets from or near the founding (Travinsky, 2012; Tanev, 2012; Cavusgil and Knight, 2009; Gabrielsson, Kirpalani, Dimitratos, Solberg, and Zucchella, 2008; Gabrielsson and Pelkonen, 2008), operation from the SME basis (Sullivan Mort, Weerawardena, and Liesch, 2012; Eurofound, 2012; Cavusgil and Knight, 2009) with limited financial and other material resources (Tanev, 2012; Sullivan Mort et al., 2012; Cavusgil and Knight, 2009), industrial variety (Sullivan Mort et al., 2012; Eurofound, 2012; Cavusgil and Knight, 2009; Crick 2009), strong international outlook of managers and international entrepreneurial orientation (Eurofound, 2012; Travinsky, 2012; Cavusgil and Knight, 2009; Gabrielsson et al., 2008; Weerawardena, Sullivan Mort, Liesch, and Knight, 2007), emphasis on differentiation strategy (Cannone, Costantino, Pisoni, and Onetti, 2012; Eurofound, 2012; Cavusgil and Knight, 2009; Schulz, Borghoff, and Kraus, 2009), emphasis on superior product quality and innovations (Eurofound, 2012; Sullivan Mort et al., 2012; Gabrielsson and Kirpalani, 2012; Cavusgil and Knight, 2009; Schulz et al., 2009; Gabrielsson et al., 2008), knowledge intensity (Gonzalez-Menorca, Fernandez-Ortiz, and Clavel San Emeterio, 2012; Jones et al., 2011; Kudina, Yip, and Barkema, 2008), utilization of advanced ICT (Gabrielsson and Kirpalani, 2012; Mettler and Williams, 2011; Cavusgil and Knight, 2009), belonging to networks (Eurofound, 2012; Renda, 2011; Schulz et al., 2009), using external independent intermediaries for distribution in foreign markets (Taylor and Jack, 2012; Travinsky, 2012; Cavusgil and Knight, 2009), global niche market orientation (Bailetti, 2012; Tanev, 2012; Gonzalez-Menorca et al., 2012; Olejnik and Swoboda, 2012). Eclectic composition of empirically established common characteristics of aglobally born suggests that entire firms are not occasionally emerging, but are global by design and thus could be defined and explained via systematic analysis of

factors, shaping R&D intensive entrepreneurship. Thus, the paper aims at providing a systemic framework of factors, shaping the formation of globally born R&D intensive firms, via systemic literature review and synthesis.

The paper has been based on a systemic analysis and synthesis of literature on born global firms from various theoretical standpoints and research traditions, namely, trade and firm internationalisation theory (Eurofound, 2012; Halldin, 2012; Cannone et al., 2012; Gabrielsson, Gabrielsson, and Seppala, 2012; Sullivan Mort et al., 2012; Mettler and Williams, 2011; Mets and Kelli, 2011; Dib et al., 2010; Cavusgil and Knight, 2009; Schulz et al., 2009; Kudina et al., 2008), resource based theory of the firm (Su, 2013; Kocak and Abimbola, 2009; Zhang et al., 2009; Cavusgil and Knight, 2009), networks theory (Kocak and Abimbola, 2009; Cavusgil and Knight, 2009; Coviello, 2006), management theory on innovation (Cavusgil and Knight, 2009), on organizational learning, and on knowledge management (Kocak and Abimbola, 2009; Cavusgil and Knight, 2009).

The paper is structured as follows. The first part of the article explores core theoretical concepts forming the epistemology of the born global firm phenomenon in search of their underpinnings and explication of the phenomenon analysis. The second part of the paper synthesizes findings from theoretical and empirical studies on globally borns and proposes a grouping of systemic factors into three levels (industry/ firm level, organizational level, and individual entrepreneur level). The proposition is followed by a discussion and conclusions.

### **Epistemology of born global R&D intensive firm**

The examination of a born global firm integrates the ideas of both international business and entrepreneurship theories, eventually leading to the emergence of a new dynamic field of entrepreneurship studies – international entrepreneurship (Su, 2013; Andersson, 2011). International entrepreneurship is understood as discovery, enactment, evaluation, and exploitation of opportunities – across national borders – to create goods and services (Oviatt and McDougall, 2005). The discussion in the field adopted a set of theories in order to understand the behavior and decision rationale of born global firms (Su, 2013; Kocak and Abimbola, 2009; Zhang, Tansuhaj, and McCullough, 2009; Cavusgil and Knight, 2009). The main theories building the epistemology of a born global firm encompass resource-based theory of the firm, dynamic capabilities theory, organizational learning, knowledge management, innovation, and network theories. The resource based theory for the firm forms the analytical framework, while the distinguished features of the phenomenon evolve because of novel ways of knowledge based resource acquisition and distribution in order to exploit global opportunities. Entire behaviors for the firm are explained by the dynamic capabilities theory, organizational learning, knowledge management, and innovation and network theories, as provided in Figure 1.

*Resource-based* theory of the firm forms the basis for the globally born firm analysis (Su, 2013; Kocak and

Abimbola, 2009; Zhang et al., 2009; Cavusgil and Knight, 2009). The resource-based theory helps explain how knowledge and capabilities are developed and leveraged within enterprising firms. Being young, a born global firm tends to lack substantial financial and human resources as well as other physical resources that may have accrued to older firms (Kocak and Abimbola, 2009; Zhang et al., 2009). It is this primary tangible resource that older firms typically tend to leverage to succeed in foreign markets. In contrast, a born global firm appears to leverage a collection of fundamental intangible resources which comprise a specific constellation of strategic orientations, such as market, entrepreneurial, and technological orientations (Kocak and Abimbola, 2009). These resources may include trade secrets, embedded technological knowledge as well as managerial, marketing, and production skills which are valuable, difficult to imitate, and provide the competitive advantage needed for internationalization (Cavusgil and Knight, 2009; Kocak and Abimbola, 2009). Resources that lead to profitability include assets, such as brand names, in-house knowledge, and skilled personnel employment, trade contacts, and efficient procedures. Likewise, company culture, capabilities, routines, and processes can be regarded as organizational resources and when leveraged skilfully, such resources engender organizational efficiency and effectiveness. They result in the development of one or more core competences that provide substantial competitive advantages (Cavusgil and Knight, 2009). Consequently, a resource-based view can allow business to identify specific knowledge and capability as valuable, unique, and hard-to-imitate resources that separate winners from losers in global competition, allowing smaller firms to differentiate themselves and succeed abroad (Cavusgil and Knight, 2009; Zhang et al., 2009). Therefore, smaller international firms may manifest specific resources that are instrumental to the conception and implementation of activities in international markets. The ownership and control of these valuable resources is critical to the foundation and growth of entrepreneurial firms. As many nascent firms face severe resource constraints, firms tend to seek and acquire resources from their external business environments (Su, 2013). When examined within the resource-based view, born global firms are seen to survive and thrive in competitive foreign markets not only by applying a unique *gestalt* of managerial and intangible resources, but also by aligning key strategic assets with the demands of local markets. In sum, from the resource-based theory we can retrieve resource acquisition characteristics of born global firms in relation to the exploitation of global opportunities, based on the exploitation of networks, knowledge intensity, and ownership of unique knowledge as core resources.

The capability of a firm to leverage entire resources within a given window of opportunity is tackled by the theory of *dynamic capabilities* (Teece, 1997). Dynamic capabilities are defined as organizational and strategic routines by which the firm achieves new resource configurations as markets emerge, collide, split, evolve, and die (Kocak and Abimbola, 2009). The dynamic capabilities theory emphasizes the role of capabilities (as opposed to resources) in explaining the ability of firms to

achieve particular organizational goals and objectives. Dynamic capabilities represent firm's ability to integrate, reconfigure, gain, and release organizational resources. These capabilities operate in directing organizational resources, operational routines, and competencies toward achieving superior performance in the markets where the firm strategically orients its operations (Cavusgil and Knight, 2009). Dynamic capabilities affect firm's performance while impacting the structure and efficiency of firm resource sets, operation routines, and competencies (Kocak and Abimbola, 2009). The development of superior dynamic capabilities hinges on knowledge-based processes inside the firm, which are instrumental to knowledge creation, knowledge integration, and knowledge configuration (Cavusgil and Knight, 2009). Moreover, the dynamic capabilities theory suggests that the ability to internationalize and grow despite limited company resources is a function of internal capabilities of a firm. Dynamic capabilities help firms achieve new resource configurations as markets emerge and evolve and also give support to appropriately adapt, integrate, and reconfigure organizational skills, resources, and functional competences as markets grow and change. There is growing evidence that competitive advantage often depends on firm's superior deployment of capabilities (Zhang et al., 2009). Thus, dynamic capabilities help explain the emergence of path-breaking nonstandard strategic choices that are taken in the stage of rise and growth of born global firms' formation.

The development of dynamic capabilities has been closely linked to the ability of a firm to constantly adapt to changes via internal organizational processes, e.g. *organizational learning*. Organizational learning covers the processes involved in assimilating new knowledge into firm's knowledge base. Hence pursuing international opportunities involves learning about a range of conditions and phenomena, often not present in the domestic market. Competitive advantages here arise from the knowledge obtained from firm's exposure to a variety of conditions that exist abroad (Cavusgil and Knight, 2009). Therefore, international expansion can promote organizational learning and facilitate the development of skills and competencies that give rise to the competitive advantage, and vice versa. The quality and intensity of organizational learning is essentially linked to the ability of the firm to acquire (both internally and externally) and integrate unique knowledge resources into organizational routines. A born global firm by definition is a business organization that, from or near its founding, seeks superior international business performance from the application of knowledge-based resources and its output maximization in multiple countries (Kocak and Abimbola, 2009). From this standpoint, knowledge can be considered as the most important resource of a globally born firm. Heterogeneous knowledge bases across firms are the main determinant of performance differences. Hence, the development, integration, and transfer of knowledge should be regarded as critical aspects of internationalization (Kocak and Abimbola, 2009). The firm harnesses knowledge resulting from this learning for accelerated internationalization (Kocak and Abimbola, 2009). These arguments repeatedly

confirm the importance of knowledge intensity to born global firm's performance in the global market.

Smart strategies for resource acquisition and exploitation, based on organizational learning processes, are important but not sufficient prerequisites for the success of a globally born R&D intensive firm, as its core strength stands with the ability to develop a unique knowledge based proposition for the global market, i.e. the expected level of novelty is high for the global market niche strategy to succeed. *Innovation* is the pursuit of novel solutions to challenges that confront the firm, including the creation of new products and markets, the attempt to lead rather than follow competitors, and proclivity for risk taking (Cavusgil and Knight, 2009). Moreover, from the international entrepreneurship perspective, internationalization is considered as an innovative act. Thus, the ability to manage innovation processes defines firm's response to changing conditions in the external environment and is important for company performance in competitive international markets.

The limitations caused by a lack of internal resources, including R&D and knowledge, and the need for the

diverse knowledge bases on global markets in value creation processes, force the firm to apply networking as a core activity in value creation and return management. Networking is essential for a born global firm in overcoming any resource constraints that they encounter (Kocak and Abimbola, 2009). In the initial stages, born global firms leverage their networks to generate organizational skills and competencies, including technological capabilities (Cavusgil and Knight, 2009). Network relationships also generate the social capital that provides a better access to resources and international opportunities and the means by which to overcome the liabilities of newness and foreignness (Kocak and Abimbola, 2009). Therefore, after internationalization is well underway, managerial focus shifts to developing human resources to support further growth. Subsequently, the firm turns its emphasis to building its client and distribution base. Thus, for born global firms, networks are critical for generating social capital and provide for the acquisition, mobilization, and development of the needed resources (Cavusgil and Knight, 2009).

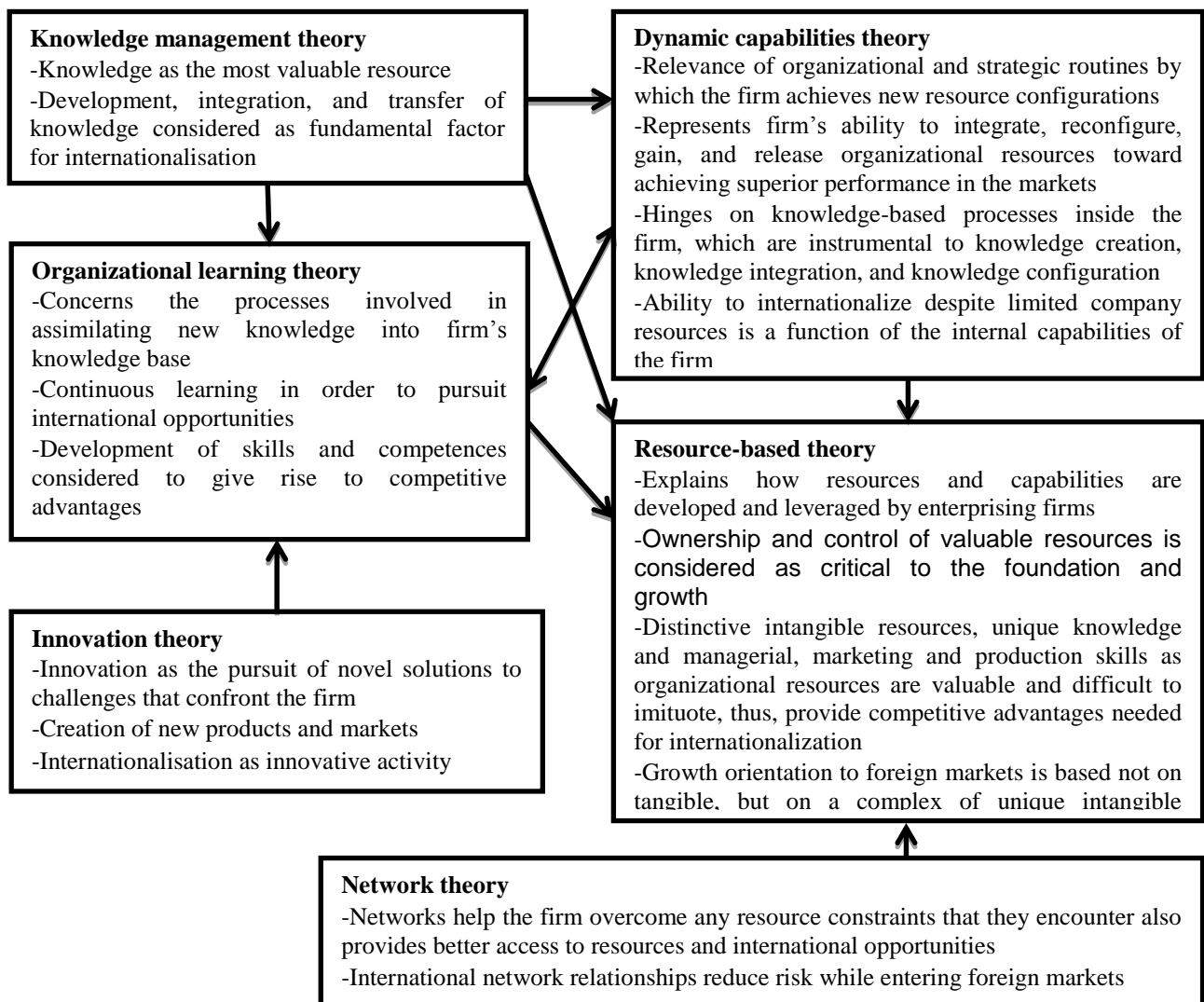


Figure 1. Epistemology of born global firm

The results of a Coviello (2006) study have confirmed the important role of networks in opening doors for born global firms to provide market access, financing, distribution channels, and contracts for both internal and external development. It is notable that resources acquired within the company network aid the born global not only as it evolves through internationalisation, but also before internationalisation, from the earliest stage of company development. A complex view of the theories provided merges the concept of knowledge-based entrepreneurship, born global firm's characteristics, factors that influence the decision to take an early internationalisation pathway and finally disclose a systemic depiction of born global R&D intensive entrepreneurial firm formation. Characteristics, revealed upon combining theories together, show the distinctive features of globally borns and track success features in the global market. Based on the entire theoretical discussion, the external and internal factors, causing the formation of a globally born firm, will be summarized in the next part.

### External and internal factors causing the formation of a globally born firm

The formation of a globally born firm is based on a complex setting of external and internal factors (Eurofound, 2012). External factors, causing the formation of resource acquisition strategies, will be further analyzed from the theoretical perspective of internationalization, globalization, and networked knowledge economy, while internal factors are basically explained by the theories of entrepreneurship and organization, with a specific focus on dynamic capabilities, networks, organisational learning, and knowledge management, as indicated in the previous section of the paper.

Traditional internationalization theories suggest that firms build a domestic market before gradually starting to export to neighbouring or culturally close markets, thereby reducing risk and uncertainty. In the following growth steps, they start considering engagement in markets that are culturally or/and geographically distant (Leonidou and Samiee, 2012). A new type of firm has been identified by Rennie (1993) showing that, due to globalisation and technological advances, many firms begin to export within a couple of years of their inception (Cavusgil and Knight, 2009). The born global phenomenon points toward the rise of an international ecosystem in which any firm, regardless of age, experience, and tangible resources, can be an active international business participant (Travinsky, 2012). Following this, the formation of a globally born is caused by changes in the global business environment rather than a single need to internationalize business activities when seeking higher return of investment. The entire link between changes in business environment and rapid internationalization decision has been based on the analysis of impacts of *globalisation*, such as decreased trade and investment barriers on a global scale (Halldin, 2012; Mets and Kelli, 2011; Cavusgil and Knight, 2009), increasing homogeneity among particular industries (Cannone et al., 2012), global information flows (Mets and Kelli, 2011), growing mobility of human capital (Cannone et al., 2012; Mets and Kelli, 2011), knowledge globalization (Halldin, 2012), *advances in technologies* (Halldin, 2012; Cannone et al., 2012; Dib et al., 2010; Cavusgil and Knight, 2009), emergence of *global niche markets* (Halldin, 2012; Dib et al., 2010; Cavusgil and Knight, 2009), and *global networks* (Halldin, 2012; Cannone et al., 2012; Cavusgil and Knight, 2009). Contextual factors for early internationalization, extracted from the literature review, are summarized in Table 1.

Table 1

Conditions for early internationalization of the firm

Condition for early internationalization	Author
<b>Globalisation:</b>	
• decreased trade and investment barriers in a global scale	Halldin (2012), Mets and Kelli (2011), Cavusgil and Knight (2009)
• increasing homogeneity among particular industries	Cannone et al. (2012)
• global information flows	Mets and Kelli (2011)
• growing mobility of human capital	Cannone et al. (2012), Mets and Kelli (2011)
• knowledge globalization	Halldin (2012)
<b>Advances in technologies:</b>	
• manufacturing	Halldin (2012), Cannone et al. (2012), Dib et al. (2010), Cavusgil and Knight (2009)
• communication	Halldin (2012), Cannone et al. (2012), Dib et al. (2010), Cavusgil and Knight (2009)
• information	Halldin (2012), Cavusgil and Knight (2009)
• transportation	Halldin (2012), Cannone et al. (2012)
<b>Emergence of global niche markets</b> , caused by customers' preference to customized and specialized products and narrow market segments' occurrence	Halldin (2012), Dib et al. (2010), Cavusgil and Knight (2009)
<b>Global networks</b>	Halldin (2012), Cannone et al. (2012), Cavusgil and Knight (2009)

The exploitation of new global conditions, consequently, cause exclusive internationalisation pathways of born global firms which differ from traditional internationalising firms as being not emergent or incremental, but rather initially intended (Eurofound, 2012; Gabrielsson et al., 2012; Sullivan Mort et al., 2012; Halldin, 2012; Mettler and Williams, 2011; Schulz et al., 2009; Cavusgil and Knight, 2009). Gabrielsson et al. (2012) expose three possible paths for the foreign expansion of firms, where globalizing internationals start from the international phase and move directly to the global phase, and born global firms ignore stage models and go to the global phase directly from the start,

differently from a traditional gradual process of traditional internationalization from the domestic towards international phase.

According to Eurofound (2012), there are several strong external conditional factors affecting the formation of a born global: sectorial, regional, national export culture, international trade incentives; national trade disincentives (e.g. legal, tax); demand which can stand for low/shrinking domestic demand, strong/emerging international demand (global niche markets), mobility of clients and global value chains; foreign trade facilitators (e.g. low transport costs, marketing possibilities through modern technologies).

Table 2

Factors influencing formation of globally born

Level	Variable	Factor for globally born	Author
External industry/firm level	Market	Domestic market is not large enough	Halldin (2012), Cannone et al. (2012), Cavusgil and Knight (2009), Kudina et al. (2008)
		Most of potential customers are foreign, multinational companies	Cavusgil and Knight (2009), Kudina et al. (2008)
		Many of potential customers have overseas operations, where they will use company products or services	Kudina et al. (2008)
		Customer needs and tastes are fairly standard across company potential country-markets	Kudina et al. (2008)
		Increasing role of niche markets and greater demand for specialized or customized products	Travinsky (2012), Varma (2010), Cavusgil and Knight (2009)
	Competition	Major competitors have already internationalized or will do so soon	Kudina et al. (2008)
		Monopoly or near-monopoly position in a given product developed, which derives from tacitly owned knowledge, proprietary products or processes	Cavusgil and Knight (2009)
		Having the most technically advanced offering in the world is key to the company competitive advantage	Halldin (2012), Cavusgil and Knight (2009), Kudina et al. (2008)
	Industry profile	Company operates in a knowledge-intensive or high-technology sector	Cannone et al. (2012), Kudina et al. (2008)
Internal/organizational level	Product	Product or service category faces few trade barriers	Cannone et al. (2012), Kudina et al. (2008)
		Product or service has a high value relative to its transportation and other logistics costs	Kudina et al. (2008)
		Company product or service has significant first mover advantages or network effects	Kudina et al. (2008)
	Management	Company has key managers who are experienced in international business	Cannone et al. (2012), Kudina et al. (2008)
		Management has a strong international entrepreneurship orientation, possess commitment and belief to the idea of internationalization	Halldin (2012), Cannone et al. (2012), Cavusgil and Knight (2009)
	Knowledge intensity	Company fosters continuous learning orientation while acquiring knowledge from foreign partners or developing unique products	Cannone et al. (2012)
	Resources	Higher quality and accessible resources in foreign markets	Cavusgil and Knight (2009)
		Company is able to respond to the changing environment and a shortened product life cycle	Travinsky (2012)
	Networking	Company has strong international partnerships, belongs to networks, and is able to use them in order to grow	Halldin (2012), Cannone et al. (2012), Cavusgil and Knight (2009), Kudina et al. (2008)
	Individual, Entrepreneur level	Global vision	Desire to be involved in international business and managerial competences possessed to exploit the opportunities in global markets
Proactiveness		Ability to recognize potential in foreign markets	Eurofound (2012), Cannone et al. (2012), Kudina et al. (2008), Travinsky (2012)
Personal networks		Personal international network of professional contacts	Eurofound (2012), Halldin (2012), Cannone et al. (2012), Cavusgil and Knight (2009), Kudina et al. (2008)

Dib et al. (2010) propose an integrated model of the factors *internal* to the firm that may influence the choice of an early and accelerated internationalization path. Here firm-, network- and entrepreneur-level variables are associated with the type of internationalization process followed, whether born global firms show higher intensity:

- Firm-level variables: unique intangible assets, innovativeness, specialization or focus, customer orientation, product differentiation, technological advantages, use of information technologies;
  - Network-level variables: use of partnerships, business networks, personal networks, participation in clusters;
- Entrepreneur-level variables, standing for: international orientation, experience abroad, education abroad, tolerance to risk, technical know-how.

Similarly, Eurofound (2012) highlights *organizational factors* and *entrepreneur-related factors* affecting the formation of born global firms. *Organizational factors* include: the mission statement towards internationalization; financial and social capital profile of the company regarding internationalization; proportion of skilled staff; employee skills and commitment towards international business operations, the need to exploit unique products and R&D capabilities globally, while executing partnership and alliances. *Entrepreneur-related factors*, impacting the formation of born globals, encompass: a desire to be involved in international business; the ability to recognize potential in foreign markets and managerial competences to exploit it; personal international network of professional contacts (Eurofound, 2012). In sum, the entrepreneur level factors are related to the internal environment of the firm, and thus emphasize a global vision, proactiveness in recognition and exploitation of opportunities globally, international networking as the characteristics of top management.

The analysis of factors, influencing the formation of a globally born firm, has been based on literature analysis, with a primary focus on the findings of empirical studies (Halldin, 2012; Cannone et al., 2012; Cavusgil and Knight, 2009; Kudina et al., 2008; Travinsky, 2012; Varma, 2010) (Table 2 for summary).

## Discussion

The core factor impacting a globally born entrepreneurial firm is linked to *market opportunities*, explored globally for unique R&D intensive solutions. Local market insufficiencies, such as a lack of size (Halldin, 2012; Cannone et al., 2012; Cavusgil and Knight, 2009; Kudina et al., 2008) or a *global customer profile*, such as sophisticated multinational customers (Cavusgil and Knight, 2009; Kudina et al., 2008), an international customer profile (Kudina et al., 2008), and the formation of global niche markets (Travinsky, 2012; Varma, 2010; Cavusgil and Knight, 2009) have been identified as the core market based factors, influencing the formation of a globally born firm. The changing nature of customers and markets towards global operations also changes the nature of *competitive environment* of the firm, and causes the need to scale returns from international markets in order to remain competitive also in conventional markets, while

acquiring the resources for keeping up with the R&D and innovation speed globally (Kudina et al., 2008). The opportunity to occupy global market niches in order to *leverage returns from R&D investments* is also an important factor for the formation of a globally born (Halldin, 2012; Cavusgil and Knight, 2009). The need to explore entire opportunities create the basis for the formation of *internal organization based factors* for a globally born, which encompass the *product, management, knowledge, resource acquisition and management, and networking capabilities* of the firm. *Product* features serve as a core factor allowing the exploitation of global market opportunities with a moderate or niche based competition, and are characterized as uniqueness with significant first mover advantages or network effects, high value added, compared to its transportation and other logistics costs, and low or absent global trade barriers (Cannone et al., 2012; Kudina et al., 2008). Success in global exploitation of a unique knowledge intensive proposition of the firm is supported by such *management* characteristics as experience in international business (Cannone et al., 2012; Kudina et al., 2008), strong international entrepreneurial orientation (Halldin, 2012; Cannone et al., 2012; Cavusgil and Knight, 2009), and also knowledge intensity and management, manifested in continuous learning and knowledge acquisition from foreign partners in order to develop knowledge intensive unique products and speed up innovation processes (Cannone et al., 2012). This leads a firm to the global search and acquisition of higher quality resources and/or substitution of non-existing resources in order to overcome time, knowledge, and other resource based constraints when competing globally (Cavusgil and Knight, 2009; Travinsky, 2012). Networking then is used as a core instrument to acquire and exploit the resource in innovation development and market access globally; thus, the ability of the firm to develop networks and use them for growth is a core factor for the success of a globally born (Halldin, 2012; Cannone et al., 2012; Cavusgil and Knight, 2009; Kudina et al., 2008). The formation of the entire firm profile is supported by the core individual entrepreneur level factors, such as a *global vision* and the desire to be involved in international business as well as managerial competences to exploit the opportunities in global markets (Eurofound, 2012; Halldin, 2012; Cannone et al., 2012; Cavusgil and Knight, 2009); *proactiveness* and ability to recognize the potential in foreign markets (Eurofound, 2012; Cannone et al., 2012; Kudina et al., 2008; Travinsky, 2012), and *networking skills* leading towards the creation and exploitation of strong personal international network of professional relationships (Eurofound, 2012; Halldin, 2012; Cannone et al., 2012; Cavusgil and Knight, 2009; Kudina et al., 2008).

## Conclusions

Major theories building the epistemology of a born global firm encompass *resource-based theory of the firm, dynamic capabilities theory, organizational learning, knowledge management, innovation, and network theories*. The resource based theory of the firm forms the basis of analysis, while the distinguished features of the

phenomenon evolve as novel ways of knowledge based resource acquisition and distribution in order to exploit global opportunities. The entire behaviors of the firm are explained by the dynamic capabilities theory, organizational learning, knowledge management, innovation, and network theories which build the framework for the analysis of systemic factors in the formation of a globally born.

From the *resource based theory* viewpoint, the framework looks at the following: how resources and capabilities are developed and leveraged by enterprising firms, ownership, and the control of valuable resources, considered to be critical to the foundation and growth, distinctive intangible resources, unique knowledge as well as managerial, marketing, and production skills as valuable and difficult to imitate organizational resources; growth orientation to foreign markets as based on a complex of unique intangible resources.

From the *dynamic capabilities theory* the framework looks at relevance of organizational and strategic routines by which the firm achieves new resource configurations; firm's ability to integrate, reconfigure, gain, and release organizational resources toward achieving superior performance in the markets; knowledge-based processes inside the firm, which are instrumental to knowledge creation, knowledge integration, and knowledge configuration; ability to internationalize despite limited company resources.

From the *network theory* the framework looks at how the networks: help the firm to overcome any resource constraints encountered; provide a better access to resources and international opportunities; serve as a risk leveraging instrument while entering foreign markets.

From the *knowledge management theory* the framework looks at how firms manage knowledge as their core competitive resource; development, integration, and transfer of knowledge are a fundamental factor for internationalisation.

From the organizational learning theory the framework looks at how the firm manages the processes, involved in assimilating new knowledge into firm's knowledge base; continuous learning in order to pursue international opportunities; and development of skills and competences considered to give rise to competitive advantages.

From the *innovation theory* the framework looks at how firm manages innovation as the pursuit of novel solutions to challenges that confront the firm; creation of new products and markets; internationalisation as innovative activities.

The systemic factor analysis for the formation of globally born R&D intensive firm allows to distinguish external and internal factors. Internal factors are further classified into the organizational and individual level. External factors causing the formation of certain are defined from the theoretical perspective of internationalization, globalization and networked knowledge economy, while internal factors are basically explained by the theories of entrepreneurship and organization, with the specific focus on dynamic capabilities, networks, organizational learning and knowledge management.

Following systemic factors for the formation of globally born firm were extracted. *External industry/firm* level factors encompass the presence of global market profile and market conditions for pushing or pulling for becoming born global firm, customer characteristics, internationalization of competitors and low barriers for international trade. *Internal organization/firm* level factors stand for product characteristics, suitable for international markets and trading, management involvement in international business, effective management of resources internationally, as well as knowledge intensity and networking as a core value creating processes. *Individual/entrepreneur* level factors encompass the *global vision, proactiveness* and ability to recognize potential in foreign markets, and international *networking skills*.

The systemic combination of extracted factors leads towards the formation of globally born R&D intensive entrepreneurial firm, which conduct global business operations at or near the founding of the firm and creates a new value for the market while transferring unique knowledge to innovative products or services through commercializing their R&D activities.

The complex view of theoretical interrelations forms the basis for further analysis of born global R&D intensive entrepreneurial firm formation at the empirical level.

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V. Długoborskytė, M. Petraite

#### Gimusių globaliomis mokslo ir technologinėms žinioms imlių įmonių formavimosi sisteminiai veiksniai

Santrauka

Šiame straipsnyje analizuojamas gimusių globaliomis mokslo ir technologinėms žinioms imlių įmonių fenomenas. Jis atspindi kompanijų žengimą į tarptautinį verslą iš karto ar per kelerius pirmuosius įsikūrimo metus ir naujos vertės kūrimą rinkoje, transformuojant unikalias žinias į inovatyvius produktus ar paslaugas. Minėtus aspektus galima pasiekti komercializuojant mokslinių tyrimų ir plėtros veiklą. Tokiu būdu sujungiamos dvi mokslinėje literatūroje daug dėmesio sulaukiančios koncepcijos – gimusios globaliomis įmonės ir žinioms imli antreprenerystė. Šios koncepcijos padeda pamatus naujo fenomeno analizei. Šio straipsnio tikslas yra atskleisti sisteminis gimusių globaliomis mokslo ir technologinėms žinioms imlių įmonių formavimosi veiksniai.

Tikslui pasiekti pirmiausia analizuojama gimusių globaliomis mokslo ir technologinėms žinioms imlių įmonių samprata, išryškinant jų išskirtines charakteristikas, ankstyvos internacionalizacijos sąlygas ir veiksnius, įtakančius tokio globalaus kelio pasirinkimą, bei teorijų pagrindu išskiriant sisteminius veiksnius, sąlygojančius analizuojamų įmonių formavimąsi.

Per pastaruosius du dešimtmečius visai ekonomikai nuo gamybos perėjus prie žinioms imlaus verslo, jau kurį laiką mokslinėje literatūroje akcentuojamas žinių ekonomikos terminas. Žinių ekonomikos idėja grindžiama tuo, kad žinios yra naudingos kuriant ekonominę naudą. Su žinių ekonomika susijusi žinioms imlios antreprenerystės sąvoka, kuri susijusi su veiklomis, kuriose naujų žinių kūrimas yra visos vertės kūrimo pagrindas. Tokios įmonės komercializuoja mokslines ar aukštųjų technologijų žinias, transformuoja žinias į inovacijas. Dėl to kuriami nauji, žymiai patobulinti produktai ar paslaugos rinkai, mokslo tyrimų ir plėtos taikymas kasdieninėje įmonės veikloje ir nuolatinė naujų galimybių bei idėjų paieška yra pagrindiniai žinioms imliai antreprenerystę apibūdinantys aspektai. Tačiau verta paminėti, jog mokslo tyrimams ir plėtrai imlus verslas yra paveiktas ne tik žinių ekonomikos realijų, bet ir mokslo tyrimų bei plėtos globalizavimo. Tokios įmonės neapsiriboja vien vietine rinka, bet konkuruoja ir globaliu mastu. Ši globalumo dimensija atveria žinioms imlios antreprenerystės sąsajas su gimusiomis globaliomis įmonėmis. Šios įmonės siekia internacionalizacijos dar beveik pačioje savo veiklos įkūrimo stadijoje ir vis labiau plinta pasauliniu mastu bei užima svarbią poziciją tarptautinėje prekyboje. Savo veiklos globalumu nuo pat įsikūrimo jos paneigia tradicines internacionalizacijos teorijas, grįstas etapiškumu, pradedant nuo įsitvirtinimo vietinėje rinkoje ir veiksmų globaliu mastu imantis tik vėlesnėse gyvavimo ciklo stadijose. Jų novatoriškas charakteris, jaunumas, idėjų naujumas ir buvimas naujoku rinkoje tampa tikru iššūkiu išgyventi globaliomis konkurencinėmis sąlygomis – gimusios globaliomis įmonės turi įvaldyti ne tik inovatyvių produktų vystymą pritaikant tarptautinėms rinkoms, bet taip pat ir pagrindinius verslo bei internacionalizacijos procesus tuo pačiu metu veikiant greitai. Nepaisant jų mažo dydžio, ribotų finansinių, žmogiškųjų ir kitų išteklių, kas iš esmės apibūdina naują verslą, šios antrepreneriškos įmonės pasiekia žymią tarptautinę sėkmę. Tai įgalina unikalių nematerialiųjų išteklių kombinacijas ir gebėjimą įsigyti trūkstamų išteklių iš šalies, tokiu būdu sudarant sąlygas naujai vertei kurti ir pateikti kaip produktą globaliai rinkai. Kadangi gimusios globaliomis įmonės tiesiogiai siejamos su tarptautine antrepreneryste, tai žinių dimensija sujungia jas su žinioms imlia antrepreneryste. Taip atsiranda gimusių globaliomis mokslo ir technologinėms žinioms imlių įmonių samprata, kurių formavimąsi nagrinėti yra ypač aktualu aiškinantis šiuolaikines globalaus verslo ir žinių ekonomikos pasireišimo realijas.

Gimusių globaliomis įmonių analizė integruo tarptautinio verslo ir antreprenerystės idėjas, o tai vedė į naujos sampratos – tarptautinės antreprenerystės – atsiradimą. Ši nauja sritis sulaukė ypatingo mokslininkų dėmesio bei įtakojo naujas teorijas, kurios savaime gilino gimusių globalių įmonių veiklos supratimą mokslinėje literatūroje ir globalios orientacijos formavimąsi. Viena iš tokių teorijų yra išteklių grįstas požiūris.

Išteklių grįsto požiūrio teorija yra viena iš pagrindinių teorijų aiškinantis gimusių globaliomis įmonių veiklos subtilybes, atskleidžianti, kaip išteklių ir gebėjimų iniciatyvose įmonėse yra vystomi ir skolinamiesi. Būtent vertingų išteklių nuosavybė ir kontroliavimas yra kritiniai antrepreneriškos įmonės kuriantis ir augant - moderniausiomis technologijomis ir savitais nematerialiaisiais išteklių yra grįsta šių įmonių tarptautinė veikla. Šis požiūris išreiškia mintį, jog specifiniai organizaciniai išteklių, kurie yra vertingi, unikalūs, sunkiai imituojami, globalioje konkurencijoje atskiria nugalėtojus nuo pralaimėtojų.

Glaudžiai su išteklių grįstu požiūriu yra susijusi ir dinaminis gebėjimų požiūrio teorija, t.y. organizacinė ir strateginė praktika, kuria įmonė pasiekia naujų išteklių formų ir konfigūracijų - gebėjimų integruoti, perkonfigūruoti, įgyti ir išlaisvinti organizacinius išteklius. Šių išskirtinių gebėjimų vystymas dažniausiai grįstas žiniomis paremtais procesais pačioje įmonėje, kurie yra esminiai žinių kūrimui, integracijai ir konfigūracijai. Dinaminiai gebėjimai leidžia įmonei pasiekti naujų išteklių kombinacijų rinkoms atsirandant ir vystantis.

Čia svarbu paminėti ir organizacinio mokymosi teoriją, apimančią procesus, susijusius su naujų žinių įtraukimu į bendrą įmonės žinių bazę. Būtent tarptautinių galimybių sekimas sąlygoja nuolatinį mokymąsi, t.y., konkurencinis pranašumas kyla iš įmonės įsisavintų žinių.

Glaudžiai susijusi su organizaciniu mokymusi yra žiniomis grįsto požiūrio teorija. Joje būtent žinios yra laikomos pačiu svarbiausiu ištekliu. Remiantis šia teorija, žinių vystymas, integracija ir perdavimas yra pagrindinis internacionalizaciją įtinkantis veiksnys.

Taip pat su organizaciniu mokymusi susijusi inovacijų teorija. Ši akcentuoja, jog inovacija yra naujo sprendimo suradimas atsakant į įmonės patiriamus iššūkius, apimant naujų produktų ir rinkų kūrimą, siekį vadovauti konkurentams nei paskui juos sekti, bei polinkį prisiimti riziką. Be to, jau pats internacionalizacijos procesas daugelio mokslininkų nuomone yra inovatyvus.

Gimusių globaliomis įmonių veiklą visapusiškai atspindi ir tinklaveikos teorija. Priklausymas tinklams padeda gimusiomis globaliomis įmonėms įveikti išteklių trūkumą, užtikrina lengvesnį priėjimą prie reikiamų išteklių bei pasinaudojimą tarptautinėmis galimybėmis.

Kompleksinės šių teorijų sąsajos tiesiogiai atspindi būtent žinioms imliai antreprenerystę, gimusių globaliomis įmonių charakteristikas, ankstyvos internacionalizacijos kelio pasirinkimą įtakančius veiksnius ir galiausiai atskleidžia gimusių globaliomis mokslo ir technologinėms žinioms imlių įmonių formavimąsi. Pastarieji gimusių globaliomis mokslo ir technologinėms žinioms imlių įmonių formavimosi veiksniai, remiantis teorinės analizės metu atliktomis išvaidomis, straipsnyje susisteminti į išorinius ir vidinius veiksnius. Vidiniai veiksniai taip pat klasifikuojami į organizacinį ir individualų lygmenį. Formavimąsi sąlygojantys išoriniai veiksniai labiau kildinami iš internacionalizacijos, globalizacijos ir tinklaveikos teorijų perspektyvų bei žinių ekonomikos. Tuo tarpu vidiniai veiksniai aiškinami antreprenerystės ir organizacinėse teorijose, akcentuojant dinaminis gebėjimus, tinklaveiką, organizacinį mokymąsi ir žinių valdymą.

Straipsnyje pateikta teorinė analizė leido atskleisti gimusių globaliomis mokslo ir technologinėms žinioms imlių įmonių formavimosi veiksnius. Taigi išoriniai industrijos/įmonės lygio veiksniai apima globalios rinkos profilį bei rinkos sąlygas, įtakančias įmonės tapimą gimusia globalia, kliento charakteristikas, konkurentų internacionalizacijos lygį, mažus tarptautinės prekybos barjerus. Vidiniai organizacijos/įmonės lygio veiksniai atspindi produkto charakteristikas, jo tinkamumą tarptautinėms rinkoms ir prekybai, vadovybės įsitraukimą į tarptautinį verslą, efektyvų tarptautinį resursų valdymą, taip pat imlumą žinioms ir tinklaveiką, kaip pagrindinius naują vertę kuriančius procesus. Galiausiai individo/antreprenerio lygio veiksniai išryškina globalią viziją, proaktyvumą, gebėjimą atpažinti užsienio rinkos potencialą, tarptautinius tinklaveikos įgūdžius. Būtent išskirtų veiksmų sistemine kombinacija lemia gimusių globaliomis mokslo ir technologinėms žinioms imlių įmonių formavimąsi, kurios pradeda vystyti tarptautinę veiklą nuo pat įsisteigimo ar per pirmuosius savo veiklos metus bei sukuria naują vertę rinkai transformuodama unikalias žinias į inovatyvius produktus ar paslaugas. Kompleksinis požiūris siejant teorines sąsajas suformuoja pagrindą ir tolimesnei studijai – gimusių globaliomis mokslo ir technologinėms žinioms imlių įmonių formavimosi empirinei analizei.

*Reikšminiai žodžiai:* gimusi globalia įmonė, mokslo ir technologinėms žinioms imli įmonė, žinioms imli antreprenerystė.

First received: May, 2013

Accepted for publication: June, 2013