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The globalization strategies of business-to-business born global firms in the wireless technology industry

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Abstract

This paper discusses the globalization process of business-to-business born globals in a rapidly growing industry, the wireless technology industry. Deviations in these patterns in regards to the mainstream pattern of internationalization and earlier born global literature are discussed. Furthermore, the roles of the founders and managers, the networks, the financial resources of the companies, and the innovations behind the companies under consideration are analyzed. A conceptual framework and propositions explaining the product, operation and market strategies of born globals are developed. The results suggest that born globals in the wireless sector do in fact deviate from the traditional internationalization process in many areas. Their expansion even to distant markets is rapid and they apply advanced product strategies at an early stage. However, their business operations are found to proceed at a more conventional pace and the notable difference from traditional firms is the rapid establishment of sales and marketing subsidiaries. Results emphasize the key role of the resources and capabilities of born globals in influencing the advancement of product categories, operation strategies, and global market presence. Born global firms were found to lack the resources and capabilities accumulated by traditionally internationalizing firms, and they therefore need to acquire them either through the earlier experience of the founding team, which should be complementary in nature, or from external domestic and international network actors.

Keywords: Business-to-business; Born global; Globalization process; Internationalization process; Globalization strategy; High technology

1. Introduction

Rapid change in the global business environment during the last few decades has had a strong impact on the internationalization processes of most companies in the world. During the 1990s a new phenomenon, 'born global' firms, emerged as many small and medium-sized companies started a globalization process that deviated from the mainstream of traditional internationalization processes (Knight & Cavusgil, 1996; Luostarinen & Gabrielsson, 2004; McDougall & Oviatt, 2000; Rennie, 1993). These born global firms started their globalization immediately after establishment without any prior domestic operations or simultaneously with domestic business operations (Luostarinen & Gabrielsson, 2004). For this study, we define born globals, in line with Oviatt and McDougall (1994, p. 49), as companies that "from inception, seek to derive significant competitive advantage from the use of the resources and sales of outputs to multiple countries".

Buckley (2002), and Jones and Coviello (2005) have called for new research in international business to compare and link the results with the traditional theories, but also for a more interdisciplinary approach. Also, Knight and Cavusgil (2004) believe that there is still a need for future research to deepen our understanding of born globals. Rialp, Rialp, and Knight (2005) in their review of the first decade of born global research argue that the phenomenon still needs further investigation of the

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process of internationalization, and especially of the factors behind it. It has been argued that the time-based process of born globals should be understood more thoroughly (Jones & Coviello, 2005). Recent research has highlighted the importance of studying the role of resources and capabilities of the born global firms (Jones & Coviello, 2005; Knight & Cavusgil, 2004; Moen & Servais, 2002). These views support the recommendation of Madsen and Servais (1997) to make relationships with other firms and the experience and competences of the founders a more integral part of the analysis. Based on this, it would be especially interesting to examine what are the unique capabilities and resources that enable born global firms to enter global markets rapidly. Thus, the research problem centers on how the globalization strategies of born globals differ from those of conventional firms and on determining the unique capabilities and resources that enable these deviations.

To bring new understanding on born globals' behavior, earlier research (Jones, 2001) has called for more study with a narrowly defined sample of firms in an industry or geographical area. It has argued that too many surveys have been too cross-sectional, covering firms of all types, and therefore their results may not bring out all the relevant differences in globalization processes, and that a more focused approach would generate richer data for theory development. It was decided to focus on the Finnish wireless technology sector, since many successful business-to-business born globals have emerged from this sector. The objectives of the study are hence to understand the globalization strategies of business-to-business born global firms and the unique capabilities and resources enabling rapid globalization in the Finnish wireless technology sector compared with conventional firms.

This research uses multiple-case study methodology (Yin, 2003) and it is based on in-depth interviews of four wireless technology born global firms originating in Finland, a small and open economy. The findings of the study are limited to the qualitative research approach and therefore one should be cautious about generalization beyond the companies studied. Nevertheless, the results are expected to be most relevant for wireless technology companies originating in small and open economies. Apart from Finland, these include countries such as Denmark, Sweden, Norway, Belgium, Israel, and New Zealand. After the introduction, the article presents a theoretical review of the relevant literature concerning the internationalization of firms and born globals, as well as their resources, capabilities, and networks. Thereafter, the conceptual framework and propositions are developed. Then the methodology is presented, followed by a cross-case analysis and examination of propositions, and finally the conclusions are drawn.

2. Theoretical review and framework development

2.1. Traditional internationalization and born globals phenomena

The internationalization of a firm has been one of the main areas studied in international business research. Traditional theories of the internationalization of a firm define it as an incremental and gradual process (Johanson & Wiedersheim-Paul, 1975; Johanson & Vahlne, 1977; Luostarinen, 1979, 1994). These 'stage models' argue that firms have first done business within domestic markets, then started to internationalize by entering neighboring international markets, and later expanded to other countries, but still on the same continent, and only thereafter started to globalize by entering the markets of other continents. Hence, globalization is defined to mean the spatial expansion of the firm outside its home continent, whereas internationalization refers to foreign expansion within the home continent (Luostarinen & Gabrielsson, 2004). Furthermore, according to the stages model, operation modes will develop only incrementally into more committed modes as a result of organizational learning. This view has also been supported by innovation-related models (Bilkey & Tesar, 1977; Cavusgil, 1984; Czinkota 1982).

Some recent studies have pointed out that companies usually start their internationalization with inward operations such as imports of technology, machinery and raw materials, and then enter foreign markets by outward modes. The companies subsequently evolve into a co-operative stage, in which they co-operate with foreign firms, for example in manufacturing and R&D. (Korhonen, Luostarinen, & Welch, 1996) Moreover, the Uppsala network model contends that firms increasingly become part of networks during their internationalization process (Johanson & Mattsson, 1988). This leads to the assumption that towards the later stages of internationalization, the amount of co-operation can be expected to increase with foreign firms.

During the past decade, a new phenomenon categorized as a 'born global' firm has come to public attention (Rennie, 1993), largely due to the changes taking place in the external environment over the last few decades. Global competition is present in almost every market in the largest economies in the world (Yip, 1989). The reasons for this have been identified as a range of factors that includes falling trade barriers, deregulation and privatization, maturity in domestic markets, faster information flows, improved communication and transportation networks, social developments such as more homogenous consumer needs, tastes, and values, globally standardized products, high technology investments that cannot be covered by sales in domestic markets only, combined with shortening product life-cycles, other economies of scale benefits, global sourcing of resources and ideas, globalizing competitors and competition, and free movement of capital goods, services, and people (see e.g. Yip, 1989; Madsen & Servais, 1997; Levitt, 1983). This change in environment has had a fundamental impact on the strategies of most firms in the world.

Since the beginning of the 1990s, more evidence of these deviations has been found and the emergence of these new kinds of firms has challenged the traditional 'stages' theories of internationalization (Autio, Sapienza, & Almeida, 2000; Bell, 1995; Bell, McNaughton, & Young, 2001; Crick & Jones, 2000; Jolly, Alhuhta, & Jeannet, 1991; Knight & Cavusgil, 1996; McDougall, Covin, Robinson & Herron, 1994; McDougall, Shane, & Oviatt, 1994; Moen & Servais, 2002; Oviatt &

McDougall, 1994; Rennie, 1993; Sharma & Blomstermo, 2003; Wolff & Pett, 2000). These firms, referred to as 'born globals', emerged over the past decade or so in several countries across Europe, in the US, and in Australia (Knight & Cavusgil, 1996; Rennie, 1993), and the number of these companies has increased rapidly in recent years (Luostarinen & Gabrielsson, 2004).

However, young companies seldom have sufficient resources to expand internationally (Knight & Cavusgil, 2004). Building on Penrose's (1959) results regarding growth of the firm, some researchers argue that one of the greatest challenges to born globals seems to be a lack of adequate managerial resources to handle international functions, as managers are often young and technologically competent entrepreneurs, but have little international business experience (Luostarinen & Gabrielsson, 2004). However, they need to find optimal solutions to expand rapidly, while at the same time sustaining their competitive edge.

One central debate in born global research focuses on to what extent these firms deviate from the conventional internationalization model (Johanson & Vahlne, 2003) as to their product, operation mode, and market strategies (Luostarinen & Gabrielsson, 2004; Welch & Luostarinen, 1988). Most of the research concludes that born globals seem to deviate from the mainstream internationalization patterns (Wolff & Pett, 2000). Some research seems to argue that deviations are so significant that existing internationalization theories may not explain them and entirely new theories are needed such as the 'new venture internationalization theory' (McDougall, Covin et al., 1994; McDougall, Shane et al., 1994). Nevertheless, several researchers believe that traditional models are still as valid at some level as complementary models, but they need to be extended with new insights (Madsen & Servais, 1997; Sharma & Blomstermo, 2003; Wolff & Pett, 2000). One important area in which new insight is needed comprises the resources and capabilities behind the more rapid globalization process of born globals, which will be discussed next.

2.2. Resources and capabilities of born global firms

In earlier literature, the nature and quality of resources have been found important for reaching sustained competitive advantage (Barney, 1991; Grant, 1991). Evidence that unique resources and capabilities seem to be important in the globalization of born global companies has been increasingly suggested (Crick & Jones, 2000; Knight & Cavusgil, 2004). These companies have had aggressive growth strategies and thus their need for finance and international market and management knowledge is much greater than that of more traditional companies (Baum, Calabrese, & Silverman, 2000). Moreover, in many cases the liability of newness hinders the globalization of the born globals (Baum et al., 2000). Some of the most important means for born globals to manage these challenges grow out of the time prior to the establishment of the company and from the external resources used by them (Madsen & Servais, 1997). They argue that the time perspective used to analyze these companies should be extended beyond their establishment. The 'genes' of born global companies are grounded in the networks and firms where their founders and managers have generated their experience. Also, other researchers (Crick & Jones, 2000; McDougall, Covin et al., 1994; McDougall, Shane et al., 1994; Yli-Renko, Autio, & Tontti, 2002) have called for more analysis on born globals that includes individuals, such as the founders and their business networks. By business networks we mean the actor bonds, activity links, and resource ties binding the companies together (Håkansson & Snehota, 1995; Halinen, Salmi, & Havila, 1999).

Reuber and Fischer (1997) combine resource-based and behavior-based views in their research on the internationalization of small and medium-sized enterprises (SMEs). They emphasize the key role of management teams and their experience and define two separate views, a 'stock' and a 'stream' of experience in the research of new ventures. 'Stock' of experience refers to the experience that the founders and managers had prior to the establishment of the firm, and it predicts internationalization in the early stages better than 'stream' of experience achieved during internationalization. Also, Knight (2001) asserted that resource-based theory explains some advantages that SMEs might possess during their internationalization. In this section, some of the most important resources found in an extensive literature review are covered: the founders and managers of the company (Madsen & Servais, 1997; Oviatt & McDougall, 1994); the network that the founders, managers, and the company have (Ford et al., 1998; Håkansson & Snehota, 1995), the financial resources (Wernerfelt, 1984; Buckley, 1989); and the innovation (Knight & Cavusgil, 2004) that has led to the establishment of the company.

2.2.1. Founders/management

Many founders and managers of born global companies have gained international experience and competence during previous work experiences (Crick & Jones, 2000; Harveston, Kedia & Davis, 2000; Madsen & Servais, 1997; Majkgård & Sharma, 1999; Moen, 2002; Oviatt & McDougall, 1997; Reuber & Fischer, 1997; Reuber & Fischer 2002; Sharma & Blomstermo, 2003). Their international work experience, foreign language skills, and international education all help the firm to enter foreign markets successfully (Luostarinen & Welch, 1990, p. 254; Jones, 2001; Reuber & Fischer, 1997), often skipping the first stages of internationalization (Reuber & Fischer, 1997). Their companies do not need to wait for a slow organizational learning process to progress before they can enter foreign markets. However, some studies (Jones, 2001; Luostarinen & Gabrielsson, 2004) have found that while the managers of born globals are technologically competent, they are also young and inexperienced when it comes to business management and international business. They argue that this is particularly the case in the Information Communication Technology (ICT) sector firms in high-technology businesses.

Moreover, the founders of born global companies also possess other characteristics vital for their companies' success. They are often entrepreneurial, which can be seen in their flexibility and readiness for change (Crick & Jones, 2000; Fischer, Reuber, Hababou, Johnson, & Lee, 1997; Karagozoglu

& Lindell, 1998; Knight, 2001; Knight & Cavusgil, 1996; Knight & Cavusgil, 2004). Harveston et al. (2000) argue that the mindsets and attitudes of the managers of born globals differ from those of the managers of more traditional companies. These managers have a clear vision of their firm's global future and growth (Fischer et al., 1997; Knight & Cavusgil, 2004). They feel that the global markets are accessible; they are not limited by their national country borders and work proactively to create their own international opportunities (Harveston et al., 2000; Madsen & Servais, 1997). Furthermore, in born global companies, which are often small, the top managers usually meet with international customers, and thus the role of individuals, rather than organizational routines, is much more important for decision-making than in larger companies (Oviatt & McDougall, 1997). This is especially the case in the early years when the top managers are the founders and are almost inseparable from their firm (Arenius, 2002, p. 182).

To conclude, born globals can close the gap in resources against their larger competitors by utilizing the extensive experience and skills previously generated by their founders (Karagozoglu & Lindell, 1998). This is evident particularly in niche businesses and in emerging technologies and services. Founders and managers with long international experience, good foreign language skills, international networks, and excellent technological competence all reduce uncertainties in the international market place and thus decrease lateral rigidity towards globalization (Luostarinen & Gabrielsson, 2004). Companies with founders and managers like these can rapidly enter more distant markets and do so with operation modes requiring more commitment (Johanson & Vahlne, 1990; Oviatt & McDougall, 1997).

2.2.2. Networks

As the network approach suggests, the internationalization process of companies is much faster when the market is internationalized, and in this case the traditional internationalization models may no longer apply (Johanson & Mattsson, 1988). Companies interact with international network actors and develop relationships in order to exploit and enhance their own resources and to gain the benefits of those of others (Ford et al, 1998, p. 46; Cook & Emerson, 1978). Hence, born globals can globalize their activities by use of their activity links, resource ties, and actor bonds (see also Håkansson & Snehota, 1995, p. 26). In research on born globals the role of networks has been under continuous scrutiny and debate: networks may perhaps have a greater impact on the globalization of born globals than on any other type of company. Networks can offer a way to surpass the resource limitations usually facing start-up companies (Baum et al., 2000; Karagozoglu & Lindell, 1998; Madsen & Servais, 1997; McDougall, Covin et al., 1994; McDougall, Shane et al., 1994). The objective of networks and strategic alliances in general is to achieve access to complementary resources such as R&D, technology, production, marketing and distribution (Dunning, 1995; Porter, 1998), and in many cases these networks are necessary for globalizing companies to enter world markets in a fast and profitable way without taking excessive risks (Ohmae, 1989). Born globals can benefit from the social, technical, and commercial resources of their networks, resources that would take individual companies years to accumulate on their own (Baum et al., 2000).

Several researchers (Fischer & Reuber, 2003; Gulati, Nohria, & Zaheer, 2000; Sharma & Blomstermo, 2003) have argued that the network approach provides insights into the strategies of born global companies and needs to be included in a more comprehensive model of globalization. Although this seems reasonable, the model clearly needs to be further developed in order to provide a better understanding of the globalization of born globals. As Luostarinen (1979, pp. 203–210) proposes, Finnish companies have to be more active than their counterparts in more central markets in order to receive the same number of market impulses. However, this challenge may be easier to overcome if they are members of a vibrant domestic network with linkages to international actors. Companies inside such a network often receive more market information than their isolated competitors, and they learn about the new technologies, services, and marketing concepts earlier (Porter, 1998). In addition to domestic networks, international networks seem to be important for the globalization of born global companies. Karagozoglu and Lindell (1998) believe that international partnerships are a significant factor for small companies gaining access to international markets. Often small companies are subcontractors to large foreign system suppliers (Madsen & Servais, 1997). For example, in the software industry, small software developers can access the dealer networks of large computer manufacturers (Bell, 1995). Further studies will be required to determine the extent to which networks contribute to the rise of born global companies.

2.2.3. Finance

One important barrier for small companies wishing to globalize has been their limited financial resources (Buckley, 1989; Luostarinen & Welch, 1990, p. 256; Reid, 1983). For born global companies, this issue has been crucial (Luostarinen & Gabrielsson, 2004). This is also closely related to the discussion on networks, as in many cases the networks of founders, managers, and the firms themselves may help overcome these challenges. Venture capitalists and other investors are often looking for founders and managers who have a global vision, international business experience, and linkages with international partners (Håkansson & Snehota, 1995; McDougall, Covin et al., 1994; McDougall, Shane et al., 1994).

Born globals that have received external funding commit more resources and grow faster – for example, they establish subsidiaries in foreign markets – as they have more financial resources available for them than traditional SMEs (Arenius, 2002, p.181; Davila, Foster, & Gupta, 2003; McDougall, Covin et al., 1994; McDougall, Shane et al., 1994). However, this also brings challenges, as pressures to globalize rapidly may increase the survival risk for a born global company (Arenius, 2002, p. 181). Besides founders and banks, important financing sources include government subsidies, private investors such as business angels, venture capital, initial public offerings, and strategic investors such as big corporations (Acs, Randall, & Yeung, 2001; Gabrielsson, Sasi, & Darling, 2004).

2.2.4. Innovation

Innovation can often be covered as part of a product strategy. However, it seems that in the case of born global companies, the main innovation is often developed prior to the establishment of the company and is the reason why the companies have been established in the first place (Yli-Renko et al., 2002). Innovation is often strongly related to the founders of the company and their experience (Yli-Renko et al., 2002). Yip (2000) believed that globalizing firms need to have a major competitive advantage as a lever in global markets, and that this advantage has a greater effect on the firm's success than any other advantage that it can develop during its globalization process. Further, earlier research has emphasized the importance of entrepreneurship, including strong innovativeness, for the competitive advantage of international small enterprises (Jones & Coviello, 2005). For born global firms innovative capability is in most cases fundamental for their competitive advantage in global markets (Karagozoglu & Lindell, 1998; Madsen & Servais, 1997). Even though the founders are usually the innovators, their networks are important factors in the innovation process, and essential in the next development phase of their products. (Acs et al., 2001; Baum et al., 2000). Although innovation has been mentioned as a crucial factor for many born global companies, it has not been included widely in analysis of the globalization process. However, according to a recent study, born globals tend to leverage technological innovativeness, unique products, and strong quality focus (Knight & Cavusgil, 2004). These are required to achieve rapid growth on the selected niche markets.

2.3. Conceptual framework and proposition development

The preliminary conceptual framework was developed on the basis of earlier research on the internationalization and globalization of a firm. The *globalization strategies* can be seen to consist of product (P), operation (O), and market (M) strategies (Luostarinen 1979, p. 173–180; 1994). Products (Gabrielsson, Gabrielsson, Darling, & Luostarinen, 2006; Luostarinen, 1979; Welch & Luostarinen, 1988), operation modes (Agarwal & Ramaswami, 1992; Anderson & Gatignon, 1986; Benito & Welch, 1994; Johanson & Vahlne, 1977), and markets (Ayal & Zif, 1979; Luostarinen, 1979) have been the dependent factors in most of the internationalization and globalization research. The firm's resources, founders and managers, innovation, networks, and financial resources are included in the framework as independent factors, as the objective is to analyze how these resources have influenced the above-mentioned strategies. As discussed earlier, the founders' international work experience, foreign language skills, and international education contribute to more rapid globalization (Jones, 2001; Reuber & Fischer, 1997). Technological innovation capability, growth orientation, and niche focus play a central role (Knight & Cavusgil, 2004). International and domestic networks can also offer a way to surpass the resource limitations usually facing start-up companies (Baum et al., 2000; Karagozoglu & Lindell, 1998; Madsen & Servais, 1997; McDougall, Covin et al., 1994; McDougall, Shane et al., 1994). Also, the extent of external funding has been found to affect the globalization process (Arenius, 2002, p. 181; McDougall, Covin et al., 1994; McDougall, Shane et al., 1994). Moreover, the external environment of a firm – enabling global factors and industry specific advantages – has an impact on the globalization process of born globals (Madsen & Servais, 1997; Gabrielsson & Gabrielsson 2003). This framework is used to examine with a multiple case study the globalization processes of four born globals and their unique resources and capabilities, which have enabled the rapid globalization (Fig. 1).

Prior to the empirical investigation, we would like to make some theoretical reflections regarding the influence of resources and capabilities on the globalization strategies of born globals.

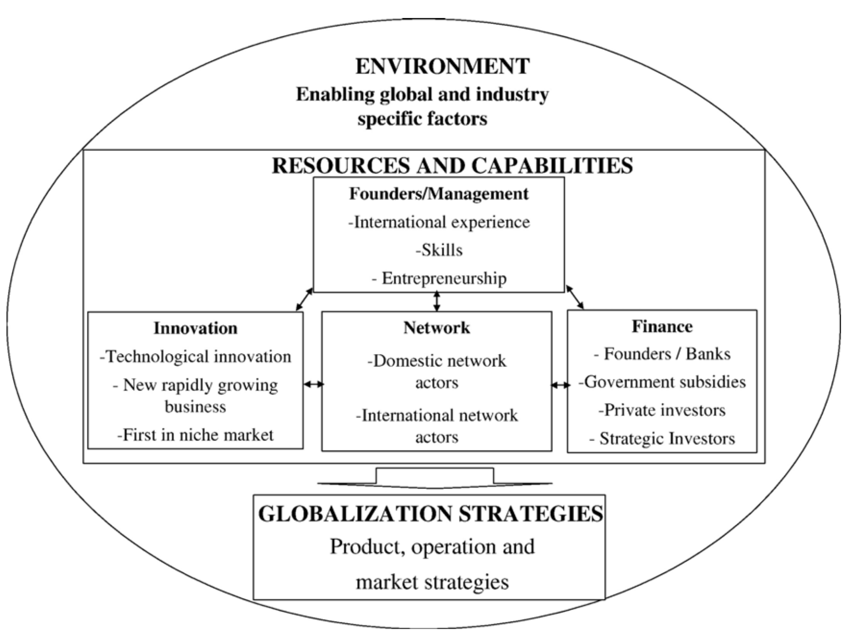

Fig. 1. Conceptual framework.

According, to Penrose (1959), the growth of the firm is restricted by the resources of the firm. Given the global vision and growth targets of born globals, the resource requirements, be they the founders and managers of the company (Madsen & Servais, 1997; Oviatt & McDougall, 1994), innovation capability (Knight and Cavusgil, 2004), or financial resources (Buckley, 1989; Wernerfelt, 1984), are bound to be restricted. Under such conditions, the networking theory suggests that firms should seek to leverage the resources of other actors by seeking to establish activity links with them (Ford et al., 1998; Håkansson & Snehota, 1995). Alternatively, the founders of the firm may bring important knowledge gained in previous positions (Madsen & Servais, 1997; Reuber & Fischer, 1997). Thus, we propose.

PR 1. *Born global firms lack the resources and capabilities accumulated by conventionally internationalizing firms. Hence, it is expected that they will acquire such resources and capabilities either through the earlier experience of the founders or from external network actors*.

Resources of born global firms as discussed earlier are often very restricted compared with the early phases of conventionally internationalizing firms. However, the greater the amount of resources and capabilities that these firms are able to acquire, the faster they are able to advance to more demanding product strategies, operation modes, and market strategies (Gabrielsson et al., 2006; Welch & Luostarinen, 1988; see also Penrose, 1959). The international work experience, skills, and entrepreneurial orientations of founders and managers help the firm to enter foreign markets successfully (Crick & Jones, 2000; Karagozoglu & Lindell, 1998; Luostarinen & Welch, 1990, p. 254). Also, the innovative capability of the founders (Knight & Cavusgil, 2004) and an abundance of finance (Gabrielsson et al, 2006) pay a key role. These and other similar resources and capabilities often enable born globals to skip the first stages of internationalization (Reuber & Fischer, 1997) and to advance to more advanced product categories and operation strategies and to build global market presence. Thus, we postulate as follows.

PR 2. *The greater the resources and capabilities of born globals compared with early phases of conventionally internationalizing firms, the more rapid the advancement during globalization in terms of product categories, operation strategies, and global market presence*.

3. Methodology and empirical analysis

3.1. Methodology

This research is a multiple case study (see Yin, 2003, p. 46–53) based on in-depth interviews of four Finnish wireless-technology born globals. Qualitative data allow researchers to find richer explanations and a deeper insight into phenomena (Miles & Huberman, 1984, p. 15–16; Ghauri, Gronhaug, & Kristiansund, 1995; Stake 2000). Moreover, the context-specificity helps researchers to better interpret the circumstances of an event (McGaughey, 2004). Further, the case study approach is especially appropriate in new topic areas (Eisenhardt, 1989; Knight, 2001), such as in this study examining the resources and capabilities of born globals. The complexity with respect to the number of factors and their interrelationship and lack of prior in-depth research, suggest case study methodology as the best alternative for achieving an in-depth understanding (Stake, 2000). The research utilized theoretical propositions to guide the empirical data gathering and analysis (Yin, 2003). Concepts are developed from the evolving theory; comparisons are made by studying events using propositions in a systematic way, but also allowing an opportunity to identify deviations and new categories (Ghauri et al., 1995; Strauss & Corbin, 1998).

The four case companies were chosen on the basis of recommendations by Miles and Huberman (1984, pp. 36–42), Eisenhardt (1989), and Yin (2003, p. 47) for research extending existing theories by being typical representatives of the population rather than selected randomly. In studies working on small samples, such as case studies, the objective is to select informative and typical cases rather than trying to have a statistical representation of the total population (Ghauri et al., 1995; Saunders, Lewis, & Thornhill, 2003; Silverman, 2005; Stake, 2000). The purpose of the case study in this research is mainly to generalize back to theory, not to population (Yin, 2003).

The case companies selected also meet Oviatt and McDougall's (1994) definition of a born global company, mentioned in the Introduction section. Furthermore, the criteria for choosing the case companies were as follows: the company is a business-to-business SME in the Finnish wireless technology sector, it had a clear global vision or strategic intent from its inception, the company started its international activities early, within 2 years of establishment (Knight & Cavusgil, 1996), and its major activities have recently focused on global markets, that is, including operations outside of their own domestic continent (Luostarinen & Gabrielsson, 2004; Madsen & Servais, 1997). Finland is an especially interesting country to study the globalization of wireless technology born globals since it is a small and open economy, and is a forerunner in wireless technology. The preliminary list of potential case companies was developed by interviewing several industry specialists, and searching through member and participant lists of industry associations and events in the sector. These experts were asked to suggest typical wireless technology born global firms. The four selected cases meeting the above mentioned criteria were: Add2Phone Ltd, Codetoys Ltd, First Hop Ltd, and WES Ltd.

Most of the primary data for the analysis have been collected from in-depth interviews of the CEOs and/or entrepreneurs/founders of the case companies. The interviews were recorded and the database was created to help maintain the planned case study protocol and to ensure validity. The interviews were semi-structured, starting with open questions. In addition, the researcher had an interview-form as a supportive tool to ensure that all relevant issues were covered. Moreover, financial data, company presentations, product definitions, and news releases were used to provide support. Some informal interviews with informants from the partner companies, including major global telecommunications and software vendors, government organizations, and venture capitalist investors, were also conducted, in order to better cross check the findings and understand backgrounds. A short description of the cases will follow.

3.1.1. Add2Phone Ltd

Add2Phone Ltd develops software for mobile operators, portals, application service providers, and media companies. Their main focus is in the area of mobile marketing and mCRM (mobile Customer Relationship Management) applications. The company was established in 2000. Most of the ten founders had many years experience in international business and in the telecommunications industry. The main innovations or key findings behind the success of the company were that mobile phones will be a medium in the future and that in addition to the revenues generated by customers, there will be another revenue stream in the future generated by marketers and advertisers. The first product, the Mobile Advertising Server, was developed for this purpose. To be the first in the rapidly growing mobile communications markets to utilize this innovation has been one of the main factors in the firm's strategies.

In 2002, the company had 25 employees and customers in 15 different countries, mostly in Europe, but also in Asia. Revenue amounted to 1.4 M euros of which 55–60% was generated in Europe, and the remaining 5–10% in Asia. These Asian revenues were mostly generated in the Philippines and Malaysia, but additional growth was expected from all of Asia. Since establishment, the company has also attracted investors. Among the owners of the company are several venture capitalist companies and organizations, including Sitra, Stratos Ventures, Danske Capital, Trident Capital, Tapiola Group, Head New Technologies, ABB Pension Fund, and Fides New Media.

3.1.2. Codetoys Ltd

Codetoys Ltd was established in March 2002 as a result of the merger of Codeonline Ltd and Springtoys Ltd, two leading mobile entertainment companies in Finland. Codeonline was established in 1998, and Springtoys in January 2000. Both companies were born globals, and so, it can be argued, is Codetoys. The company is an end-to-end service provider for mobile entertainment services. Its packet includes concept, design, hosting, access provision, statistics, reporting, and marketing. The company has firmly established its position among the world's leading telecom operators and media houses, and its services can reach over 250 million potential players on all continents. It has delivery contracts with more than 50 operators in more than 50 countries. The company has 60 employees from 10 different nationalities, with offices in the UK, Germany, the USA, and Japan. Turnover in 2002 was 3 million euros, of which 3% came from Finland, 60% from the rest of Europe, and 37% from other continents.

The pivotal innovation behind the company was technological. The service sold by the company is a 'turn-key project' for telecom operators. The company can be defined as an ASP (application service provider), selling hosted services operated from a hosted environment in Espoo. Tekes, the National Technology Agency, was an important organization in the first years of development. Soon after establishment in 2002, Codetoys had a wide investor base around the world, including Eqvitec Partners, Shamrock Holdings, Motorola, Bertelsmann, AOL Time Warner, Wellington Partners, Sampo, Tapiola, PCA Infocom Finance.

3.1.3. First Hop Ltd

First Hop Ltd was established in 1997 and is a software developer whose products are targeted to mobile operators globally. Their first international product was Message Router, followed by Messaging Manager, WAP Gateway, and GPRS Accelerator. First Hop's products are middleware products, helping mobile operators to connect new content and content providers easily and quickly to their networks, and to existing billing and other business support systems. The company's revenue in 2002 was 2.3 M euros, of which 19% came from Finland. Europe's importance for the company has been substantial as 92% of the revenue came from that continent. The remaining 8% came from Asia. Nevertheless, the vision of becoming a global company has been clear since the founding of the firm. On average, the number of personnel was 73 in 2002, of which 9 were located outside of Finland; 14 employees were non-Finns. At the end of 2002, the investors, Stratos Ventures and DFJ ePlanet Ventures, owned 65% of the shares. The main innovation behind the success of the company has been technological. They have developed software that manages to connect many complex systems to many different standards seamlessly. The business innovation has been the vision that there will be a new global market in the area of middleware for connecting content and applications into mobile networks in the future, and by developing a commercial product for this market, the company could become a global player in products that enable the delivery and management of popular messaging-based (SMS, MMS, WAP Push) services.

3.1.4. WES Ltd

Wireless Entertainment Services Ltd. (WES) was established in 1998. The company operates in the mobile entertainment business. Their revenue in 2002 was 3.4 M euros, of which domestic sales were less than 5%; 66% of sales were generated in Europe and 34% on other continents. The company had 35 employees all located in Finland, of whom three were non-Finns.

The company provides content for delivery to mobile phones. These include ringing tones and logos, and recently color pictures and java games. They have focused only on operator customers and believe that this has been an important strategic and innovative decision, as they have thus been able to dedicate most of their resources to developing products and maintaining their competitive edge in the area, instead of using their scarce resources on marketing the products to customers. The central innovation behind the success of the firm was that they were first in the market, believes the CEO of the company. WES was the world's first provider of commercial ringing tones and has now sold more than 100 million mobile entertainment content downloads worldwide (company's website 24 December, 2003).

Table 1
Summary of globalization strategies of case companies

Company	Add2Phone	CodeToys	First Hop	WES
Product strategy	Started directly with services, know-how, and system sales. Mobile advertiser server the main product.	Started with services and know-how to sales. Also selling hosted systems to operators in mobile entertainment and games area.	Started with services and know-how to sales. Provides middleware software, such as message routers, for mobile operators and infrastructure vendors.	Services and know-how to mobile operators. Ringing tones, logos, pictures and java games are main products.
Operation strategy	Started directly with sales and R&D offices in both Europe and North America. No production abroad. Also inward and co-operation modes used.	Started with export mode to UK, but opened sales offices in UK, Japan, and US rapidly. License agreements with game companies as inward mode. Partnering with Motorola as co-operation mode.	The company started with exports and then established sales subsidiaries in UK and Singapore. The company uses also widely agents. No production or R&D operations abroad.	Mainly own export and in some countries also agents e.g. Asia and South Europe. Content licenses and sourcing from Europe and US as inward mode. In process of establishing US sales subsidiary.
Market strategy	Very short domestic phase. Simultaneously to many European markets, and to the US and Canada. Lately sales has been started in Asia.	No domestic phase. Simultaneously to all continents Europe, Asia, South America, Africa and US.	Started sales in domestic markets and then entered mainly European countries, but also Hong Kong and Taiwan.	Very short domestic phase (Sonera operator as customer). The company entered then rapidly Europe, Asia, and South American markets (jumped over Nordic countries). Now working to enter US.

The major owners of the company are management and personnel. The company also has an external investor, Conventum, which owns 15% of the shares. Akumiitti Ltd, itself a born global company in the mobile industry, also owns a small number of the company's shares.

3.2. Cross case analysis and discussion of results

In this section we will analyze the globalization strategies of the case firms and contrast them to earlier research on traditional firms and born globals. Then we will discuss the unique resources possessed by these companies: the founders, network, innovativeness and finance that have enabled deviation from the traditional internationalization pattern.

3.2.1. Globalization strategies of case companies

3.2.1.1. Product strategy. The product strategies of the case companies deviated from those of traditional companies. The case companies in this research do not sell physical goods. From inception, they have sold services and know-how internationally and even globally. Two of the case companies also started system sales almost immediately following their first international activities, and system sales were an important part of their offering. All of the case companies operated in niche business areas. In addition, supporting the results of the earlier research on born globals (Jolly et al., 1991), these companies have complemented their product offerings by developing products closely related to their portfolio. See the summary of globalization strategies of case companies in Table 1.

Based mostly on Luostarinen's (1979, 1994) research, but also on the results of other traditional internationalization and globalization models (see also Gabrielsson et al., 2006), it can be argued that traditional companies start their internationalization by exporting physical goods. This is followed by sales of services, then know-how, and finally systems. In the case of the born global companies examined in this study, this is different as they often start selling services, know-how, and even systems in the early stage of their internationalization (see also Luostarinen & Gabrielsson, 2004). This is especially so in these cases where the products are new innovations and mostly unknown to the customers and service network is inexistent. In many cases their product offerings may not even include the traditional physical goods; for example they may sell software, in which case the physical goods may only be diskettes and manuals, or there may be no physical goods at all.[2]

In order to cover the high R&D costs involved in developing advanced technology products, a small domestic niche is usually not enough to support these companies even in their first years of operations, not to mention profits (Arenius, 2002). These companies need to enter the global market rapidly. Furthermore, it may also be that international market pressures in niche areas are less substantial because of a lower level of protectionism, and thus there is even more motivation for born globals to enter these areas (Karagozoglu & Lindell, 1998). Yip (1989) argued that the strategic goal for a company should not be to find a niche in any existing business but to create a new position for the firm's own strengths. Madsen and Servais (1997) argued that the niche products of born global companies could be either customized or standardized. Also the born globals examined in this study were found to follow a niche approach. Moreover, they had standardized the platform level in their product strategy across countries, while they allowed minor level of customization in their service, know-how and system products offered to specific customers.

[2] The authors recognize that there are also born globals that sell physical goods, e.g. Amazon.com.

3.2.1.2. Operation strategy. The case companies in this research closely followed the general operation strategies of born globals by using inward, outward, and co-operative modes immediately in their first globalization activities. In their outward modes, they leapfrogged, for example by establishing subsidiaries immediately or very rapidly, and also experienced de-internationalization phases. None of the case companies had production operations in international markets, and it is unlikely that there will be changes in this strategy in the near future, as production is not an essential function for these companies because of the fact that the products are digital services and know-how and also the use of the internet as a delivery channel.

Traditional companies proceed incrementally by starting their foreign operations with non-direct investment marketing operations (NIMOs), followed later with direct-investment marketing operations (DIMOs) (Luostarinen 1979, pp.173–180; see also Johanson & Vahlne, 1977). After they have gained some ground in foreign markets, they first start non-direct investment production operations (NIPOs) and then usually expand to direct-investment production operations (DIPOs). The case companies advanced rapidly to establishing marketing operations including sales subsidiaries abroad, but they had not proceeded towards establishing production abroad. Earlier research on born globals has produced similar findings, but some of that research has also proposed that born globals go even further and also establish production subsidiaries early on (e.g. Crick & Jones, 2000; Sharma & Blomstermo, 2003; Tiessen, Wright, & Turner, 2001). Born global companies in general may proceed in reverse order, leapfrog stages, and even undergo de-internationalization or re-internationalization (Luostarinen & Gabrielsson, 2004). In their holistic process, traditional companies start with inward operations, followed by outward operations, and co-operation modes follow later (Luostarinen & Welch, 1990). The born global case companies examined in this study started utilizing inward, outward, and co-operations modes at the same time, which was also consistent with earlier research on born globals (Luostarinen & Gabrielsson, 2004).

3.2.1.3. Market strategy. The case companies in this research used customer segmentation in contrast to country-based segmentation as their main criterion. Even though the importance of psychic distance has diminished, cultural, language, and time differences still have a role to play. This seems to be related to the concept of lead markets. It seems that they did not want to wait until they conquered European markets before entering more distant continents. Subsidiaries in lead markets are needed in order to convince customers and partnership companies in these markets, but also to receive feedback and business impulses from these markets. In most cases, the strategy of these companies is not to establish a company in every single country, but rather to have regional headquarters in a few lead markets, which can then serve as a base for escalation into that region.

Based on the stages model of internationalization traditional companies first enter psychically close (Johanson & Vahlne, 1977) or HOT (Luostarinen, 1979, p.181–193) countries. When they have gained experience from these first international activities, they then enter WARM countries, followed by entry into MEDIUM, COOL and COLD countries. GDP and many other country-specific measures are factors in decision-making. In contrast, the born global companies examined revealed that they in general seek global market segments, and country-specific issues follow this segmentation. Moreover, it has been notable that none of the case companies have considered North European markets important; they have largely skipped these markets and sought growth from large European countries, Asia, and America within the first or second year of existence. This is consistent with research results that have found that psychic distance has a minor influence on market strategies and born globals enter lead markets rapidly (Arenius, 2002, pp. 180–182; Burgel & Murray, 2000; Crick & Jones, 2000; Ellis, 2000; Luostarinen & Gabrielsson, 2004; Madsen & Servais, 1997; Majkgård & Sharma, 1999).

3.2.2. Resources and capabilities of case companies

3.2.2.1. Founders/management. The case companies in this research all had founders and managers with extensive international experience from previous jobs in the industry or from other industries. In all the case companies there were multiple founders with knowledge in different areas critical for the management of global business. This was usually complemented by a strong technological background in the industry. It also resulted in a global vision from inception, and their globalization was based on this vision, rather than on random external signals such as unsolicited orders. See Table 2 for a summary of the resources and capabilities of the case companies.

In traditional internationalization theories, the development of international business knowledge was mostly seen as a result of organizational learning within the company, and from its international operations (Johanson & Wiedersheim-Paul, 1975; Johanson & Vahlne, 1977; Luostarinen, 1979, pp.194–195). This view may still work to some extent, when analysing larger companies and their internationalization. However, the born global case companies examined seem to generate this business knowledge mostly from other sources. This has also been witnessed in other born global research emphasizing the earlier experience of founders from their previous employment positions (Crick & Jones, 2000; Harveston et al., 2000; Madsen & Servais, 1997; Majkgård & Sharma, 1999; Moen, 2002; Reuber & Fischer, 1997; Sharma & Blomstermo, 2003). Some studies (Luostarinen & Gabrielsson, 2004; Oviatt & McDougall, 1997) on the other hand, found that entrepreneurs of born global companies are young and technologically competent, but have little international business experience. The case companies in this research deviate in the sense that the founders had significant previous international business experience. This seems to indicate that the international business and industry experience acquired in previous positions is crucial for the success of born globals and often explains the fast globalization and use of advanced product, operation, and markets strategies at an early stage.

Table 2
Summary of resources and capabilities of case companies

Company	Add2Phone	CodeToys	First Hop	WES
Founders and management	10 founders with extensive international business and technological experience	Founders with strong academic technical background and sales experience from global markets from other industries in management.	Founders had mainly academic background. Management had long extensive international business experience.	Founders had long international business experience from other industries. Also prior experience from content business.
Innovation	Innovative products delivered to media houses and operators that provide marketing communication to mobile phones.	Innovative products offering operators possibility to increase revenues from mobile data services e.g. mobile games.	Innovative products that help operators to connect more content providers and applications into their networks.	Among the first in providing content to mobile operators.
Network	Domestic network (e.g. Sonera, Nokia), international networks (e.g. HP, operator customers) and membership in industry forums essential. Founders' personal network important.	Domestic network important in beginning (e.g. Tekes, Sonera, Nokia, Almamedia). Content owners (e.g. Hasbro, Celador), Motorola, and HP important in later phases as well as investors and industry forums. Founder personal network important.	The role of the domestic mobile communication network has been important (e.g. Nokia, Radiolinja operator). Domestic reference customers important in beginning. Venture capitalist also important for resources and motivation. Management's personal network important.	The domestic reference customer has been important in early phase (e.g. Sonera, Nokia). A network of local content sourcing agents has been useful in inward activities. Founders' personal networks important. International network partners role increased in later phase.
Finance	Venture capitalist funding (e.g. Trident capital) and governmental funding (e.g. Tekes) important in beginning. Latter sales revenues increasingly important.	In the beginning governmental funding (Tekes), private investors and venture capital funding important. Later strategic investors became more important (e.g. Motorola, AOL).	In the beginning bank loans and government funding (Tekes) but later investors and venture capitalists have covered 90% of funding. Lately sales revenues increasing important.	Funding by owners and venture capitalists for some part in the beginning. Currently funding mainly based on sales revenues.

3.2.2.2. Innovation. The case companies in this study had a technological innovation in a new niche business area. Usually this was new software, a service, or a system that made it possible to combine new businesses with mobile technology and to increase the revenue streams of the industry actors. First mover advantage, that is to be early in the market, was seen as critical for these companies, and the urgent need to utilize the innovation globally has been the major factor behind the globalization decisions of the case companies.

Traditionally, companies started to export goods that had already been approved in domestic markets (Luostarinen, 1979, p. 185; Johanson & Vahlne, 1977; Vernon, 1966). Internationalization usually started after some time, when the company found that there were not enough growth opportunities in domestic markets. On the whole, there was no worldwide acceptable innovation behind the decision to internationalize. The born globals examined in this study, on the other hand, often had a technological innovation in a global niche business area (see also Karagozoglu & Lindell, 1998; Madsen & Servais, 1997; Yli-Renko et al., 2002). The importance of innovative products in the successful globalization of born globals is extremely important.

3.2.2.3. Networks. The case companies in this research had founders and managers with extensive networks in the industry. This helped the companies in developing products (R&D), opening sales and marketing opportunities internationally, and attracting investors. The role of the domestic network in the early phase of internationalization was essential for the case companies. The case firms leveraged the resources of domestic network partners, by linking their activities with Finland-based multinational actors such as Nokia and Sonera. Later, its importance diminished, as the companies were able to attach to global networks and attract more partners. The importance of these global networks has eventually become significant. Government organizations have also had a role in the globalization of the case companies, especially during the early years. Furthermore, other means of networking such as industry forums have facilitated accumulation of important information. Even though the role of the networks has been most important in the area of sales and marketing, they have also provided necessary information to the companies for their product development and strategy planning (see Table 2).

Although there have been some observations about customer loyalty and the role of suppliers, internationalization has mainly been seen as part of an organization's own internal learning (Johanson & Mattsson, 1988). However, based on the results of this study, the importance of networks for born global companies has been significant (see also Håkansson & Snehota, 1995; Johanson & Vahlne, 2003).

3.2.2.4. Finance. Most companies in this research received funding from government organizations when they were established and during their development phase. All except one company mentioned Tekes, the Finnish National Technology Agency, as an important source of funding. Private and public venture capitalists became actively involved in the process soon after the development phase, when the companies started their international sales and marketing activities (see Table 2). It may be that the availability of funding has been one of the major reasons for the rise of born globals in the Finnish wireless sector. This supports the results from the study of Gabrielsson et al. (2004) mentioned earlier.

In traditional models on internationalization, finance has been mentioned as a limitation in some cases. However, it has not been included in analysis widely. In this research on born globals, venture capitalist companies have been recognized as an important source of finance. This research also brought out the importance of the need for multiple sources of financing, including international venture capitalists and strategic partners who could contribute valuable international knowledge and experience.

3.3. Examination of the propositions and discussion of the results

In this section, the propositions developed will be compared with the findings from the case studies and compared with the extant research.

Proposition 1 postulated that born global firms lack the resources and capabilities accumulated by conventionally internationalizing firms; they need to acquire them either through the earlier experience of the founders or from external network actors. In line with the proposition, the founders and the management of the case firms were found to be far from inexperienced (see Table 2). In fact, both the founders and management were often highly competent as to both technological and international business experience and skills. They also had a global vision from inception and very entrepreneurial attitudes. These findings support earlier research, which argues that the international experience, skills and entrepreneurial capabilities of the founders contribute to more rapid globalization (Jones, 2001; Reuber & Fischer, 1997). Moreover, an interesting and new result is that in many of the cases several founders had established the firms. This was because of the need to acquire the necessary portfolio of innovations, networking linkages, global business experience, and other key capabilities at the outset by assuring that the members of the founding team complement each other. Furthermore, the case firms were found to actively network with both domestic and international actors to overcome their lack of resources and capabilities. These findings corroborate earlier research to the effect that the networking capabilities of the firms are crucial for their rapid expansion (Yli-Renko et al., 2002). A new finding was that in the early phase of their globalization, the importance of the domestic network was significant. When the companies continued their globalization and achieved global growth, the role of the global network partners increased. Based on the analysis it can be concluded that Proposition 1 receives support.

Proposition 2 asserted that the greater the resources and capabilities of the born globals compared with early phases of conventionally internationalizing firms, the more rapid the advancement during globalization in terms of product categories, operation strategies, and global market presence. It seems that the examined business-to-business born globals indeed proceed more rapidly to distant markets than conventionally internationalizing firms measured by psychic distance. This was possible due to the founders' previous international and industry experience, the large network of contacts, financing, and investor relations, as well as to the innovativeness of the products offered. The study conformed to earlier research findings according to which born globals seem to proceed faster and jump over stages compared with conventional firms (Luostarinen & Gabrielsson, 2004; Madsen & Servais, 1997), see Table 1. Importantly, our results seem to conform to studies asserting that innovativeness is a central capability for early and rapid globalization (see also Knight & Cavusgil, 2004). The product and service offering was innovative, and in most cases unique worldwide. Furthermore, by investigating Table 2, it becomes evident that all of the four case companies from the Finnish wireless technology sector were able to raise the necessary finance and were thus not short of financial resources. This is somewhat contradictory to earlier research according to which born global firms lack adequate financing and resources and therefore struggle to overcome the challenge of instant globalization (Knight & Cavusgil, 1996; Oviatt & McDougall, 1994). The existence of the necessary funding and other resources of these case firms enabled the rapid globalization process found in this research. However, in their operation strategies the firms had proceeded rapidly to establishment of sales and marketing subsidiaries, and some R&D units, but had not established foreign production units. The explanation may be found in the product strategy rather than in the resources and capabilities of the case firms. The case firms do not offer physical products, but started their foreign sales by offering digital services and software products that can be easily distributed via the net. Hence, they do not require establishment of foreign manufacturing units. Proposition 2 was clearly supported by the examination of the four Finnish wireless technology born globals since the high resource and capability level of these examined born global cases explained the exceptionally rapid advancement of their globalization strategies.

4. Conclusions

This study supports earlier research on born globals and asserts that they deviate from the conventional internationalization process. Their market expansion even to distant markets is rapid and they apply advanced product strategies at an early stage. In business operations the notable difference from traditional firms business is the rapid establishment of sales and marketing subsidiaries. Also, results emphasize the key role of resources and capabilities, innovation, and the experience and networks of founders and managers in influencing the globalization strategies.

The major theoretical contribution for researchers can be concluded from the conceptual framework developed. First, the framework illustrates a clear interconnection between the resources and capabilities of the company and the globalization strategies of born globals. This view was strongly supported by the empirical data. These resources and capabilities, in addition to global enablers and industry specific factors, seem to be the main explanatory factors for the development of born global companies and their globalization strategies. Second, the complementarities of the experiences and skills of the founding team were found to be a significant factor influencing positively the rapid globalization of born globals. Also, the resources necessary for global expansion may be acquired through forming links with global actors. It was found that in the early phase of globalization the role of domestic network partners is important. Later, the role of a global network became stronger.

The managerial implications can also be drawn from the framework developed in this research. It depicts the critical resources and capabilities that need to be acquired at an early phase. This may indicate that when deciding on venture finance, venture capitalists need to go beyond examination of the business plan to the capability and skill level of the founders/managers. For entrepreneurs, the question boils down to a search for talent through intake of capable management and a suitable external advisory board. For governmental decision-makers, this frame indicates that a shift is required from innovation-based toward more holistic and integrated support programs, which include financial support for the entire innovation and commercialization process, training of founders/management, and support for development of the born global's network.

The results should be interpreted with caution due to the exploratory nature of this study. More holistic research examining the resources impacting born global firms and their global business strategies is called for. In particular, the qualities of the founding team and the network management would seem to deserve more attention. Furthermore, the results need to be validated through more robust quantitative research and replicated in other industries and economies to explore their generalizability. It would also be interesting to extend the study from business-to-business companies to consumer companies.

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