

# **EXPORTING TO YOUR NEIGHBOURS – THE INTERNATIONALIZATION OF YOUNG COSTA RICAN AND FINNISH SOFTWARE FIRMS**

## **Abstract**

According to established international business theories, different domestic demand conditions should be reflected in different degrees and patterns of firm internationalization.

We study the internationalization of young, small software firms in Finland and Costa Rica. These countries and their immediate geographic regions have very different economic conditions, and, accordingly, patterns of firm internationalization should exhibit marked differences.

To our surprise, we find that internationalization of young software firms in the two locations follows very similar patterns, which are best described as accelerated regional expansion rather than instant globalization.

## **INTRODUCTION**

There is increasing documentation on the emergence, antecedents, and characteristics of International New Ventures (INVs) (Oviatt & McDougall, 1994, Schildt, Zahra, & Sillanpää, 2006). These firms appear to have a number of unique features: they are young, entrepreneurial, and growth oriented, their management possesses a global mindset, and they are frequently characterized as knowledge-intensive organizations that sell innovative technology-based products (Autio, Sapienza, & Almeida, 2000, Bell, McNaughton, & Young, 2001, Bloodgood, Sapienza, & Almeida, 1996, George, Zahra, Autio, & Sapienza, 2004, Knight & Cavusgil, 2005, McDougall & Oviatt, 2000, Oviatt & McDougall, 1994, Shrader, Oviatt, & McDougall, 2000, Zahra, Ireland, & Hitt, 2000). A prominent feature of these ventures is their predisposition to cater to international

markets soon after they are created, and to internationalize early. Studies on such early internationalizers form one of the most cited groups of studies within the entrepreneurship literature (Schildt, Zahra, & Sillanpää, 2006).

The theoretical justification of INV, or, as sometimes it is referred to, Born Global, research is largely based on a claim that the classic stages theory of firm internationalization (Johanson & Vahlne, 1977, Johanson & Wiedersheim-Paul, 1975) is inadequate to capture the internationalization process of young firms in global markets. (Knight & Cavusgil, 2005, McDougall & Oviatt, 2000, Oviatt & McDougall, 1994). Internationalization, thus, is not seen as a separate process to which a firm will proceed in “the next phase”. Instead, internationalization is an embedded process at the very core of the business from the very start; markets are explicitly perceived as global, not as a dualistic construct consisting of a domestic part and an international part.

Not all researchers, however, have felt comfortable advocating truly global firm internationalization patterns. Rugman & Verbeke (2007), for instance, propose a “regionalization hypothesis”, which suggests that most international business action is characterized by semi-globalization, which is situated between the two theoretical extremes of firms expanding across the world as if it were an integrated marketplace, and firms focusing primarily on their home market and region.

Regardless of the exact speed and scope of early internationalization, multiple reasons behind international expansion have been explored in previous research.

Focusing on the competitive advantages of INVs as highlighted by Oviatt & McDougall (1994), research on INVs has made significant advances in understanding the importance of a firm's entrepreneurial characteristics for early internationalization (Zahra, 2005). While important, a focus on firm- and entrepreneur characteristics has left another area of possible antecedents for early internationalization largely unexplored: we know little about the effects of home country- and home market conditions on early internationalization. Even though limited home market size could be one of the factors that influence SMEs to go international (Zahra & George, 2002), few empirical studies on the topic exist. This may be due to the fact that comparable data across multiple countries is often hard to come by; especially when the firms in focus are private companies, often unwilling to disclose data to outside parties. It has been suggested that research on INVs would benefit from comparing SMEs from multiple countries (George, Wiklund, & Zahra, 2005). It is entirely plausible that the internationalization routes dominantly favored by firms in some setting, whether born global, regional, or stage-gated path, are exogenously determined. The size and dynamism of the home market can provide firms with opportunities for expansion at the local level. This implies that for a given level of sales, firms will have a smaller degree of internationalization if they are located in a large market than if they operate from a small one. In this research we investigate degrees of internationalization for software companies that operate in countries with similar size, but very different economic conditions: Finland and Costa Rica. In these settings different degrees of early internationalization should be expected. Our main research question pertains to the degree of internationalization in light of home market conditions: *What is the impact of home market size on the degree of early*

*internationalization in an industry that should favor early internationalization, such as the software industry? We also ask: How common are International New Ventures in such an industry?*

This paper is organized as follows: In the following section we discuss the prevalence of INVs and the home market effects on INV internationalization. Based on this discussion we develop hypotheses. In the next section we describe the methodology including the context, sample, and data. Next we present the results of our research. Findings and implications for research and management are discussed at the end.

## **THEORY AND HYPOTHESES**

### **Prevalence of INVs**

The process of internationalization varies by industry (Chadee & Mattsson, 1998, Fernhaber, McDougall, & Oviatt, 2007, Westhead, Wright, & Ucbasaran, 2001). In many service industries, for instance, product intangibility renders trade barriers less effective, and fixed investments in production facilities are smaller. Especially high technology industries, characterized by high research and development costs, shorter product life cycle, and concentrated markets, should see a speeding up of the international expansion process (Jones, 2001, Shrader, Oviatt, & McDougall, 2000). Combining high technology and service aspects of a firm's offering, some authors (Autio, Sapienza, & Almeida, 2000, Bell, 1995, Boter & Holmquist, 1996, Preece, Miles, & Baetz, 1998) claim that knowledge-intensive service firms are especially prone to early internationalization. Ventures operating in software development and sales are prime examples of such firms.

In the provision of software, products can be dispatched effortlessly and transportation costs are low. Thus, internationalization may be less costly in terms of monetary and organizational resources required to do so. Hence, there are reasons to expect that software companies from small, open economies should internationalize their operations at an early age.

Increasing cultural homogeneity, first mover advantages, the need to reach markets of sufficient size, and the past managerial foreign market experience are the major reasons usually posted to account for the phenomenon of young firms reaching out to distant (both geographically and culturally) markets (Bell, 1995, Hashai & Almor, 2004, Oviatt & McDougall, 1994). The most common first export market for US based international new ventures in the Shrader et al. (2000) sample was not the geographically close Canada but the far more distant Japan. Many studies claim that the classic stages (Uppsala) theory (Johanson & Vahlne, 1977, Johanson & Wiedersheim-Paul, 1975) is inadequate for explaining the internationalization process of young firms (Knight & Cavusgil, 2005, McDougall & Oviatt, 2000, Oviatt & McDougall, 1994) since there are some companies, called Born Global firms, that do not follow a path of gradual increased commitment to international operations. An essential part of this increasing commitment is the geographic expansion from familiar and less risky markets close to the home country to more distant and culturally diverse foreign markets. Some studies posit that firms will go through the different phases of internationalization at an increased speed (Hashai & Almor, 2004, Luostarinen & Gabrielsson, 2006), while other studies have found that firms start from markets that are geographically and psychologically close to the home market. For example, the Finnish companies studied by Luostarinen &

Gabrielsson (2006) follow the conventional stages of gradual internationalization even if the process is implemented faster than what the traditional stage- model of internationalization would suggest. Also, the knowledge intensive firms studied by Hashai & Almor (2004) first targeted markets that were perceived as less risky for their operations and only later penetrated markets that are perceived as psychically distant (Hashai & Almor, 2004). In line with this, Bell's (1995) empirical evidence from software firms in Ireland, Norway, and Finland supports the concept of psychic distance as a key factor in the selection of early export markets of young firms.

Moreover, whether companies start out as global or regional players has also been a topic for recent attention in research on international business and multinational enterprises. A series of papers from Rugman & Verbeke (2005, 2004, 2007) has shown that even the largest multinational companies (MNEs) in the world are heavily biased towards their home regions. If such incumbents are regionally oriented, it may well be that regionalization also characterizes those firms that have been titled Born Globals in previous research. Initial data in support of this "regionalization" hypothesis for new ventures has been provided by Lopez et al. (2009). Given the contradictory empirical evidence on the market strategies of Born Globals as well as the "regional" arguments presented recently in the context of MNEs, we hypothesize as follows:

Hypothesis 1a: Most new software firms in Finland and Costa Rica only export to foreign markets that are geographically proximate, *ceteris paribus*.

Countries in immediate proximity of Costa Rica include its Northern neighbor Nicaragua, and Panama in the South. Neither Panama nor Nicaragua present large markets for software, and neither country hosts attractive high technology clusters that could provide gateways to other markets. Moving beyond these immediate neighbors, other countries close to Costa Rica, such as Honduras, Guatemala, and El Salvador, are all characterized by less developed IT- and software markets than many Western countries. Previous research has proposed three factors that should prompt new ventures from emerging economies to internationalize, namely learning opportunities, low levels of institutional and country risk in host countries, and host country market potential (Yamakawa, Peng, & Deeds, 2008). For Costa Rican firms, internationalizing to neighboring countries only seems to offer the advantage of similarities in the institutional environment, and certainly only limited market potential.

Countries close to Finland, however, have more developed economies and IT infrastructure. Neighboring countries such as Sweden and Norway have high levels of GDP and provide attractive – yet small - markets for software firms. East of Finland, Russia has huge and largely untapped market potential, and the Baltic countries South of Finland have quickly transitioned their economies to growth tracks. In addition, other European Union countries, such as Denmark and Germany are within an easy reach from Finland. Overall, this compilation of countries seems to provide more of those opportunities that would encourage software INVs to enter (learning opportunities, low levels of institutional and country risk, and great market potential) than what is the case for the neighbors of Costa Rica. This examination of the geographically proximate country markets leads us to refine our first hypothesis as follows:

Hypothesis 1b: Costa Rican software ventures are more likely than Finnish ventures to enter country markets that are not geographically proximate, *ceteris paribus*.

### **Home market effects on INV internationalization**

It has been suggested that firms internationalize in order to seek new markets for growth (Dunning, 1981). Previous research has attempted to better understand the nature of country effects on internationalization and international performance, often in the context of large multinational enterprises (Brouthers, 1998, Makino, Isobe, & Chan, 2004, Schlegelmilch & Crook, 1988). Based on empirical observations, this stream of literature established early on that the limited size of the home market or the saturation of the home market prompts firms to export (Pavord & Bogart, 1975, Schlegelmilch & Crook, 1988). This assumption has not been challenged in literature since then. Instead, home market size is often a “taken-for-granted” predictor of internationalization; home market restrictions and limited demand potential should drive firms to aggressively seek opportunities in foreign markets (Bell, 1995, Fan & Phan, 2007, Knight & Cavusgil, 1996, Yiu, Lau, & Bruton, 2007). Indeed, for example Fan and Phan (2007) find that new airline startups are more likely to be ‘born-global’ from inception if they come from a small home market rather than a larger one. Overall, the literature on home country effects uniformly suggests that firms would conduct a larger portion of their business in international markets if they come from small, open economies, where domestic demand



for niche products and services (typically offered by young, small firms) is very limited (Luostarinen & Gabrielsson, 2006, Oviatt & McDougall, 1994).

Software industry in both Costa Rica and Finland is a competitive arena characterized by high knowledge intensity, which has also been connected to early internationalization of new firms (Autio, Sapienza, & Almeida, 2000, Preece, Miles, & Baetz, 1998, Shrader, Oviatt, & McDougall, 2000, Zahra, Ireland, & Hitt, 2000). The economic conditions in the two countries, however, are abysmally different. The countries are quite similar in terms of population size (4.2 million for Costa Rica, 5.3 million for Finland), but, as Table 1 shows, they differ when it comes to economic development, information- and communications technology (ICT) sector (which comprises software as well), and macroeconomic conditions. Finland is one of the world's most competitive economies and most technologically developed welfare and information societies (IMD, 2003) whereas Costa Rica is a small developing country located in Central America with a GDP of about one tenth of Finland's GDP, and limited technological infrastructure. While Finland spent 5.2% of GDP on its ICT sector in 2007, the corresponding expenditure in Costa Rica was only 3.9% of its GDP. Also, in 2007 there were 50 personal computers per one hundred people in Finland, while the corresponding number in Costa Rica was 23 PCs. Clearly, the Finnish ICT sector is much larger, providing more market opportunities for emerging firms targeting both business customers as well as consumer markets.

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Insert Table 1 about here

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If, as previous literature posits, foreign markets are regarded as opportunities for expansion when home markets are small and under-developed (Autio, Sapienza, & Almeida, 2000, Fan & Phan, 2007, Knight & Cavusgil, 1996, Madsen & Servais, 1997), it is plausible to expect a higher degree of internationalization among Costa Rican software companies, other things being equal. Thus, we hypothesize:

Hypothesis 2: Young software firms in Costa Rica will have a higher degree of internationalization than those in Finland, *ceteris paribus*.

## **METHODS**

Studies of international new ventures (INVs) show different operationalizations and interpretations of the focal concepts. There is variation in what constitutes a *new* venture, at what stage internationalization should happen to qualify as *early* internationalization, and what qualifies as *internationalization*. A summary of some key definitions and operationalizations is provided in Appendix I. Based on previous definitions and operationalizations, Appendix I also lists the definition and operationalization adopted in the current study. We suggest that the original Oviatt & McDougall (1994) definition of starting international operations *from inception* actually means that a new firm has international customers among its first customers. INVs should have a global rather than a regional reach. Conveniently, previous studies that have studied the internationalization of new ventures have classified all trade across national borders as international trade.

Certainly, by book definitions, this is the correct classification. A Canadian firm selling to the US or a Finnish firm selling to Swedish customers would, in previous research on born globals / international new ventures, be involved in global trade. The theoretical argumentation typically depicts born global firms as high growth enterprises that have a truly global orientation, approach all world markets as one, and could as well sell to customers in Africa, Asia, or in Europe. However, on an operational level most previous studies do not differentiate sales to neighboring countries from sales to the other side of the globe. Also, most studies are very silent on the distribution of the “global” customers; if international sales account for 90% of a firm’s sales, but they are all to one customer company, we are hardly talking about a born global firm. We attest that the definition and operationalization of a born global firm has to take into account the geographic distribution of the firm’s activities; they have to reach beyond the immediate geographic region of the firm’s home market.

## **Context**

In 2006 the sales turnover of the Finnish software sector was EUR 5.6 Billion with combined R&D investments of the Finnish software firms adding up to EUR 0.29 Billion (over 5% of sales turnover) (TIEKE, 2009). At the time of our data collection in 2004, the Software Business Finland Company Directory listed altogether 380 firms<sup>1</sup>. Most of the firms are small; industry data from 2001 reveals that 70% of these firms employed less than 20 people. However, this large group of small companies

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<sup>1</sup> According to the theme interviews conducted with software industry experts in Finland in January 2004, this directory is the most comprehensive and up-to-date listing of companies operating in software arena in Finland.

continuously innovates and creates new product ideas (Tyrväinen, Warsta, & Seppänen, 2004).

Costa Rica also has a very dynamic software industry. Available data on the Costa Rican software industry aggregate software producers with firms in the broader information and communications technologies (ICT) sector. Under this category there are 150 firms listed. These firms include software producers and also producers of ICT-related products and services. The majority of these firms are small or medium enterprises. Only 9% of the total number of firms has more than 100 employees. Exports for the whole sector were estimated to be USD 70 million at the time of the study, 2004 (Camtic, 2004).

### **Sample and Data**

We collected data from forty Costa Rican software companies and seventy five Finnish software firms. These are sizable percentages of the total numbers of firms operating at the time of the data collection (2004). For the forty Costa Rican firms we conducted semi-structured interviews and administered a questionnaire followed up with telephone consultations. All but three interviews were with owners or founders of the firm or with people who were designated as the highest ranking official in the firm. Out of the 380 companies listed in the Software Business Finland Company Directory at the time of the survey (March 2004), 75 managers of independent Finnish software firms responded to our survey. Similar to Costa Rica, Finnish respondents were highly ranked in their organizations (typically Founders and / or CEOs).

In both countries we collected data on four measures related to exports. The first one was a measure of *total exports as a percentage of total sales*. This measure of export intensity has been used in several empirical studies of internationalization (Axinn, 1988, Bello & Williamson, 1985, Bilkey, 1985; Kundu & Katz, 2003). A second was total *foreign clients as a percentage of total customers*. Though seldom used as a measure of export performance (Zou & Stan, 1998), this measure is an important complement of export intensity, particularly for determining how active the firm is in seeking clients abroad. It also permits assessing structural differences among firms, as would be the case if, for instance, two companies with similar ratios of export sales to total sales had export sales concentrated on only a few customers or to many customers.

Thirdly, we collected data on *current sales*, and specifically the *percentage of current sales that were local, regional, or global*. This measure would allow us to assess the persistence of early export activities to the date the study was conducted. This measure follows in the tradition of much work that accounts for export intensity by taking into account growth of export sales (Zou & Stan, 1998). The *time elapsed from firm inception to first export* provides an important and unequivocal base line to know when a company starts its internationalization activities, and also a measure of how aggressively a firm pursues foreign market after its founding.

In addition, we collected information on firm-level characteristics, specifically firm size, firm age, and international experience. The *size* of the firm was operationalized using total sales and number of employees. Firm size is also incorporated in our analysis as an important mediating variable. In some studies, firm size has been

perceived as a barrier to internationalization (Ali and Camp, 1993; Calof, 1993). This measure is complemented by firm *age* which was measured as the number of years that had elapsed since the firm was founded until the time of the study. Many studies of early internationalization bound empirical samples using firm age. For instance, Knight, Madsen and Servais (2004) operationalize early internationalizers as firms younger than 20 years and with 25 percent of their sales aimed at foreign markets. *International experience* was measured as the number of years the firm had been exporting.

## **RESULTS**

We started the data analysis by exploring the possible differences between Costa Rican and Finnish software companies. Table 2 reports results for the ANOVA test for comparisons between Finland and Costa Rica. Finnish sample firms are slightly younger and smaller than their Costa Rican counterparts. Data show that Costa Rican firms, on average, have a larger share of their businesses in foreign markets. Although the difference is not statistically significant (no support for Hypothesis 2), export sales of Finnish firms, as a percentage of total sales, is 25.4% whereas Costa Rican firms have 34.8%, on average. The distribution of this variable is depicted in Figure 1. In addition to this traditional export intensity measure, we also examined the geographic distribution of the sample firms' customers. On average, for the whole Costa Rican sample, the percentage of customers who are foreign amounts to 34%. In the Finnish sample, the average percentage of customers who are foreign is 23%. Here, the difference between the two countries is marginally significant at  $p = .10$  (Table 2). Overall, these initial country comparisons do not lend significant support for Hypothesis 2.

--- Insert Table 2 here ---

--- Insert Figure 1 here ---

That we found no support for Hypothesis 2 in our dataset prompted us to examine the available macro-level industry data for the two countries. Interestingly, these secondary data (Table 3) confirmed what the sample data had already shown: Even if the software industry export / revenue ratio is slightly higher in Costa Rica (41%) than in Finland (39%), the difference between the two countries is hardly significant.

--- Insert Table 3 here ---

We also examined the time it took the ventures in the two country samples to achieve their first export sales. As depicted in Figure 2, it took the Costa Rican firms an average of 4 years since their founding to export for the first time, and it took an average of 4.2 years for firms in the Finnish sample. This average is higher than the one reported by Luostarinen & Gabrielsson (2006), who found that the average domestic period before the first international sales for Finnish Born Global firms was 2.1 years. However, unlike Luostarinen & Gabrielsson (2006), we look at the internationalization patterns in the general population of young software firms, and not only firms that have previously been classified as early internationalizers.

--- Insert Figure 2 here ---

Although in both country samples customers are predominantly domestic (See Table 2), there are firms in both samples that export a large share of their total sales. This signals the possibility that groups of substantially different firms are intermingled in the

samples. Thus, we attempted to establish whether firms in these samples could be clearly classified into groups with distinctive characteristics. Thus, we used clustering techniques as an exploratory tool that would permit us to see if firms in our sample could be grouped around the variables described in the literature as the fundamental characteristics of INVs. This will also allow us to examine the overall prevalence of “true” Born Global firms in the samples. In order to perform cluster analysis, variables must be chosen with a good theoretical basis (Aldenderfer & Blashfield, 1984). From our literature review we chose five variables that appear to be fundamental constructs when studying firm internationalization: the percentage of customers who are foreign, export sales as a percentage of total sales during the first year of firm existence, time elapsed from firm inception to first export, firm size, and firm age.

For both samples all variables were screened to explore their distributions, missing value patterns, and outliers. The cluster analyses were first performed using Ward’s technique with Euclidean distance. Examination of dendograms permitted to assess the number of clusters for each sample (Punj & Stewart, 1983), and the possible occurrences of outliers. For both cases, Costa Rica and Finland, we arrived at a three-cluster solution. For validation, following Punj and Stewart (1983), we re-ran our clustering procedures using an iterative partition algorithm, k-means clustering, on the same data sets. We found that the cluster assignments using k-means were fairly coincident with the hierarchical procedure used first, and both procedures permitted to draw the same conclusions. In Table 4 we report the results of the k-means clustering procedure for both samples (Costa Rica and Finland).



--- *Insert Table 4 here* ---

In Costa Rican data one group of firms, under Cluster 1 in Table 4, consisted of relatively young (5.5 years on average) and small firms. These companies did not engage in significant export activities. The percentage of total customers outside of the local market was, on average, a little less than 9%. Practically no firm in this group had exported during its first year of existence. Cluster 3 in the Finnish data has similarities with Cluster 1 in the Costa Rican sample. These Finnish firms are young (3.7 years on average), small and not engaged in significant export activities. The percentage of total customers outside of the local market was, on average, 7.2% for Finnish companies in this cluster.

A second group of Costa Rican firms, grouped under Cluster 3 in Table 4, showed, at the time of the study, somewhat more active export activities than firms in Cluster 1. These firms' customers were, on average, 49% foreign. These firms were also the largest firms in the Costa Rican sample and the majority of them, like those companies in Cluster 1, did not export during their first year of existence. On average, it took them 5.3 years to make their first export. Similar to Costa Rican Cluster 3, Cluster 2 in the Finnish data has companies that are the oldest ones and also the largest ones in the Finnish sample. However, even for this cluster, the average share of foreign customers out of total customers is still below 20%. On average, it took these Finnish firms almost nine years after the company was first founded to start exporting. The long average time

elapsed between firm startup and first exports suggest that these companies (Cluster 3 for Costa Rica and Cluster 2 for Finland) should not be titled Born Globals. It appears safe to infer from these data that these firms started operating in the home market and only slowly started to expand.

Our clustering analysis reveals a third group in both country samples with significantly different average characteristics. These groups, under the heading Cluster 2 for Costa Rica and Cluster 1 for Finland (Table 4), show a much higher percentage of current customers who are foreign. These groups of companies also internationalized much earlier. Judging by the fact that, on average, these five firms started exporting practically upon their founding (0.6 years on average for their first export in Costa Rica and 1.2 years in Finland), and the fact that most of their business is currently with foreign customers, we can term these firms, unlike companies in the previously discussed clusters, as global competitors, or potential born global firms. These firms are small and young, started exporting very soon after they were born, and maintain most of their business with foreign customers.

Table 5 reports, for the three clusters identified in each country, the breakup of sales in local, regional, and global markets.

*--- Insert Table 5 here ---*

From Table 5 it appears that Costa Rican firms in Cluster 2 (n=5) do place a much larger emphasis on customers outside their immediate geographic area than firms in Clusters 1 and 3. Also, Table 5 shows that for Finnish firms main export markets are, in case of all three clusters, predominantly local and regional. Out of Finnish respondents, over 70% designated their most important export market to be confined to Scandinavia or the European Union. With these data available we can speculate that some firms follow what could be described as a traditional route to internationalization, while others do not. The results so far suggests that, first, in a representative sample of firms in one industry, in two different countries, evidence of different internationalization paths appear to be present for different group of firms. Second, despite different economic conditions in the home markets, there appears to be groups of firms in both samples which are similar. Third, the same apparent internationalization paths appear in both samples. Thus, it cannot be assumed, *ex ante*, that a different internationalization behavior is present in one country and not the other based on different home market conditions. Home market characteristics led us to hypothesize that Costa Rican software ventures would be more likely than Finnish ventures to enter country markets that are global (Hypothesis 1b). Even if a few isolated cases of INVs that reach out to global markets early are present in the Costa Rican sample, we do not find general support for this hypothesis. What we do find, however, is support for Hypothesis 1a: Most new software firms in both Finland and Costa Rica only export to foreign markets that are geographically proximate, that is, local or regional.

Finally, for early internationalizers in both samples, we examined the country markets that they first entered. Clearly, many firms started close to home, exporting to nearby countries. These countries are regional neighbors such as Nicaragua, Panama, El Salvador, Guatemala, and Honduras in the case of Costa Rica, and Scandinavian countries, Baltic countries, and Russia in the case of Finland. The countries share cultural traits and business practices with our focal countries. Few firms, however, exported upon birth to the more challenging strategic markets, like the US, which has quite different business and cultural practices. In Table 6 we have listed the firms that started exporting within 3 years of their creation along with their current export sales as a percentage of total sales and the reported country where the firm first exported. Upon this analysis, we see that the majority of firms with some degree of internationalization export to nearby regional markets. This means that although they started exporting very early in their lives, and continued exporting a fairly large share of their sales, much of these exports were aimed at regional neighboring countries.

*--- Insert Table 6 here---*

In the Costa Rican sample there is only one firm, whose current exports account for 81% of total sales, which started exporting right from its inception, to the most strategic market: the United States. This firm started out with more than half of its customers in a foreign country located far in terms of psychic distance. Two other Costa Rican firms made their first export to such strategic markets (one to the USA, the other to Canada), but most of these two firms' business still comes from serving the local market. Most

Costa Rican firms, as can be seen in Table 6 for the earliest internationalizers, chose to export to nearby countries (Central America) or countries which can be said to have close proximity in terms of cultural and business traits (South America or Spanish-speaking Caribbean countries). Similarly, most of the 25 Finnish firms that achieved first international sales within three years of inception started selling locally or regionally: Eleven companies reported first export sales to a nearby country either in Scandinavia or in the Baltic region. Nine companies directed their first export sales to a country in the European Union. Russia was the first foreign market for two firms. None of the 25 Finnish companies reported in Table 6 had Asian, African, Australian, or South- or Central American companies or individuals as their first export customers. Only three companies out of 25 had their first international sales in the USA.

Combined, these results provide mixed support for our hypotheses. First, we find support for Hypothesis 1a: Most new software firms in both Finland and Costa Rica only export to foreign markets that are geographically proximate, that is, local or regional. This conclusion followed from the examination of the distribution of local/regional/global customers of the ventures in various clusters, as well as from the more qualitative examination of country markets first entered by early internationalizers. These same analyses, however, provided no support for Hypothesis 1b. Given the nature or regional economies surrounding Costa Rica and Finland, we expected to see Costa Rican ventures reaching out to more distant geographic markets. However, this did not happen in our data. What is more, we did not find support for Hypothesis 2 either. The data do not permit to conclude that there would be significantly different internationalization patterns

and degrees of internationalization among the Finnish vs. Costa Rican software ventures. The degree of internationalization among young software firms in Costa Rica is not significantly higher than that of Finnish ventures. Also, the average speed of internationalization in both countries is very similar, that is, it takes an average of four years for these firms to achieve first international sales. The implications of these findings are discussed in the next and final section of this paper.

## **DISCUSSION AND CONCLUSIONS**

We set out to study the internationalization patterns of new ventures in the software sector in two countries that have very different economic profiles. Using a single industry, two-country study, we have examined how differences in country-level economic conditions affect the degree and speed of internationalization, and its geographic scope. To our surprise, ventures in both countries, Finland and Costa Rica, exhibit similar internationalization patterns, despite of the apparent differences in the level of country economic development and home- and regional market size. Neither Finnish nor Costa Rican INVs skip regional and neighboring markets in their internationalization even when (rationally speaking) larger market opportunities might be elsewhere.

On average, Finnish firms in our sample received 25% of their revenue from export sales, while the percentage for Costa Rican companies was (not significantly) higher, at 35%. Both of these figures are higher than the average scale of internationalization (7%) discovered among SMEs in a variety of industries

(manufacturing, professional services, wholesale/retail, and other services) in Sweden<sup>2</sup> (George, Wiklund, & Zahra, 2005). However, both in our data as well as in the study of George et al. (2005), the variation among companies is great. Hence, rather than merely focusing on averages, future research should be careful to account for the presence of various clusters of companies among internationalizing new ventures. Using a clustering approach, we have shown that while true Born Globals – i.e. firms that start to sell to far-away markets from inception - do exist, they are rare exceptions rather than the rule even in countries and in an industry that should favor early internationalization. Instead of reaching out to large and developed markets like the US, Finnish software exporters typically start their foreign sales from other Scandinavian countries, whereas the first export markets for Costa Rican firms are typically in Central America.

These findings may come as a surprise in comparison to studies where Born Globals have been depicted as an increasingly prevalent phenomenon. Shrader et al.'s (2000) sample indicates that about 41 per cent of the most obviously successful new ventures (new ventures that made an Initial Public Offering within first six years of existence) in the United States were experiencing accelerated internationalization in the early 1980's. However, only a fraction of new ventures ever make it to an IPO. In the Preece et al. (1998) sample of 75 small technology-based firms in Canada, only 7% (5 firms) had no foreign sales. However, when the global diversity of the international sales was taken into consideration, it became obvious that globally diverse firms were older, larger and had greater access to resources for international expansion than those firms

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<sup>2</sup> George et al. (2005) scale of internationalization measure is the arithmetic mean across five different items: export share, import share, share of advertising budget directed at international markets, share of R&D expenditure abroad, and share of production completed abroad.

who sold to Northern American markets only (Preece, Miles, & Baetz, 1998). Our research shows that early and fast internationalization to strategic large markets is a rare phenomenon even in countries that, because of their limited market size, should favor intense and fast internationalization. This is something that future research using models and frameworks developed in the context of INVs and Born Global firms has to take into account: The samples of truly Born Global firms cannot be derived from general populations of new firms, even when industry- and country conditions should favor such sampling. That we found most of our sample firms to start their internationalization through exports to neighboring countries has implications for theorizing on INVs as well. To an extent, the theory of early internationalization (Oviatt & McDougall, 1994) was developed because the “stage” theories (Johanson & Vahlne, 1977), widely used in export marketing literature of the multinational enterprise, seemed to be inadequate to explain the phenomena of INVs and Born Global firms. Our investigation suggests that there is more evidence of early internationalization starting from neighboring country markets rather than from distant markets. Hence, stage theories of internationalization – and even early internationalization – may still apply (See also Luostarinen & Gabrielsson, 2006).

Maybe the most surprising finding from our research is that despite the striking differences in home market conditions, high technology firms from Finland and Costa Rica follow similar patterns of internationalization. In both countries, we identified similar clusters of internationalizing new ventures despite having hypothesized – based on existing literature – that the limited size of the Costa Rican market should have



encouraged more international and global sales by those firms. It is possible that the reason for the patterns recognized in the internationalization of Costa Rican and Finnish software firms is that the liability of intra-regional expansion is lower than the liability of interregional expansion (Rugman & Verbeke, 2007). The additional costs of doing business abroad are often much higher when venturing into other regions of the world than when expanding intra-regionally, in the home triad region (Rugman & Verbeke, 2007). Lopez et al. (2009) have previously described the regional nature of INVs, and our research expands their findings by showing that regional expansion is typical for new ventures coming from a variety of home markets and institutional environments, as well as by specifically examining the role of home country effects in early internationalization.

Concerning this home country effect, our hypothesis was based on a stylized fact in international business literature: home market restrictions and limited demand potential should drive firms to aggressively seek opportunities in foreign markets (Bell, 1995, Fan & Phan, 2007, Knight & Cavusgil, 1996, Yiu, Lau, & Bruton, 2007). Since the Costa Rican software market is less developed than that in Finland, we expected to see more export intensity in Costa Rican firms. However, the results did not support this hypothesis. Instead, we found that in both Finland and Costa Rica INVs in software industry can be divided into similar clusters. In both countries, the largest cluster represents companies that derive less than 10% of their revenues from exports, and have few – if any – truly global customers. We believe, *post hoc*, that this finding emphasizes the strength of the regionalization hypothesis (Rugman & Verbeke, 2007). The finding

also draws attention to the limitations of an assumption underlying much of export decision literature; i.e. that managers would primarily decide to enter markets that provide the largest customer base and best opportunities to maximize profits. If this was the case, Costa Rican firms would have been better off entering, for example, North American markets. Instead, we saw that both Finnish and Costa Rican companies primarily entered neighboring countries first. This should redirect researchers' attention back to the importance of factors such as institutional similarities and psychic distance in export decision making (Johanson & Vahlne, 1977). For example, institutions can directly affect firms' internationalization decisions choices (North, 1990). As profound differences in institutional frameworks exist between countries and regions (Peng, Wang, & Jiang, 2008), firms' export behaviors should be examined as choices between entering a familiar market in the same region or a more distant market where the firm is more likely to encounter issues related to the lack of legitimacy and unfamiliarity with the "rules of the game". We believe that the recent research on the importance of institutions in internationalization and export decision making, which has been largely driven by researchers' interest in emerging economies (Gao, Murray, Kotabe, & Lu, 2009, Peng, Wang, & Jiang, 2008), should be expanded to fine-tuned theorizing on the importance of institutions in early internationalization decisions in all kinds of economies, not only emerging ones. Also, we welcome future research that challenges the "home market" argument which assumes that home market restrictions and limited demand potential drives firms to aggressively seek opportunities in foreign markets (Bell, 1995, Fan & Phan, 2007, Knight & Cavusgil, 1996, Yiu, Lau, & Bruton, 2007). That more limited opportunities in Costa Rican home market – when compared to Finland - did not result in

faster or “deeper” internationalization by Costa Rican firms suggests that alternative explanations are at play. Clearly, a large majority of Costa Rican (as well as Finnish) INVs first established a position in their limited home market before venturing across borders, defying the Born Global logic.

A limitation of our study is its focus on exports only. Exporting, as opposed to other modes of foreign market entry, is the quickest and easiest way for firms to penetrate foreign markets (Johanson & Vahlne, 1977). This is the most common method of market side internationalization for your software firms. However, early internationalization should also take into account internationalization activities on the supply side (Jones, 2001). It is entirely possible that the very first international activities of a software venture take place through outsourcing and buying services or products from foreign partners. These activities remain outside of the scope of our research. Another limitation of this study is a result of our focus on home country factors behind export decisions. While this study was set out to investigate degree of internationalization as related to home market conditions, we have not tested how various firm-level predictors of early internationalization – such as market- and technology knowledge, opportunity recognition, competition, network relationships, or entrepreneurs’ perceptions - play out in our sample (Oviatt & McDougall, 2005).

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Table 1: Macroeconomic and software market characteristics of Finland and Costa Rica

<b>Country economic profile</b>	<b>Costa Rica</b>	<b>Finland</b>
2005 GDP (ppp) million \$*	37,970	151,200
2005 GDP per capita (ppp) \$/person*	9,600	29,000
Personal computers (per 100 people), 2007 data ‡	23	50
Mobile cellular subscriptions (per 100 people), 2007 data ‡	33.8	115
ICT expenditure (% of GDP), 2007 data ‡	3.9	5.2

\* CIA World Factbook, 2005 data<sup>3</sup>

‡ World Bank (2009a), World Bank (2009b)

Table 2: ANOVA comparisons between Finland & Costa Rica

	Finland		Costa Rica		t values for difference in means	
	Mean	sd	Mean	sd		p
% of sales to foreign customers	25.44	29.83	34.84	34.37	-1.29	0.20
% of customers who are foreign	23.14	29.56	34.13	32.87	-1.68	0.10
<b>Number of employees</b>	<b>1.65</b>	<b>0.10</b>	<b>2.45</b>	<b>1.36</b>	<b>-3.52</b>	<b>0.00</b>
<b>Firm age</b>	<b>6.95</b>	<b>5.59</b>	<b>9.08</b>	<b>5.39</b>	<b>-1.91</b>	<b>0.06</b>
Time to first export in years	4.24	4.27	4.06	3.71	0.21	0.84

Table 3: Software industry characteristics of Finland and Costa Rica

<b>Software industry in 2005</b>	<b>Costa Rica</b>	<b>Finland</b>
Software sector employment (number of employees)	4,800***	12,340**
Software revenue, million \$	173***	1,625**, a
Software exports, million \$	71***	630**, a
SW exports / SW revenue (%)	41***	39**

\*\* Lassila, Maula & Kontio (2006)

\*\*\* Nicholson & Sahay (2009)

<sup>a</sup> conversion: 1 EUR = 1.25 USD.

Table 4: Cluster means for each variable.

	Costa Rica	Finland
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<sup>3</sup> [http://globaleedge.msu.edu/countries/countrycomparator.asp?](http://globaleedge.msu.edu/countries/countrycomparator.asp?Year=2005&Countries=114&Countries=50&Stats=0&Stats=2&Stats=7&Stats=8&Stats=9)

[Year=2005&Countries=114&Countries=50&Stats=0&Stats=2&Stats=7&Stats=8&Stats=9](http://globaleedge.msu.edu/countries/countrycomparator.asp?Year=2005&Countries=114&Countries=50&Stats=0&Stats=2&Stats=7&Stats=8&Stats=9)

	Cluster				Cluster			
	1	2	3	F value	1	2	3	F value
% of current customers who are foreign	8.6	83.6	49	36.23**	60.5	19.8	7.2	47.99***
Firm size	1.7	2.6	3.1	5.84**	2.9	3.3	1.6	17.31***
Firm age	5.5	6.2	13.3	20.48**	6.1	13.6	3.7	41.35***
% of exports during the first year <sup>4</sup>	3	90	0.9	387.45**				
Time to first export	3.0	0.6	5.3	8.34**	1.2	8.9	1.8	22.46***
Number of firms in the cluster	18	5	16		11	18	22	

Table 5: Percentage of sales by geographic distance, grouped by clusters observed in

Table 4

Variable	Costa Rica <sup>5</sup>			Finland <sup>6</sup>		
	Cluster 1	Cluster 2	Cluster 3	Cluster 1	Cluster 2	Cluster 3
% of local customers	92	17	51	23	53	43
% of regional customers	5	15	27	54	20	50
% of global customers	4	68	23	23	27	7

<sup>4</sup> For Finnish firms, we did not measure exports during the firm's first year of existence. Therefore, we performed our exploratory data analysis using only firm age, size, and the time elapsed to first export using the percentage of customers who are foreign as an output measure.

<sup>5</sup> Local: Central America; Regional: South America, Mexico, and Caribbean; Global: All else.

<sup>6</sup> Local: Scandinavia and Baltic region; Regional: Europe; Global: All else.

Table 6: Firms in the sample that exported within 3 years of their founding and country where they first exported

Costa Rica		
Time to first export (Years from founding)	Current % exports of total sales	Country of first export
0	42%	Mexico
0	81%	USA
0	100%	Dominican Rep.
0	100%	Central America
0	20%	Mexico
0	15%	Panama
2	10%	USA
2	58%	Venezuela
2	72%	Venezuela
2	80%	El Salvador
2	100%	Nicaragua
2	N.A.	Ecuador
3	13%	Mexico
3	13%	Central America
3	20%	Canada

Finland		
Time to first export (Years from founding)	Current % exports of total sales	Country of first export
0	100%	Denmark
0	55%	Sweden, USA, Germany
0	40%	France
0	10%	Scandinavia
0	N.A.	Russia
0	N.A.	USA
1	90%	Sweden
1	70%	N.A.
1	50%	N.A.
1	25%	Netherlands
1	15%	Germany
1	10%	Sweden
1	1%	Spain
2	N.A.	Russia
2	65%	Sweden
2	20%	Norway
2	10%	United Kingdom
2	10%	Sweden
2	5%	Lithuania
2	0%	France
3	10%	Sweden
3	2%	Norway
3	N.A.	Netherlands
3	N.A.	USA
3	N.A.	United Kingdom

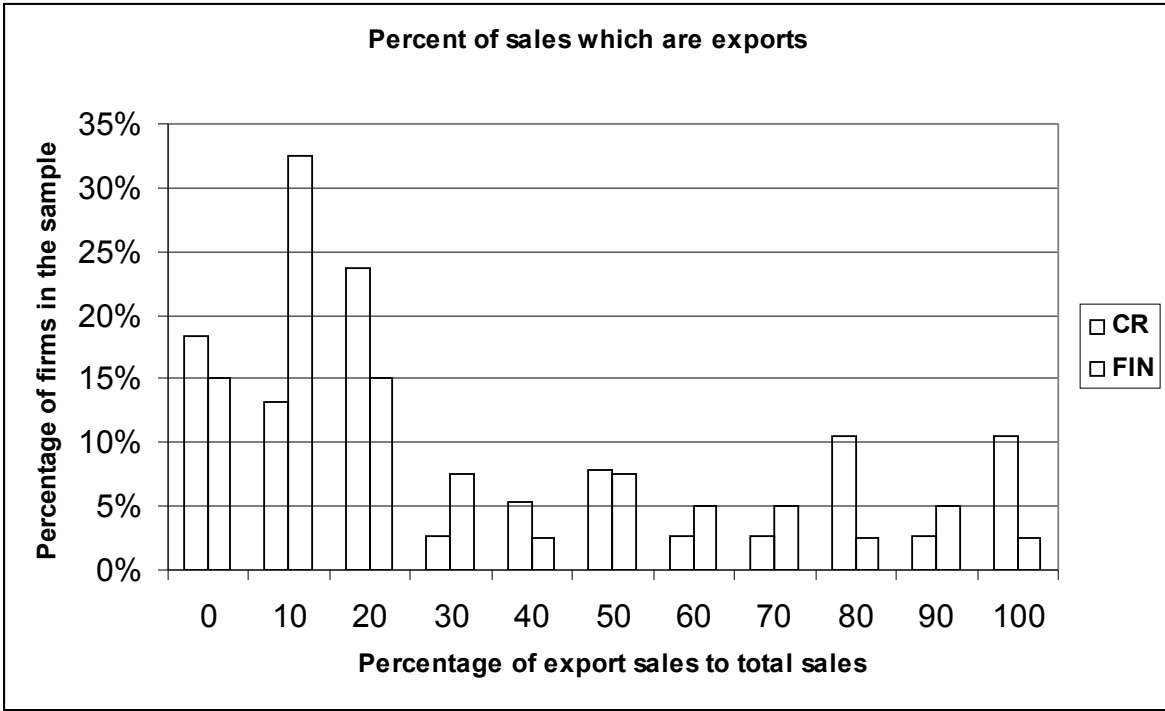


Figure 1: Current exports reported as a percentage of total sales, Costa Rica and Finland

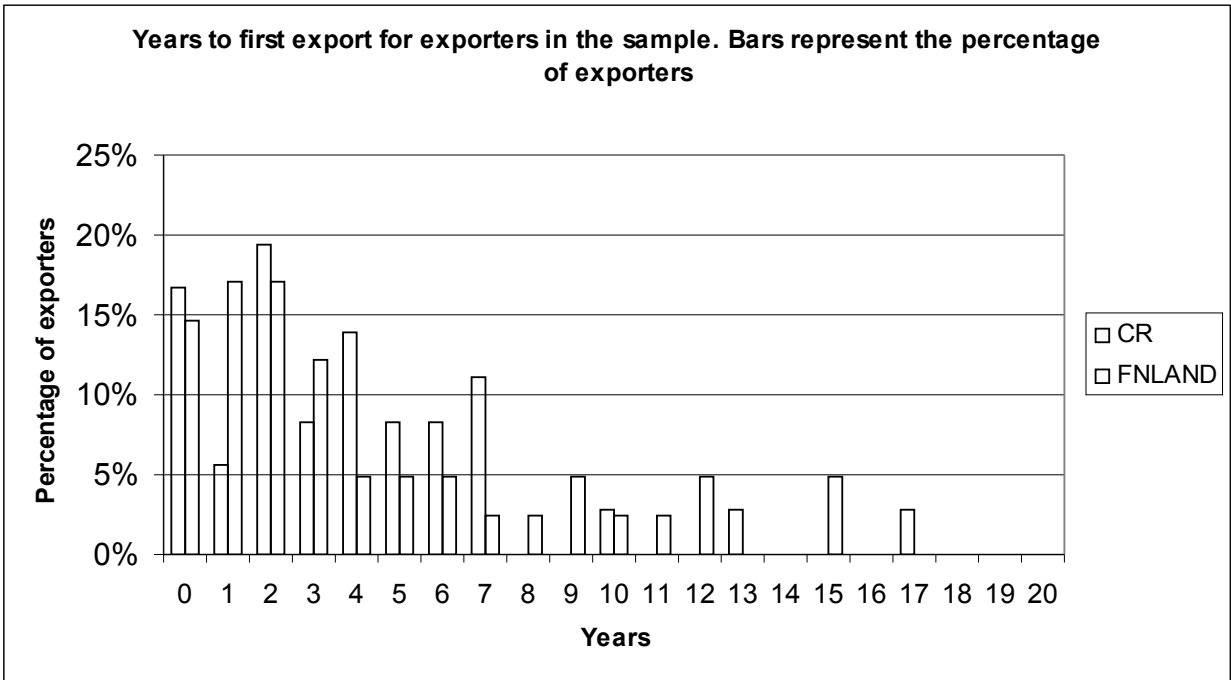


Figure 2: Distribution of time elapsed from firm founding to firm first export in years. Average is 4 years for Costa Rican firms and 4.2 years for Finnish firms.

**Appendix I:** Can be omitted in final manuscript if needed

Born Global and International New Venture definitions in existing literature

<b>Author(s)</b>	<b>Concept</b>	<b>Definition</b>	<b>New venture (age)</b>	<b>Internationalization</b>
Oviatt & McDougall (1994)	International new venture	A business organization that, from inception, seeks to derive significant competitive advantage from the use of resources and the sale of outputs in multiple countries.	Not defined	Resource acquisition, sale of outputs
Bloodgood, Sapienza, & Almeida (1996)	Internationalization of new high-potential ventures	New entrepreneurial ventures with high aspirations and potential for growth ...planning on operating on an international basis at start-up.	Less than 5 years	Inbound logistics, operations, outbound logistics, marketing and sales, service
Preece et al. (1998)	Instant international	A firm engaging in the internationalization process in the formative stages of its business development.	Not defined but operationalized as anything between 1.9 – 14.25 years.	Sale of outputs (International intensity and global diversity)
Zahra, Ireland, & Hitt (2000)	International expansion by new venture firms	New ventures defined as companies six years of age or younger.	6 years or less	Sale of outputs (At least 5 % of sales from foreign markets)
Shrader et al. (2000)	New venture internationalization	N/A	6 years or less	International sales
Knight & Cavusgil (2004)	Born global	Companies that, from or near their founding, seek superior international business performance from the application of knowledge-based resources to the sale of outputs in multiple countries.	Not defined. Empirical sample includes companies founded in 1980 or later.	Sale of outputs (At least 25% of production sold to foreign markets)
Zhou, Wu, & Luo (2007)	Born global, internationalizing SME	N/A	3 years or less from domestic establishment to internationalization	Exporting and/ or importing (At least 10% of sales from foreign markets)
Current study	Born global firm, International new venture	A business organization that, from inception, seeks to derive significant competitive advantage from the sale of outputs in global markets.	1 year or less from domestic establishment to internationalization	Sale of outputs in global markets (outside of the firm's immediate geographic region)