

IT Entrepreneurial Strategies in Emerging Economies: Lessons from a Local Start-up

*AIS Special Interest Group for ICT in Global Development (SIG GlobDev) First Annual
Workshop, ESCP-EAP University, Paris, December 13, 2008*

Alina Chircu
Associate Professor
Information and Process Management Department
Bentley University
175 Forest Street, Waltham, MA 02452
Email: achircu@bentley.edu

Flavius Chircu
Consultant
Creire
Email: fch@creire.com

Abstract: *This study discusses the creation, survival and growth strategies of locally-based start-ups in emerging economies. The study consists of a revelatory case study analysis of an IT start-up in one of the largest developing countries of central and Eastern Europe, Romania. The analysis shows how IT entrepreneurs in developing countries can adapt to the institutional, resource and industry constraints of their environment and build a successful business. The results suggest successful IT start-ups can overcome the lack of formal institutions in developing countries by managing a relationship spiral: searching for potential business prospects among the IT entrepreneurs' informal social networks and narrowing down these prospects until a client is identified. The analysis also suggests that IT start-ups in developing countries can overcome the industry constraints in these countries – the lack of supporting, complementary products and services – by managing a product spiral: adapting their generic product to each client and offering increasingly customized, vertically integrated products and services. The study also provides insights into how the activities of IT entrepreneurs in developing countries can contribute to economic growth not just through the creation of the local IT start-ups themselves, but also through the creation of new business opportunities for their clients.*

Workshop-specific keywords: ICT to support Small and Medium Enterprise (SME), Technological entrepreneurship as a path to prosperity.

1. Introduction

IT entrepreneurship is recognized as a powerful engine for growth in developing countries (Arora and Gambardella, 2005; Peng et al., 2008; Walsham and Sahay, 2006). IT, either locally-developed or transferred from other countries, is important for a country's economic development (Tan and Leewongcharoen, 2005; Walsham and Sahay, 2006). In addition, strong

entrepreneurial activity supports economic growth (Wennekers and Thurik, 1999), and especially in developing countries (Mayer and Peng, 2005). The more dynamic and evolving environments of emerging economies poses substantial challenges for local start-ups (Peng et al., 2008), especially for those in the IT industry, where lower levels of technological infrastructure (Dewan and Riggins, 2005) may impede survival and growth. To uncover these challenges, this paper describes the entrepreneurial process in a local IT start-up focused on developing specialized customer relationship management (CRM) software applications in a large central and eastern European (CEE) developing country, Romania.

In a recent review of the literature, Walsham and Sahay (2006) uncover several important research questions related to how IT contributes to development. They suggest researchers should focus on specific technologies, expand the geographical coverage of the research, provide local insights, employ cross-cultural research teams, and focus more on the individual level rather than on country-level analyses. This study follows the recommendations put forward by Walsham and Sahay (2006) by focusing on an area of the world (CEE) and a developing country (Romania) that have received very little research attention until now. The analysis also offers a perspective less studied in the past research – that of the individuals entrepreneurs starting IT-based firms in a developing country. In addition, this study provides a cross-cultural perspective on IT entrepreneurship by combining U.S.-based and local experiences and insights. Finally, the study focuses on a specific technology – customer relationship management (CRM) – which is growing globally and especially in developing countries (Barker, 2007; Gartner, 2008; Ramaseshan et al., 2006). Indeed, recent estimates predict global revenues from CRM systems will be close to \$9 billion in 2008 and exceed \$13 billion by 2012 (Gartner, 2008), with on-demand, software as a service CRM solutions experiencing explosive growth (Barker, 2007).

The paper is organized as follows. In section 2, we discuss the major theoretical underpinnings of the study of local IT start-ups in developing countries. In section 3, we explain and justify the case study methodology chosen for the study. In section 4, we present and analyze the case data. In section 5, we draw a set of lessons learned from the case study analysis, and propose a framework for IT startup behavior in developing countries. Finally, in section 6, we conclude with a set of implications for theory and practice and recommendations for future research.

2. Theoretical Review: Factors Affecting Entrepreneurial Strategies in Developing Countries

Entrepreneurial strategies involve decision regarding start-up motivation, planning and establishment, acquisition of resources, and products and market choices (Greve and Salaff, 2003; Park and Bae, 2004). Entrepreneurial strategies for establishment, survival and growth of local start-ups in developing countries have been little studied in the academic literature (Meyer and Peng, 2005; Park and Bae, 2004). Meyer and Peng (2005) propose that two factors affect new firm creation, survival and growth: resources and institutions. In a related paper, Peng et al. (2008) suggest that a firm's strategy and subsequent performance in emerging economies are affected by another major factor: the competitive environment in the firm's industry. We discuss the theoretical underpinnings for these three major, inter-related factors below.

2.1. The Impact of Resources on Entrepreneurial Strategies

Resources are essential in supporting a start-up's performance and creating enterprise-wide capabilities for sustainable competitive advantage (Lee et al., 2001; McDonald, 2007). Entrepreneurial strategies focus on acquiring and building two main types of resources: internal capabilities and external networks. Internal capabilities can positively affect start-up performance (Lee et al., 2001). They include the entrepreneurial orientation, skills and resourcefulness of the entrepreneurs themselves, as well as complementary financial resources, technological capabilities, and human capital (Lee et al., 2001; Meyer and Peng, 2005). External networks can help start-ups complement their internal resources with social capital from personal and business external networks (Greve and Salaff, 2003; Lee et al., 2001; Packalen, 2007). External networks include the personal social networks of the entrepreneurs' themselves, which are a rich source of advice especially in the initial stages of start-up formation (Greve and Salaff, 2003; Packalen, 2007). External networks can also include business partners (such as other firms providing complementary products and services, venture capital organizations providing funding and management knowledge, or universities and research institutions providing technological knowledge) and sponsors (such as banks providing capital and government agencies creating and promoting a start-up-friendly business environment) (Lee et al., 2001). In turn, internal and external resources, such as technology capabilities, access to R&D knowledge, and technological

partnerships, determine the type of entrepreneurship strategy adopted by technology start-ups in developing countries (Park and Bae, 2004).

How entrepreneurs in developing countries accumulate and exploit such resources is still an open research question. Indeed, while such resources are generally widely available to firms in developed countries, they have to be adapted or developed from scratch in developing countries (Meyer and Peng, 2005). Researchers agree developing countries present significant challenges for companies: less financial resources (as measured by GDP), a less developed or sometimes even inexistent technical infrastructure, lower education levels, and a less developed political and regulatory environment. However, even if developing countries have lower levels of information and communication technology penetration than developed countries, they are adopting new technologies such as PCs, mainframes and the Internet at higher rates than developed countries (Dewan et al., 2005; Dewan and Kraemer, 2000; Dewan and Riggings, 2005; Gibbs and Kraemer, 2004; Zhu et al., 2004). This can result in a more widespread availability of basic technology infrastructure, and the consequent development of the local IT industry (Tan and Leewongcharoen, 2005). In addition, local start-ups may also benefit from lower wages for highly skilled labor (Hobday, 2005) – although competition for such resources in a growing, albeit still developing, economy is likely to create additional constraints.

2.2. The Impact of Institutions on Entrepreneurial Strategies

Institutions, both formal (rules, regulations, and markets) and informal (norms and culture) are important for entrepreneurial activity (Meyer and Peng, 2005; Peng et al., 2008; Wennekers and Thurik, 1999). In particular, institutions, both formal and informal, are extremely important for facilitating and protecting IT investments in developing countries (Walsham and Sahay, 2006). However, these institutions, or the lack thereof, may constrain entrepreneurial strategies of start-ups in developing economies (Meyer and Peng, 2005; Peng et al., 2008).

Formal institutions that support entrepreneurial strategies include rules and regulations for conducting business, competing, and accessing capital (Meyer and Peng, 2005; Peng et al., 2008; Wennekers and Thurik, 1999). However, formal institution in developing countries may not facilitate the access to capital IT start-ups need (Arora and Gambardella, 2005). The lack (or sometimes underdevelopment) of formal market institutions in emerging economies, together

with cumbersome regulations these economies usually experience, result in start-up set-up times that are much longer (up to 10-30 times longer) than those in developed countries such as the U.S. (Meyer and Peng, 2005; Peng et al., 2008). Creating an environment that promotes entrepreneurship is a difficult undertaking, and the few governments that have achieved it are described as having “taken pains to generate a richer and more nurturing environment conducive to birth and survival of technology-based ventures.” (Lee et al., 2001). Instead, increased corruption and government favoritism towards incumbents are widespread characteristics of developing economies (Meyer and Peng, 2005; Peng et al., 2008). This creates fewer incentives for entrepreneurial activity (Wennekers and Thurik, 1999).

When formal institutions are lacking, as it is usually the case in developing countries, entrepreneurs have to rely more on informal institutions (Meyer and Peng, 2005; Walsham and Sahay, 2006). Such informal institutions may include personal social networks for accessing capital and other resources (and their associate norms) (Meyer and Peng, 2005; Walsham and Sahay, 2006) as well as business norms, business culture, and national culture, which may affect the extent to which entrepreneurs are open-minded and innovative and take risks (Meyer and Peng, 2005; Peng et al., 2008; Wennekers and Thurik, 1999). Emerging economies may have less developed informal institutions that support entrepreneurship. For example, their business culture may not encourage or reward risk-taking (Arora and Gambardella, 2005), which is necessary for a strong entrepreneurial orientation and start-up performance (Lee et al., 2001).

2.3. The Impact of the Competitive Environment on Entrepreneurial Strategies

The local industry structure and competition may affect entrepreneurial activity in developing countries (Peng et al., 2008) and shape entrepreneurs’ strategies (Park and Bae, 2004). With respect to IT entrepreneurship, the IT industry can be defined as consisting of upstream players (hardware companies), middle players (telecommunication companies and software producers), and downstream players (service providers) (Tan and Leewongcharoen, 2005). In the U.S. and much of the developed world, the IT industry is vertically specialized, resulting in different steps of the value chain (such as development, production, marketing, and support) being supported by different, specialized companies rather than vertically integrated ones (Macher and Mowery, 2004). Thus, firms producing hardware, general-purpose software, and specialized software co-exist and cooperate with system integrators that manage the complex implementation of the

diverse software and hardware components, and with other training, consulting, and support service providers that ensure the delivery of complete solutions for customers. However, such vertical specialization may not exist in developing countries, whose IT industries are generally in early stages of development (Tan and Leewongcharoen, 2005) and may lack many of the supporting structure western software companies take for granted.

The success of local IT start-ups in a developing country is likely to be dependent on the success of the IT industry in that country, and on the success of related industries such as telecom (Arora and Gambardella, 2005). Researchers have proposed that the IT industry success in developing economies is affected by different success factors than those required in the developed world (Tan and Leewongcharoe, 2005). A model developed by Tan and Leewongcharoen (2005) propose that long-term IT success is influenced by the country's size, economic development, and political stability, a relationship mediated by exogenous factors such as geography and endogenous, controllable factors such as infrastructure, government policy, human resources, and level of IT use. In the short-term, these factors also affect the foreign direct investment level in IT, which in turn influences the IT industry success as well. While this model, tested in the context of the IT industry in Thailand, shows for the first time how developing countries can improve their IT industry, it leaves open the question of how individual IT firms in developing countries can be successful.

3. Methodology: Revelatory Case Study

The methodology of this study is a revelatory case analysis (Yin, 1994) of a local IT start-up offering CRM services in a CEE country, Romania. The case study site was selected based on an extensive search process that was part of a larger project of business success and failure in developing countries. The single case design is appropriate for describing a new or previously inaccessible phenomenon – as it is the case with IT software development in the emerging markets of CEE. Indeed, entrepreneurship in CEE is a new, little studied phenomenon (Meyer and Peng, 2005). The case study methodology was selected because it can answer interesting, less studied, “how” questions about the use of IT (Walsham and Sahay, 2006) and the establishment of local start-ups (Peng et al., 2008) in developing countries.

This research continues the tradition of in-depth case studies analysis of IT in developing countries, while providing a much-needed cross-cultural perspective (Walsham and Sahay,

2006). Such a cross-cultural view is possible because the study's authors have lived and worked both in the U.S. culture and the culture of the country under study (Romania), were closely familiar with the economic, social and political dynamics of the studied country, and were able to gather data in the local language and to interpret local nuances that may be lost in translation.

Data collection was conducted using the principles of triangulation for ensuring validity (Yin, 1994). Two researchers conducted semi-structured interviews independently, during two separate day-long visits at the company headquarters in Romania, followed by phone and email interaction with the company founder. Secondary data was collected from the company's website, promotional materials, and a database search of local business publications through ISI Emerging Markets, an electronic business information provider focused on emerging economies. The interview notes were transcribed and combined with the secondary data in a case database. Information from the case database was then analyzed individually and jointly by the two authors and compared with the theoretical insights derived from an extensive literature review of entrepreneurship and IT in developing countries. This process was iterative in nature, and continued until no new insights could be derived from the data (Eisenhardt, 1989).

4. Data Analysis: The Evolution of an IT Start-up in a Developing Country

4.1. The Company and Its Environment

CRMSoft (a pseudonym) was started in 2002 in Bucharest, the capital of Romania, which is one of the largest CEE countries. The company was founded by two Romanian entrepreneurs who met while they were both working in upper management positions in the local subsidiary of a multinational company. Fueled by the founders' own experience with broken customer relationship processes, CRMSoft was set up to deliver a better way for local companies to manage their customer relationships. The company launched its first CRM product in 2003. By 2006, the company was reporting revenues slightly over 300,000 Euros (360,000 USD).

CRMSoft was established during a transition period, while the country's economy was changing from a planned to a market-based system, thus resulting in a lack of strong, formal institutions. The transition from state-owned to privately-owned enterprises was, as in many other Central and Eastern European countries, lengthy and fraught with government inexperience and errors. In addition, financial intermediaries such as banks for access to capital, incentives such as tax

advantages, and a supporting business culture were little, if at all, developed (World Bank, 2005). The formal institutional environment with respect to local start-ups can be characterized as benign neglect at best. Apart from tax advantages provided from time to time, there was little support for entrepreneurial activity during that time.

At the time of CRMSoft's launch, the IT industry was in its early stages of rapid growth. In 2003, the year CRMSoft launched its first application, the Romanian software and IT services companies reported revenues of 767 millions of US dollars. By 2004, the industry revenues increased to 1.086 billion USD, and profits reached 150 million USD. The number of firms in the industry was experiencing similar growth, from 8,438 in 2003 to 10,568 in 2004. In terms of human resources, the industry reported 25,313 employees in 2003 and 32,274 employees in 2004. It is interesting to note, however, that despite the large number of firms, the software and IT services industry was highly concentrated, with the top 100 companies generating over 50% of the industry revenue. In addition, the group of the top 10 companies, generating over 27% of industry revenues, was composed mainly of subsidiaries or implementation partners of some of the largest IT companies from developed economies, such as IBM, Microsoft, Oracle, and Siemens. Most of the industry's 2003 and 2004 growth was being generated by increased foreign direct investments and acquisition activities by multinational companies.

4.2. Product Evolution

CRMSoft started as combination of consulting and outsourcing services, a sure way to maintain cash-flow while scouting for a product idea. Microsoft .NET and Linux competencies developed around software development and integration. CRM's initial projects were modular software development for few western clients. These projects exposed the founders to mature software markets and their underlying technologies. Meanwhile, CRMSoft started offering their services to Romanian clients, which were mostly web-server and mail-server deployment and integration.

By mid-2003, considering the competencies of CRMSoft, a well-defined need of the Romanian SMEs, as well as their own exposure to western IT markets, the company's founders decided to re-invest their early profits into developing a hosted CRM solution.

The Romanian SMEs at the time had a lot to do with intermediation services. They were wholesalers, and distributors situated between imported goods and Romanian retailers or

consumers. Customer relationship management was a constantly growing and evolving need that could not be adequately supported by computer spreadsheets, thus limiting the growth of the companies themselves.

“Romanian SMEs do not have real CRM solutions – they get by with what they can. [...] Any firm eventually has an inflexion point that cannot be overcome unless it makes a [CRM] investment. The firm cannot control its operations, loses money, has lower efficiency, and cannot move forward. Its competitors have already made [the CRM investment.]” (company interview)

Because of the industry’s concentration, the company decided early on to forgo competing at the very top of the market – mainly consisting of foreign multinational subsidiaries already served by Microsoft, Oracle or SAP or at the next highest level – mainly consisting of large local companies generally served by large Romanian IT providers. Instead, CRMSoft decided to develop applications for the small and medium enterprise (SME) market. The decision was a purely economic one: the large enterprise software providers priced their solutions for the high end of the market, with prices starting around 100,000 Euro. These prices were, however, beyond the reach of many local SMEs, in a country whose GDP/capita at the time (2003) was only 2,260 USD (or around 6,900 USD in purchasing power parity terms). CRMSoft targeted its products to SMEs with no dedicated IT department, which had basic IT infrastructure (Internet-connected PCs) and skills (Microsoft Office experience), for which it identified a growing need for CRM solutions.

“The CRM market is evolving and growing rapidly. The consumers become more educated and know what to ask for – this was not happening a few months ago. I would compare the evolution of the [Romanian CRM] market to that of the Internet” (company interview)

The CRM product development was facilitated by the existence of well established CRM providers in the west, whose product functionality was widely known in the marketplace and could thus provide insights into the kinds of functions a CRM system needs to provide for its clients.

Developing a competitively priced product for the Romanian SME market was facilitated by the expertise and resourcefulness of the company founders, who contributed much of the software development themselves, and by a relatively inexpensive skilled IT labor. The emergence of the ASP (Application Service Providers) (also known recently as on-demand software and SaaS, or Software as a Service), especially in the CRM arena (Barker, 2007), was also a facilitator, as the ASP solution seemed well fitted for enabling SMEs to access sophisticated software applications on a transaction basis, without having to invest in the usually very expensive supporting infrastructure, license fees, and implementation services of the traditional, internally-managed solutions. While SMEs were not able to invest in higher-end solutions, they had easy access to general-purpose technology, such as PCs and Internet connections, which was all that was required to take advantage of the CRM solution in an ASP configuration.

“Our clients do not have an infrastructure problem – especially the ones located in large cities. Businesses can obtain an Internet connection at a relatively low cost (100 euro a month), and they usually buy no-name computers that do the job pretty well. [...] Their sales agents have PDAs, and can use an Internet connection at the office, Internet cafes on the road, or company-sponsored Internet connections for their home offices to upload sales data to the CRM application” (company interview)

4.3. Founder’s Activities

The CRMSOft founders are Romanian engineers who obtained business graduate degrees at western European universities. For a brief period, while servicing the western European clients, the founders had worked mostly on writing computer code and managing projects, and only little on sales and marketing. After the successful completion of the initial projects, their activity increasingly turned to sales, marketing and business development to the point it had taken most of their time.

One of the biggest obstacles towards CRMSOft’s early development, if not the biggest, had been the lack of formal Romanian frameworks for facilitating the matching of customer needs to providers of custom-IT products and services. To overcome such obstacle, the founders had to rely on personal and professional networks. Moreover, they went as far as joining other types of social networks (interest or fraternity-based) with the idea of scouting for business prospects. In

addition, CRMSOft became a Microsoft Certified Partner in 2004 – again, with the goal of leveraging relationships to build trust and gain clients. In retrospect, the basic idea was to initially approach as large a circle of individuals as possible, keep talking about your product and service offerings while learning about their needs, reduce the number of promising prospects while increasing the frequency and quality of the interaction with the remaining prospects, until make a sale.

One of the major activities the company’s founders have been engaged in was educating prospective customers about the benefits of a CRM solution for their business. CRMSOft learned early on that their success depended on their client’s ability to grow and gain additional customers. Thus, demonstrating the value of their product was considered essential for making the sale:

“You have to gain the client’s trust, as in any business. For the ASP solution, you need to explain and demonstrate how it works. [...] To convince an SME [to buy CRMSOft’s product] we have to show them how much money they can earn from additional sales, and compare this with the cost of not doing anything. [...] We predict our client’s needs, and offer them more than they are asking for.” (company interview)

Building strong relationships with clients has served CRMSOft well through increased reputation and trust, which resulted in additional sales prospects and customer loyalty. In the words of one of the company founders, the relationship was more akin a partnership, rather than a buyer/seller relationship:

“We understand what our clients do, their business, their clients. We give them the right kinds of opportunities that are appropriate for their market. [...] Either I or my salespeople have to manage this relationship. The relationship [we build with the client] makes a difference. As a result, the clients do not leave CRMSOft to use salesforce.com – the technology is not that different, but the difference lies in the relationship.” (company interview)

These client prospecting and education activities were inherently time and resource-intensive. Obtaining the right human resources that could support such processes was key for CRMSOft’s founders. This was particularly an acute problem as the Romanian IT industry was characterized

by high employee turnover. Moreover, the IT employees, when not leaving to work in developed countries in Western Europe, the U.S.A. and Canada, preferred to work for the Romanian subsidiaries of large software multinationals. What helped CRMSOft acquire and retain high-quality human resources was the founders' experience with human resource practices of multinational companies, who in effect were "educating the Romanian market" and showcasing best practices. One of the company founders commented along these lines:

"IT employees are very difficult to find. They either do not want to or quickly decide not to work as hard as we [the company founders] would like. My experience [as country manager of the Romanian subsidiary of a multinational company] helps me understand how to manage human resources. But other [Romanian] companies do not treat their employees very well, and everybody – both the employer and the employees – loses." (company interview)

4.4. The Eureka Moment: Understanding Real Customer Requirements

After developing a general-purpose CRM system and promoting it to the founders' personal contacts, CRMSOft was able to identify their first paying customer that needed the precise combination of products and services the company offered and some more. Indeed, in addition to a hosted CRM service contracted through a service level agreement, the client needed a lot of customization and handholding along the technology decision-making process. In effect, CRMSOft ended up performing the activities of several companies at once—business consulting, IT consulting, software vendor, and independent software developer.

For example, for one of their clients, an SME focused on import and distribution activities, CRMSOft had to map existing processes, collect existing customer data, analyze the potential for additional profits from existing and new prospects, and build the business case, all prior to making the sale. Once the company became a client, CRMSOft managed the implementation and customized the CRM interface for the specific needs of the client, and then provided ongoing training and support. This level of executive management involvement, software customization, and the width of complementary service offerings made CRMSOft stand out when compared to salesforce.com or other western product or service offerings that in theory would have needed only localization to work in the Romanian market.

To enable such customer-specific personalization, the founders made the strategic bet to invest the company's resources on customizing the CRM offering to the vertical market of their initial customer. However, such customization was to take place mostly at interface level (business process encoding) and less so at core-levels of the technology. This design was chosen in the hope that CRMSoft can attract not only other customers in the same industry vertical, but customers in other vertical markets, and could easily customize the software to their needs through the interface, rather than through different software code.

5. Discussion: Lessons for IT Start-ups in Developing Countries

This case study suggests rich insights regarding how industry competition, resources and institutions both support and constrain the creation, survival, and growth of local IT start-ups in developing countries. Next, we discuss the lessons learned from the case study analysis and link back these lessons to theoretical concepts. Based on the analysis, we then propose a framework for understanding how IT entrepreneurs in developing countries can manage the interplay of institutions, resource, and industry-based factors successfully.

5.1. Institutions Lessons

Our analysis confirms that, as suggested by previous research (Meyer and Peng, 2005; Washam and Sahay, 2006), local institutions – especially informal ones, based on social networks – are paramount for ensuring startup success in developing countries. As formal mechanisms for establishing and managing business relationships are lacking in developing countries, IT start-ups have to rely on the personal social networks of their founders to support their creation and growth. As they do so, they have to navigate the informal rules in these networks that allow them to obtain resources such as knowledge, capital, and skills from their contacts. For example, they have to provide similar services to social network contacts in exchange. Similarly, having strong, trust-based, collaborative relationships with clients enables start-ups to learn about a customer's industry and exploit that knowledge with subsequent clients.

The reliance of IT start-ups on informal institutions has an interesting economic development implication. As IT start-ups exploit their networks for finding financial capital and clients, they can also contribute to the growth of these networks. As the case of CRMSoft demonstrates, adopting a strong relationship, even a partnership perspective, with clients is instrumental in

ensuring client future development and expansion. Thus, apart from being successful themselves, local startups can become an engine of growth for the economy in general.

It is important to note, however, that IT start-ups in developing countries are also subject to possible limitations stemming from other type of informal institution - the country's work culture and the informal rules governing the country's IT industry. The informal rules governing the behavior of IT start-up employees can result in lower levels of effort and higher turnover rates than those desired by the IT entrepreneurs and demanded by IT start-up growth.

5.2. Resources Lessons

Our case analysis shows resources can be a supporting, rather than a constricting factor in local start-up evolution. Far from being constrained by lack of resources, local start-ups are well positioned to exploit certain resource advantages available in developing countries, such as rapid growth in technology infrastructure and lower wages to provide lower-cost, specialized software products. Such a development is possible because, even though developing countries may have disadvantages in infrastructure which may hinder innovation, they also have lower labor cost advantages, especially for the kinds of highly-skilled, engineering human resources required for technological innovation. This, in turn, supports the development of lower-cost products, which can be sold more profitably than products developed in western economies (Hobday, 2005), and for which there is an untapped local market that cannot afford the high cost of CRM solutions developed for the western industrialized economies (Ramaseshan, 2006).

However, it is important to note that, due to industry-based factors such as vertical integration requirements, resources can become a limiting factor for start-up survival. Building capabilities for serving an entire industry vertical, rather than specializing for serving a well-defined part of the value chain, is very time and resource-intensive. The IT entrepreneurs can alleviate this problem up to a certain point through their own dedication and involvement in all aspects of the business in the beginning. However, as the business takes off, finding the appropriate human resources with the required training and work ethic necessary may become problematic, and may eventually limit, or at least slow down, start-up growth. Investing in employees may not always an option if the IT industry in developing countries is characterized by a relatively high level of

employee turnover (as it was the case in our analysis, and as we see in several widely cited developing economy examples, such as India).

5.3. Competitive Environment Lessons

Our case analysis shows an interesting implication for IT start-ups entering new markets in developing countries. Such start-ups may need to become more vertically integrated in order to ensure they can provide complete solutions in a less mature value chain structure. While this requires a higher than expected resource commitment, it also positions these start-ups well for defending their position from competitors, as they can control a larger part of the value chain efficiently. In addition, by providing a variety of services in an industry vertical where previously there were no such services, IT start-ups can contribute to industry development, above and beyond what would be possible by transferring technology from the developed world through the establishment of local subsidiaries of large multinational IT providers. The extent to which this integration is sustainable as the local IT industry evolves, and the likelihood of industry evolution towards the vertically specialized model of the western economies (Macher and Mowery, 2004), is still an open research question.

Our case analysis also confirms IT start-ups in developing countries are likely to be second-movers who benefit from the lessons of and can copy and improve on the products of first-movers in developed countries through “creative imitation” (Hobday, 2005; Pack and Bae, 2004; Suarez and Lanzolla, 2005). Indeed, Hobday’s (2005) analysis of the innovation process in developing countries recommends a focus on latecomer, smaller firms rather than on first movers. These firms will generally acquire mature technology from industrialized countries, assimilate it, and then attempt to improve it. In the context of the IT industry, this innovation process may start with firms in developing countries, especially the local subsidiaries of multinational corporations, implementing enterprise software packages such as ERP and CRM systems available from established players in the developed world, such as SAP or Oracle. As these packages are assimilated and information about their features diffuses in the local economy, local IT startups may attempt to innovate by providing their own, locally-developed enterprise software solutions. These solutions can achieve basic customer relationship management goals without requiring huge investments in state-of-the-art technology infrastructure (Ramaseshan et al., 2006). IT start-ups can further lower the cost of their products

by focusing on developing ASP solutions, which eliminate the burden of investing in expensive infrastructure for their potential clients (Seltsikas and Brown, 2006). ASP (SaaS) models are especially appropriate for firms in developing countries because they require little, if any, upfront investment, and provide a scalable solution as the company grows.

In particular, this analysis provides implications for CRM software start-ups in developing countries. Global CRM trends indicate emerging economies have been experiencing significant growth in CRM penetration, and this growth is likely to continue at an exponential pace in the next five years (Barker, 2007; Gartner, 2008). Interestingly, because these economies present lower profit opportunities and larger tax burdens, it is predicted many established CRM vendors will keep focusing on developed countries (Gartner, 2008). Thus, instead of facing tough competition from large global competitors, local IT start-ups in developing countries such as the company we have studied in this paper seem well positioned to continue growing and establish themselves as important local market players. And because much of the growth in CRM software is predicted to come from ASP / on-demand / SaaS models (Barker, 2007), local IT start-ups in developing countries whose software is built on the ASP model have a shot at becoming regional or even global players in the CRM market. It is likely that as the industry matures, IT start-ups in developing countries will actively have to pursue clear integration initiatives with other enterprise software providers operating in their market and achieve complete industry solutions through mergers and acquisitions of other small software providers.

5.4. An IT Start-up Framework: Managing the Relationship and Product Spirals

How do start-ups evolve in developing countries given that the particular structure of institutions, resources, and industry in their environment can both contribute to but also limit their growth? Our case study offers an interesting management strategy for developing business along two distinct dimensions: a relationship spiral and a product spiral.

First, our case suggests the activities of the IT entrepreneurs can be described as climbing a *relationships spiral*: casting a wide net for gathering business prospects and narrowing it down successively to the most qualified candidates. This implies leveraging the entrepreneurs' social and professional networks for acquiring a large circle of business prospects, educating them on the benefits of the product, and continually reducing the larger social circle into smaller and

smaller business and professional circles with the goal of achieving sales. The social network offers not only access, but also credibility for the initial prospecting stages. Obviously, the degree of involvement with each business prospect increases as the set of prospects decrease in size. The need for socially-constructed credibility and increasing involvement makes this strategy appropriate for personal social networks, but not for larger groups of individuals selected at random. After a successful relationship spiral is built around a client, it can generate new contacts that enhance the size and variety of the IT entrepreneurs' social network and support the creation of new relationship spirals for acquiring additional clients.

Second, our case suggests IT start-ups also have to develop IT product functionality and deliver supporting IT services for their clients in a *product spiral*: developing a general-purpose, industry-independent product that can be customized to a specific client industry. This implies starting with a broad set of general-purpose functionality, usually build based on best practice examples available from similar companies operating in developing countries, and narrowing it down successively based on particular local client needs, while providing vertically integrated consulting and support services to complement the IT product offering. As clients needs change – for example, as the IT start-up targets clients in a different industry – a new product customization spiral has to be started for that specific industry's functionality. However, the IT entrepreneurs can leverage past consulting and implementation lessons from previous clients, making the development of the new product spiral easier.

Our case analysis suggests that the right management of the relationship and product spirals can lead the IT start-up towards increasingly personalized relationships and customization of their product, respectively. This, in turn, can create increased levels of trust and mutual commitments between the start-up and its clients. As a result, the IT start-up benefits through increased loyalty from existing clients and recommendations for new clients. In addition, the high levels of personalization and customization also benefit the IT start-up clients. By focusing on educating clients and demonstrating the business value of its products, the IT start-up creates opportunities for growth for its clients as well. This, in turn, could positively affect economic development at the developing country level.

It is important to note though that maintaining the relationships and product spirals requires very high levels of entrepreneurs' resourcefulness, energy and commitment. As the IT start-up grows

and its client base and product offering increase, additional human resources are needed to sustain the same high level of personalization along the relationship spiral and customization along the product spiral. However, as our case suggests, the IT entrepreneurs' energy and commitment to the IT start-up's activities sometimes cannot be matched by those of the company employees. Thus, the particular characteristics of acquiring, training and retaining human resources in the developing country the IT start-up operates in can become a limiting factor in IT start-up growth.

6. Conclusions

This study contributes to research and practice by providing rich insights into the little-studied questions about the creation, survival and growth strategies of locally-based IT start-ups in developing countries. For international business and IT research, this study shows that the institutional, resource and industry environment of developing countries presents not only challenges, but also opportunities. Previous research has shown successful IT start-ups benefit from the presence of well-established institutions, internal and external resources, and a favorable competitive environment that provides complements for the start-up's products and services (Arora and Gambardella, 2005; Lee et al., 2001; Peng et al., 2008). This study provides additional, much-needed insights into how local IT start-ups in developing countries are established in the absence of such institutions, resources, and competitive environment. The analysis presented in this paper suggests successful IT start-ups can overcome the lack of formal institutions by creating a relationship spiral around potential clients built on the IT entrepreneurs' informal networks, which are narrowed down through intensive personalized contacts and continuous education regarding the benefits of the IT product. The analysis also suggests that IT start-ups in developing countries can overcome the industry constraints in these countries – the lack of supporting products and services – by managing a product spiral to offer highly customized, vertically integrated products and services to potential clients. For international development research, this study suggests the activities of IT entrepreneurs in developing countries can contribute to economic growth not just through the creation of the local IT start-ups themselves, but also through the creation of new business opportunities for their clients. For practice, this analysis provides management lessons IT entrepreneurs in emerging economies can follow to ensure the success of their companies in the absence of needed resources,

institutions, and industry support structures. In addition, for policy makers, this study suggests that entrepreneurial activity can be a useful engine for development that should be encouraged and supported. Government actions can include developing formal institutions that support access to capital and knowledge and a legal and regulatory environment easy to navigate. Developing human capital resources through technical education programs is also important, as is creating employment incentives that make it attractive for highly skilled labor to remain in the country rather than migrating to higher-wage developed countries. Last, but not least, policy makers can encourage experienced IT professionals working in developed economies to return and use their skills and knowledge to shape the institutions and IT industry in their native developing countries.

Future research can analyze how IT start-ups can formally institutionalize best practices from their relationship and product management strategies so that their business can scale. Future studies could also examine how improvements in the IT startup's business environment, such as improvements in a developing country's formal institutions or IT industry, both as a result of natural country evolution or of purposeful policy intervention – affect the establishment of local IT start-ups and the country's overall economic development.

7. References

- Arora, A., and Gambardella, A. (2005) "The Globalization of the Software Industry: Perspectives and Opportunities for Developed and Developing Countries," in Jaffe, A. B., Lerner, J., and Stern, S., *Innovation Policy and the Economy*, Volume 5.
- Barker, C. (2007) "Gartner Sees Steady CRM Growth," ZDNet.co.uk, available at <http://news.zdnet.co.uk/software/0,1000000121,39289177,00.htm> (Accessed November 11, 2008).
- Dewan, S., D. Ganley, and K. L. Kraemer (2005) "Across the Digital Divide: A Cross-Country Analysis of the Determinants of IT Penetration," *Journal of the Association for Information Systems*, 6, 12, pp. 409-432.
- Dewan, S. and K. L. Kraemer (2000) "Information Technology and Productivity: Evidence from Country-Level Data," *Management Science*, 46, 4, pp. 548.

- Dewan, S. and F. J. Riggins (2005) "The Digital Divide: Current and Future Research Directions," *Journal of the Association for Information Systems*, 6, 12, pp. 298-336.
- Eisenhardt, K. (1989), "Building theories from case study research", *Academy of Management Review*, 14, 4, pp. 532-50.
- Gartner, Inc. (2008) "Gartner Says Worldwide CRM Software Market to Grow 14 Percent in 2008," available at <http://www.gartner.com/it/page.jsp?id=653307> (Accessed November 11, 2008).
- Gibbs, J. L. and K. L. Kraemer (2004) "A Cross-Country Investigation of the Determinants of Scope of E-commerce Use: An Institutional Approach," *Electronic Markets*, 14, 2, pp. 124.
- Greve, A., and Salaff, J. W. (2003) "Social Networks and entrepreneurship," *Entrepreneurship: Theory and Practice*, pp. 1-22.
- Hobday, M. (2005) "Firm-level Innovation Models: Perspectives on Research in Developed and Developing Countries," *Technology Analysis & Strategic Management*, 17, 2, pp. 121 – 146.
- Lee, C., Lee, K., and Pennings, J. M. (2001) "Internal Capabilities, External Networks, and Performance: A Study on Technology-Based Ventures," *Strategic Management Journal*, 22, pp. 615-640.
- Macher, J. T., and Mowery, D. (2004) "Vertical Specialization and Industry Structure in High Technology Industries," *Advances in Strategic Management*, 21, pp. 317–356.
- McDonald, M. P. (2007) "The enterprise Capability Organization: A Future for IT," *MIS Quarterly Executive*, 6, 3, pp. 179-192.
- Meyer, K. E., and Peng, M. W. (2005) "Probing Theoretically into Central and Eastern Europe: Transactions, Resources, and Institutions," *Journal of International Business Studies*, 36, pp. 600 – 621.
- Packalen, K. A. (2007) "Complementing Capital: the Role of Status, Demographic Features, and Social Capital in founding Team's Abilities to Obtain Resources," *Entrepreneurship: Theory and Practice*, pp. 873-891.

Park, S., and Bae, Z. (2004) “New Venture Strategies in a Developing Country: Identifying a Typology and Examining Growth Patterns through Case Studies,” *Journal of Business Venturing*, 19, pp. 81-105.

Peng, M. W., Wang, D., and Jiang, Y. (2008) “An institution-based view of international business strategy: A focus on emerging economies,” *Journal of International Business Studies*, 39, pp. 920 – 936.

Ramaseshan, B., Bejou, D., Jain, S. C., Mason, C., and Pancras, J. (2006) “Issues and Perspectives in Global Customer Relationship Management,” *Journal of Service Research*, 9, 2, pp. 195-207.

Seltsikas, P., and Brown, L. K. (2006) “Application Service Provision (ASP) for e-business transformation by SMEs,” *International Journal of Information Technology and Management*, 5, 4, pp 308-320.

Suarez F., and Lanzolla, G. (2005) “The half-truth of first-mover advantage,” *Harvard Business Review*, 83, 4, pp. 121- 127, 134.

Tan, F. B., and Leewongcharoen, K. (2005) “Factors Contributing to IT Industry Success in Developing Countries: The Case of Thailand,” *Information Technology for Development*, 11, 2, pp. 161–194.

Walsham, G., and Sahay, S. (2006) “Research on information systems in developing countries: Current landscape and future prospects ,” *Information Technology for Development*, 12, 1, pp. 7-24.

Wennekers, S., and Thurik, R. (1999) “Linking entrepreneurship and Economic Growth,” *Small Business Economics*, 13, pp. 27-55.

World Bank (2005) “Economic Growth in the 1990s: Learning from a Decade of Reform.”

Yin, R. K. *Case Study Research – 2nd Edition*. Sage Publications, Beverly Hills, CA, 1994.

Zhu, K., K. L. Kraemer, S. Xu, and J. Dedrick (2004) "Information Technology Payoff in E-Business Environments: An International Perspective on Value Creation of E-Business in the Financial Services Industry," *Journal of Management Information Systems*, 21, 1, pp. 17.

Acknowledgements

The authors would like to thank Mr. M. Panait, founder of CRMSOft, for facilitating the data collection for this study.