HOW KEY PARTNERS SHAPE THE EXTENT OF INTERNATIONALIZATION OF YOUNG, TECHNOLOGY-BASED FIRMS

Johan Bruneel
Ghent University, johan.bruneel@ugent.be

Helena Yli-Renko
University of Southern California

Bart Clarysse
Ghent University

Recommended Citation
Available at: http://digitalknowledge.babson.edu/fer/vol26/iss22/1
HOW KEY PARTNERS SHAPE THE EXTENT OF INTERNATIONALIZATION OF YOUNG, TECHNOLOGY-BASED FIRMS

Johan Bruneel, Ghent University and Vlerick Leuven Gent Management School
Helena Yli-Renko, University of Southern California
Bart Claysse, Ghent University and Vlerick Leuven Gent Management School

ABSTRACT

In this paper, we use an organizational learning perspective to examine the extent of internationalization of young, technology-based firms. We develop hypotheses on the impact of the firm’s knowledge-base at founding, experiential learning, and interorganizational learning on internationalization, and use data on 114 young, technology-based firms in Flanders to test our hypotheses. The results show that both experiential learning and interorganizational learning have a significant, positive impact on the extent of internationalization. Further, by examining the interaction of these two types of learning, we find that learning from key partners may substitute for experiential learning; i.e., young, technology-based firms benefit more from interorganizational learning when their level of experiential learning is low. These results highlight the important role that key partners play in shaping the internationalization of young, technology-based firms and contribute to theory development in the fields of internationalization and organizational learning.

INTRODUCTION

As firms expand into foreign markets, they face considerable difficulties and costs arising from liabilities of foreignness (Hymer, 1976): explicit or implicit laws and customs that give local firms an advantage, higher coordination and transportation costs that the foreign firm has to bear, exchange rate risk, and a lack of familiarity with local networks and information sources (Zaheer, 1995). At the root of these liabilities of foreignness lies the firm’s lack of foreign market knowledge and lack of internationalization capabilities.

The existing theories of internationalization have each discussed how firms can accumulate the foreign market knowledge and develop the capabilities they need for successful internationalization. The internationalization process theory argues that firms accumulate foreign market knowledge as they gradually expand their international activities (Johanson & Vahlne, 1977, 1990). The international new venture theory posits that early internationalization is driven by the founders’ foreign market knowledge acquired during previous work experiences, and that rapid learning then shapes the structures and routines of the firm to support further internationalization (Oviatt & McDougall, 1994; McDougall, Shane, & Oviatt, 1994). Even though these perspectives differ somewhat in that the internationalization process theory emphasizes gradual accumulation of knowledge and the new venture internationalization theory proposes an early, rapid pattern of learning, both of these theories fundamentally focus on learning through experience.

To complement these experiential learning perspectives, some researchers have recently begun to focus on the network resources of the firm, arguing that firms can learn, not only from their own experiences, but also from their exchange partners, in order to gain the knowledge and skills necessary for internationalization (Chetty & Blankenburg Holm, 2000; Yli-Renko, Autio, & Tontti, 2002). In a recent review paper, McDougall and Oviatt (2006) point out that there is a rich opportunity to use organizational learning theory to study international expansion, alliances, and networks.

In this paper, we develop and test an organizational learning model of internationalization that incorporates interorganizational learning as well as experiential learning and the founders’ knowledge...
base. In so doing, we make two unique contributions to the literature. First, while previous studies have separately looked at how the founding team (e.g. Reuber and Fischer, 1997), the firm’s experience (e.g. Erramilli, 1991), or relationships with other organizations (e.g. Chetty & Blankenburg Holm, 2000) impact internationalization, few attempts have been made to develop an integrative framework. We draw on organizational learning theory to integrate and link these separate perspectives, thereby contributing to the development of internationalization theory. Second, extant studies on interorganizational learning have typically considered this learning mechanism in isolation, raising the question: what is the interrelationship between experiential and interorganizational learning? In this paper, we propose that interorganizational learning can substitute for experiential learning and consequently speed up the internationalization process for firms that lack experience. We thus contribute to the organizational learning literature by explicating the relationship between the two different types of learning.

THEORETICAL FRAMEWORK AND HYPOTHESES

The Knowledge Base at Founding

An organization’s development and success are greatly influenced by its founders (Stinchcombe, 1965; Eisenhardt & Schoenhoven, 1989). An organization starts with a certain amount of knowledge which is embedded in its creators (Huber, 1991); this knowledge stock is formed by the know-how and information the founders have gained over time (Nonaka, 1994). As individuals engage in problem-solving, they gradually progress to more efficient strategies as they become more familiar with the problem domain. Anzai and Simon (1979) defined this process as learning-by-doing and found that the ability to form more effective strategies depends on the amount of previous experience one has with addressing the problem. Numerous studies have since confirmed the finding that individuals are able to perform a certain task faster and with less errors the more experienced they are with the task (see Argote, 1999, for a review).

As individuals gain experience, reflect on that experience, and transform these reflections into abstract concepts and generalizations, they are then able to formulate new approaches and ideas. These new strategies are, in turn, tested in new situations which lead to new experiences (Kolb, 1984). The experience of actions and their outcomes are retained in the memory of individuals; these mental models are deeply held interpretations of experiences and have a powerful influence on how individuals act in the future (Kim, 1993).

The international new venture theory indirectly uses this individual learning approach. The theory emphasizes the importance of the decision maker in the initiation of the internationalization process by entrepreneurial ventures, arguing that internationally experienced people fuel the emergence of new ventures which compete on the international scene from an early stage (Oviatt & McDougall, 1994).

Through working in an international environment, an individual acquires information on foreign markets and develops the ability to form and execute internationalization strategies. Founders with international experience will therefore be more alert to opportunities in foreign markets. As previous experience reduces the perceived risks associated with a task, internationally experienced entrepreneurs are more likely to pursue an internationalization strategy. Internationally inexperienced teams, on the other hand, will be more reluctant to start international activities given the high level of uncertainty and risk associated with this expansion strategy (Reuber & Fischer, 1997). Also, the more international experience the founders have, the better their capabilities to execute internationalization strategies rapidly and successfully should be (Westhead, Wright, and Ucbazaran, 2001).

Hypothesis 1. The international knowledge base of the founding team at start-up is positively related to the extent of internationalization of a young, technology-based firm.

Experiential Learning
Once founded, organizations start activities, learn from their experience, and improve the performance of tasks over repetition. This thesis that firms learn from direct experience originated in production studies, as researchers observed that direct labor costs declined with increasing cumulative output (Argote, 1999). Experiential learning involves the changing of behavior to enhance performance. An organization’s behavior and actions are based on a set of routines (Cyert & March, 1963). These routines include forms, rules, procedures, and strategies around which organizations are constructed and through which they operate (Levitt and March, 1988). The basis for the routines is the organization’s past behavior. Managers evaluate and make sense of the effects and organizational outcomes of past actions, and draw conclusions which result in reshaping the managers’ cognitions (Rajagopalan & Spreitzer, 1997). As a result, the managers will make decisions based on these experiential lessons, thereby changing the behavior of the company. This phenomenon is referred to as the learning curve, progress curve, or learning-by-doing, and shows that organizations develop and improve skills and capabilities to perform a certain task as experience is accumulated.

Experiential learning is the cornerstone of the internationalization process theory or stage model (Johanson & Vahlne, 1977). This theory considers the international growth of companies to be a gradual process. The central argument is that a lack of knowledge about foreign markets and operations is an important obstacle to the development of international operations. Companies can overcome this knowledge gap mainly by operating abroad. If a company has no knowledge about operating abroad, it perceives internationalization as risky. Consequently, the company will commit little resources to this growth option which results in starting with a low level of international activities, i.e., direct exports. Through direct exports, the company starts to learn about foreign markets and also how to set up international activities. As a result, the perceived risks related to internationalization decrease and the company responds by committing more resources to further internationalization. This learning process ultimately leads to the establishment of a subsidiary abroad, the highest level international activity. In other words, by taking incremental steps, the firm gradually accumulates foreign market knowledge, decreasing the perceived risks and uncertainties of internationalization, and will consequently expand its international activities.

Experiential learning in internationalization goes beyond the accumulation of foreign market knowledge. As a firm conducts international activities, it also changes its structures and routines to support further internationalization, i.e., it develops internationalization capabilities (Tallman and Fladmoe-Lindquist, 2002). The firm learns to deploy its resources and organizational processes to better implement international market entry actions and coordinate cross-border business activities, resulting in a higher extent of internationalization.

Hypothesis 2. The experiential learning through international activities is positively related to the extent of internationalization of a young, technology-based firm.

Interorganizational Learning

In addition to learning from their own experiences, organizations also learn from other organizations (Levitt & March, 1988; Huber 1991). Each organization possesses a stock of proprietary knowledge which is accumulated through experiential learning. Studies show that organizations share this knowledge when they interact with other organizations. This implies that organizations have access to external knowledge through their interorganizational relationships. A company can tap into the knowledge base of its partners thereby expanding its own stock of knowledge. Yli-Renko, Autio and Sapienza (2001) showed that young, technology-based firms acquired knowledge from their key customers and thereby improved their new product development, technological distinctiveness, and sales cost efficiency.

Several studies show that a limited stock of internal resources and foreign market knowledge reduces the possibility of the firm to grow through internationalization (Welch & Luostarinen, 1988; Carrier, 1999). A firm will seek knowledge it lacks but which is vital for the fulfillment of its objectives (Kogut,
Therefore, young, technology-based firms will seek to acquire foreign market knowledge through other organizations and employ this new knowledge, thereby speeding up the internationalization process.

When firms engage in relationships with other organizations, they also acquire new skills and capabilities. Kale, Singh, and Perlmutter (2000) found that organizations internalize difficult-to-codify competencies through interorganizational relationships. This indicates that interorganizational learning also provides an avenue to imitate and adopt the competencies of other organizations. This, in turn, leads to the enhancement of the firm’s existing capabilities and skills and the possibility to create next-generation competencies (Hamel, 1991).

Through interaction with other organizations, a young, technology-based firm can acquire international market knowledge and internationalization capabilities. Exchanging information with, working on joint projects, or just observing the activities of its customers, suppliers, commercialization/technology partners, or investors will result in important learning for the young firm. Such learning requires a high level of social interaction between the young firm and the partner, and therefore is concentrated in the key relationships of the young firm, i.e., the most important customers, suppliers, commercialization/technology partners, and investors (Yli-Renko et al., 2001).

The young firm’s key customers, suppliers, and commercialization/technology partners are typically larger, more established firms active in multiple markets; they therefore represent an important source of international market knowledge. Through interaction with its exchange partners, the young, technology-based firm can acquire information about customer needs and market trends which enables the firm to improve and enhance its products for foreign markets. The firm will be better able to select the highest-potential foreign markets, as well as anticipate and prepare for the conditions in those markets. In addition to serving as a source of market knowledge, the exchange partners can also help the young firm develop foreign entry capabilities. The partners, as established organizations, will have processes and procedures in place for managing exchange relationships and conducting cross-border activities. Through observation and emulation, a young firm that establishes a relationship with such a partner will develop corresponding routines and processes. In other words, the firm can learn from the key partners’ experiences with internationalization.

In addition to its business partners, young, technology-based firms can also learn from their investors. One of the most important roles of venture capitalists is assisting the portfolio companies in defining and shaping their strategies (Sapienza, 1992). Through their experience with the internationalization process of other portfolio companies, investors learn the do’s and don’ts of internationalization. As a result, they can provide the young, technology-based firm with valuable information on how to implement its internationalization strategy. In addition, investors are renowned for their networking activities (Frederiksen et al., 1990); through their networks, investors can mobilize additional knowledge and information about international markets which would otherwise be beyond the firm’s reach.

**Hypothesis 3. Interorganizational learning from key partners is positively related to the extent of internationalization of a young, technology-based firm.**

**Interaction of Experiential and Interorganizational Learning**

Through interorganizational learning, firms expand their knowledge base and internalize competencies and abilities of other organizations. Although much of the literature on interorganizational learning suggests that such learning will benefit all firms, it is likely that the impact of interorganizational learning for more experienced firms will differ from the impact for less experienced firms. Through the firm’s international activities, the former generally has already accumulated knowledge about how to do business abroad and developed skills to further pursue international expansion. As a result, firms with experience in the international arena may have less need to acquire other organizations’ international knowledge and skills. Since less experienced firms, on the other hand, lack the necessary knowledge and
skills to internationalize, it is therefore likely that these firms will gain more from learning through partners.

Also, as a firm gains experience in the international arena, the learning that is required to improve its performance is likely to become increasingly specific. That is, rather than seeking general information on markets or basic skills to conduct international activities, the firm’s knowledge needs will be highly targeted to its specific foreign markets, processes, and products. As the nature of learning changes from broad and general exploratory learning to increasingly deep and specialized exploitative learning (March, 1991), the usefulness of other organizations as learning sources is likely to decrease. Consequently, we predict that the impact of interorganizational learning will be lower for more experienced firms.

**Hypothesis 4.** Interorganizational learning from key partners may substitute for experiential learning in the sense that the lower a young, technology-based firm’s level of international experience, the greater will be the positive relationship between interorganizational learning and the extent of internationalization.

**DATA AND METHODS**

To test the hypotheses, we use a sample of young, technology-based firms in Flanders. By only focusing on one region, the non-measured variance among firms resulting from environmental conditions is reduced (Deeds, DeCarolis, and Coombs, 1999). Flanders is a small, export-intensive economy located in the Northern part of Belgium considered to be an emerging high-tech region (Cantwell & Iammarino, 2001). We define young, technology-based firms as ventures less than 12 years old which have their own R&D activities, and develop and commercialize new products or services based upon a proprietary technology or skill.

To identify the sample, four different databases on firms in Flanders were used: (1) a database of all firms founded between 1991 and 2002 in high-tech and medium-tech sectors, (2) a database of spin-offs from the different Flemish universities and research institutes, (3) a database of all firms that received government R&D subsidies, and (4) a database of companies in the portfolios of venture capital investors. Of the 1003 firms initially identified, 247 met the definition of young, technology-based firm, based on telephone screening. Of these firms, 210 were interviewed in the first round of data collection in 2002-2003 for a study by Heirman and Claysse (2005). The data for the present study were collected in follow-up face-to-face interviews with the founder/senior management of the firms in 2005. By then, 22 of the original firms had gone bankrupt and six had been acquired. Of the 182 independent firms, 114 were interviewed, yielding a response rate of 63%. Responding firms were not significantly different in size (measured as number of employees) or age from non-respondents, as indicated by Kolgomorov-Smirnov two-sample tests.

The size of the sample firms ranged from 0 to 299 employees at the end of 2004, with a mean of 15.7 and a median of seven. The majority of the companies (80%) had international activities. The median firm had 3 years of international experience, while its founding team had 2 years of international working experience before founding the company. The median firm generated 40% of it total sales abroad in 2004. Whenever possible, multiple measurement items based on previous studies were used for each of the theoretical constructs. Statement-style items were measured on a Likert-scale from 1 = do not agree to 7 = completely agree. Confirmatory factor analysis was used to establish that only one factor is needed to represent each set of items. Cronbach alpha was used to determine overall construct reliability. In line with construct reliability requirements (Nunnally, 1967), all Cronbach alphas are greater than .60.

**Dependent Variable**

The dependent variable in this study is the extent of internationalization. Previous studies have typically used one of three measures to operationalize the construct: the percentage of foreign sales (e.g.
Preece, Miles and Baetz, 1998), the absolute value of foreign sales (e.g. Autio et al., 2000), or the type of foreign market entry mode used (e.g. Nakos and Brouthers, 2002). We combined these three different measures to allow for more complete measurement of the entire construct (alpha = .89). In line with previous studies (e.g. Calvet, 1981), we categorized the entry mode into three different levels according to the level of commitment required: 1= direct exports and licensing, 2= distributor agreements, and 3= foreign subsidiary. To combine the measures, the scores were standardized and averaged; higher scores indicate greater extent of internationalization of the young, technology-based firm.

**Independent Variables**

*Founding team’s international knowledge base at start-up* was measured as the sum of the number of years of international working experience for the founding team members. Previous studies have often used a dichotomous variable to measure the prior international working experience of the founders/management team (e.g. Bloodgood, Sapienza & Almeida, 1997; Reuber & Fischer, 1997). As indicated by Cavusgil and Zou (1994), however, the international knowledge of managers is accumulated over time. Thus, an individual who has many years of international experience is likely to have more knowledge and skills related to internationalization than his/her less experienced counterpart. Therefore, we use the number of years of international experience as a more accurate measure of the founding team’s international knowledge base at start-up.

*Experiential learning* was operationalized as the number of years the company has had international sales (e.g. Cavusgil & Zou, 1994; Errammili, 1991). As experiential learning takes place through the firm’s experiences and experiences accumulate over time, the amount of time that the firm has had international activities is a reasonable proxy for this type of learning.

*Interorganizational learning.* To capture the extent of interorganizational learning, we focus on the relationships between the young, technology-based firm and its key partners. Building on Dyer and Singh (1998) and Yli-Renko et al. (2001), we asked the young, technology-based firms to identify their most important partners, specifically their key customer, supplier, partner for commercial activities (e.g. distributor), partner for technology development, and investor. We used two items to measure the extent to which the young, technology-based firm perceives that it has learned from each of its key partners in the context of internationalization: (1) Our company has acquired new or important information about foreign markets from this key partner, and (2) This key partner has helped us to build our capabilities/skills towards internationalization. These items were developed based on Yli-Renko et al. (2001). The Cronbach alphas for interorganizational learning through the different key partners are: .65 for key customer, .89 for key supplier, .80 for key commercial partner, .87 for key technology partner, and .82 for key investor. Next, we constructed a composite variable to measure the extent of overall interorganizational learning by adding the averaged scores for each of the five key partners. If a firm did not have a key partner in one or more of the categories, the learning for that partner category was zero.

**Control Variables**

*Resource base at start-up.* The firm’s growth and success depends on the characteristics of its resource base (Barney, 1991). Heirman and Clarysse (2005) studied to what extent the initial resource base has an impact on the future growth of young, technology-based firms and found that companies with more starting capital grow faster. Bloodgood et al. (1996) argued that the number of employees is an appropriate measure to represent the firm’s resource-base when a firm is relatively new. Because growing through internationalization requires the financial means to target and expand activities in a foreign market and also the people who manage the activities abroad, we combine both starting capital and the number of full-time employees in the first year after founding to allow for a more accurate measurement of the construct (alpha = .63). To combine the scales, the scores were standardized and averaged; higher scores indicate a greater resource base at start-up.
Growth orientation. Several studies show that the growth orientation of the management team has an important impact on the firm’s strategies and growth (e.g. Autero & Autio, 2000; Gundry & Welsch, 2001). Since internationalization is an important avenue to realize growth (Madsen & Servais, 1997), entrepreneurs that put a strong strategic emphasis on growth are more likely to rapidly grow their international sales. The following statement item was used to measure the firm’s growth orientation: “Growing as rapidly as possible is the most important goal of this company.”

Industry sector. The nature of the firm’s activities and operating environment can influence its propensity to initiate and grow international sales (Miesenbock, 1988; Cavusgil and Zuo, 1994). Therefore, we include industry sector as a control variable in the model. We grouped our sample firms into four sectors: life sciences, micro-electronics, information and communications technology (ICT), and other.

Table 1 presents the descriptive statistics and correlations for the variables.

RESULTS

We use linear regression analyses to test our hypotheses. The results of these analyses are presented in Table 2. The full model shows that the international knowledge base of the founding team at start-up has only a marginal impact (beta=.03, p<.10) on the international expansion of the start-up (Hypothesis 1). Hypothesis 2 is supported (.55, p<.001): a higher level of experiential learning is associated with a greater extent of internationalization. Further, the results indicate that the level of interorganizational learning also has a significant positive impact (.18, p<.01) on the extent of internationalization, supporting Hypothesis 3.

To test the interaction effect between experiential and interorganizational learning (Hypothesis 4), we added the term experiential learning x interorganizational learning. The result shows a significant negative impact of this interaction term on the extent of internationalization (-.02, p<.05). To further examine the interaction effect, we split the sample into a low experiential learning group and a high experiential learning group at the median, and ran the model separately for these two groups. The results of these analyses are shown in Models 4 and 5. Model 4 shows a strong positive impact of interorganizational learning on the extent of internationalization (.18, p ≤ .01). On the contrary, interorganizational learning has no significant impact on the extent of internationalization when the experiential learning of the firm is high. As a result, Hypothesis 4 is supported.

In the effects of control variables, the results show a positive relationship between the level of starting resources and the extent of internationalization. The growth orientation or industry sector of the firm has no significant influence on the firm’s extent of internationalization.

DISCUSSION

In this paper, we examined the extent of internationalization of young, technology-based firms using an organizational learning perspective. We tested the direct influence of the knowledge-base at founding, experiential learning, and interorganizational learning on the firm’s internationalization. Further, we hypothesized that interorganizational learning can make up for a lack of experiential learning, and examined the interaction effect of these two distinct types of learning. In the following, we discuss the theoretical implications of our results.

We found only weak (p<.10) support for the hypothesis that a firm’s international knowledge base at start-up has a positive impact on the extent of internationalization of the firm. Previous studies have shown a strong relationship between the characteristics of the founding team and the company’s internationalization (Reuber and Fischer, 1997; Westhead et al., 2001). There are two possible explanations for why we didn’t observe this in our dataset. First, most of the founding teams in the
sample have very little international experience (median 2 years), but the majority (80%) of the firms have some international activities; therefore, previous international experience at the team level isn’t likely to influence the young, technology-based firm’s extent of internationalization. Another explanation is that the entrepreneur may have some international experience accumulated during previous employment in industry sectors unrelated to the sector in which the young, technology-based firm operates. Although the entrepreneur has international experience, its unrelatedness makes it less valuable as a resource and consequently less useful for the international activities of the firm.

The prediction that experiential learning by the young, technology-based firm is positively related to the firm’s extent of internationalization is supported. This finding is in line with internationalization process theory (Johanson & Vahlne, 1977); firms accumulate foreign market knowledge and develop skills for internationalization over time, resulting in higher levels of internationalization. As a company learns more about doing business abroad, the associated uncertainties and risks decrease, thereby stimulating the firm to commit more resources to its international expansion.

Strong support was also found for our hypothesis that learning through partners can fuel the internationalization process. This finding indicates that young, technology-based firms acquire knowledge about international markets and skills for internationalization via their key partners, and is consistent with previous research looking at the interorganizational acquisition of knowledge and skills. For example, Yli-Renko et al. (2001) showed that key customer relationships offer significant learning opportunities for young, technology-based firms, having a positive influence on the company’s number of new products, technological distinctiveness, and sales cost efficiency. Knowledge spillovers between partners have also been widely studied in the framework of strategic alliances (see Grant and Baden-Fuller 2004 for a review). Kale et al. (2000) showed that strategic alliances not only provide learning opportunities but also that companies can develop and enhance capabilities and skills. Similarly, Simonin (1999) discussed the transfer of marketing skills and know-how between companies operating in international strategic alliances. We have contributed to this body of research by examining the impact of learning through key partners on the internationalization of young, technology-based firms.

Next, we introduced the interaction term to test the interrelationship between experiential learning and interorganizational learning. We found strong support for the idea that learning through partners can substitute for learning-by-doing. Our analysis showed that interorganizational learning has a significant positive effect on the extent of internationalization when the firms have a low level of experiential learning. This positive relationship is not significant in the high experiential learning group. This finding shows that, at the early stages of internationalization, young, technology-based firms can speed up their international expansion by acquiring knowledge and developing skills through partners. As they accumulate first-hand international experience, experiential learning becomes more important and the firms become less dependent on second-hand information and imitation of other organizations’ skills. This finding is an important contribution to organizational learning theory, as few previous studies have looked at the interrelationships between different types of learning.

The impact of the control variables also merits some discussion. First, our results showed a strong, positive relationship between the level of starting resources and the extent of the company’s international activities. Findings from previous research have remained inconclusive on whether the stock of available resources has an impact on the company’s ability to unfold an internationalization strategy. For example, Cooper and Kleinschmidt (1985) found a negative relationship between organizational size and export growth where others (e.g. Czinkoza and Wesley, 1983) found no significant relationship between size and the degree of internationalization. Our finding clearly indicates that organizations which have a larger resource-base at founding do have a higher extent of internationalization. A firm needs organizational slack in terms of both financial means and human resources in order to successfully pursue international expansion.

The growth orientation of the firm had no significant influence on the extent of internationalization.
This finding suggests that it may not be accurate to conceive of internationalization as primarily a growth strategy. At least in small, open economies like Flanders, young, technology-based firms internationalize, regardless of whether the firm has growth as primary objective or not. Thus, internationalization may not be merely a growth option for young, technology-based firms, but rather a necessity for survival.

Limitations and Directions for Future Research

As every empirical piece, our study is not without limitations, thereby providing avenues for future research. First of all, our dataset is comprised of young, technology-based firms located in Flanders. Although this has the positive effect of reducing non-measured variance, it raises the question of whether our results would hold in other environmental settings and for other types of firms. Flanders, as a region, is characterized by a very open economy geared to exporting, and young, technology-based firms are R&D intensive companies typically competing in dynamic markets. Conducting similar studies in different regions and industries would contribute to our understanding of the generalizability of the findings.

Second, given the cross-sectional nature of our data, we cannot provide insights into the causal dynamics of learning and internationalization. The research design also does not allow for testing for changes in the composition and the role of the company’s key partners at different phases of the internationalization process. For example, to what extent does the relationship with a key partner influence the initial decision to start international activities? Future longitudinal studies may shed light on these issues.

Third, by focusing solely on the key partners of the company we examined a limited subset of the firm’s relationships, ignoring the effects that the size of the firm’s network might have on learning outcomes. By looking at the comprehensive network of customers, suppliers, commercial partners, technology partners, and investors, future studies could provide further insights into how the breadth of learning efforts influences internationalization; such comprehensive approaches are, of course, very difficult to execute.

Lastly, while beyond the scope of the current study, additional areas for future research include examining the conditions under which interorganizational learning occurs and explicating the processes through which this learning takes place. Factors such as the knowledge base and location of the partner organization, the absorptive capacity (Cohen & Levinthal, 1990) of the focal firm, and the social capital embedded in the interorganizational relationship could be some of the factors to be included in future research.

CONTACT: Johan Bruneel; Sint-Pietersplein 4, 9000 Gent; (T)+32 9 2648982, (F)+32 9 2647992; johan.bruneel@ugent.be

REFERENCES

Argote, L. (1999), ‘Organizational Learning: Creating, Retaining, and Transferring Knowledge’, Kluwer Academic, Boston, MA.,
Heirman, A. and Clarysse, B. (2005), ‘the initial resources and market strategy to create high growth firms’, Ghent University, Working Paper Series


TABLE 1. Correlations and descriptive statistics of the variables in the model

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extent of internationalization</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Years of international experience of the firm</td>
<td>.57**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>International experience of founding team</td>
<td>.27**</td>
<td>.04</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interorganizational learning</td>
<td>.31**</td>
<td>.19*</td>
<td>.18</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resource base at start-up</td>
<td>.36**</td>
<td>.06</td>
<td>.27**</td>
<td>.15*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Growth orientation</td>
<td>.20*</td>
<td>.05</td>
<td>.22*</td>
<td>.09</td>
<td>.10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Industry sector</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Life sciences</td>
<td>.02</td>
<td>-.02</td>
<td>.08</td>
<td>.11</td>
<td>.14</td>
<td>-.04</td>
<td></td>
</tr>
<tr>
<td>Micro-electronics</td>
<td>.02</td>
<td>.10</td>
<td>-.01</td>
<td>.04</td>
<td>.04</td>
<td>-.01</td>
<td></td>
</tr>
<tr>
<td>ICT</td>
<td>.03</td>
<td>.02</td>
<td>-.02</td>
<td>-.15</td>
<td>.02</td>
<td>.19*</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>-.07</td>
<td>-.07</td>
<td>-.03</td>
<td>.04</td>
<td>-.14</td>
<td>-.15</td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>-.04</td>
<td>3.93</td>
<td>8.64</td>
<td>7.32</td>
<td>.00</td>
<td>3.55</td>
<td></td>
</tr>
<tr>
<td>Standard deviation</td>
<td>2.71</td>
<td>3.66</td>
<td>13.35</td>
<td>4.78</td>
<td>1.70</td>
<td>1.88</td>
<td></td>
</tr>
<tr>
<td>Median</td>
<td>.17</td>
<td>3.00</td>
<td>2.00</td>
<td>6.75</td>
<td>-.22</td>
<td>3.52</td>
<td></td>
</tr>
<tr>
<td>Min</td>
<td>-4.24</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>-2.42</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Max</td>
<td>4.40</td>
<td>13</td>
<td>80</td>
<td>25</td>
<td>5.08</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>114</td>
<td>114</td>
<td>114</td>
<td>114</td>
<td>114</td>
<td>114</td>
<td>114</td>
</tr>
</tbody>
</table>

** p ≤ .01,  * p ≤ .05; two-tailed tests. Pearson correlation coefficients., Kendall’s tau-b correlation coefficients for industry sector
### TABLE 2. Linear regression estimates of extent of internationalization

<table>
<thead>
<tr>
<th></th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4: low experiential learning group</th>
<th>Model 5: high experiential learning group</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Control variables</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resource-base at start-up</td>
<td>.55*** (.22)</td>
<td>.42*** (.12)</td>
<td>.41*** (.12)</td>
<td>.42* (.17)</td>
<td>.54** (.19)</td>
</tr>
<tr>
<td>Growth orientation</td>
<td>.24+ (.13)</td>
<td>.14 (.11)</td>
<td>.11 (.11)</td>
<td>.10 (.18)</td>
<td>.37* (.15)</td>
</tr>
<tr>
<td>Life sciences</td>
<td>-.094 (.77)</td>
<td>-.11 (.60)</td>
<td>-.18 (.60)</td>
<td>-.08 (.93)</td>
<td>-.23 (.94)</td>
</tr>
<tr>
<td>Micro-electronics</td>
<td>.14 (.83)</td>
<td>-.29 (.67)</td>
<td>-.12 (.66)</td>
<td>1.41 (1.24)</td>
<td>-.16* (.84)</td>
</tr>
<tr>
<td>ICT</td>
<td>.165 (.56)</td>
<td>.34 (.45)</td>
<td>.39 (.44)</td>
<td>.76 (.68)</td>
<td>-.38 (.65)</td>
</tr>
<tr>
<td><strong>Independent variables</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Knowledge base at founding</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Experiential learning</td>
<td>.38*** (.05)</td>
<td>.55*** (.10)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interorganizational learning</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>.09* (.04)</td>
<td>.18** (.06)</td>
<td>.18** (.06)</td>
<td>.06 (.06)</td>
<td></td>
</tr>
<tr>
<td><strong>Interaction terms</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Experiential learning x interorganizational learning</td>
<td></td>
<td></td>
<td>-.02* (.01)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Constant</strong></td>
<td>-.93 (0.56)</td>
<td>-2.99*** (.54)</td>
<td>-3.50*** (.59)</td>
<td>-3.28*** (.82)</td>
<td>-.13 (.79)</td>
</tr>
<tr>
<td><strong>Adjusted R^2</strong></td>
<td>.12</td>
<td>.46</td>
<td>.47</td>
<td>.22</td>
<td>.21</td>
</tr>
<tr>
<td><strong>F</strong></td>
<td>4.09***</td>
<td>12.81***</td>
<td>12.15***</td>
<td>12.02</td>
<td>5.31</td>
</tr>
<tr>
<td>df (residual)</td>
<td>108</td>
<td>105</td>
<td>104</td>
<td>84</td>
<td>84</td>
</tr>
</tbody>
</table>

**Unstandardized coefficients, standard errors in parentheses**

*** p ≤ .001, ** p ≤ .01, * p ≤ .05, + p ≤ .10; two-tailed