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Manuela N. Hoehn-Weiss  
University of Washington Bothell, USA, mnhw@u.washington.edu

Joseph A. LiPuma  
EM Lyon, France

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BETTER IN PAIRS?: INTERACTIONS BETWEEN ALLIANCES AND CORPORATE VENTURE CAPITAL ON NEW-VENTURE INTERNATIONALIZATION*

Manuela N. Hoehn-Weiss, University of Washington Bothell, USA
Joseph A. LiPuma, EM Lyon, France

*The authors are listed alphabetically and contributed equally to this research effort.

ABSTRACT

Drawing on insights from the resource-based view and institutional theory, we examine how alliances with large industry partners, functional-type alliances, CVC and interactions between these different types of partnerships influence foreign market entry. Results show that legitimacy attained through allying with large industry partners is more related to foreign market entry than are the specialized knowledge resources provided by functional alliances. Moreover, CVC does not appear to be related to internationalization. We thus extend research on the identification of resources relating to and the effect of different types of partnerships on new-venture internationalization, and we provide insights for entrepreneurs considering foreign market entry.

INTRODUCTION

It is well known that new ventures face resource constraints, and thus, challenges, different from those of established firms (Chang, 2004; Dean, Brown, and Bamford, 1998; Stinchcombe, 1965). In order to obtain or gain access to financial and non-financial resources, many new ventures seek alliances and other partnerships (Ahuja, 2000; Eisenhardt and Schoonnoven, 1996; Nohria and Garcia-Pont, 1991) in addition to, or in lieu of equity investments, such as venture capital. It is also known that new ventures enter foreign markets when domestic markets are constrained and/or to quickly expand the market for products in such markets, and that internationalization is costly in terms of financial capital, increased risk from foreign market uncertainty, and increased agency costs (Sapienza et al., 2006; Sapienza and Gupta, 1994). What is less understood is the relationship between different types of partnerships and a new venture’s internationalization, specifically, the interplay between alliances and corporate venture capital (CVC).

Indeed, the literature regarding new ventures’ relationships and internationalization generally focuses on the value of networks for market entry and expansion (e.g., Coviello and Munro, 1995; Johanson and Vahlne, 1990), or on international joint ventures and their performance implications (e.g., Kirby and Kaiser, 2003; Lu and Beamish, 2006). Although the value of alliances in the internationalization process has received some attention (e.g., Lu and Beamish, 2004), the relationship between various alliance characteristics and internationalization is understudied, despite recognition that such relationships offer learning advantages in international contexts (Emden et al., 2005). Moreover, the relationship between CVC and internationalization also has received scant attention (for an exception see LiPuma, 2007), despite the fact that such venture capital resources may influence the geographic preferences and goals of new ventures (Gupta & Sapienza, 1992), many of which choose to internationalize. In addition, interactions between
alliances with large partners and corporate equity investors, each of which may add foreign market knowledge and foreign networks as a result of multinational activities, have not been explored for their relationship to internationalization.

Therefore, drawing on insights from the resource-based view and institutional theory, in this research we examine how alliances with large industry partners, functional-type alliances, CVC and interactions between these different types of partnerships influence foreign market entry. We contribute to the literature as follows. We extend research on the identification of resources relating to and the effect of different types of partnerships on new-venture internationalization, and we provide insights for entrepreneurs considering foreign market entry.

**Theory and Hypotheses**

Resource constraints affect 98 percent of entrepreneurs (Evans & Jovanovic, 1989), and one of the biggest challenges new ventures face is gaining access to resources needed for growth and survival. One mechanism that can be seen as a potential pathway for resources is venture capital (VC) from independent or corporate sources. Another such mechanism, which does not require entrepreneurs to cede any control of the venture (as is the case with VC), is allying with industry partners (Eisenhardt and Schoonhoven, 1996; Powell et al., 1996). In fact, alliances can be an effective means of gaining access to financial and non-financial resources, including a wider range of information, technology development, technological and manufacturing capabilities, products and markets (Mowery et al., 1996; Nohria & Garcia-Pont, 1991; Hagedoorn, 1993). Accessing these types of resources through alliances may be faster than would be possible if the venture were to assemble resources and build capabilities through internal means. In the context of international expansion of business activities, alliances can be not only a faster way to access foreign markets but also a more effective way since alliance partners could have knowledge of local market conditions that may be very difficult for outsiders to access (Osborn and Hagedoorn, 1997). Indeed, internalization of information about foreign markets may help new ventures leap a “hurdle,” allowing them to enter foreign markets (Liesch and Knight, 1999). That is, alliances may help with both the acquisition of requisite knowledge and its internalization, which pushes ventures over the threshold necessary for foreign market entry. Therefore:

**Hypothesis 1:** Having alliances is positively and significantly associated with an increase in new ventures’ likelihood to internationalize.

Although we conjecture a positive and significant relationship between alliances and a new venture’s likelihood to internationalize, it may be that alliances is too coarse of a construct. In fact, we suggest that using more nuanced constructs would provide more insight into the relationship between alliances and new-venture internationalization. Indeed, it is known that firms entering new geographic markets face a liability of foreignness since they may not be familiar with local customs and local business practices, and local consumers may not be familiar with the firm, its products, and its brands (Zaheer, 1995). This liability would apply to both small, new ventures and larger, established firms. However, large, established firms can more easily devote tangible assets (e.g., financial capital and equipment) to overcoming this liability of foreignness, whereas new ventures are generally resource-constrained and may be limited to using intangible assets (e.g., knowledge, networks and market entry strategies) to address this liability (Knight & Cavusgil, 2005). Such new ventures face the threat of failure to a much greater degree than larger, established firms, and, in fact, often fail (Alrich and Auster, 1986; Levinthal, 1991). This means that new ventures do not have the resources available to quickly overcome their liability of foreignness in a new geographic market. Moreover, new ventures face the additional challenge of...
liability of newness (Stinchcombe, 1965; Aldrich and Fiol, 1993). This means that in addition to not having access to certain resources, firms also may lack legitimacy because they do not yet conform to the norms of expected homogenous firm structures in the marketplace and may thus not be seen as professional (DiMaggio and Powell, 1983; Scott, 1995; Meyer and Rowan, 1977). Furthermore, these ventures may be inexperienced with regard to production or other processes, and their routines may be immature and unrefined (Sorenson and Stuart, 1999). Allying with a partner who is large and who presumably has a certain stature in the foreign market that firms are entering may act as an endorsement mechanism, thus providing legitimacy to the ventures (Stuart et al, 2000; Gulati and Higgins, 2003; Hoehn-Weiss, 2006) because actors’ reputations are in part constructed from the identities of their associates (Blau, 1965). These alliances with high-stature, large partners may then help new ventures overcome the liabilities of newness and foreignness, and may increase their chance of being able to tap into a foreign market. Therefore:

Hypothesis 2: Having alliances with large industry partners is positively and significantly associated with an increase in new ventures’ likelihood to internationalize.

In addition to the stature of the alliance partners, the alliance characteristics pertaining to type of resource accessed may also influence likelihood of internationalization. Specifically, alliances along the functional lines of marketing and R&D provide specific resources, that is, market and technology knowledge, respectively, each of which is valuable for foreign market entry. Indeed, international R&D alliances may help a firm share/reduce costs, acquire tacit knowledge, and understand better the product requirements of the foreign marketplace (Hagedoorn and Narula, 1996), whereas a marketing alliance may help ventures commercialize complex technologies (Botkin and Matthews, 1992; Alvarez and Barney, 2001) and acquire market information pertaining to market size and composition, target customers, buying patterns, and so on. Acquiring this market knowledge through other types of market entries, such as Greenfield investments or acquisitions (Harzing, 2002) may be too costly and time-consuming for new ventures. Therefore, we expect:

Hypothesis 3a: Having R&D alliances is positively and significantly associated with an increase in new ventures’ likelihood to internationalize.

Hypothesis 3b: Having marketing alliances is positively and significantly associated with an increase in new ventures’ likelihood to internationalize.

CVC and Internationalization

In addition to financing, venture capital providers supply knowledge, advice and active managerial support (Gorman & Sahlman, 1989; Hellmann & Puri, 2002). Furthermore, venture capitalists (VCs) provide access to human capital and social capital via the knowledge, networks and other valuable capabilities of the funding organization. Such resources can help young ventures as they consider moving beyond their national borders, as specialized market knowledge and knowledge of international operations is crucial to market entry (Clark, Pugh & Mallory, 1997). Of all resources, information and knowledge are the most critical to the international expansion of the firm (Knight & Liesch, 2002); tacit knowledge, such as foreign market and cultural knowledge (Kogut & Zander, 1993) is a strategic asset in the achievement of company goals (Winter, 1987). Acquisition of such tacit knowledge occurs over time and firm structures and routines facilitate its internal transference.
Experiential knowledge, in particular, is a critical resource for internationalization (Kogut & Zander, 1993), and venture capitalists provide such knowledge gleaned from investing in foreign ventures or enacting business in foreign environments (Carpenter, Pollock & Leary, 2003). Such experience may serve as a proxy for the reduction of uncertainty of foreign market entry and as a surrogate for accumulating cultural knowledge, and this experience may be inimitable and non-substitutable (Daily, Certo & Dalton, 2000).

International networks can address resource constraints in these situations (Coviello & McAuley, 1999). Frequent communications between entrepreneurs and VCs enhance knowledge transfer and internalization, facilitating the role of strategy and advice taken by VC providers (Sapienza, 1992). As compared to independent VC (IVC) providers, CVC organizations possess greater technical knowledge and market insights from their embeddedness in MNEs. This embeddedness reduces the added complexity of the international environment, resulting in greater value add to internationalizing funded ventures (Maula & Murray, 2001), and facilitating their foreign market entry. Most CVC investors are multinational enterprises (MNEs) such as Intel, Sun, and Microsoft (Rauser, 2002). Their global reach may increase the radius of exchange with their portfolio companies, and their ability to build relationships may exceed that of IVC providers, who have only recently begun to internationalize (Hall & Tu, 2003; Manigart, Collewaert, Wright, et al., 2006). Therefore:

Hypothesis 4: Receipt of corporate venture capital is positively and significantly associated with an increase in new ventures’ likelihood to internationalize.

Large-Partner Alliances and CVC

Large alliance partners and CVC providers may supply similar value add for internationalization of young ventures, as each may possess market and technical knowledge that may be used to initiate foreign market entry. These two may reinforce each other if each type of relationship provides access to distinct yet complementary resources, increases the venture’s opportunity structure, and enhance its legitimacy in the eyes of partners, suppliers or customers (Dushnitsky and Lavie, 2007). Thus:

Hypothesis 5a: Having both CVC and large alliance partners is more positively and significantly associated with new ventures’ likelihood to internationalize than having only one of these.

On the other hand, young ventures may face limitations with regard to how many different activities, and, especially partnerships, they can manage at a time (Rothaermel and Deeds, 2006) in part due to limitations in managers’ attentional capabilities (Simon, 1947). This, in turn, may force ventures to substitute the use of alliances with large partners for CVC investments or vice versa. In fact, use of both large-partner alliances and CVC may overwhelm the venture’s ability to internalize information necessary for internationalization (Liesch and Knight, 1999), and present potential redundancies in the external resources channeled through these types of relationships (Dushnitsky and Lavie, 2007). Therefore:

Hypothesis 5b: Having both CVC and large alliance partners will not be associated with new ventures’ likelihood to internationalize.
DATA AND METHODS

Sample and Data Collection

The sampling frame comprises 111 U.S.-based, VC-backed new ventures that were founded during the 1990s and had an IPO between 1997 and 2002. We compiled the company data from VentureXpert and Global New Issues within Thomson Financial’s SDC Platinum database. We obtained ventures for both Life Sciences and Information Technology industry sectors by selecting on the following minor Venture Economics Industry codes (VEIC) as provided by SDC: biotechnology, medical/health, communications and Internet.

Data for the focal ventures’ alliances that were formed pre-IPO were drawn from Thomson Financial’s SDC M&A Database, specifically the JV/Alliance subdatabase. As the alliance announcement dates in SDC are unreliable (Anand and Khanna, 2000; McGahan and Villalonga, 2003), announcement dates were verified using Lexis-Nexis to determine which alliances had, in fact, been announced prior to an IPO during our study period. For all discrepancies between SDC and Lexis-Nexis we relied on Lexis-Nexis. A total of 82 alliances were identified for the sample ventures. We collected data on the alliance partners’ size, as measured by sales, from COMPUSTAT. Last, we obtained the data pertaining to internationalization activity from InfoUSA’s CorpTech database.

We based our choice of technology-based ventures on the fact that they are more likely to enter foreign markets early in their lives (Johnson, 2004) and are more likely to receive venture capital (Gompers, 1995). In addition, technology-based companies dominated the market for IPOs in the sample period (Ritter & Welch, 2002; NVCA, 2004). The subcategories originally yielded 713 ventures, which we matched against historical data from CorpTech and compiled data on the degree of internationalization of each venture. The CorpTech database, previously known as the Corporate Technology Directory and maintained by InfoUSA, contains data on U.S.-based companies that manufacture, do research and development, or provide services relating to high technology products.

CorpTech provides categorical data on international intensity (five categories: zero, <2.5%, 2.5-10%, 10-25% and 25+ %). Of the 188 matched ventures with historical internationalization data in CorpTech, we excluded 77 ventures that indicated the presence of foreign sales without specifying a category of intensity. Although internationalization, per se, and not the intensity of international activities is the focus of this study, it was deemed that including only those ventures for which intensity data was known would provide a better sample for analysis.

After screening for missing, irrelevant or incorrect data, our final sample contained a total of 111 ventures with the following distribution among industry sectors: 25 biotechnology, 13 medical/health, 25 communications, and 48 Internet ventures.

Measures

Our dependent variable is Internationalization, a dummy that assumed the value of “1” as soon as the focal venture indicated the receipt of revenues from foreign sources. As with all time-varying dummy variables in this study, once this variable assumed the value of “1” it retained the value of “1” in subsequent years of observation.
Independent variables include Alliance, Large-Partner Alliance, Marketing Alliance, Technology Alliance and U.S. CVC Alliance. Alliance is a time-varying dummy indicating whether the focal venture established a formal alliance partnership at any point prior to its IPO, and is coded “1” as soon as such a partnership existed prior to its IPO, and ‘0’ otherwise. Size is often used by financial industry professionals to assess a given company’s stature in a given market and may denote prominence. To capture a size assessment of all of the new ventures’ alliance partners, we used size, measured by sales for both U.S.-based and foreign-based partners, as a time-varying dummy variable. Consistent with information gained during interviews with several VCs, we considered U.S.-based industry alliance partners to be large if their sales were $500M or greater the year prior to the alliance announcement date, and we considered foreign-based alliance partners to be large if their sales were US$1B or greater the year prior to the alliance announcement date. The logic for the differential coding is because the benefits of size, such as prominence, would be more difficult to access with foreign partners. We chose a dummy variable to capture size of alliance partners, because using metric sales data would not have constituted a meaningful measure for all cases where alliance partners were private firms or for cases where there were multiple partners in an alliance. Large-Partner Alliance is time-varying and coded as “1” as soon as the focal venture had established an alliance with a large partner at any time prior to its IPO and ‘0’ otherwise.

Alliances were classified into categories along functional lines, consistent with categories used in prior research (see McGahan and Villalonga, 2003). The two alliance type categories used in this research were derived by aggregating existing SDC alliance type categories and include R&D alliances and marketing alliances. If an alliance addressed multiple functional areas, it was coded for all alliance types that applied. We constructed two time-varying dummy variables, Technology Alliance and Marketing Alliance, as follows. Technology Alliance was coded as “1” as soon as an Internet venture’s total alliance portfolio contained at least one R&D alliance. Marketing Alliance was coded as “1” as soon as a venture’s total alliance portfolio contained at least one marketing alliance. The final independent variable is U.S. CVC, a time-varying dummy indicating if the focal venture ever received venture capital from a U.S. corporation (coded “1” once yes and ‘0’ otherwise).

In order to address other factors that might relate to internationalization, we included the following control variables: Age, Total Funding, Information Technology, and Life Sciences. International business process theories (e.g., Johanson & Vahlne, 1977) suggest that internationalization is a function of age of the firm. Therefore, we include Age as a control that captures the time-varying number of months between the venture founding date and its IPO. Considering the resource demands of internationalization, the total amount of capital provided by VC investors may affect the foreign market entry decision of ventures. We use Total Funding, the time-varying total dollar value of VC investments from inception to IPO as a control. Using the natural log of this variable adjusts for its positive skew.

Industries differ in their ability to export and the degree of capital requirements for international operations. Brock, Yaffe and Dembovsky (2006) suggest that contradictory results in previous studies of internationalization may have been due to sector differences. The 111 ventures in the study encompass four different Venture Economics Industry Classification (VEIC) codes: Internet, Communications, Biotechnology and Medical/Health. Regulatory issues, such as testing and approval of new drugs, medical tools and therapies, may impede the ability of providers of such products to enter foreign markets rapidly. We created two industry dummies: Information Technology (encompassing Internet and Communication ventures) and Life Sciences (encompassing Biotechnology and Medical/Health ventures). This aggregation was done because
of the sectors’ commonalities and is consistent with the aggregation used for the Company Venture Economics Primary Industry Class coding designation. Each venture is coded “1” for its appropriate industry affiliation.

Analysis

Due to the dichotomous nature of the dependent variable, Internationalization, we use probit regressions to estimate the chances of internationalization given the independent and control variables.

The general regressions model is:

\[
\text{Probit (Pr(International))} = \alpha + \beta_1 \text{Alliance} + \beta_2 \text{Large-Partner Alliance} + \beta_3 \text{Technology Alliance} + \\
\beta_4 \text{Marketing Alliance} + \beta_5 \text{U.S. CVC} + \beta_6 \text{U.S. CVC} \times \text{Large-Partner Alliance} + \sum_m \beta_m \text{Control}_m
\]

where \(\sum_m \beta_m \text{Control}_m\) is a vector of controls (Total Funding (ln), Life Sciences, Age). The Information Technology dummy variable is necessarily omitted from the analyses.

RESULTS

As seen in Table 1, slightly fewer than half (43%) of the sample companies received revenues from foreign sources. More than half of the ventures (60%) have received venture capital from a U.S. corporation. Regarding alliances, 38% of the sample ventures entered into a formal alliance, but only 18% entered into an alliance with a large partner. One-quarter (25%) of the ventures entered into technology alliances whereas slightly fewer (23%) entered into marketing alliances. A small percentage (13%) of the companies both received CVC and entered into agreements with large alliance partners. Two-thirds of the sample companies are in Information Technology industries, with the other third belonging to Life Sciences. On average, companies were 4.5 years old and received an average of $30.6 million in VC funding.

Table 2 presents the correlations for the variables in this study. A review of the correlations concludes that few variables have correlations greater than 0.6, suggesting that multi-collinearity is generally not an issue in the analyses. High correlations are present between the Technology Alliance and Large-Partner Alliance variables, thus one must take care in interpreting the results of models that utilize those two variables.

The probit procedure reports coefficients for the various models, as seen in Table 3. Model 1 shows the results of an analysis that tests the existence of a positive relationship between the use of alliances and the likelihood of internationalization (Hypothesis 1). The analysis does not support this hypothesis. Model 2, however, finds a highly significant positive relationship between the existence of alliances with large partners and increased chances of internationalization. Having such a relationship increases the probability of receiving revenue from foreign sources by approximately 150%. This significant, positive relationship exists in the presence of dummy variables for the type of relationship, albeit with less significance and with a lesser magnitude, as seen in Model 3. This model does not indicate support for Hypotheses 3a and 3b, which respectively hypothesize a positive relationship between R&D and marketing alliances and an increased likelihood of internationalization. Model 4 examines the nature of the relationship between alliance type and an increased probability of internationalization in the absence of a factor
for large-partner alliances. In this case, the use of technology alliances is significantly and positively related to an increased likelihood of receiving foreign revenues.

Model 5 tests whether the receipt of CVC is positively related to increased odds of internationalization (Hypothesis 4). This hypothesis is not supported. The analysis summarized in Model 6 includes an interaction term to test Hypotheses 5a and 5b regarding the substitutability/complementarity of CVC and large-partner alliances. Neither this model, nor the saturated model, Model 7, finds support for an interaction between the CVC and large-partner alliances.

The analyses also provide insights into relationships between control variables and internationalization. Life Sciences, for example, has a significant and negative relationship with foreign revenues across all models as compared to Information Technology. Life Science ventures are 40%-54% less likely to have international sales than Information Technology ventures. This supports the contention that regulatory issues may hamper, or at least delay, foreign market entry for life science ventures. Additionally, Age is positively and significantly related to venture internationalization: older ventures are more likely to have internationalized than younger ventures.

**DISCUSSION AND CONCLUSION**

In this research we examine the relationships between different alliance types and alliance characteristics, i.e. the stature of the alliance partners, on the one hand and likelihood of internationalization on the other hand. Our first hypothesis corroborates that the alliance construct by itself it too coarse of a measure, and that we can gain insights from examining the more finely-grained measures of alliance types and alliance characteristics. It is not alliances, per se, that are associated with foreign sales by new ventures; rather, there are characteristics of alliances that seem to have such an association. Our subsequent findings show that legitimacy attained through allying with large industry partners is more related to foreign market entry than are the specialized knowledge resources provided by functional alliances. Interestingly, CVC does not appear to be related to internationalization. Access to the resources associated with domestic CVC may enhance the venture’s market and technology position in the U.S. and may mitigate its need to rapidly enter foreign markets. These findings are consistent with prior research (e.g., LiPuma, 2007), which finds that CVC is related to the degree of internationalization, but may not influence likelihood of internationalization.

The apparent relationship between technology alliances and internationalization, in the absence of controls for alliances with large partners, may be consistent with the acknowledgement that technology companies are often forced to enter foreign markets to garner revenues to offset investment. Assuming that R&D alliances enhance the technical level of a venture, the lack of a robust finding between the presence of R&D alliances and internationalization is consistent with the findings of Anderson, Gabrielson and Wictor (2004) who found no support for a relationship between the technical level of a firm and its international activities.

We caution that the interpretation of our saturated model may be affected by the inclusion of two highly correlated variables, specifically, the alliance partner stature variable (Large-Partner Alliance) and one of the functional alliance type variables (Technology Alliance). Another limitation of our study is that the small number (14) of ventures that both received CVC and entered into alliances with large partners may underlie the lack of significance in the models that analyzed the interaction effects between these two variables. Both of these concerns may be
addressed with additional data collection, which presents an opportunity to extend our work. Also, this study only included VC investments from U.S.-based corporations. It may be that investments from foreign-based corporations could result in the acquisition of foreign market knowledge that could influence the foreign market entry choice of new ventures. Including this information would provide a more nuanced picture of the degree to which these MNEs could provide local country knowledge. Another limitation is that we did not have TMT information available for the ventures included in this research. Research has shown that start-ups are more likely to have international activities if their founders had prior international education or work experience (Burgel & Murray, 1998; McDougall et al., 2003) and that such experience of the top management team (TMT) facilitates internalization of market knowledge (Yeoh, 2004) and relates to the timing of foreign market entry and the process by which it is accomplished (Reuber & Fisher, 1997), so including information regarding the international experience of TMT members presents an important opportunity for extending our research in the future. Finally, excluding new ventures that did not undergo an IPO in the reference period may have biased our results. Indeed, sample bias may result from the fact that there are disadvantages to going public, and some successful firms may not want to do so. The IPO process typically costs 10-16% of IPO proceeds (Lee et al., 1996). Publicly traded companies have to share profits; companies may choose to remain private as a result if they do not need the external investment to fund their development. Undergoing an IPO requires additional reporting and fiduciary responsibilities (e.g., Sarbanes-Oxley) that results in a loss of confidentiality. Thus, the exclusion of successful firms may bias the results.

There are a number of potentially fruitful avenues to extend the current study. Future research should examine the international intensity of new ventures, as the decision to enter foreign markets may be independent of the use of alliances and VC, yet the degree of internationalization may weigh heavily on these resources as a means to gain legitimacy and knowledge, and subsequently sales, internationally. Future research should also expand the sample to include non-IPO firms as these might exhibit different alliance and VC acquisition behavior than those firms that underwent an IPO. Another extension to this research may be to examine the timing of foreign market entry with regard to alliance formation. If there is a definitive pattern with regard to sequencing, that is, alliance formation consistently precedes foreign market entry, causality could potentially be assessed.

In the current study, we extend research on the identification of resources relating to and the effect of different types of partnerships on new-venture internationalization. Implications for entrepreneurs considering foreign market entry are as follows. Because there was no support for the conjecture that alliances and CVC are complements, entrepreneurs facing resource constraints may want to focus on one or the other type of partnership, rather than trying to pursue both. Moreover, since our findings show that legitimacy attained through allying with large industry partners is more related to foreign market entry than are the specialized knowledge resources provided by functional alliances, entrepreneurs wanting to expand internationally may want to take alliance partner stature into account when exploring different partnership options.

CONTACT: Manuela N. Hoehn-Weiss; mnhw@u.washington.edu; (T): 425-352-5496; (F): 425-352-5277; University of Washington Bothell, Box 358533, 18115 Campus Way NE, Bothell, WA 98011-8246.

NOTES

1. New ventures are defined as young firms that were founded and received venture capital funding during the 1990s and had an IPO between 1997 and 2002. Defining new ventures
according to life cycle stage, that is, pre-IPO or prior to another outcome event, rather than according to physical age, is consistent with prior research (see, for example, Stuart et al, 1999; Gulati and Higgins, 2003).

2. Unlike SIC codes that are only assigned to private firms at the time of IPO, VEIC codes, originally developed by Venture Economics and used by the National Venture Capital Association, are available for all VC-backed ventures.

3. The majority of the screened out ventures resulted from a lack of historical data regarding their internationalization.

REFERENCES


### Table 1: Descriptive Statistics

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<th>Std.Dev.</th>
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### Table 2: Pairwise Correlations

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Standard errors in parentheses
+ significant at 10%; * significant at 5%; ** significant at 1%