USING CORPORATE VENTURE CAPITAL TO SOURCE INNOVATION

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ACADEMIC ABSTRACT

Recent academic attention on corporate venture capital has focused on the investing firm's learning benefits or financial returns. This paper suggests different characteristics of ventures that can provide either exploratory or exploitative learning. More important is that other strategic benefits may be more prevalent than learning. In particular, firms invest in ventures that are suppliers, perhaps to increase their bargaining power over a key resource provider. Still other investing firms seek to defer commitment under high uncertainty about the success of the technology. In each case, CVC is used as a tool to help the firm source innovation.

EXECUTIVE SUMMARY – SO WHAT?

Buying technology that the investing firm does not possess from ventures is an activity that has tended to be under-emphasized in the extant research. Vertically related small companies, whether related or unrelated to the large firm often provide the most immediate tangible benefits. Large firms may invest to increase their bargaining power over, help influence the direction of, or provide a coordinating mechanism for ventures that develop technology and/or products used by the large firm. Vertically related ventures can provide critical products, market access or technology that can advance the large firm's existing products, markets or technology.

The learning benefits of corporate venture capital via appropriating the venture's intellectual property have been touted in the current literature. My interviews and surveys confirm that this is a benefit some investing firms seek. However, several respondents were extremely careful *not* to acquire intellectual property due to legal concerns. As a result, investing firms that want the venture's intellectual property frequently acquire it or license it from the venture using an arm-length arrangement.

Many investing firms in my sample wanted to learn *about* new technology (and markets). This is much different than learning *from* ventures by internalizing intellectual property. Goals included helping advance internal thinking and gaining exposure to monitor the latest trends. These objectives are identical to those described in pioneering research on corporate venture capital. In addition, a spider's web of ventures can be utilized to gain

simultaneous exposure to multiple technologies. Investing firms then can pursue the ventures with promise using a real option perspective, thus, reducing risk and uncertainty.

INTRODUCTION

Sourcing radical innovation is critical to the strategic management of a firm. Although internal sourcing via research and development ("R&D") is frequently utilized, radical innovation requires new knowledge that can disrupt existing competencies. Firms have also undertaken corporate entrepreneurship initiatives that (1) create new internal ventures or (2) transform existing businesses which alters business resource patterns (Guth & Ginsberg, 1990; Stopford & Baden-Fuller, 1994). However, corporate strategists understand that their firms cannot be the source of nor respond rapidly enough to all relevant innovation (Teece, 1986, 1992; Ernst, H., Witt, P. & Brachtendorf, G., 2005). Therefore, external sourcing of innovation, including acquisitions and alliances is also important. In addition, partnering with entrepreneurial ventures can be advantageous because ventures often develop and bring to market radical innovations faster and more often than incumbents (Roberts, 1980; Rind, 1981; Tushman & Anderson, 1986; Bleicher & Paul, 1987; Veugelers, 1997; Hill & Rothaermel, 2003). Importantly, a significant amount of innovation is driven by large firm cooperation with entrepreneurial ventures (Shan, W., Walker, G. & Kogut, B., 1994; Alvarez & Barney, 2001).

This paper explores corporate venture capital ("CVC") that involves large firms taking minority equity stakes ("minority investments") in smaller, entrepreneurial ventures to enhance innovation (Rind, 2000).[1] Recent research focuses on the learning benefits of CVC (Keil, T., Zahra, S. A., & Maula, M., 2004; Dushitsky & Lenox, 2005; Schildt, H. A., Maula, M. V. J. & Keil, T., 2005; Wadhwa & Kotha, 2006). Yet, my data and interviews indicate the majority of investments were made by firms that bought technological competencies (Tidd & Trewhella, 1997) that they do not possess from ventures.

My study adds to our knowledge of how firms utilize CVC in several ways. Firms that buy innovative inputs seek to increase their bargaining power via equity due to resource dependence and transaction cost theoretical considerations. This explanation has not received adequate attention in the current CVC literature. My interviews and extant literature also indicate that the type of learning large firms seek is varied. In addition, investing firms make use of CVC as a real option and to diversify to provide strategic flexibility to manage risk and uncertainty.

CORPORATE VENTURE CAPITAL

Are investments in ventures a good use of corporate resources? When seeking to stay at the forefront of innovation, minority investments are available as part of an arsenal of governance modes that includes internal development, internal ventures, acquisitions and alliances. Radical innovation requires new knowledge that is unrelated to and may

destroy current competencies (Nelson & Winter, 1982; Tushman & Anderson, 1986; March, 1991; Henderson, 1993; Benner & Tushman, 2003). It is highly uncertain as most attempts at innovation fail to live up to expectations, take longer to become viable than anticipated, or do not enjoy commercial success (Rosenberg, 1995; Eisenhardt & Schoonhoven, 1996; Stuart, T. E., Hoang, H. & Hybels, R. C., 1999; Hill & Rothermael, 2003).

Advantages of CVC

Due to the substantial risk and uncertainty of radical innovation, strategic flexibility and controllable resource commitment are important to large firms. Strategic flexibility is "the ability of the organization to adapt to substantial, uncertain, and fast-occurring (relative to required reaction time) environmental changes that have a meaningful impact on the organization's performance" (Aaker & Mascarenhas, 1984:74). Typically, this has concentrated around asset ownership strategies and the difficulties caused by the exit barriers they may create (Harrigan, 2000). Strategic flexibility is also needed during the early stages of the innovative process to allow firms to defer resource commitment until uncertainty about its commercial value is reduced (van de Vrande, V., Lemmens, C. & Vanhaverbeke, W., 2006).

Minority investments tend to require a smaller initial resource commitment than most other governance modes. Investing firms may also invest in a portfolio of ventures, some of which have similar strategic goals. Thus, investing firms have the strategic flexibility to defer additional resource commitments in any one venture until uncertainty is reduced or to make no additional investments is a type of real option.

Options are valuable when uncertainty is high. Additional investments can be deferred until after more information that reduces uncertainty is obtained and allows the investor to better determine the value of the investment (McGrath, 1997; Barnett, 2003). With CVC, firms make a relatively small initial investment when uncertainty is highest, but the investment has the potential to later improve the firm's future opportunities or capabilities (Kogut & Kulatilaka, 1994; McGrath, 1997). A real option can help firms cope with the failure inherent in innovation by limiting downside exposure to the option cost while retaining access to potential opportunities.

Corporate venture capital also allows firms to manage risk via diversification. When traditional venture capital firms invest, only one out of ten ventures is successful, two to three may be moderately successful, and the rest do not reach their cost of capital and are, thus, failures (Henderson & Leleux, 2002). As a result, diversification is critical. Corporate venture capital programs must also diversify by investing in multiple ventures. In doing so, the investing firm acts as the hub of a wheel and the resulting structure can be considered a "spider's web (Harrigan, 1988).

Several theoretical perspectives can be used to explain investing firm behavior in sourcing technology through CVC, including learning, resource dependence and transaction cost dependence. As each examines a different goal of the investing firm, this

may indicate that investing firms seek different benefits from CVC. First, I will review the most common theoretical perspective – learning. Then, I will introduce a bargaining power theoretical perspective that is a missing element from most contemporary studies of CVC. Exploratory data and interviews support the view that firms invest to reap more than one type of benefit.

Learning from CVC

A recent and important body of CVC research has focused on learning to improve innovation efforts. Knowledge is central to the firm's dynamic capability that determines its other competencies and capabilities (Lei, D., Hitt M. A. & Bettis, R., 1996). Learning from external sources help broaden the firm's knowledge base to stay abreast of cutting-edge technologies (Bierly & Chakrabarti, 1996; Teece, D. J., Pisano, G. & Shuen, A., 1997). CVC helps investing firms learn in primarily two ways that can be classified as either exploitative or explorative (Schildt et al., 2005; van de Vrande, 2006; Wadwa & Kotha, 2006; Keil et al., 2004). Exploitative learning "emphasizes transferring knowledge that is closely tied to incumbents' knowledge bases" and is used to enhance existing capabilities (Keil et al., 2004: L2). This can result in the venture's intellectual property being appropriated and harvested by the investing firm (Dushnitsky & Lenox, 2005).

Exploratory learning, on the other hand, occurs when firms seek different competencies than they possess. They frequently monitor innovation and explore for opportunities to gain familiarity about a technology or market before devoting additional resources to it (Roberts & Berry, 1985). Investing in ventures working on unrelated, but cutting edge technology or in different markets can be very appropriate before making a large resource commitment for exploration that is disruptive to the organization.

Although learning may be an intended outcome of CVC, learning from ventures is often challenging because interaction between the partners is required to transfer knowledge and other resources (Mowery, D. C., Oxley, J. E. & Silverman, B. S., 1996; Henderson & Leloux, 2002; Keil et al., 2004; Dushnitsky & Lenox, 2005). Many entrepreneurs will not share intellectual property for fear that the investing firm will appropriate their expertise. Appropriation concerns are most salient when the investor has complementary assets, incentive to commercialize the innovation without the venture and when a technology component is involved (Hardymon, G. F., DeNino, M. J. & Salter, M. S., 1983; Gulati & Singh, 1998; Henderson & Leloux, 2002; Gans & Stern, 2003). In addition, the investing firm's business unit managers often will not interact with the portfolio ventures, especially when they weren't consulted by the CVC managers prior to making the investment (Henderson & Leloux, 2002 Ernst et al., 2005; Schildt, et al., 2005).

Reluctance to interact will limit the knowledge transfer that occurs and reduce the anticipated benefit of learning from the venture. Rather than obtain new knowledge, some firms will simply buy needed innovative products from ventures. Investments in these vertically related ventures are often made to increase bargaining power.

Bargaining Power from CVC

Learning is not the only benefit sought by an investing firm. Bargaining power is the ability to affect product characteristics, availability, prices, terms, etc. in a buy/sell transaction (Harrigan, 1983a). A unified framework combining both resource dependence and transaction cost analysis best explains why firms want increased bargaining power over ventures that source radical innovation (Fink et al., 2006) and how minority investments are an effective governance mode.

It is not uncommon for large firms to be dependent upon an innovative input developed by a venture. With rapid environmental and technological change, firms realize that they cannot develop internally all the resources needed to remain competitive (Teece 1986, 1992; Tidd & Trewhella, 1997; Veugelers, 1997). Purchasing resources that are radical innovations are critical as firms have become more focused on exploiting their core competencies (Davis, G. F., Diekmann, K. A. & Tinsley, C. H., 1994). This forces firms to interact with undependable resource providers from their external environment, including ventures that possess expertise not found in the large firm. In particular, when an input is a radical innovation to the large firm, there are few suppliers and the suppliers control specialized or cospecialized assets (Teece, 1986), small companies have some bargaining power over the large firm customer (Pisano, 1990).

To reduce external environmental uncertainty, organizations will attempt to increase their influence over each other using various adaptations to control limited resources (Pfeffer & Salancik, 1978). One adaptation is a minority investment in ventures that sell needed products and services to the investing firm (Campbell et al., 2003; Keil et al, 2004). Firms seek increased bargaining power over a resource provider via equity ownership when they are dependent upon that innovation (Pfeffer & Salancik, 1978; Harrigan, 1983b). Investing firms frequently take a seat on the board of directors of ventures. Some argue that the board seat provides a mechanism for learning (Dushnitsky & Lenox, 2005). Yet, it is a common response to resource dependence because it can increase hierarchical control and make it more difficult to deny access to the resource (Pfeffer & Salancik, 1978; Oliver, 1991; Gulati & Singh, 1998).

Transaction cost economics must also be considered. Organizations often seek the governance mode that minimizes the coordination costs of exchanges with other organizations when transactions involve high levels of uncertainty,[2] there are few potential suppliers and they can engage in opportunistic behavior to the detriment of the purchaser (Williamson, 1975; Eisenhardt, 1989). A ventures' bargaining power is enhanced when the product requires tacit knowledge to develop and is a radical innovation to the purchaser (Pisano, 1990; Tidd & Trewhella, 1997).

Maximum coordination and control can be achieved via acquisition of the venture. Although acquisition reduces resource dependence, maximizes control and minimizes transaction costs, when uncertainty about the success of the technology is high, acquisition reduces the firm's strategic flexibility when the ability to defer resource commitment or to exit is most important. In this case, firms will not want to commit too

early (Gulati & Singh, 1998; van de Vrande et al., 2006). Also, the firm may not be able to manage the venture due to the rapidly changing environment the venture operates in and the potential to demotivate its personnel (Teece, 1986; Tidd & Trewhella, 1997). Equity via a minority investment can be used to increase control and coordination, especially when acquiring technology is important (Harrigan, 1985; Nagarajan & Mitchell, 1998).

Minority investments are a governance mode that is a middle ground between market exchange and fully integrated organizations that has advantages over both for bringing innovation into the large firm. An investing firm will seek specific benefits from a venture that often differs from the benefits sought by another investing firm from its investment. This paper has introduced bargaining power as a benefit that much theory neglects. It also highlights the range of benefits that investing firms expect and will examine the characteristics of ventures that may provide those benefits.

EMPIRICAL EVIDENCE

Data Collection

The strategic fit between the investing firm and its portfolio ventures is an important consideration (Gompers & Lerner, 1998; Keil et al., 2004; Dushnitski & Lenox, 2005; Schildt et al., 2005). Relatedness is a proxy for strategic fit and refers to the extent to which businesses share a common expertise, market or resource. Patterns and characteristics between the large firm and its venture investments were examined to discover the extent to which the venture was related or unrelated. Although relatedness may be a continuum, for simplification, in this study, related ventures will have a technology or market relation to current activities whereas unrelated small companies have no common technology or market expertise (Rumelt, 1986). Vertically related is a third trait as small companies have been found to buy from or sell to the large firm.

Data was collected during 2000 and 2001 via 43 surveys yielding 83 small company investments in 15 different industries (see Table 1). These were supplemented by interviews with 72 managers including non-survey respondents using a structured questionnaire to guide the interview. The goal was to balance the richness of information found in case studies with the breadth of large-scale examinations (Harrigan, 1983a; Duhaime & Grant, 1984). The identity of the firms has not been revealed as the data was provided in confidence.

TABLE 1.
Data Summary By S&P 500 Industry Group

	Companies				Minority Investments	
	S&P 500		In Sample*			
	#	%	#	%	#	%
Aerospace & Defense	7	1.4	1	2.3	2	2.4
Automotive	8	1.6	1	2.3	2	2.4
Banks	31	6.2	Excluded from sample			
Chemicals	12	2.4	6	14	13	15.7
Conglomerates	9	1.8	0	0	0	0
Consumer Products	28	5.6	4	9.3	7	8.4
Containers & Packaging	8	1.6	0	0	0	0
Discount & Fashion	24	4.8	1	2.3	2	2.4
Electrical & Electronics	27	5.4	1	2.3	2	2.4
Food	21	4.2	0	0	0	0
Fuel	25	5	2	4.7	4	4.8
Health Care	39	7.8	4	9.3	5	6.1
Housing & Real Estate	8	1.6	0	0	0	0
Leisure Time Industries	18	3.6	2	4.7	5	6.1
Manufacturing	28	5.6	5	11.6	7	8.4
Metals & Mining	16	3.2	1	2.3	2	2.4
Nonbank Financial	45	9	Excluded from sample			
Off Equip and Comp	40	8	7	16.2	14	16.9
Paper & Forest Prod	11	2.2	0	0	0	0
Publishing & Broad	13	2.6	3	7	8	9.6
Service Industries	15	3	2	4.7	4	4.8
Telecommunications	19	3.8	3	7	6	7.2
Transportation	10	2	0	0	0	0
Utilities	38	7.6	0	0	0	0
Total	500	100	43	100	83	100

*Includes BP Amoco, Nokia, Starwood and NBC that were not S&P 500 companies

Much of the data of interest was not publicly available, therefore, directly contacting those making investments was expected to be the most effective way to discover why and how corporate venture capital is utilized. Titles of participating managers were Business Development Manager, Director of Corporate Development, Vice President of Business Development and Senior Vice President of Corporate Development, etc. The sample is non-random and no claim is made as to it being representative. However, information

was provided by the primary decision-maker and a high percentage of firms engaging in corporate venture capital is thought to have participated.[1]

Data Analysis

As an exploratory study, emphasis was placed on the interviews and an initial examination of the association between key variables. Table 2 reveals that the majority of minority investments are in ventures that have a vertical (i.e., a buyer or seller) relationship with the investing firm. It is unlikely that the majority of these investments were made to learn. Also, ventures having a low degree of strategic fit with the investing firm receive funding just as frequently as those that are closely aligned with the investing firm. This is informative because few CEO's would consider acquiring another large firm that did not share a perceived high degree of strategic fit with the focal firm's core business.

TABLE 2

Minority Investments By Type Of Relatedness

	Related	Unrelated	Total
Vertically Related	27%	32%	59%
Not Vertically Related	23%	18%	41%
Total	50%	50%	100%

Note: Related refers to the extent to which businesses share common technological or market expertise. Vertically related refers to the extent to which goods and services are supplied or purchased.

Investments in Vertically Related Ventures

Why use minority investments with vertical transactions? Almost 60% of the minority investments in my sample are in vertically related ventures. Vertical strategies are critical because the firm needs a steady supply of inputs as well as a market for its goods. Firms utilize various governance modes from complete ownership to no ownership when developing vertical strategies. Complete integration may reduce transaction costs, but can also increase economic costs (Pisano, 1990) and can reduce the strategic flexibility that is important when technology uncertainty is high (van de Vrande et al., 2006). Minority investments can (1) increase the investing firm's bargaining power when buying scarce resources and (2) provide a better coordinating mechanism for certain types of innovations.

Bargaining Power

For large firms sourcing radical technology, a minority investment is a mid-level response to improve the investing firm's bargaining position (Oliver, 1991). Minority investments allow investing firms to limit their asset exposure and risk while retaining the flexibility that is important when the technology or market is emerging and/or is changing rapidly. Learning is not a primary expectation from vertically related ventures

as most of the knowledge that is transferred is necessary for coordination and little knowledge is internalized or acquired by the other (Mowery, et al., 1996; Gulati & Singh, 1998).[2]

Consider IBM's 1982 investment in Intel when Intel was a fledgling venture. The microprocessors that Intel developed and manufactured were a critical input for IBM's personal computers (Harrigan, 1988). Intel controlled cospecialized assets (those with a bilateral dependence between the PC and the microprocessor) to develop a radical innovation for IBM given IBM's internal capabilities (Teece, 1986). IBM's investment increased its bargaining power not only to better assure access to the scarce resource, but also to prevent its [Japanese] rivals from gaining control over a key supplier. Total control by IBM of Intel via acquisition would likely have resulted in a culture clash and demotivated Intel's entrepreneurial staff. Importantly, IBM likely couldn't have managed the rapid technological changes required to be successful[3] (Teece, 1986; Tidd & Trewhella, 1997).

Other illustrations of investments in vertically related ventures are plentiful. Compaq Computer invested in Transmeta Corporation to assure access to microprocessors for portable computers and hand held computing devices. Cisco Systems routinely invests in ventures to buy advanced technology that it cannot or does not want to develop in house. Vertical relationships and minority investments also include large firms selling to ventures. Compaq invested in numerous ventures that purchased its core products. In contrast, Intel invests in ventures that develop technologies that utilize its newer, innovative products that are not yet embraced by established firms to create demand to spur a new market for the innovative products (Takahashi, 1999; Chesbrough, 2002).

The interviews lend additional support to this as managers stated that investments were made to gain access to relevant technology (when learning is secondary or not a factor) and to acquire technology to get to market faster. Several managers also stressed that they expect to have a significant voice on the direction of the technology being developed so it can be developed to their specification. Thus, firms also invest to increase their bargaining power for better coordination, especially of autonomous innovation.

Coordination Mechanism

Autonomous innovation is that which can be pursued independently of any other innovation in contrast to systemic innovation that requires other complementary innovation to be of value (Armour & Teece, 1980; Teece, 1986; Chesbrough & Teece, 1996). As an example, Motorola must fund development of advanced technology for batteries to be used in their handheld communications devices. To develop more advanced batteries, the firm can attempt to develop them internally or develop a joint venture (Chesbrough & Teece, 1996). However, a minority investment may have the advantages of allowing Motorola to shape the direction, timing and features of the technology with lower investment exposure and greater flexibility than other modes of investment. Using a corporate venture capital program, Motorola can effectively hedge its bet by investing in multiple ventures that provide similar, but slightly different

innovative technology (i.e., the "spider's web"). It can use the spider's web approach to influence the direction and features of battery technology with low investment exposure. Ultimately, several ventures may supply batteries to Motorola. It retains the strategic flexibility to buy from any company it desires while retaining a certain amount of bargaining power over a venture. At the same time, an individual venture can also develop the same or similar technology for other uses (such as for other industries).

Investments in Unrelated Small Companies

Unrelated ventures – those that share a low degree of technological or market expertise with the investing firm – and, especially, technologically unrelated ventures were aggressively invested in. They are prevalent when the venture also shares a vertical relationship with the large firm as the example of IBM's investment in Intel illustrates.

TABLE 3
Minority Investments By Type Of Relatedness

	Market Related	Market Unrelated	Total
Technologically Related	15%	13%	28%
Technologically Unrelated	22%	50%	72%
Total	37%	63%	100%

72% of the investments in my sample were in technologically unrelated ventures. Unrelated ventures are important to investing firms and the ones most frequently mentioned. The managers interviewed wanted exposure to "new, dissimilar" technology that is different from their own. They stated that this can be technology that their firm can't or is too slow to produce, typically doesn't do, or it can complement existing capabilities. Many firms won't invest if the venture has the same technology as the investing firm. Stated one manager, there's "not much use in doing exactly what they do." Several sought ventures that can fill "gaps" in their existing technology. Investing firms are attracted to unrelated ventures because ventures develop technologies faster, better and/or cheaper than large firms as they are "not encumbered with policies and procedures." Another firm made an "investment in a company with a technology entirely unrelated to our core business but one that we can use in changing our core business."

Although bargaining power is a key objective for some investments, investing firms will invest in unrelated ventures to learn. Unrelated ventures that are not vertically related can help enhance explorative learning for new knowledge. Prior research has indicated that integration of the venture's intellectual property is difficult when there is a very wide gap between the venture's expertise and the investing firm's (Dushnitski & Lenox, 2005). Unrelated ventures will tend to have technological or market expertise that the investing firm does not have. Entering new technological or market areas without the requisite knowledge is risky. Therefore, I suggest that unrelated ventures are most useful for explorative learning to gain knowledge about unfamiliar areas before deciding to invest additional resources (Roberts & Berry, 1985; Keil et al,, 2004; Schildt et al., 2005; van de Vrande, 2006; Wadwa & Kotha, 2006).

Explorative learning can begin with monitoring the venture's innovative activity to gain exposure and insight. This often helps investing firms decide whether or not to pursue unrelated areas, but does not require immediately integrating or appropriating the venture's intellectual property. Before entering a new business area requiring a different set of competencies, firms should gain familiarity about a given technology and or a new market's characteristics to determine whether to invest additional resources in that area. In this case, investments in unrelated ventures will be made when the firm doesn't want to make a bet with its own research and development, but wants a "foot in the door" for new technology that can alter the firm.

A minority investment can be used as a real option to help the firm obtain knowledge over time about the new industry. For example, to learn about biotechnology, Monsanto invested in several biotechnology companies. The interaction required for knowledge transfer included inviting scientists from the ventures to give seminars about their research and potential opportunities to senior management, as well as contract research leading to licenses. Monsanto committed significant capital to internal research-based biotechnology ventures only after familiarity was developed (Roberts & Berry, 1985).

Over time, once sufficient familiarity has been gained by the investing firm, unrelated ventures can become related as occurred with Monsanto. Another example is Microsoft's investment in UUNet Technologies that was an Internet backbone operator, perhaps to gain familiarity with the Internet service market. At the time of the investment, UUNet was likely an unrelated small company. With the development of MSN Internet access service, UUNet can be considered as related to Microsoft. Microsoft potentially benefited twice from this investment. First, it received an education, then it sold UUNET to MCI WorldCom for a profit (Deogun & K. Scannell, 2000).

Investing in unrelated ventures can help firms manage risk and uncertainty while obtaining needed innovation. Firms that invest internally in unfamiliar areas may miss critical elements of the technology or market and reduce their chance of success (Roberts & Berry, 1985). Acquiring unrelated firms may draw a negative reaction from influential shareholders (Useem, 1996). In contrast, minority investments require minimal asset exposure. Once uncertainty is reduced, more resources can be invested, which is consistent with a real options decision process.

Investments in Related Small Companies

Large firms also invest in ventures whose knowledge base is closely related to that of the investing firm. An example is Cisco Systems' investment in Cerent Corporation. Cisco specializes in routing devices that direct traffic over the Internet. Its minority investment in Cerent allowed it to stay abreast of a related, but more advanced router that operates differently than the networks developed by Cisco. In this case, Cerent was expected to be leading a market that had evolved, due in part to Cisco's earlier efforts. Subsequent to making the minority investment, Cisco acquired Cerent (Thurm, 1999).

Although the majority of managers in my sample sought insight or exposure to new, different technologies or markets, a few expressed the desire to learn from the venture. Dushnitsky & Lennox (2005) contend that the venture will permit integration of its intellectual property in return for financing and they provided evidence that, in some industries, higher investment levels in corporate venture capital lead to higher future patent citation rates (i.e., innovativeness). Internal R&D is important to help manage the innovative process by increasing absorptive capacity (Cohen & Levinthal, 1990), giving the firm the knowledge to recognize and exploit external innovation (Mowery et al., 1996; van de Vrande et al., 2006). Investing firms with the proper absorptive capacity can internalize external knowledge from portfolio ventures and quickly put it into use to augment existing capabilities. This type of learning is likely more exploitative than explorative and adds incrementally to existing knowledge (March, 1991; Keil et al., 2004; Schildt et al., 2005; Wadhwa & Kotha, 2006).

An argument has been made that investing in ventures with similar expertise provides limited benefits because the more closely related the venture is, the more redundant its knowledge base is with the investing firm and the less learning will accrue to the investing firm (Dushnitsky & Lenox, 2005). In addition, the closer the investing firm's expertise is to the venture, the more reluctant the entrepreneur may be to share his or her intellectual property. However, strategically, industry leaders, like Cisco invest to remain industry leaders by gaining exposure and access to cutting-edge technology in their existing markets. Thus, one benefit of investing in related ventures is to learn about a related, but more advanced technology when a bet with R&D is not desired to reduce the risk of getting leap-frogged by rivals with superior technology. In addition, firms that are not industry leaders can invest in related ventures to help close the gap between themselves and the industry leader faster than they could do it on their own.

Related ventures that are also vertically related can provide an immediate benefit to the investing firm. Many Internet companies were not suited to be standalone independent entities, but could be better utilized by a large firm that could leverage its products and/or technology effectively. For example, Rite Aid's investment in Drugstore.com allowed it to establish an on-line distribution channel faster than if tried to develop an Internet site on its own. This was important to enhance its competitive position with its chief rival, CVS that already had an on-line capability (Berner, 1999).

An alternative explanation is that large firms invest in related ventures, not solely for sourcing technology, but when financial returns are more important than strategic benefits. In this case, investing firms have the expertise to evaluate the prospects of the venture whereas they may not have the expertise to evaluate unrelated ventures. In fact, investments in related ventures have been shown to yield superior financial returns, especially when compared to unrelated ventures (Gompers & Lerner, 1998).

CONCLUSION

Corporate venture capital should not be perceived as simply a financial activity or to internalize a venture's intellectual property. Along with acquisition, joint ventures and internal ventures, minority investments are a strategic tool that can augment a large firm's innovativeness and competitive position (Birkinshaw, J., van Basten Batenburg, R. & Murray, G, 2002). Ventures can provide multiple benefits to investing firms, including increased bargaining power over a key resource provider, a response to resource dependency, and an option to expand into a new, unfamiliar area.

The arguments presented in this paper are limited in methodology. No attempt was made to test them statistically. Developing a complete understanding of CVC requires different methodologies and the methods utilized herein of obtaining qualitative information from decision-makers at investing companies has been useful in improving our knowledge of this strategic tool.

ENDNOTES

[1] I do not restrict this definition to requiring the investing firm to have a separate subsidiary to make the investment as other researchers have done (e.g., Birkinshaw et al., 2002; Ernst et al., 2005). Also, this paper does not consider investing for solely financial return as traditional venture capitalists do.
[2] This type of uncertainty involves the terms of the trade that can involve complex contingencies that are difficult to understand, predict or articulate (Pisano, 1990).
[1] For example, Dushnitsky and Lenox (2005) identified 247 firms for the entire period of 1969-1999 that invested in CVC and my sample includes 43 surveys and 72 interviews.
[2] This is not to say that vertical relationships do not involve technological interdependencies that may require significant coordination and information flows (Teece, 1986).
[3] To be clear, the relationship was not one sided as Intel was also dependent on IBM for cash and other complementary assets such as IBM's brand name (Teece, 1986; Oliver, 1991).

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