



Finance And Investing

Making Sense of Corporate Venture Capital

by Henry Chesbrough

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Large companies have long sensed the potential value of investing in external start-ups. More often than not, though, they just can't seem to get it right.

Recall the mad dash to invest in new ventures in the late 1990s—and then the hasty retreat as the economy turned. Nearly one-third of the companies actively investing corporate funds in start-ups in September 2000 had stopped making such investments 12 months later, according to the research firm Venture Economics, and during the same period, the amount of corporate money invested in start-ups fell by 80%. This decline in investments was part of a historic pattern of advance and retreat, but the swings in recent years were even wider than before: Quarterly corporate venture-capital investments in start-ups rose from \$468 million at the end of 1998 to \$6.2 billion at the beginning of 2000 and then tumbled to \$848 million in the third quarter of 2001. While private VC investments also ebb and flow as the economy changes, the shifts in corporate VC investments have been particularly dramatic.

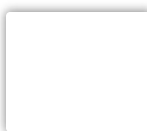
Such inconsistent behavior certainly contributes to the low regard with which many private venture capitalists view in-house corporate VC operations. In their eyes, the wild swings are further

evidence that big companies have neither the stomach nor the agility to manage investments in high-risk, fast-paced environments. They also point to some high-profile missteps by individual companies to support this conclusion. Those missteps have, in turn, tended to make some companies hesitant to launch programs to invest in external start-ups, even in good times.

A number of companies, however, have defied this stereotype of the bumbling corporate behemoth and have continued to make investments in new ventures. Even as substantial numbers of corporate venture capitalists have headed for the exits in the past year and a half, some big companies—including Intel, Microsoft, and Qualcomm—have publicly committed themselves to continued high levels of investment. Others—such as Merck, Lilly, and Millennium Pharmaceuticals—have actually come in the door as others have left. What gives these optimists their confidence? More generally, why have some companies' forays into venture capital been successful, generating significant growth for their own businesses?

To answer these questions, we need an organized way to think about corporate venture capital, a framework that can help a company decide whether it should invest in a particular start-up by first understanding what kind of benefit might be realized from the investment. This article offers such a framework, one that also suggests when—that is, in what kind of economic climates—different types of investment are likely to make sense.

But first, let's briefly define corporate venture capital. We use the term to describe the investment of corporate funds directly in



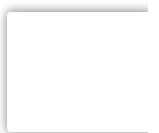
external start-up companies. Our definition excludes investments made through an external fund managed by a third party, even if the investment vehicle is funded by and specifically designed to meet the objectives of a single investing company. It also excludes investments that fall under the more general rubric of “corporate venturing”—for example, the funding of new internal ventures that, while distinct from a company’s core business and granted some organizational autonomy, remain legally part of the company. Our definition does include, however, investments made in start-ups that a company has already spun off as independent businesses.

Our framework can help companies evaluate their existing and potential VC investments and determine when and how to use corporate VC as an instrument of strategic growth.

Our framework helps explain why certain types of corporate VC investments proliferate only when financial returns are high, why other types persist in good times and in bad, and why still others make little sense in any phase of the business cycle. It can also help companies evaluate their existing and potential VC investments and determine when and how to use corporate VC as an instrument of strategic growth.

The Dual Dimensions of Corporate VC

A corporate VC investment is defined by two characteristics: its objective and the degree to which the operations of the investing company and the start-up are linked. Although companies typically have a range of objectives for their VC investments, this type of funding usually advances one of two fundamental goals.



Some investments are strategic: They are made primarily to increase the sales and profits of the corporation's own businesses. A company making a strategic investment seeks to identify and exploit synergies between itself and a new venture. For example, Lucent Venture Partners, which invests the telecommunications equipment maker's funds in external companies, makes investments in start-ups that are focused on infrastructure or services for voice or data networks. Many of these companies have formal alliances with Lucent to help sell Lucent's equipment alongside their own offerings. While Lucent would clearly like to make money on its investments in these start-ups, it is willing to accept low returns if its own businesses perform better as a result of the investments.

The other investment objective is financial, wherein a company is mainly looking for attractive returns. Here, a corporation seeks to do as well as or better than private VC investors, due to what it sees as its superior knowledge of markets and technologies, its strong balance sheet, and its ability to be a patient investor. In addition, a company's brand may signal the quality of the start-up to other investors and potential customers, ultimately returning rewards to the original investor. For example, Dell Ventures, Dell Computer's in-house VC operation, has made numerous Internet investments that it has expected to earn attractive returns. While the company hopes that the investments will help its own business grow, the main rationale for the investments has been the possibility of high financial returns.

The second defining characteristic of corporate VC investments is the degree to which companies in the investment portfolio are linked to the investing company's current operational capabilities—that is, its resources and processes. For example, a start-up with strong links to the investing company might make use of that company's manufacturing plants, distribution channels,

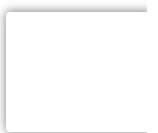


technology, or brand. It might adopt the investing company's business practices to build, sell, or service its products.

Sometimes, of course, a company's own resources and processes can become liabilities rather than capabilities, particularly when it faces new markets or disruptive technologies.¹ An external venture may offer the investing company an opportunity to build new and different capabilities—ones that could threaten the viability of current corporate capabilities. Housing these capabilities in a separate legal entity can insulate them from internal efforts to undermine them. If the venture and its processes fare well, the corporation can then evaluate whether and how to adapt its own processes to be more like those of the start-up. In rare cases, the company may even decide to acquire the venture.

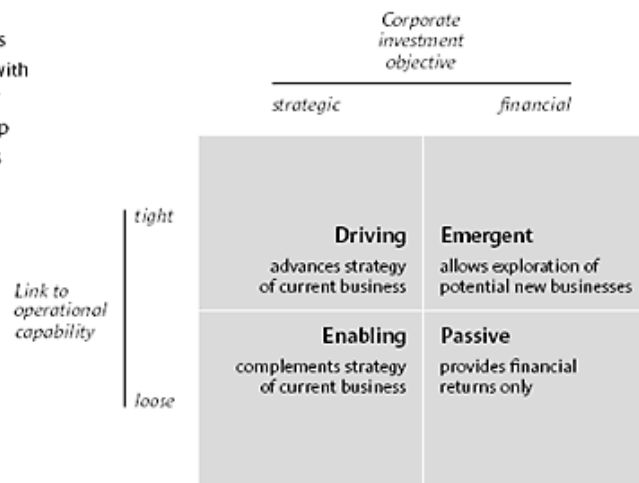
Four Ways to Invest

Clearly, neither of these two dimensions of corporate investing—strategic versus financial and tightly linked versus loosely linked—is an either-or proposition. Most investments will fall somewhere along a spectrum between the two poles of each pair of attributes. Still, overlaying the two dimensions creates a useful framework to help a company assess its current and potential VC investments. (See the exhibit “Mapping Your Corporate VC Investments” for a depiction of these distinct types of corporate venture capital.)



Mapping Your Corporate VC Investments

Combining an assessment of your company's corporate objective—strategic or financial—with an analysis of the degree of linkage—tight or loose—between your operation and a start-up receiving your funding reveals the four types and purposes of corporate VC investments.



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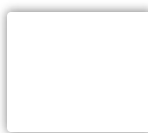
Driving Investments.

This type of investment is characterized by a strategic rationale and tight links between a start-up and the operations of the investing company. For instance, Agilent Technologies created a VC operation to invest in three strategic areas—life sciences, wireless communications, and optical communications—that it has identified as key to its growth. The VC arm works closely with the company's existing businesses to share information, qualify investment opportunities, and connect portfolio companies to Agilent's own initiatives. For example, Agilent has recently invested in a start-up company making wireless radio-frequency devices, a product area Agilent plans to explore in its own business. If this investment is successful, Agilent's future business will benefit; if it fails, Agilent will get a valuable early warning about pitfalls to avoid in that business.

Similarly, Microsoft has earmarked more than \$1 billion to invest in start-up companies that could help advance its new Internet services architecture, “.Net.” This Microsoft technology—which will enable its Windows platform to provide a variety of Internet services—is a contender to set the standards for the next generation of products and services over the Web. Microsoft is funding start-up firms that will exploit its architecture and, in so doing, promote the adoption of the Microsoft standard over rival approaches from Sun Microsystems and IBM. The start-ups are tightly linked to Microsoft’s operations through the Windows software and tools that the company provides to them for the development of their own products.

The strategic value of Microsoft’s .Net investments is highlighted by the company’s decision to make them in the shadow of earlier VC investment losses. The company has written off staggering sums—\$980 million in the third quarter of 2000 alone—in its corporate VC portfolio. But rather than backing off, Microsoft is charging ahead with new .Net investments. Because they could help the company win the battle over the next Internet services standard—a major strategic victory—it is willing to risk substantial financial losses.

Although it’s clear that many driving investments can advance a corporate strategy, there are limits to what they can achieve. The tight coupling of these investments with a company’s current processes means that these investments will sustain the current strategy. They will be unlikely to help a corporation cope with disruptive strategies or to identify new opportunities when the company must go beyond its current capabilities to respond to a change in the environment. If a corporation wants to transcend current strategy and processes, it should not rely on driving investments, which are ill suited for these tasks.

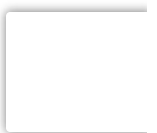


Enabling Investments.

In this mode of VC investing, a company still makes investments primarily for strategic reasons but does not couple the venture tightly with its own operations. The theory is that a successful investment will enable a company's own businesses to benefit but that a strong operational link between the start-up and the company isn't necessary to realize that benefit. This may seem too good to be true. How can a company's strategy benefit if its operations are not tightly linked to the venture? One answer lies in the notion of complementarity: Having one product makes a person want another. A company can take advantage of this notion by using its VC investments to stimulate the development of the ecosystem in which it operates—that is, the suppliers, customers, and third-party developers that make goods and services that stimulate demand for the company's own offerings.

Intel Capital, the investment arm of the semiconductor giant, is a paradigmatic example of a company making enabling investments. Back in the early 1990s, long before corporate venture capital was fashionable, Intel realized it could benefit from nurturing start-ups making complementary products: Demand for them could spur increased demand for Intel's own microprocessor products. So Intel invested in hundreds of companies whose products—such as video, audio, and graphics hardware and software—required increasingly powerful microprocessors inside the computers they ran on, thereby stimulating sales of Intel Pentium chips. Whereas Microsoft's VC investments in start-ups seek to establish a new standard, in Intel's case, the investments have mainly been aimed at increasing its revenue by boosting sales within the current Wintel operating system standard.

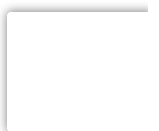
Intel Capital's enormous VC investment portfolio has been the subject of some derision. Critics charge that Intel engages in



“drive-by investing.” They argue that the company cannot possibly coordinate with its own operations—or even effectively monitor—the more than 800 investments it has made in the past decade. But this criticism misses the point of Intel’s investment strategy. The strategic value to Intel lies not in its ability to coordinate its operations with the companies in its investment portfolio but rather in the increased demand for Intel’s own products generated by its portfolio companies. Intel need not closely manage every investment because it typically coinvests alongside VC firms that direct the ventures’ growth and monitor their performance.

Intel itself may have added to the confusion about its investment rationale by widely touting the financial returns it earned in recent years. The high returns were in fact secondary to Intel’s strategic objectives, merely making Intel’s investments more affordable. The strategic benefits of these enabling investments have spurred Intel to continue with this type of funding, despite its recent investment losses, just as the strategic benefits of the driving investments help to offset Microsoft’s recent losses. (Note that not all of Intel’s VC investments would be characterized as enabling. Some clearly are driving investments, including those the company has made in companies in its supply chain. And, as we will see below, other Intel investments fall into another category in our framework.)

The investments made by Merck’s new VC unit illustrate another kind of enabling investment. Rather than increasing demand for Merck’s products, the company’s investments are designed to support technologies that could enhance its profitability by streamlining the way it does business. For example, Merck has invested in start-up companies developing ways to cut the time required to recruit appropriate patients for clinical trials of new drugs. Merck’s relationship with the start-ups is that of an



investor and a customer. But if these ventures succeed, Merck will be able to use their methods to move its drugs more rapidly through the clinical trials necessary to obtain FDA approval, leaving it more time to market a drug before its patent expires. The company estimates that speeding up the patient recruitment process could ultimately add millions of dollars *per month* to Merck's bottom line. Again, Merck need not enjoy a high financial return on these investments to realize their strategic benefits.

But enabling investments have their limits, too. These vehicles will be justified only if they can capture a substantial portion of the market growth they stimulate. When Intel grows its ecosystem, it is also growing the market for competitors like Advanced Micro Devices. Because Intel's market position is strong, it can expect to realize most of the increased demand in the market. Intel's smaller rival AMD, by contrast, could not afford to create demand in a similar fashion because it would not capture enough of the increase to justify its investments.

Emergent Investments.

A company makes these kinds of investments in start-ups that have tight links to its operating capabilities but that offer little to enhance its current strategy. Nevertheless, if the business environment shifts or if a company's strategy changes, such a new venture might suddenly become strategically valuable. This gives it an optionlike strategic upside beyond whatever financial returns it generates. For example, a company may sense an opportunity in a strategic "whitespace"—a new market with a new set of customers. Exploring the potential of such a market is often difficult for a company focused on serving its current market. Investing in a start-up willing and able to enter this uncharted territory—selling real products to real customers—provides information that could never be gleaned from the hypothetical



questions of a market research survey. If the market seems to hold potential, the investing company may choose to shift its course.

Thus, while the immediate benefits, if any, of such investments are financial, the ultimate return may result from exercising the strategic option. In that sense, emergent investments complement the benefits of driving investments, which are designed only to further the company's current strategy.

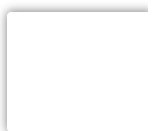
A strong operational link between a company and its start-up can take various forms. It may mean sharing technology, as with the start-ups spun off from Lucent Technologies. (See the sidebar "Lucent Hedges Its Bets.") Lucent also sometimes shares production facilities and sales channels with the newly independent ventures, improving the efficiency of its own production and distribution operations by allowing them to run at a higher capacity.

Lucent Hedges Its Bets

A good example of an emergent investment strategy—in which a company invests in external startups that ...



Or the links might take the form of product use. In 1997, Intel invested in a start-up called Berkeley Networks. Berkeley used existing Intel processors to make low-cost switches and routers for communications networks—a new market for Intel products. At the time, Intel was happy to see its products used in this rather novel way. But with little likelihood that Berkeley's business

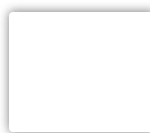


would create much incremental demand for its products and no other apparent strategic upside for itself, Intel saw the investment as primarily a financial one.

As Intel performed its due diligence on its investment, though, it began to see the outlines of a possible strategy shift, one that might result in the widespread use of its products in network switches. Initially, this view was controversial within the company: At the time, Intel's communications business was focused on making products (for example, network interface cards for PC networks) that were compatible with the prevailing Ethernet network standard. Since the Berkeley approach competed with the Ethernet standard, Intel had to balance the benefits of promoting a new network architecture that used Intel's core Pentium products against the threat that the Berkeley-inspired architecture posed to Ethernet networks. After some sharp internal disagreements—and after the value of Berkeley Networks began to grow—Intel decided to adapt its strategy to pursue this opportunity, culminating in the Intel Internet Exchange Architecture, launched in 1999. The investment in Berkeley Networks helped Intel identify a promising opportunity more quickly than it might have otherwise.

Of course, many options never become valuable, and many emergent investments will never be important to an organization's strategy. It is important to let these options lapse and settle for whatever financial returns have been earned. Thus, managing these investments requires balancing financial discipline with strategic potential. Many companies err by throwing good money after bad. Partnering with private VC funds, and following their lead, is one way to impose financial discipline on the process.

Passive Investments.



In this mode of VC investment, the ventures are not connected to the corporation's own strategy and are only loosely linked to the corporation's operational capabilities. Consequently, the corporation lacks the means to actively advance its own business through these investments. And despite the perception of some companies that they enjoy technology or market knowledge that gives them advantages over other investors, the recent flight of corporate VC suggests otherwise. Thus, in passive venturing, a corporation is just another investor subject to the vagaries of financial returns in the private equity market. Indeed, this type of investing is arguably a misuse of shareholders' funds. (For a fuller discussion, see the sidebar "The Corporation as Money Manager.")

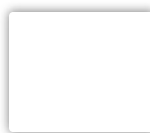
The Corporation as Money Manager

One corporate best practice in the 1960s and 1970s involved identifying diversification opportunities in ...



For example, Dell Ventures poured money into ventures that had only tangential connections with Dell's own strategy. Yes, these ventures would have increased demand for personal computers and servers if they had succeeded, but Dell's market share was not high enough to allow it to capture much of the gain from that increased demand. When the value of its investments collapsed last year, no potential strategic benefit remained—as would have been the case with an emergent investment—to compensate for the financial losses.

Investments for All Seasons



Seen in this light, it is not surprising that corporate VC investors—many of which fit the description of passive investors—tend to head for the exits when the markets turn down. Similarly, emergent investments are more appropriate when the economy is booming and the likelihood of solid financial returns offsets the uncertainty of any strategic benefit.

By contrast, enabling and driving investments have more staying power. Granted, enabling investments may retreat somewhat in difficult times. When financial returns are down, enabling investments become more expensive and thus less attractive when compared with other, more conventional, business development mechanisms—such as advertising or promotional expenses—that a company can use to further its strategy. But as the decisions by companies such as Intel and Merck indicate, enabling investments can hold long-term benefits.

And low financial returns ought to have little impact on driving investments. After all, these investments are not justified by their financial returns but rather by their strong potential to positively affect the company's own business. As the decisions by companies such as Microsoft suggest, a decrease in the rate of return on VC investments shouldn't undermine that rationale.

While corporate VC investments have generated decidedly uneven financial returns, they should not be judged primarily on that basis. They should be thought of as important ways for a company to fuel the growth of its business.



Thus, while corporate VC investments have generated decidedly uneven financial returns, they should not be judged primarily on that basis. They should be thought of as important ways for a company to fuel the growth of its business. Driving, enabling, and emergent investments can, in different ways, each foster the growth of a company's current businesses; emergent investments can identify and spark the growth of future businesses. (The exhibit "Paths to Growth" shows six ways the different kinds of corporate VC investments can generate growth.)

Paths to Growth

A corporation's investments in external start-up companies can advance its own growth on a number of strategic fronts.

Growing Your Current Businesses

	<i>Investment</i>	<i>Type</i>	<i>Example</i>
<i>Promoting a standard</i>	In start-ups making products and services that promote the adoption of a technology standard you own or are backing	Driving	Microsoft's investment in companies supporting .Net, its Internet services architecture
<i>Stimulating demand</i>	In start-ups developing complementary products and services that increase demand for your own	Enabling	Intel's investment in companies whose products require its Pentium processor
<i>Leveraging underutilized technology</i>	In companies you have spun off in order to commercialize an unused and nonstrategic technology	Emergent	Lucent's investment in companies built around a technology that Lucent deems a misfit with its current strategy

Growing Your Future Businesses

	<i>Investment</i>	<i>Type</i>	<i>Example</i>
<i>Experimenting with new capabilities</i>	In ventures developing interesting new business processes unrelated to or possibly in conflict with your current ones	Emergent	Cisco's investment in communications technologies that it later acquires and deploys internally
<i>Developing a backup technology</i>	In companies developing alternative technologies, as hedges against your current technology direction	Emergent	Intel's investment in a company developing a networking technology that could supplant one that Intel participates in
<i>Exploring strategic whitespace</i>	In companies serving customers in new markets, thereby providing an indicator of those markets' potential	Emergent	Panasonic's investment in start-ups pursuing the convergence of home computing and entertainment

Paths to Growth A corporation's investments in external start-up companies can advance its own growth on a number of strategic fronts.

Regardless of whether growth is desired in present or future businesses, a company needs a clear-eyed view of its strategy and its operational capabilities. It needs the discipline to build its investment portfolio with these parameters in mind. And it needs to manage its investments to capture the latent strategic benefits in its portfolio rather than chasing the evanescent promise of high financial returns in the venture capital market. If it follows these precepts, a company's VC investments will survive during general downturns in venture capital investment and will ultimately generate valuable growth for its shareholders.

1. See Dorothy Leonard-Barton, "Core Capabilities and Core Rigidities: A Paradox in Managing New Product Development," *Strategic Management Journal*, summer 1992, for a discussion of how companies' capabilities can become liabilities. For an introduction to disruptive technologies, see Clayton M. Christensen, *The Innovator's Dilemma: When New Technologies Cause Great Firms to Fail* (Harvard Business School Press, 1997).

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