

Capturing and Measuring the Strategic Value in Corporate Venture Capital

by

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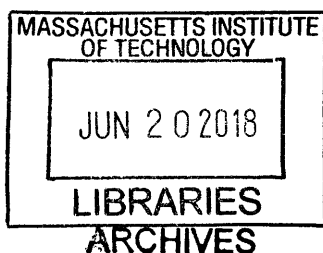
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Abstract

Corporations are increasingly utilizing corporate venture capital (CVC) as a significant component of their external innovation strategy. Over the past several years, these CVCs have grown to contribute a large percentage of all startup funding in the US. The growing role of CVCs in the innovation ecosystem presents pressing questions around the structures, objectives, and stability of this particular source of funding.

After several decades of CVC history, nearly all CVCs have converged onto the dual objective of investing for both strategic and financial returns. It is the existential need to return strategic value back to the parent corporation that separates CVCs as distinct from institutional venture capital (VC) firms. While the survivability and growth of institutional VCs depend solely on financial return performance, the survivability and growth of CVCs depend on demonstrations of both a respectable financial return, as well as relevant and significant strategic returns.

This research explores and examines the capture and measure of strategic value in CVC investments through a series of interviews with prominent CVC units representing a cross section of various industries. A framework for characterizing four taxonomies of strategic investment objectives is proposed and used to landscape a sample of CVCs in order to determine whether the capture of strategic value in CVCs is emergent from the system design of a CVC's structure, practices, and organizational linkages. A survey on how CVCs measure direct and indirect strategic value revealed that the vast majority of CVCs were unable to, or do not attempt to measure the performance of this primary investment objective. Both quantitative and qualitative treatments were given to the analysis of the research data on the structures, practices, and strategies related to value capture in strategic VC investments.

This research found a wide range of approaches towards capturing strategic value in CVC investments. However, the measurement of such value remains elusive. Very few instances of actual measurement of strategic value were observed, which paints a picture of a

significant funding source of US innovation largely unjustified by the lack of performance measurements on existential investment objectives.

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Dedication & Acknowledgements

Dedication

It was 1992 when I told my science teacher that I wanted to go to MIT. I was a child, and my reason was because MIT was my name spelled backwards. 26 years later, that dream has become a reality, my motives more substantial, and myself now a husband and a father. This thesis is dedicated to my beautiful wife Rachel – you have encouraged me to pursue a dream, and took on a great deal of sacrifices to let me do so. And to my son Titus – you have been my buddy these past two years and you remind me to never stop exploring and building. You two are the loves of my life.

Acknowledgements

I want to thank my thesis advisor Bill Aulet - from the beginning of my time at MIT, you have profoundly shaped my understanding and excitement for innovation and entrepreneurship. And to my thesis co-advisor Jonathan Fleming – Thank you for the continual guidance and insights you have provided me along the way. You've been generously available and helpful on advising my research, and your career has been an inspiration to me.

The SDM program has truly been a journey, and I must thank my fellow journeymen. To the BeyondSDM crew – Ben, Justin, Adrien, Christian, and Jose, from our breakfast club meetings to our Slack banter, you all have been the sanity check of my MIT experience.

To my church family, both in DC and in Cambridge – so many of you sent us off in love as we left our home of 8 years, and so many of you welcomed us in as we transitioned into a new home in Cambridge. I love you all dearly.

Last but not least, I want to thank my family for their love and support along the way. My hope is that my children can grow up in a home where they feel enabled and supported to pursue their passions without fear as did.

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Background/Context

Brief context of CVC

In 2017, Corporate Venture Capital (CVC) supplied \$37.4B in venture investment, making up 44% of all venture capital value deployed that year in the US (Pitchbook, 2018). This continues the trend observed over the past several years of the increasing role of CVC in the startup funding space. Yet, while the funding function of CVCs reside under the umbrella of venture capital, alongside institutional VCs both from a funding category level, and at the individual investment level, CVCs are a fundamentally different machine compared to institutional investors.

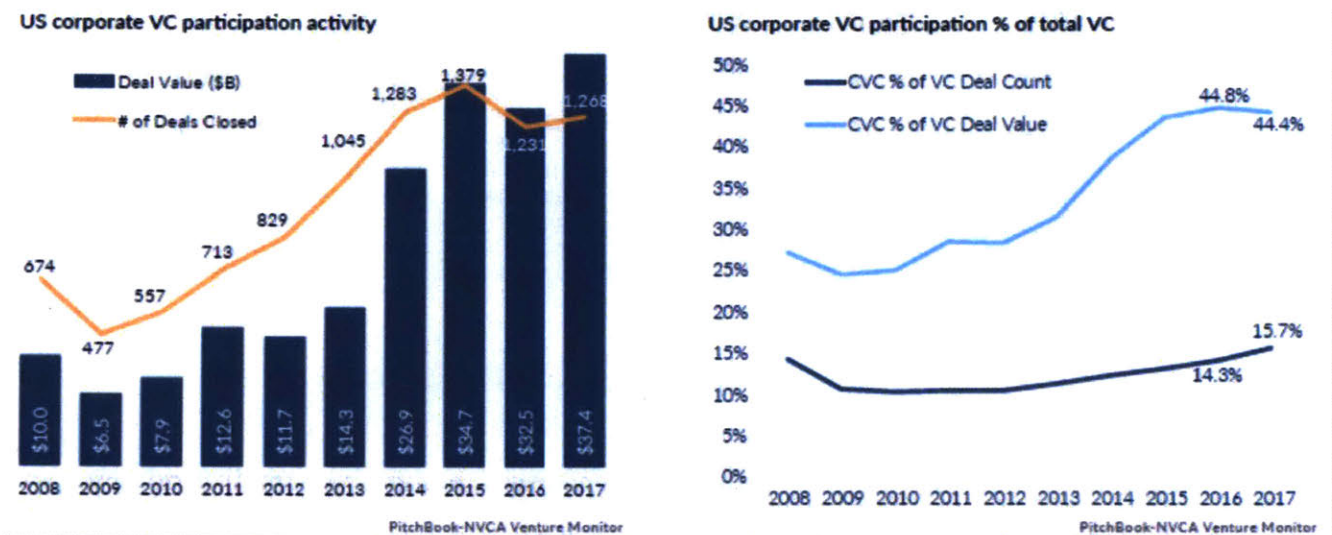


Figure 1. US Corporate VC participation activity and % of total VC activity is on the rise (Pitchbook, 2018)

Confusion persists within the venture capital community, and without – amongst the broader entrepreneurial ecosystem and inside the corporate institutions themselves – on the

nature and value of CVC activity. This is in large part due to CVCs being taxonomically similar, but metabolically distinct from their Institutional counterparts. The most apparent of these distinctions is the CVC's existential purpose for extracting strategic AND financial returns. This dual-objective of both financial and strategic returns is reflected in numerous industry studies, including a survey conducted by CBInsights (CBInsights, Inside the Minds of Corporate Venture Capitalists, 2015).

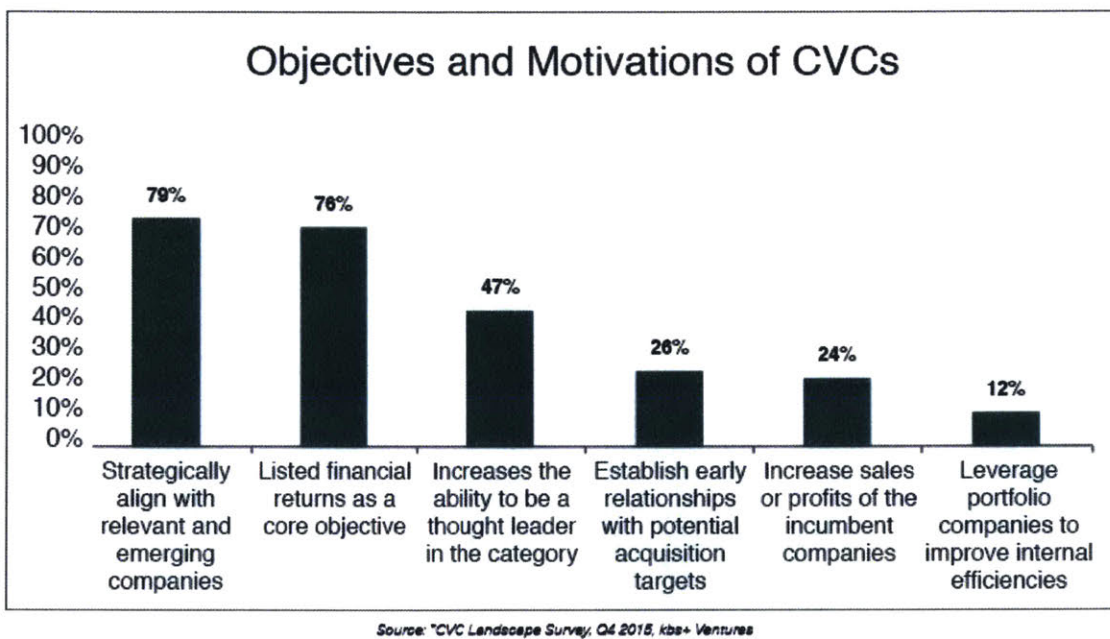


Figure 2. Majority of CVCs agree that both strategic and financial returns are top priorities.

Capturing and measuring financial returns in venture capital investments is relatively simple and well understood. Measuring the performance along the financial dimension follows the same approach adopted by institutional VC firms. It is the strategic value extraction from CVC investments that remains a perennial discussion within the industry. Understanding and implementing the proper structures and value conduits from capturing and measuring strategic

value is often a challenge within even the most seasoned of CVC outfits. The aim of this study is to better understand the systems of strategic value capture in CVC investments, and to propose a structure-value framework aligned with different stated CVC objectives. Such a study is important because arguably half of the US startup innovation infrastructure is being financed by this source. CVCs have a growing influence on what new technologies get developed and commercialized, yet are susceptible to the ebbs and flows of both the market conditions, and internal corporate politics.

The case for CVCs pursuing strategic returns dates back to the very start of CVC history. Early on, corporations saw CVC as a vehicle for diversifying into new markets (CBInsights, 16). The motivation to attain strategic benefit from CVC activity include the unique opportunities that corporations have to drive synergies that can further the performance of the corporate parent. Strategic investments can improve the efficiency, performance, and sales of current business offerings, and provide insight into the direction of rapidly changing markets and technologies. This strategic motivation for CVC is additionally reinforced by the calculation that for most corporations in a position to engage in CVC investments, even the best return rates barely move the corporate's financial needle. For long-term survivability, CVCs must demonstrate business relevance by returning a worthwhile strategic return.

Investing for financial returns can often be equal parts an internal necessity for organizational autonomy, and external signaling. Internally, the short-term survivability of a CVC outfit and performance measure is often financial in nature. This exists in the absence of direct metrics for strategic value delivery as internal rates of return are often used as a proxy

measure of strategic value. This assumes that the structures and execution of strategic value exists.

Externally, the messaging of financial return priorities serves to sustain good standing among the institutional investment community. Syndication and relationships with institutional investors are necessary conditions for sourcing and orchestrating deals. CVCs do well to be perceived as smart money within the VC community.

CVC as vehicle for open innovation

Corporations are increasingly recognizing the value of participating in, and contributing to the entrepreneurial ecosystem, as evidenced by the rapid growth in the number of CVC outfits, and the growing percentage of CVC contribution to all venture dollars deployed. From a corporate growth strategy, CVCs are best understood as a vehicle for external, or open innovation.

Open innovation can be defined as a corporation's systematic and broad exploration of internal and external sources of innovative ideas and technologies, and an equally systematic approach towards marrying these innovations with the company's unique set of strengths and capabilities, driving towards the exploitation of such opportunities by way of commercialization. In the midst of technology uncertainty and rapidly changing market landscapes, many corporate organizations have recognized the need for more broad-based innovation-focused functions to serve as breeding grounds for new products, services, and business models. They recognized that the best ideas for the future state of their current business may not necessarily reside within the confines of their corporate walls, and seek to

engage in external innovation efforts. One way in which Corporations often engage with external innovation efforts is through venture capital investments on startup companies. Portfolio companies often act as R&D options that can be called with an acquisition if successful.

Numerous strategic motivations exist when CVCs fund startups that play within the value chain of their current business offerings. Often, CVCs can provide valuable introductions to sales partners, distribution partners, manufacturing capabilities, or significant initial orders that can pave a path towards scaling a business. An options approach towards valuing the strategic and financial value of venture investments within a VC portfolio can be useful in informing decisions that CVCs will need to be able to make on active management of specific investments (startups) and the portfolio system as a whole.

Common ways of approaching strategic value in CVCs

“Strategic Value” may refer to different things to different corporations. Strategic value in the context of CVC may mean access to new and enabling technologies, a “window on technology” to see what novel technologies, processes, or business models may be out there, access to talent, technology scouting functionality, or even corporate branding. The scope of this study will limit the discussion of strategic value to that which brings benefit to a company’s present or future product offerings. This primarily includes the CVC’s function as access points to exclusive early-stage technologies, and providing a window on emerging technologies.

Several ways exist in attempting to measuring strategic value in CVCs. For the sake of this study, the methodologies are categorized as direct strategic value, and indirect strategic

value. Very generally, direct strategic value refers to the value extracted post-investment – typically in the form of access to new and/or enabling technologies exclusive to the invested startup by way of partnerships or co-development agreements, or through a subsequent acquisition of the startup. The measure of direct value may also involve the attempt to calculate increases in revenue or improvement in profit margin attributed to the CVC.

Napp and Minshall proposes a 3-layer CVC framework for the capture and measurement of strategic value, comprising a value delivery layer, an operational layer, and a metrics layer (Johann Jakob Napp, 2009). Napp references Schildt, Maula and Keil in distinguishing between Explorational and Exploitational value for the investing corporation.

Explorational value refers to the translation of information and opportunities beyond the current positions of the corporation's current business offerings. They may include market knowledge in an unfamiliar or new segment, a "window on technology" for emergent technologies, or real options on R&D efforts.

Exploitational value refers to the extraction of value from a direct investment serving to augment or enhance a current business position. This may include access to complementary technology, enabling the leverage of own technologies, or tactical plays to expand into new markets.

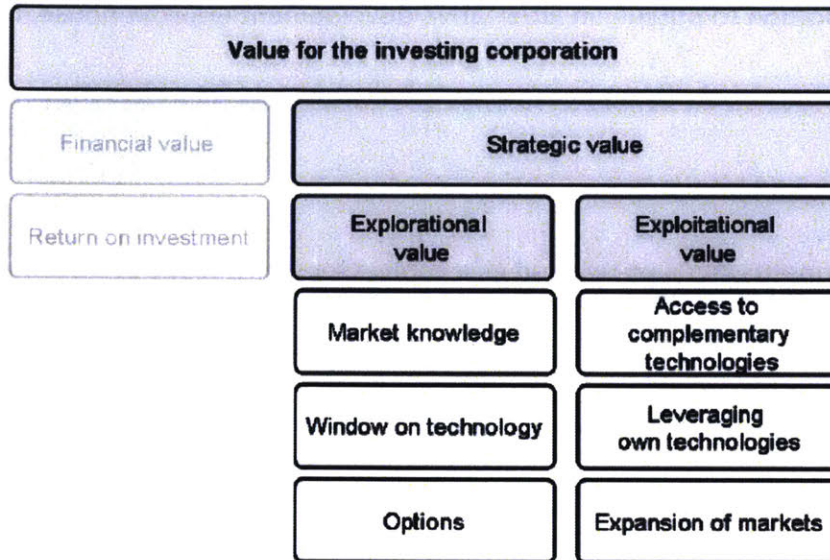


Figure 3. Strategic Value of CVC (Napp 2009)

CVC as an options play for R&D:

Corporations are increasingly turning to external or open innovation efforts as an augmentation or virtualization of internal R&D efforts. Established companies that have been optimized for incremental innovation to maintain current business positions are often not good at seen the value in new technologies (Christensen, 2016). Companies that recognize an inherent limitation on their own R&D efforts to develop disruptive technologies, turn to open innovation plays which serve to “pull” in new ideas and enabling technologies.

Measurement of value delivery can include the number of acquisitions made originating from a CVC investment, or the amount of revenue generated from an acquisition or partnership brought about from an initial CVC investment. Another approach that has been attempted involves real options pricing. However, obtaining accurate figures for how much it would have

cost for the corporation to pursue an alternative development effort in-house, including an accurate conversion rate of attempts to success, has proven to be a challenge.

CVC as White Space Bets:

CVC investments can also be used as a vehicle for white space exploration. Market or product segments that are currently unoccupied by a corporate's offerings may be of interest to the company, but whether due to program risk or technology risk, funding for such internal developments are unavailable. CVC investments allow for a low cost exploration of new markets with low risk exposure.

Measurement of value in this class of CVC investments may be the number of new products or new market offerings originating from an initial CVC investment, whether through an acquisition or by way of a partnership or licensing agreement attached to an equity investment.

CVC as an access point to exclusive enabling technologies:

CVCs are often the primary means of participating in the broader innovation ecosystem beyond the walls of the corporation. One way to view the value in having this presence in the ecosystem is in the way of providing access exclusive and enabling technologies for the parent corporation. A new technology may be exclusive and inaccessible by other means because it is novel and proprietary to the efforts of a particular startup.

Directly measuring the value of enabling technologies can be difficult as the risk of double-counting is real. It is hard to separate how much additional revenue from sales of a product is attributed to a competitive advantage associated with the infusion of an enabling

technology. Rather, a proxy measure of the value of access to exclusive and enabling technologies is in the number of partnerships or co-development efforts resultant of an equity investment.

CVC as a window on technology:

CVC participation in the broader innovation ecosystems uniquely provide a corporation a way to see what's ahead, and function as technology and market sensors for new and potentially disruptive technologies and business models. They function as a window on emergent technologies in a way no other function within the corporation is able to.

Measurement of this window on technology value may be in the number of novel introductions to the parent organization. The corporation may concern itself with tracking the number of technologies and ideas introduced by the CVC outfit that were previously unknown to the company, and how many of those resulted in some sort of action, whether by way of equity investment, or market research, or internal R&D exploration.

Dimensions/variables in different CVC practices

Industry publications such as those of the National Corporate Venture Capital (NCVC) and National Venture Capital Association (NVCA), as well as publications by market intelligence services such as CBInsights and Pitchbook have facilitated industry discussion over CVC value capture.

In a 2008 report issued by the National Institute of Standards and Technology (NIST) on the trends and common practices of CVCs, the researchers concluded that there was not a single "one-size-fits-all" approach towards CVC, and that best practices and strategic value

assessment is largely dependent on the CVC's role in the corporation, its mission, and the corporate environment (Ian MacMillan, 2008).

Napp and Minshall proposes a three-layer framework for understanding strategic value flow in CVC investments that includes a structural operational layer, a value layer, and a metrics layer (Johann Jakob Napp, 2009). They conclude that more work is needed to refine and validate the framework, particularly the metrics layer, and acknowledges that the quantitative measure of strategic value remains a challenge from both the practical and academic perspective.

In a 2002 Harvard Business Review article titled Making Sense of Corporate Venture Capital (Chesbrough, 2002), Chesbrough proposes a 2x2 matrix for mapping a corporate's strategic objectives along the categories of either Strategic OR Financial investment objectives, and Tight OR Loose link to operational capability. Chesbrough concludes that CVCs which aim for strategic investment objectives with either tight links to operational capabilities – those that drive advances in their current business, or with loose links to operational capabilities – those that enable complementary strategies of current business, are best positioned to be successful. Chesbrough argues that CVC investment objectives that trend more financial, at the cost of strategic returns, generally do not survive market downturns due to the function's inability to prove strategic worth to current business strategies.

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.

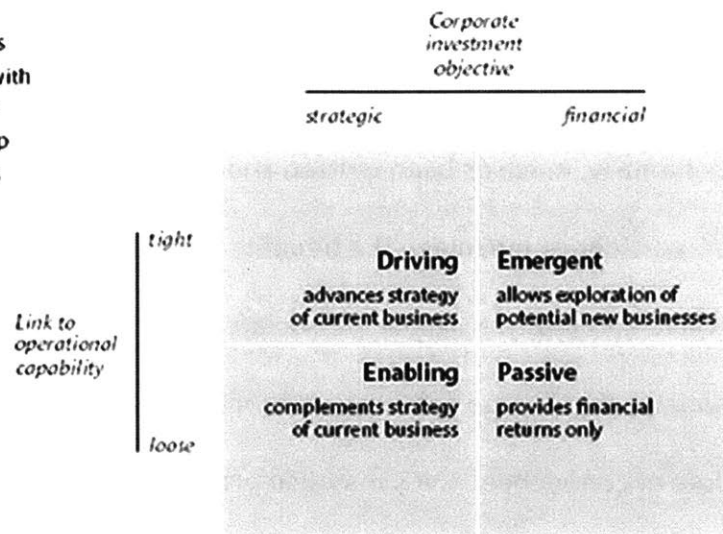


Figure 4. The four ways of investing (Chesbrough 2002)

Some time has passed since this article, and the CVC world has changed a bit since the initial articles publishing. Initial discussions with various CVCs appeared to suggest that a dichotomy between Financial and Strategic investment return rarely exists in practice. Most CVCs would state that they have both a Strategic AND Financial return objective.

Thesis hypotheses:

What has been understood

As stated earlier, most CVC's would claim both a Strategic and Financial return objective. There are several reasons for this. For even the largest CVC funds, respectable financial returns would represent but a small fraction of the overall returns realized by the business units. It is often not enough to move the corporate financial needle in any significant sense. The argument that financial returns alone can serve to bring value to shareholders can also be a

challenging assertion to back up. Shareholders today have access to other means of diversifying their own investment portfolios and even have opportunities to invest in early stage companies themselves.

Additionally, much as been written and understood regarding strategic value delivery TO the CVC portfolio companies. The benefits that strategic investors bring to a startup include branding value and positive signaling associated with an investment coupled with a partnership deal, essentially, that a large corporation is willing to depend on small startup's product lends a credible vote of confidence. CVCs may also provide startups with introductions to their businesses and customers, as well as access to channel partnerships and resources that enable scaling. CVCs bring market and technology knowledge that may otherwise require years of industry experience to obtain, and can provide access to infrastructure to help develop new products, and access to customers to test out new products. In short, it is well understood how CVCs are strategic to a startup.

What remains to be understood

What is less understood is how CVCs are strategic for a corporation. The review of both academic and industry publications reveal that additional research remains in understanding the capture and measure of direct and indirect strategic value in CVC investments from the perspective of the parent corporation. The following research question and hypotheses inform the research and analysis direction of this study:

Research Question: How is strategic value best captured and measured in corporate venture capital investments?

- H1. A CVC's stated strategic objectives are captured by the organizational structure, investment practices, and strategies.**
- H2. CVCs investing for Market Anticipation and R&D options measure strategic value in resulting number of M&A.**
- H3. CVCs investing for Market Sustainment or Market Expansion measure strategic value in the number of partnerships, increase revenue, profit margin, new markets, or other assets.**
- H4. CVCs investing to gain a window on new technologies measure strategic value the number of novel technologies and ideas exposed to the parent organization.**

Hypothesis 1

Hypothesis 1 asserts that the strategic value delivery of CVC investments is funneled through the CVC and can be captured in the way the CVC is organized, how the CVC approaches investment opportunities and executes on those investments, and the strategies that inform the CVC investment focus. If this is true, then there should be a measurement that quantifies this strategic value "flow" through the CVC organization. Technology maturity of investments will reveal what strategic opportunities are available in the CVC investment, and consequently the CVC's strategic objectives. One should be able to observe a CVC's stated objectives actually demonstrated in investment activities. To examine this, we use a 2x2 matrix of high-low strategic/BU alignment and hi-low technology/market maturity.

Hypothesis 2

Hypothesis 2 looks to the number of M&A actions originating from a CVC investment as a measure of the efficacy of CVC's as a tool for anticipating disruptive technologies. The logic

follows that if an investment portfolio represents options on emergent technologies and external R&D efforts, the measure of strategic value is in the number of product lines and businesses acquired from the portfolio.

Hypothesis 3

Hypothesis 3 looks to measurable increases in parallel collaboration agreements, revenue increases, profit margins, new markets, and other assets as a result of CVC investments for the purpose of maintaining or expanding a corporation's market position. The hypothesis is that CVCs providing access to exclusive and enabling technologies, or access to new markets, should ultimately yield measurable increases in revenue. Portfolio companies may engage in direct partnerships with a Business Unit, or can foster a favorable market environment for the corporate offering, or open up new markets for the corporate offerings.

Hypothesis 4

Hypothesis 4 relates to the CVC function as a window on emergent technology and market developments, and the value of such intelligence on frontier innovations that could impact the corporates future market position. The hypothesis is that this intelligence can be measured in the number of novel technologies and business models that the CVC exposes the parent company to, and ultimately, the number of corporate actions instigated by this technology and market intelligence. These actions are not limited to equity investments through the CVC, but may also include a market exploration study, an internal R&D exploration, or the formation of a corporate thesis on emergent industry themes.

Strategic value definitions

Direct Strategic Value - “direct strategic value” will mainly refer to the value extraction of direct investments into portfolio companies, many of which are made with a partnership, co-development, some form of working relationship, or simply access to IP that is of worth to the corporate parent of the CVC. The extraction of this value is typically post-equity investment.

Indirect Strategic Value – in this paper, “indirect strategic value” will refer mainly to the “window on technology” value the CVC brings to the parent organization. This value is extracted prior to any investment event as the CVC participates and contributes in the external innovation ecosystem and functions as the eyes and ears for emergent technologies, markets, and business models. Indirect Strategic Value may also include the access provided by the CVC to a broad network of other investors and the startups within their portfolios.

CVC Investment strike zones – strategic alignment and technology maturity

With the dual objectives of strategic and financial returns, a new framework is proposed that assumes financial returns objectives and combines both the stated strategic investment objectives with the strength of corporate operational capabilities into a spectrum of strategic alignment. A second axis captures the spectrum of the technology or market maturity level of targeted investments.

The spectrum of strategic alignment ranges from strong to weak. The strength of strategic alignment considers factors such as organizational structure, frequency of communication with business units, involvement of the business units in investment decisions, and the like. The actual strength of strategic alignment may or may not be as stated by the

CVC, but rather best extracted by the CVC's structures, processes, and implemented strategies. A CVC may choose to embody strong strategic alignment with the strategic aims of the corporate parent and business units to the ends of delivery investments of immediate strategic value to current business offerings. But a CVC may also choose to embody a weak strategic alignment so as to better pursue "white space" opportunities less influenced by current or planned business offerings.

The spectrum of technology/market maturity is proposed as the second dimension in mapping CVC investment strike zones as the proximity to a commercializable product of invested startups may vary from industry to industry, and would determine what strategic value is available for extraction from an investment. Investments in startups working on nascent technologies and markets may not supply opportunities for partnership and co-development opportunities as investments in more mature startups, or startups working on technologies in the latter half of the technology S-curve. CVCs that primarily focus on later stage startups and mature technologies may take on technology scouting functions for the parent organization. On the other hand, CVCs that invest in early stage companies, or nascent technologies often take on more technology monitoring functions.

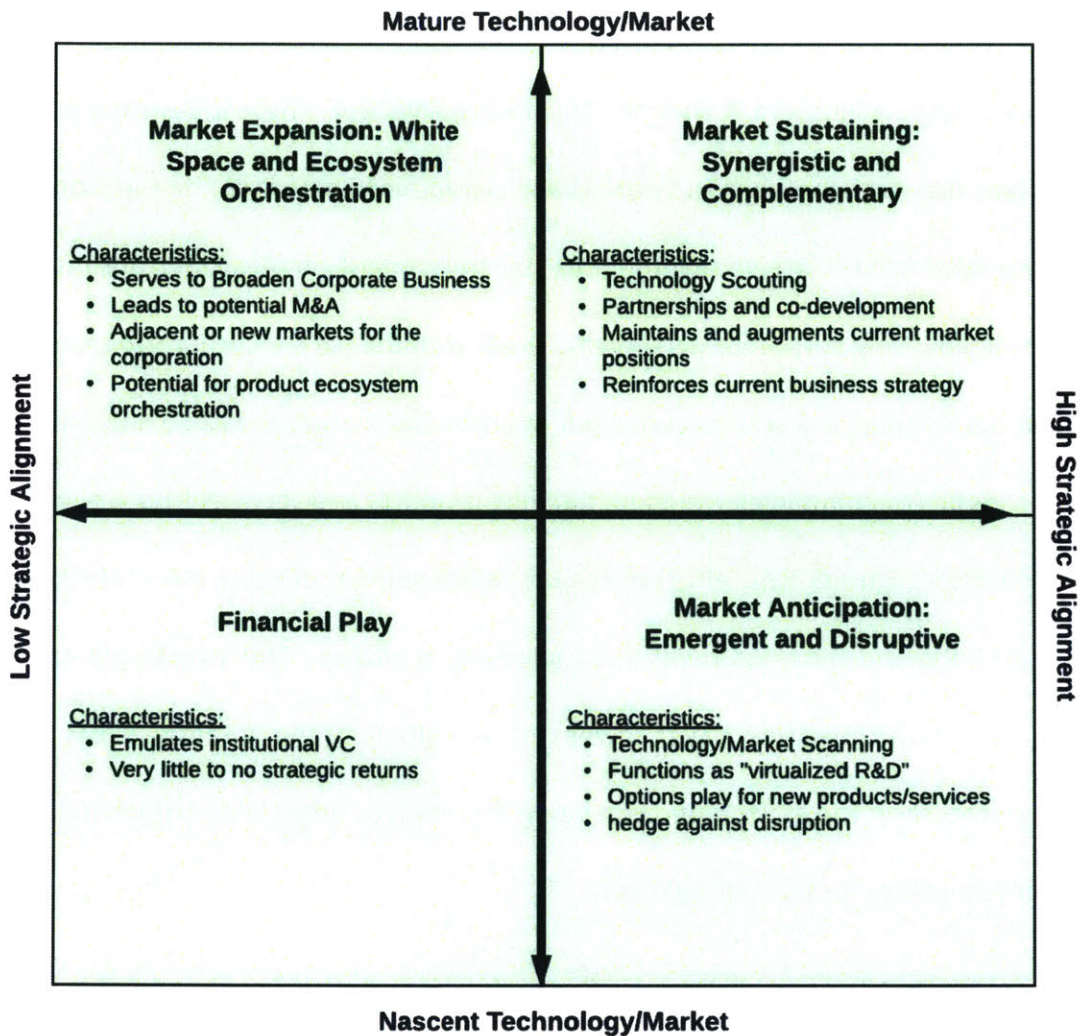


Figure 5. Strategic Alignment and Technology/Market Maturity Framework for Investment Strike zones

Figure 5 above provides a good framework for understanding different plays in CVC investments. A startup might either have a high or low alignment with the CVC company's current business offerings. The startup would also either be targeting an existing market sector that is relevant to the CVC company, or targeting a nascent market sector in a bet on an

emergence of a new market trend. Together, a quadrant of different categories of investments can be classified, with different management decisions associated.

High Strategic Alignment & Nascent Technology/Market– these investments are often on technologies that are emergent and potentially disruptive in nature to the CVC company. However, synergies from strategic alignment exists. Investments in these startups involve CVC assistance in establishing corporate partnership deals with the parent corporation, and represent an option play on a shift in consumer needs in the market the CVC company currently serves. These types of companies would be building products and services that would otherwise require a high risk R&D effort to realize. Management of these investments aim to both maximize NPV, and allow for lower financial return multiples. The investment can still be considered a successful investment with lower return multiple as the potential exists for greater future returns if the startup ends up being acquired, or informs a corporate decision on an emergent technology or market segment.

Low Strategic Alignment & Nascent Technology/Market– these investments have little in common with the strategic objectives of the corporate business units. Instead, these investments are typically a purely financial play. CVCs would be looking for only a financial return as strategic value does not exist. CVCs may end up investing in these deals because of the desirability of financial returns, and sometimes as a means of establishing credibility in the ecosystem of Venture Capital – fostering syndicate relationships with other VC's to ensure access to future deals that may hold good strategic alignment. It is also possible that startups that once started with strategic alignment, pivot towards a product or market that places them into this category for the CVC. Management of these investments would be to maximize NPV.

Low Strategic Alignment & Mature Technology/Market– these investments have little in common with the strategic objectives of the corporate business units. However, they likely present a “white space” opportunity to the CVC company for expansion into a previously unoccupied space. A CVC may invest in these startups because they represent a potential opportunity to fill gaps in the corporate product lineup, or enter a market segment that the corporate hopes to expand into. Management of these investments aim to both maximize NPV, but also acknowledges that the strategic value of the investment may allow for lower financial return multiples and still be considered a successful investment as the potential exists for greater future returns if the startup ends up being acquired or informs a corporate decision on a product strategy.

High Strategic Alignment & Mature Technology/Market– these investments present opportunities to advance the current business strategies and market positions of the corporate parent. Often involving technology scouting functions, equity investments can also include partnership agreements or licensing arrangements to secure access to enabling technologies exclusive to the startup. Management of these investments aim to maximize the strategic value delivered to the startup that improve the startup’s chances of success, and to maximize the extraction of strategic value from the access to technology – leading to a competitive advantage for the corporation.

Research Methodology

In exploring the four hypotheses in this research, a series of interviews were conducted with prominent CVC firms across multiple industry domains. The aim was to sample a reputable cross-section of the CVC community to arrive at meaningful outcomes for the hypothesis. The CVCs interviewed were associated with corporations in the electronic, semiconductor, industrial, material, healthcare, biotech, and pharmaceutical industries. A 28 question form was sent out prior to each CVC prior to in-person or phone interviews, and 17 CVC groups were interviewed in total.

Framework of questions

The questions used for the CVC interviews generally revolved around the following three categories:

- What organizational structures define the CVC group?
- What methods are used in the CVC investment process?
- What strategies inform the CVC investment behavior?
- What measures are used to quantify direct and indirect strategic value?

Further, questions related to the relative maturity levels of the technologies/markets invested in were asked and discussed, using NASA's Technology Readiness Level (TRL) scale as a reference point. A question on what round of fundraising the CVC typically enter in on (seed, A, B, C, etc.) also lent towards determining relative technology/market maturities of the CVC's investment strike zone.

CVC interviews/results and data

Data and Analysis

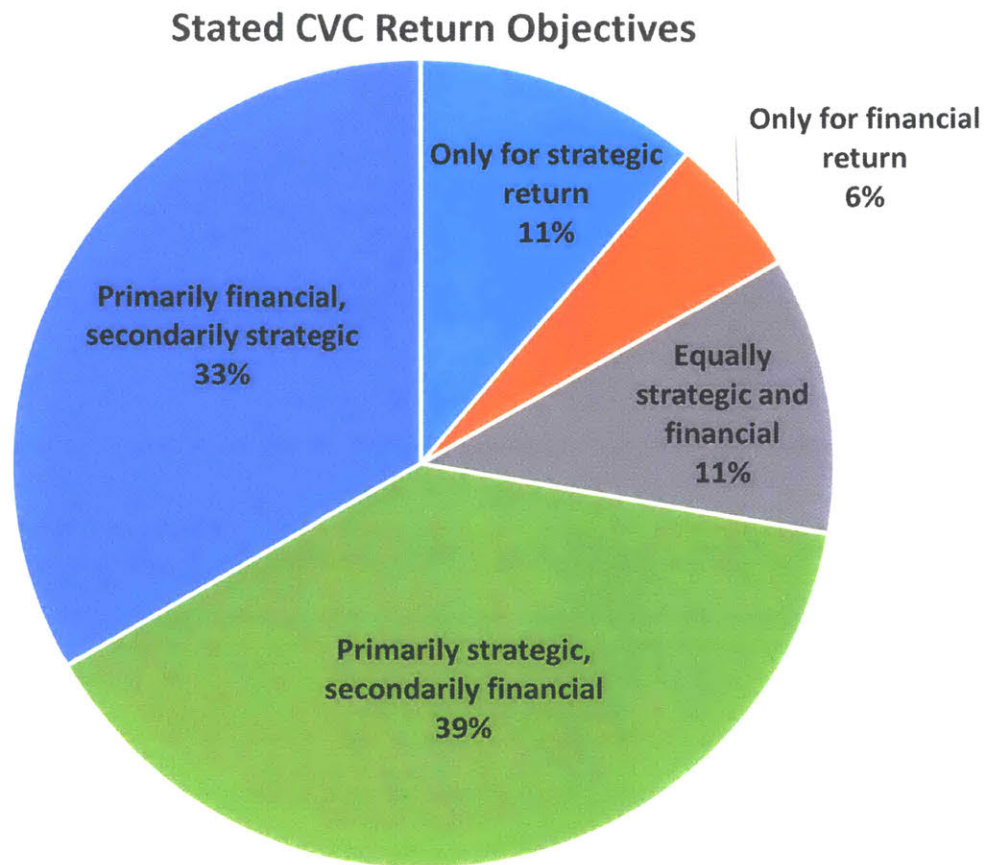


Figure 6. CVC return objectives

39% of the CVCs interviewed stated that their investment return objects were primarily strategic and secondarily financial. 33% stated that their return objectives were primarily financial and secondarily strategic. 11% stated that their return objectives were equally strategic and financial. In total, the majority of CVCs (83%) claimed the dual objective of investing for both financial and strategic return. This result is congruent with the 2015 findings

by CBInsights (CBInsights, Inside the Minds of Corporate Venture Capitalists, 2015), and supports the framework assumption of this thesis research – that the existential dual purpose of CVCs to deliver both financial and strategic returns.

Under what corporate function does the CVC reside?

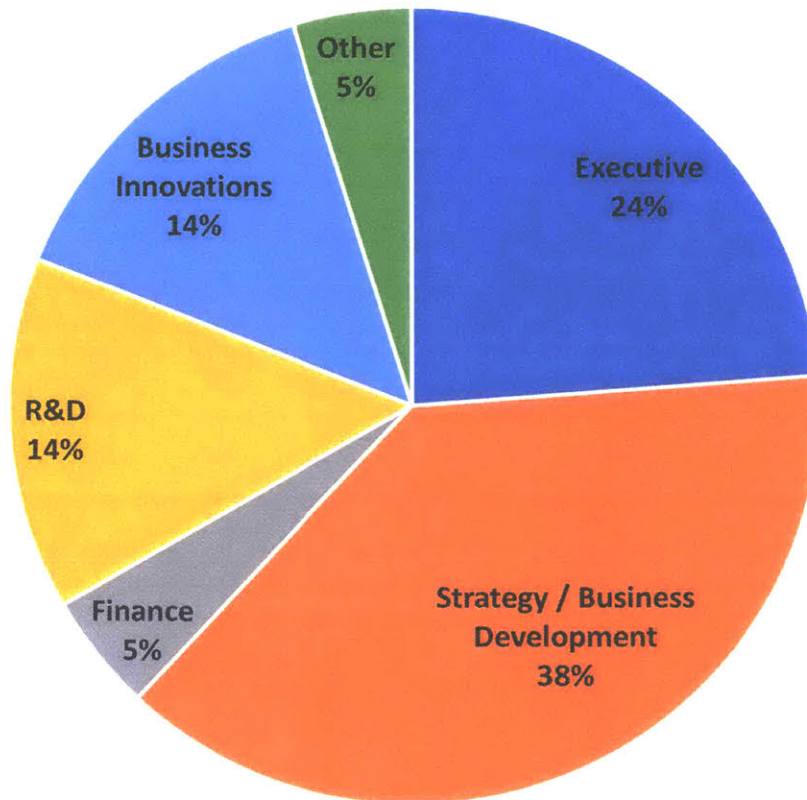


Figure 7. CVCs and Corporate Organization Structure

Whether independent as a separate subsidiary, or integrated within a corporate function, CVCs were asked what corporate function they most closely reside under. Particularly with the independent CVC outfits, this organizational linkage was informed by the reporting and management structure.

The majority (62%) of the CVCs interviewed fell under the Executive or Business Development function, followed by R&D and Business Innovations at 14% each. The recognition of the strategic value of CVCs can be observed from an organizational perspective in where the function resides within the corporate parent.

Strategic Sponsorship Requirements for Investment Deal

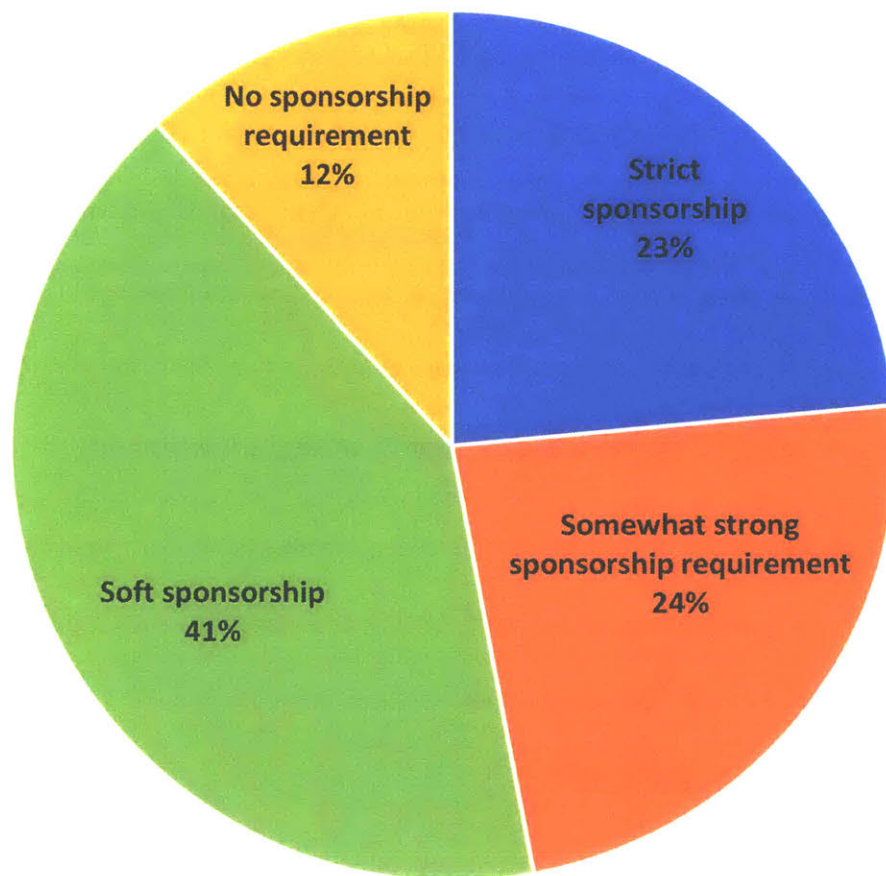


Figure 8. Strategic Sponsorship Requirement

Strategic investors will use some form of strategic alignment screening in evaluating startups to ensure relevance prior to pursuing an investment. Interviewed CVCs were asked the following question:

What strategic alignment screen is necessary for investment?

- A. Strict strategic sponsorship requirement
- B. Somewhat strong strategic sponsorship requirement
- C. Soft strategic sponsorship requirement
- D. No strategic sponsorship requirement

A strict strategic sponsorship requirement takes the form of requiring an arrangement or planned arrangement of partnership with one of the corporate business units for the vast majority of CVC investments. This partnership may take the form of a co-development agreement, a letter of intent to pursue such an agreement, a purchase order, or a similar arrangement. 23% of CVCs interviewed indicated they had a strict strategic sponsorship requirement as a strategic alignment screen prior to an equity investment.

A somewhat strong strategic sponsorship requirement calls for most investments to require some form of partnership agreement, or that the business units support a concept of future collaboration. 24% of CVCs interviewed indicated they had such a strategic alignment screening prior to equity investment.

A soft strategic sponsorship screen merely involves a rationale for why a target investment is strategically aligned or relevant to the parent organization, devised in conjunction with the business units. This may take the form of a strategic alignment rating rubric, or

identifying a business unit champion who would vouch for the startup's strategic relevance. More CVCs indicated the use of this level of strategic screening than any other level of screening, with 41% stating the use of a soft sponsorship requirement.

Only 12% of CVCs stated that they did not require any degree of business unit involvement in pursuing an investment.

Of note, a few CVC's employed the use of multiple investment categories or "virtual funds" aimed at different strategic objectives with different levels of strategic alignment screening. One fund may be dedicated to investments requiring a somewhat strict strategic sponsorship requirement with the business units, while another fund would be set aside for investments requiring no sponsorship from the businesses and deployed on startups less relevant to current business unit strategies.

Board Participation

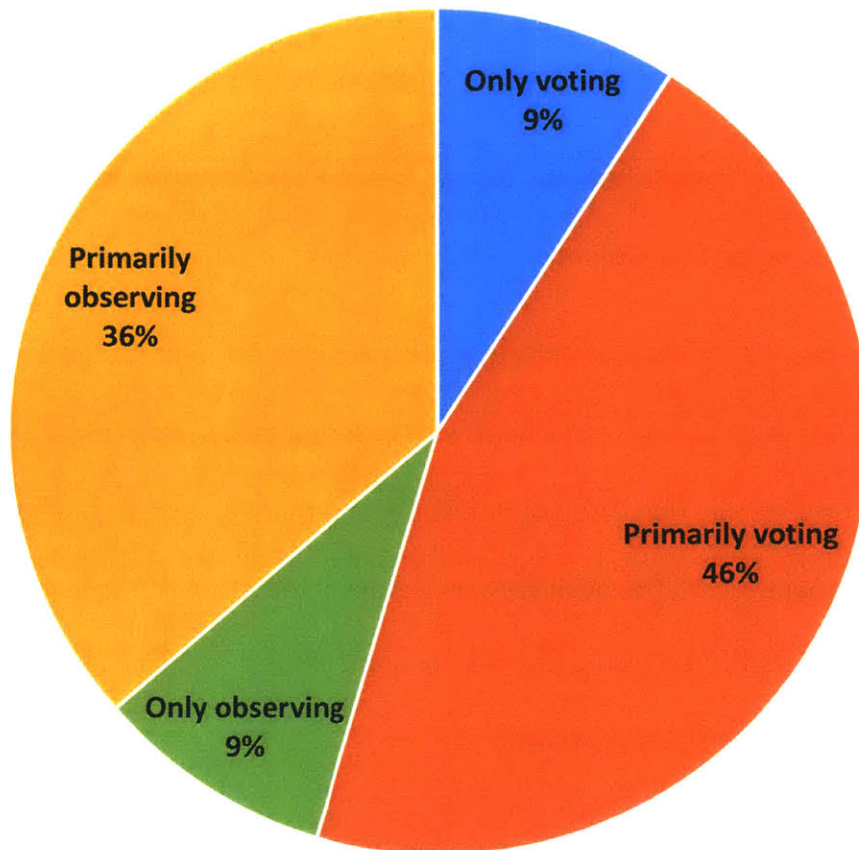


Figure 9. CVC participation on startup boards

Whether or not a board seat is taken can depend on a number of risk and financial reporting factors. Most CVCs interviewed stated that the decision to take a board voting seat, or a board observer seat, depends on a case by case scenario. The majority indicated primarily taking voting seats (46%) or primarily taking observer seats (36%), as appropriate. It appears for the most part that the decision of board participation is less informed by a CVC's strategic imperatives, and more informed by risk avoidance and how to be most helpful to the startup. Only a minority of CVCs have a strict observer only or voting only protocol for their investments.

Business Unit Participation in CVC Function

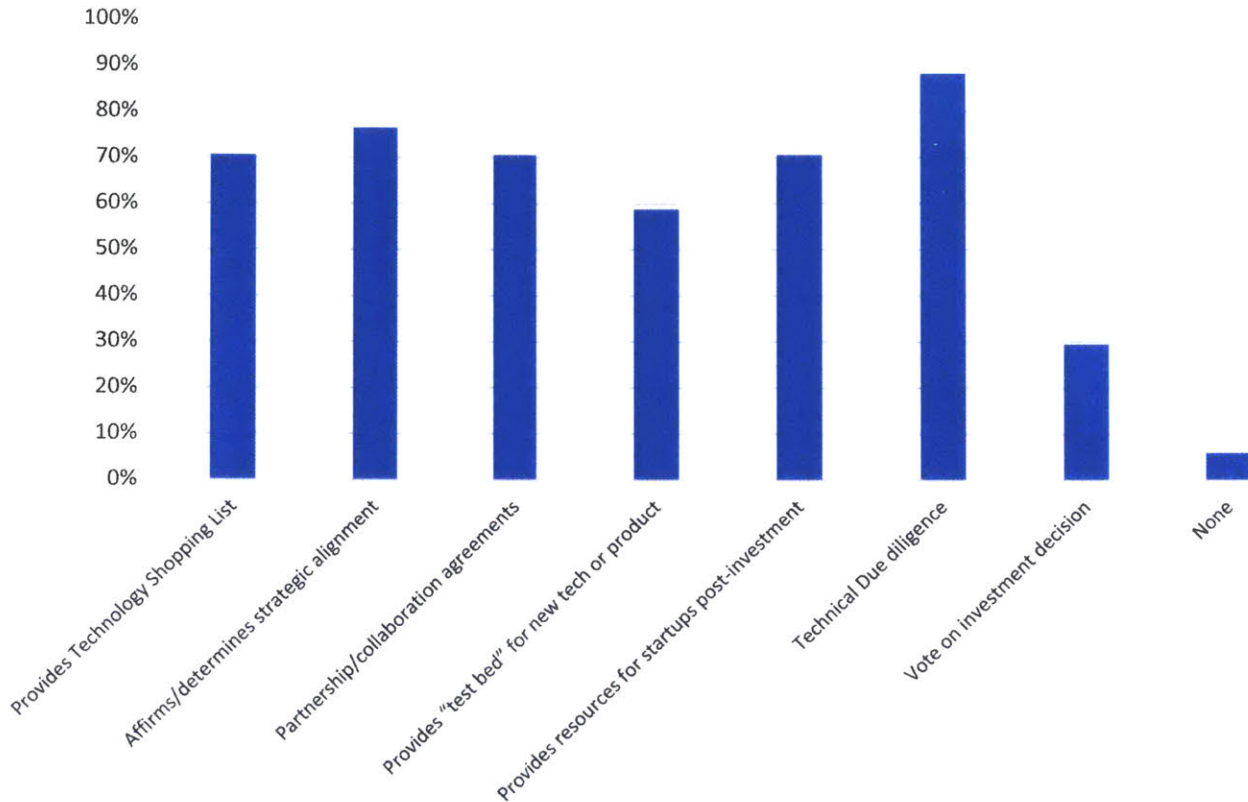


Figure 10. Business Unit participation in CVC investment function

The involvement of business units in the CVC investment process was used as one of the indicators of the strategic alignment strength of the CVC unit. Strongly strategic alignments have more business unit linkages exhibited by various means of involvement. CVCs were asked how the business units were involved in the CVC function. In general, business units were involved by informing strategic objectives and providing supporting resources prior and post-investment. Typically, BU's did not have a vote on the investment, but were frequently asked to contribute in other decision supporting ways such as in technical due diligence (78% of reporting CVCs).

Is the CVC allowed to invest in potential competitors of current business offerings?

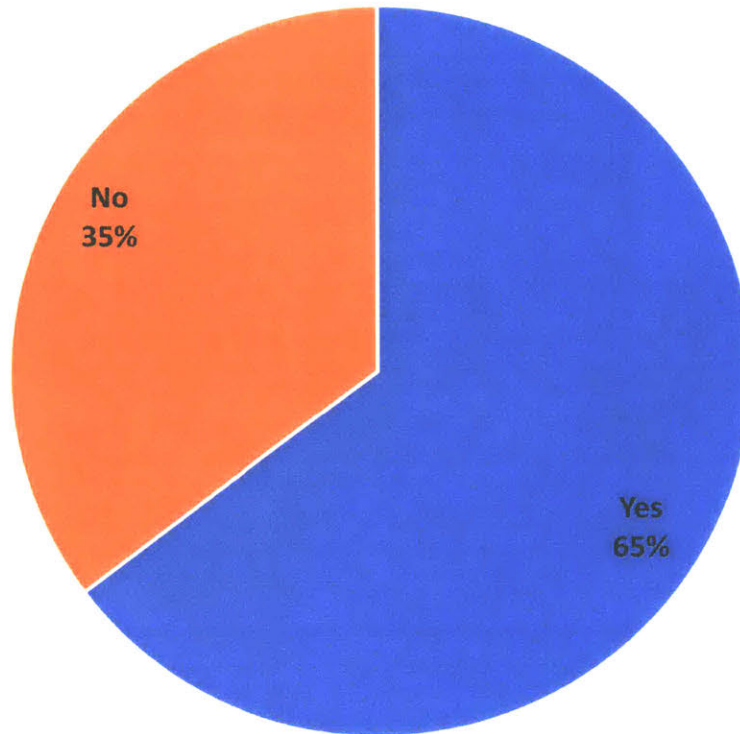


Figure 11. CVC investment on Business Unit competition

The question of whether or not a CVC invests in a potential competitor of current business offerings is aimed at determining how lock-step the CVCs are with current business unit strategies. It is also aimed at revealing the degree of infiltration an external innovation strategy is allowed to have within the corporation. More than half (65%) of CVCs interviewed indicated that they have or would invest in potential competitors of current business offerings.

CVC Unit Integrated or Independent

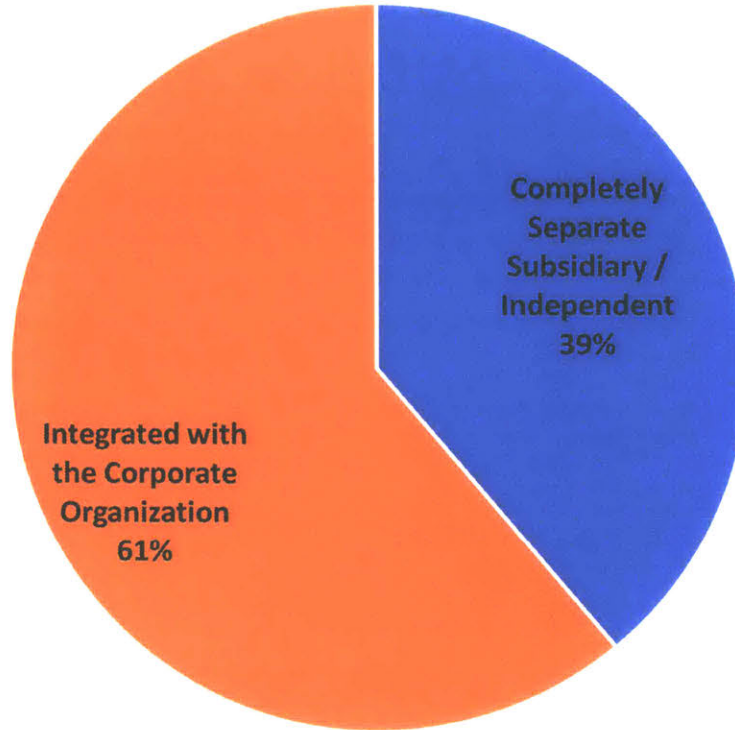


Figure 12. Percentage of CVCs Integrated or Separate from the parent corporation

Of the CVCs interviewed, the majority (61%) were integrated with the corporate organization over being a separate or independent subsidiary. Whether a CVC is independent from, or integrated with the parent corporation, organizational structure at this level does not appear to correlate with the average frequency of business unit interactions. Both categories interact with the business units on an average frequency of about twice a week.

CVC Funding Source

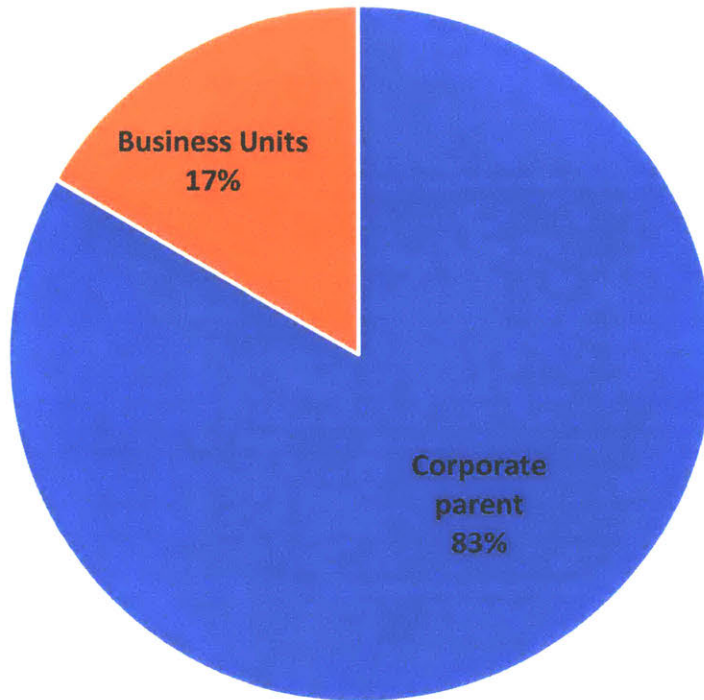


Figure 13. Percentage of CVCs being funded by the corporate parent, or by the BU's

The majority of CVCs (83%) deploy capital provided by the corporate parent, most commonly in the form of an “evergreen fund” or the ability to invest off the corporate balance sheet. Only a handful of CVCs indicated that the business units were LPs of the fund(s). A couple CVC’s indicated having established traditional 10-year fund structures from corporate dollars.

Series Stage of Initial CVC Investment

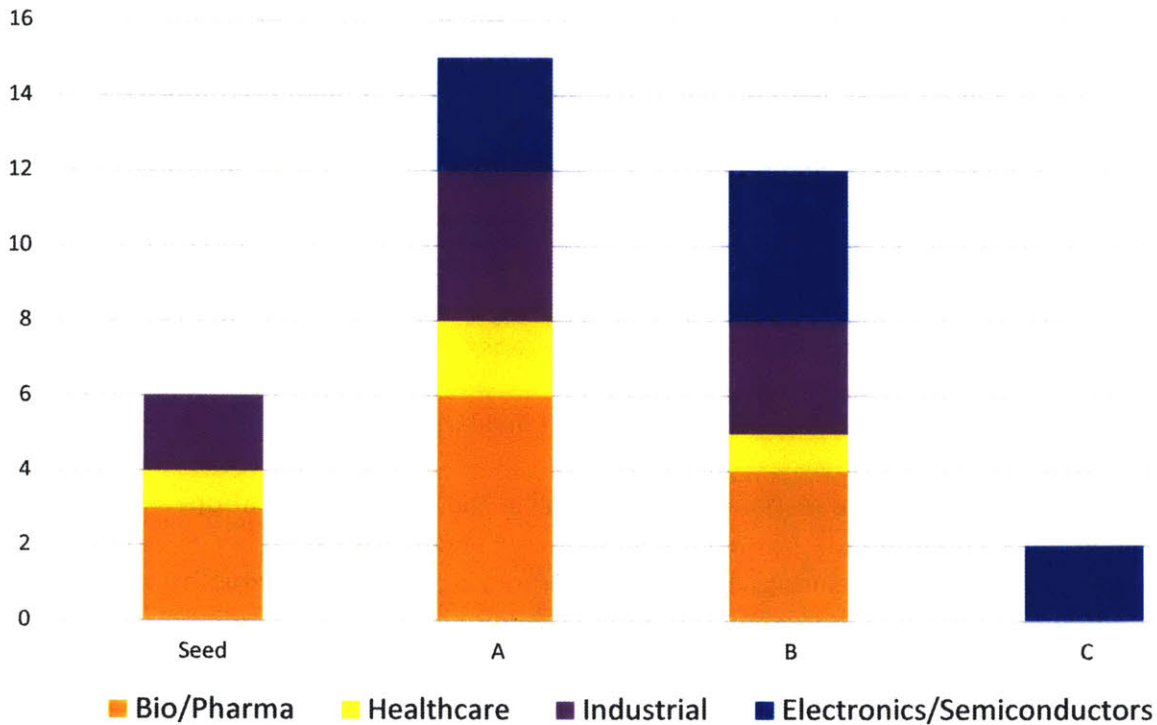


Figure 14. Series Stage of Initial CVC Investment, separated out by industry focus

In plotting out the typical entry point of initial investments for all CVCs interviewed, and categorizing the CVCs along industry focus (Bio/Pharma, Healthcare, Industrial, Electronics/Semiconductors) reveals a useful observation. In general, healthcare and Bio/Pharma-focused CVCs are more interested in entering investments at earlier stages, and at higher risk. Further, the average technology readiness level of targeted investments in Bio/Pharma and Healthcare are lower than investments in industrial or electronics/semiconductor industries. Overall, most CVCs view Series A and B rounds as a preferred entry point on investment.

Window on Technology

One of the primary strategic values a CVC can bring back to the corporate parent is by providing an “eyes and ears’ function on the emergence of new technologies or business models novel to the company. CVCs were asked:

- How many different startups/technologies are seen each year?
- How many startups/technologies were notably reported back to the parent corporation, including but not limited to pre-reads for direct investment?
- How many of those were responded to as novel to the parent corporation?
- How many of these novel ideas instigated a corporate action (R&D exploration, tech scouting, market exploration, investment for tech monitoring purposes, etc.)

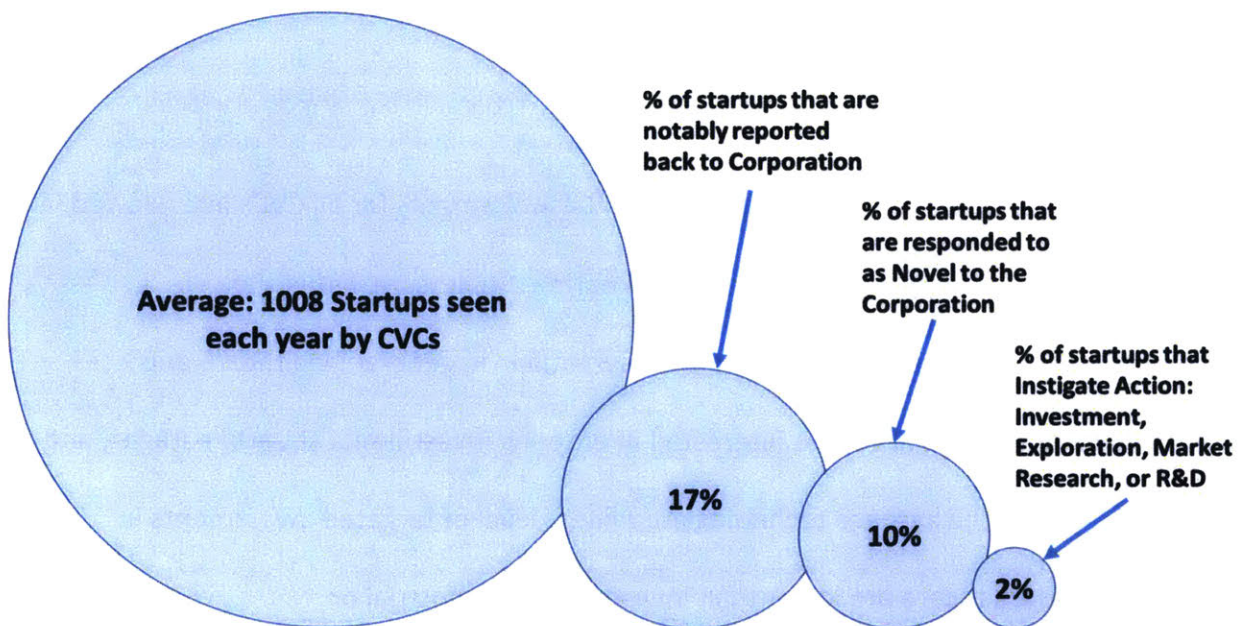


Figure 15. Window on Technology Funnel - CVCs as Market and Technology Sensors for Novelty

Figure 15 illustrates the window on technology funnel. Out of 18 CVCs interviewed, only 9 groups reported tracking this metric. Nearly all understood the strategic value of providing the parent organization with front-line technology and market intelligence. If not explicitly tracked, many CVCs explained that delivery of this value occurred implicitly through normal interactions with the Corporate Parent or BU's.

The CVCs interviewed saw anywhere from 100 to 2000 startups each year, with an average of 1008 startups considered for investment. Out of these, approximately 17% are reported back to the parent organization as potentially interesting and new. This includes, but not limited to startups that are recommended for initial investment due diligence. On average, 10% of the reported startups employ technologies or business models that are novel to the corporation's corpus of knowledge. And from there, on average, 2% of the startups seen by the CVC group instigate some form of action by the corporate parent, not limited to an equity investment but also including market exploration studies, or R&D efforts.

Mapping CVC positioning

The data analysis conducted on interview responses from 18 CVCs also included the mapping of CVC positioning along the spectrum of Strategic/Business Unit Alignment, and Technology/Market Maturity, as shown in Figure 5. To do so, responses related to Strategic Alignment and Business Unit Linkages were evaluated for each CVC were used to assign a Strategic/Business Unit Alignment index value. Similarly, responses related to the technology and market maturity of an investment "sweet spot" were used to assign a Technology/Market Maturity index value.

CVCs were asked about their organizational and collaborative relationship with business units, in the effort to approximate a relative degree of strategic alignment with present business objectives. These questions included:

What returns objective does the CVC invest for?

- A. Only for strategic return
- B. Only for financial return
- C. Primarily strategic, secondarily financial
- D. Primarily financial, secondarily strategic

What sponsorship screening is necessary for investment?

- A. Strict sponsorship, ie. Partnership/co-development agreement, letter of intent, PO
- B. Somewhat strong sponsorship requirement, most investments requiring some form of partnership agreement or concept of future collaboration.
- C. Soft sponsorship, ie. Memo or rationale of strategic fit, strategic fit dashboard rating
- D. No sponsorship requirement

Investment Committee: who votes?

- A. Independent / autonomous – only CVC decision needed for investment decision
- B. Corporate lead

- C. BU
- D. R&D
- E. CVC

What roll does the BU play?

- A. Provides “hit list” of technologies/capabilities
- B. Affirms/determines strategic alignment
- C. Partnership/collaboration agreements
- D. “test bed” for new tech and products
- E. Provides support and resources for startups post-investment
- F. Due diligence
- G. Vote on investment decision
- H. none

What is the frequency of BU Interactions for deal and technology review, tech sourcing needs, etc.)?

- A. Daily
- B. Weekly
- C. Monthly
- D. Quarterly
- E. Seldom
- F. never

Has/Would the CVC ever make an investment despite almost certain financial loss (for the sake of strategic gain)?

A. Yes

B. No

Does the CVC invest in potential competitors of current business offerings?

A. Yes

B. No

A CVC with strong strategic/BU alignment can be characterized as one with frequent interactions (weekly or daily) with the BU's, requiring strong or somewhat strong sponsorship from the BU's for investment, where the CVC would never invest in potential competitors of current business offerings and where the BU's have significant control and involvement before the investment, on the investment decision, and after investment. Business Unit linkages of lesser degrees of control over the investment process, or less frequent interactions between the BU's and CVC units, or the ability for the CVCs to invest in startups that compete directly with current company offerings indicate weaker strategic alignment.

CVCs were also asked questions related to the maturity level of the technology and markets of typical targeted investments. These questions were used to approximate the technology/market maturity levels of investments that land in a strike zone for initial investment. Although almost all CVCs interviewed indicated that they have or would consider investing in companies of almost many stages and technology maturity levels, most were able to identify a typical "sweet spot" for initial investment. An approximate technology/market

maturity index for initial investments was determined from the answers for the following two questions:

What series stage does the CVC typically make an initial investment?

- Seed
- A
- B
- C
- D+

On a TRL scale (1-9), the CVC invests in companies with maturity levels for:

- Technology
- Product
- Business Model

The Technology Readiness Level (TRL) scale shown below in Figure 16 was used as a reference for identifying a target level, or range, or technology maturities associated with a startup investment. The TRL scale concept was extended to product and business model maturity levels when appropriate.

TRL Scale	
TRL 9	System ready for full scale deployment
TRL 8	System incorporated in commercial design
TRL 7	Integrated pilot system demonstrated
TRL 6	Prototype system verified
TRL 5	Laboratory testing of integrated system
TRL 4	Laboratory testing of prototype component or process
TRL 3	Critical function: Proof of concept established
TRL 2	Technology concept and/or application formulated
TRL 1	Basic principles observed and reported

Figure 16. Technology Readiness Scale

Each CVC was then assigned a relative strategic/BU alignment index value, as well as a relative technology/market maturity index value, and plotted on the two axis of Figure 5.

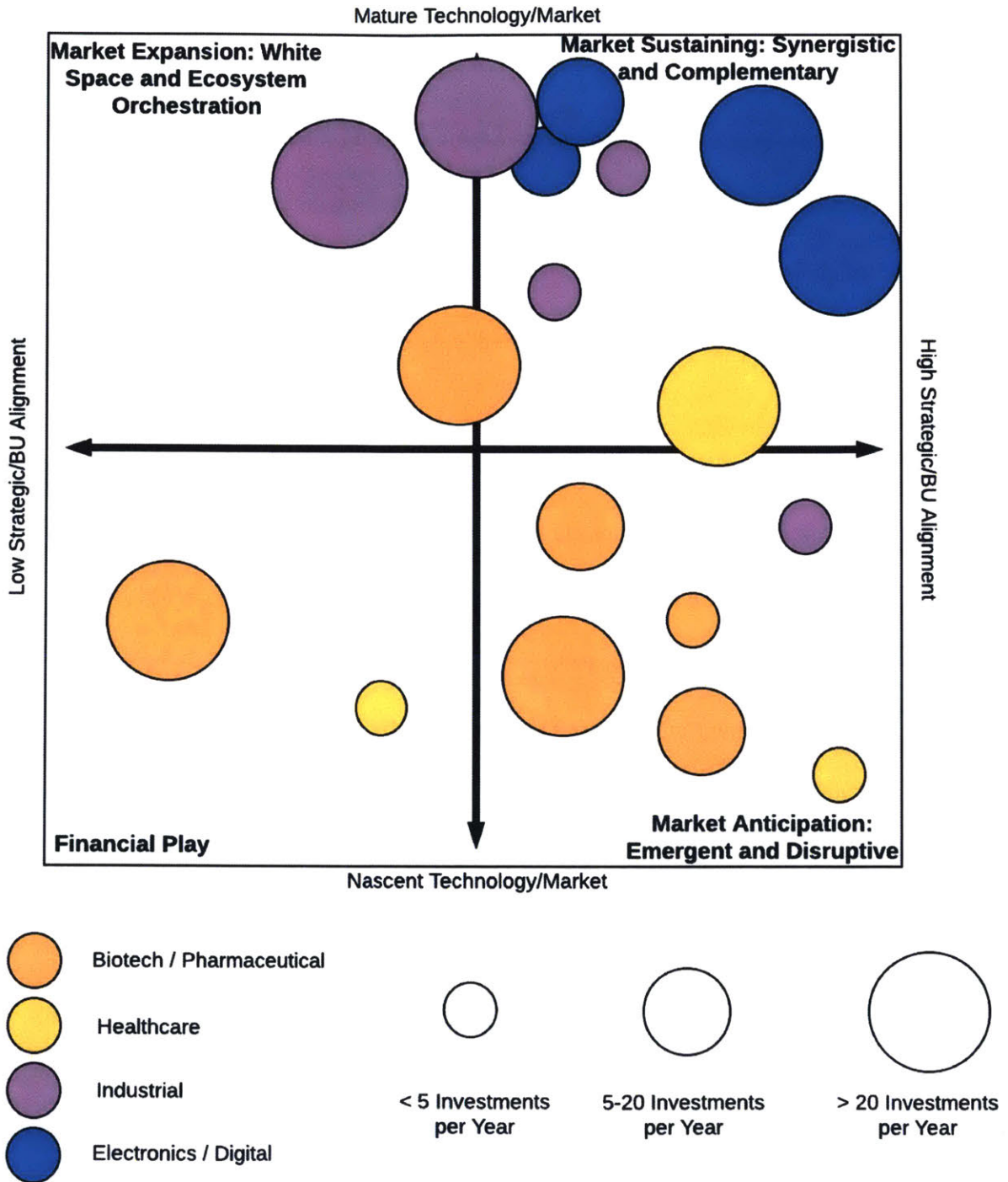


Figure 17. Mapping CVC along strategic quadrants. Note - participant CVCs have been anonymized.

From the mapping of CVC positioning along the spectrum of strategic/BU alignment and technology/market maturity shown in Figure 17, several key observations are made.

1. Industry domains inform a separation of technology risk tolerance. CVCs in the Biotech/Pharma and Healthcare domains tend to invest at earlier stages both from a funding series standpoint, as well as a technology maturity standpoint. The majority of these biopharma and healthcare focused CVCs tend to invest in the Market Anticipation quadrant (high strategic/BU alignment and low technology/market maturity).
2. Industrial and Electronics/Digital domain focused CVCs tend to invest more mature technologies, corresponding to partnership and co-development opportunities that characterize the Market Sustaining quadrant (high strategic/BU alignment and high technology/market maturity).
3. Relatively few CVCs appear positioned in the left two quadrants related to Market Expansion and Financial Play. The lack of CVCs investing purely for financial returns is not particularly surprising as it reflects the general response from the industry that for survivability, a CVC must demonstrate at least some strategic return.
4. The lack of CVCs in the Market Expansion quadrant is surprising as the CVC structure is uniquely equipped to drive value in pursuing white space opportunities at less risk, and to cultivate supporting ecosystems around core businesses.

Outcomes

Upon conclusion of the data collection and analysis above, the initial hypotheses are revisited for final conclusions resulting from research.

H₁. A CVC's stated strategic objectives are captured by the organizational structure, investment practices, and strategies.

From this research, Hypothesis 1 is proven true. The strategic objectives of the CVC is revealed in the structure, practices, and strategies that shape the CVC, and one can map out the CVC's objectives based on these observations, as shown in Figure 17. However, it is also apparent that strategic value delivery is not contained within the CVC, and extends beyond the system boundary of the CVC's investment activities. This warrants further exploration and discussion.

H₂. CVCs investing for Market Anticipation and R&D options measure strategic value in resulting number of M&A.

From this research, Hypothesis 2 is proven false. For CVCs that are taxonomically positioned for investment portfolios representing external R&D options and potential disruptive technologies for future acquisition, this metric is rarely tracked. Very few CVCs could claim acquisitions resulting from CVC investments, and of the few that could, the number of acquisitions were typically very small.

CVC investment as a precursor for acquisition may have been at one point more common in the history of CVC. But this no longer is the case. This may be that a minority stake

in a startup earns a company no upper hand in the acquisition of the startup, or that CVCs are not ultimately investing for this purpose despite public perception that they do, or a combination of the two. This thesis research does not show credible evidence that M&A activity is a measure of strategic value for CVC investments aimed at anticipating new technologies.

H₃. CVCs investing for Market Sustainment or Market Expansion measure strategic value in the number of partnerships, increase revenue, profit margin, new markets, or other assets.

From this research, Hypothesis 3 is proven false. With the exception of a handful of CVCs, the majority do not measure the number of partnerships, increased revenue, increased profit margin, or new markets provided through the investment portfolio. While the number of partnerships and new markets resulting from investments would be relatively easy to track, the measure of resulting impacts to revenue, profit margin, was described as very difficult to calculate. Further, CVCs may invest in companies that provide access to an enabling technology which improves a component of the business offering in such a way that it would be highly difficult if not impossible to separate out what fraction of any resultant revenue increase is attributed to the enabling technology. Still, one prominent CVC indicated that confidential calculations on revenue increase were used internally as a measure of success, and the rest of the CVCs interviewed did not appear to measure or attempt to measure strategic value delivery in this way.

H4. CVCs investing to gain a window on new technologies measure strategic value the number of novel technologies and ideas exposed to the parent organization.

From this research, Hypothesis 4 is proven true, however, not all CVCs track this measurement. The window on technology function also appears to be less relevant to CVCs in certain industries where the innovation pipeline is very linear and slow, such as in the biotech and pharmaceutical industry. However, the organizational and process structures in place to convey the technology and market intelligence is usually incidental to those in place to support investment decisions.

CVC Value Networks

The term “ecosystem” is often used in the industry. An ecosystem can be defined as a dynamic network of resource exchange, resulting in systemic benefit of the whole, evidenced by the sustainment and growth of the system. This definition requires broadening of system boundaries to a level of abstraction such that a sustaining value delivery network can be observed. At this point, value cycles – including strategic value – can be better understood and captured. The apparent difficulty of properly measuring strategic value of CVC investments at the portfolio level suggests that this system boundary is insufficiently broad to observe the strategic value of CVC activity.

In terms of the CVC structure and investment objectives, the focus should be on the establishment of the necessary conditions or environment for this ecosystem to be sustainably exploited – like any renewable natural resource. Measuring at the wrong points can lead to unsustainable extraction, or insufficient extraction.

A helpful start to better understand a CVC ecosystem is to begin by identifying the reciprocating value cycle that explains the success or failure of a CVC at a high level of abstraction. CVCs reside at the interface of two worlds – that of their corporate objectives and linkages with the parent corporation, and that of their participation in the external innovation ecosystems. This dynamic is illustrated in Figure 18 below.

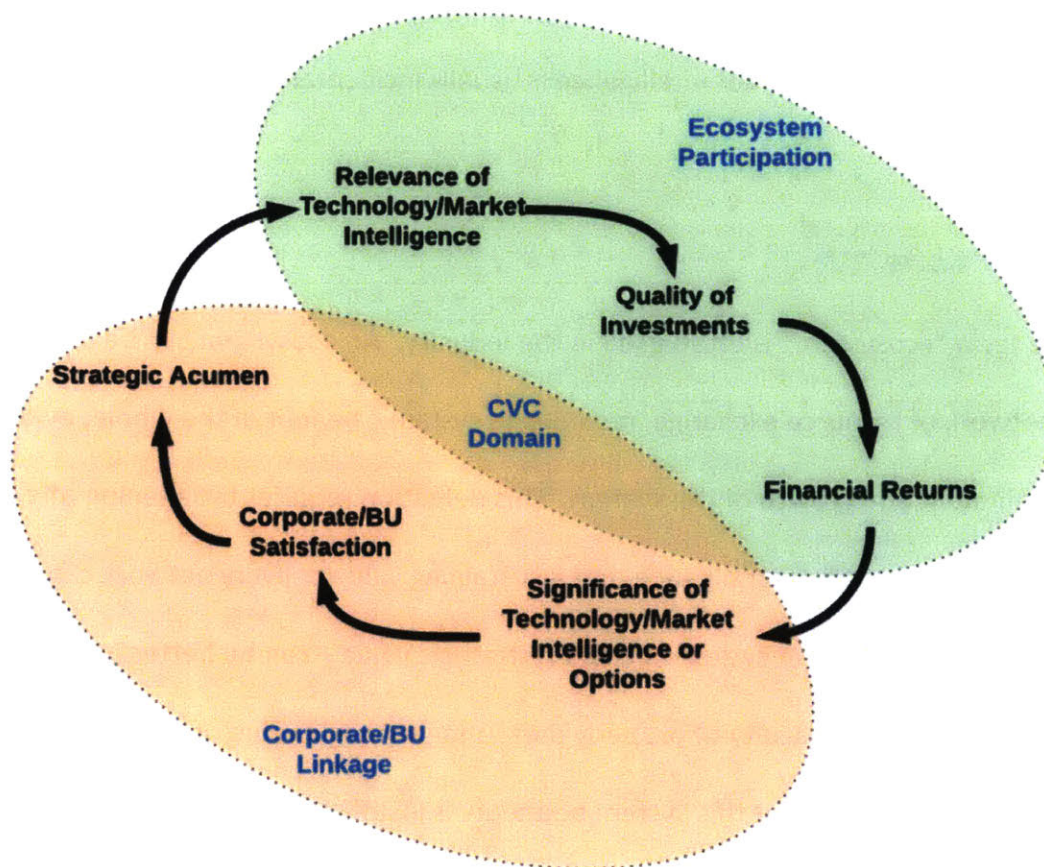


Figure 18. CVC Value Cycle

Strategic Acumen describes the CVC’s depth and breadth of insight on the corporate’s business and strategic objectives. This is informed by the CVC’s linkages and interactions with the BU’s, as well as the level of control the BU’s have over investment decisions. Strategic

Acumen also informs what the CVC considers as strategically aligned and relevant – an investment thesis aimed at advancing or expanding current market strategies. Increased strategic acumen results in increasing relevance of Technology/Market Intelligence.

Relevance of Technology/Market Intelligence describes how well targeted and informed a CVC is when evaluating and pursuing investments that are aligned to a strategic investment thesis. This can take the form of establishing an appropriate level of strategic or sponsorship screening in the deal flow. Increasing relevance of the CVC's Technology and/or Market Intelligence results in increasing quality of investments.

Quality of Investments describes a measure of how well the CVC chooses investments, in other words, the execution on their strategic investment thesis. This is also informed by the quality of an investment syndicate the CVC is able to assemble, or participate in – also a function of the quality of startups the CVC is able to have access to. Increasing quality of investments results in increasing financial returns.

Financial Returns describes the returns realized upon an exit event on the investment. While true that in many cases CVCs will consider a discount on an investment if the strategic value of the investment warrants it, in general, sound investments on promising technologies that align with a sound strategic investment thesis will yield returns. Many CVCs will use financial returns as a proxy measure of strategic value delivery, assuming that investments are strategically focused. Thus, increasing financial returns results in increasing significance of the technology and/or market intelligence and optionality presented to the corporate parent by the CVC.

Significance of Technology/Market Intelligence or Options describes how valuable the CVC function is to the corporate parent, and may include how influential the intelligence on emergent technologies or market knowledge is on business decisions. The attempt of directly capturing and measuring strategic value of CVC investments often happens here as this component of the CVC value cycle also describes the options provided for partnerships and future acquisitions in the CVC portfolio. Increasing significance of technology/market intelligence and options provided by the CVC lends to increasing corporate/BU satisfaction.

Corporate/BU satisfaction describes how well the parent organization regards and values the CVC outfit. This is most often the culmination of both financial and strategic returns delivered by the CVC. Increasing value here feeds back into the cycle with increasing CVC strategic acumen. A failing or broken linkage in any point of this cycle would result in the reduction or breakage of subsequent elements in this CVC value cycle.

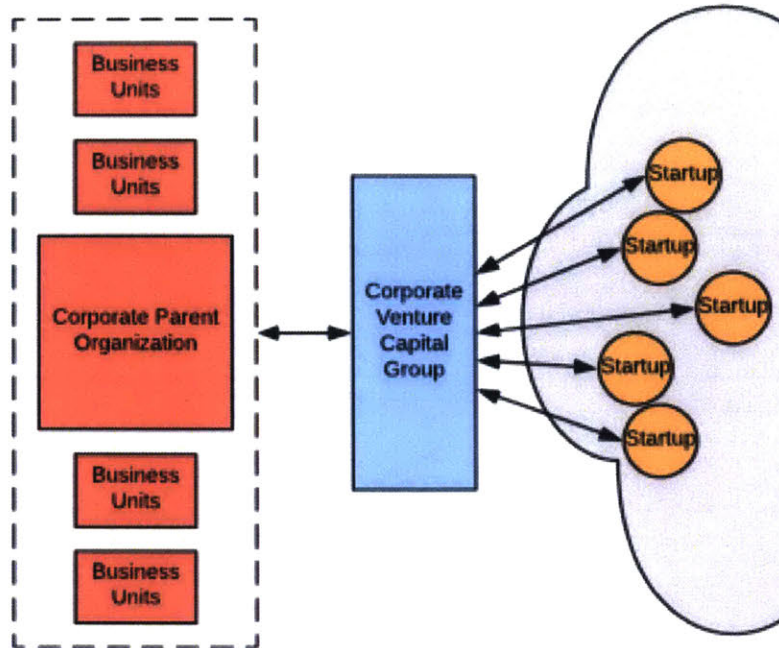


Figure 19. Direct CVC linkages between corporate parent and portfolio companies.

One example of how trying to measure strategic value only within the direct linkages and activities of a CVC fails to capture the true strategic value of a CVC is illustrated with Figure 19 and Figure 20. Figure 19 illustrates the immediate linkages between a CVC unit, its parent organization, and its portfolio. To truly appreciate the value this CVC provides in terms of the breadth of its source for market intelligence, technology intelligence, and the ability to facilitate connections between business units and the other participants in the broader entrepreneurial ecosystem, an expanded view of the second and third degree linkages must be considered. This expanded view is shown in Figure 20. The CVC's participation in this external innovation environment can provide access to opportunities for partnerships and technology/market intelligence beyond the immediate CVC investment portfolio.

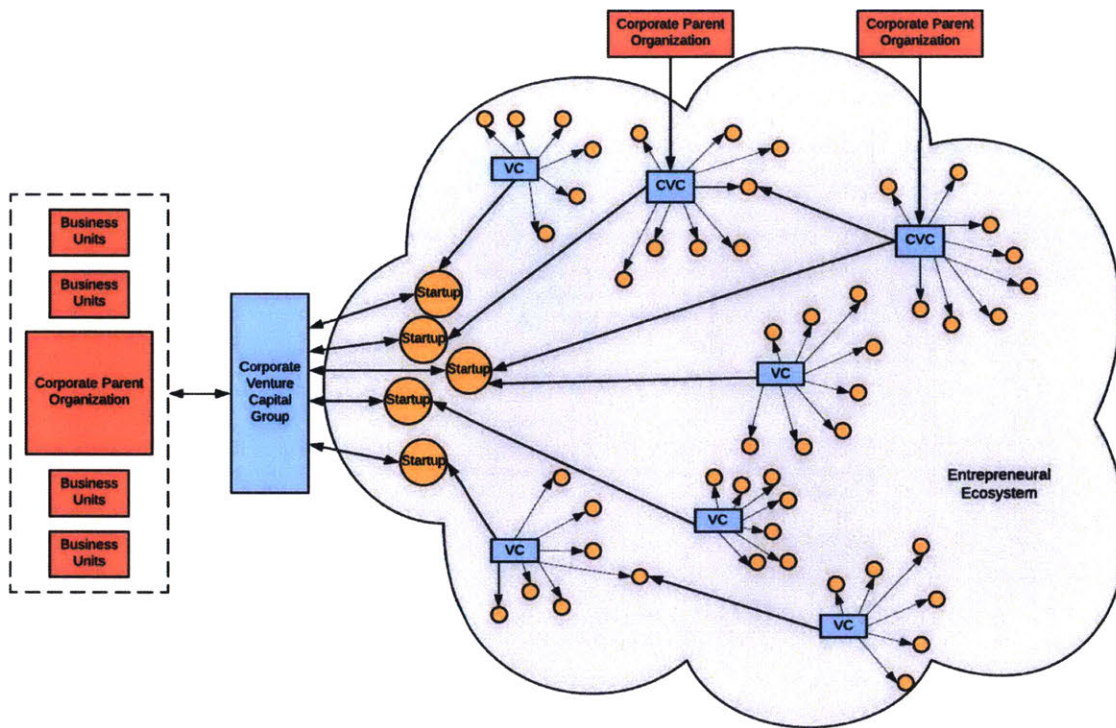


Figure 20. Indirect linkages in the broader entrepreneurial ecosystem beyond immediate CVC portfolio

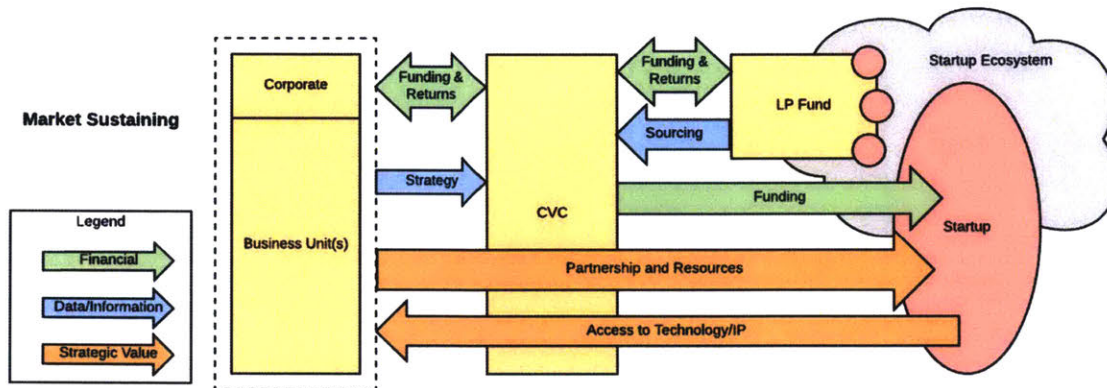
Taxonomies of CVC Structures

Research into a number of CVCs with varying investment objectives yielded an opportunity to characterize general taxonomies of the four investment quadrants described in Figure 5. **Error! Reference source not found..** The purpose of these taxonomies is to help illustrate high level value flows in order to better evaluate whether a CVC's structure and practices are aligned with the desired objectives. For example, if the CVC functions largely as a technology scout for new and exclusive technologies, ready for infusion in a business product's roadmap, it may make sense to invest heavily as LPs of domain-focused VC funds to build a pipeline of pre-vetted deals. However, if the objective is for the CVC to provide a window on

emerging technologies, investing heavily as LPs of other funds would be abdicating their role in interacting broadly and early with founders and early stage startups.

Four taxonomies are provided below, along with characteristic observations:

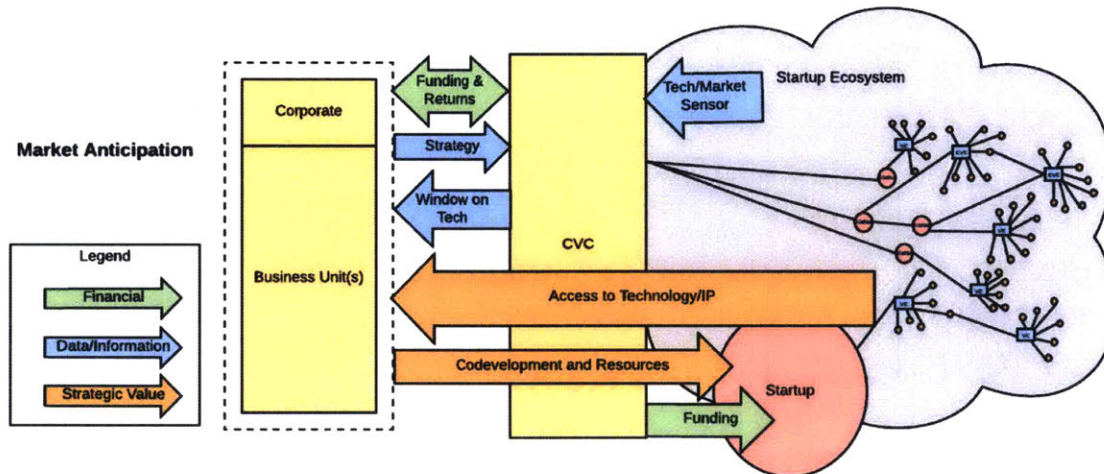
Market Sustaining: Synergistic and Complementary



- The CVC maintains close relationship, both from the organizational and communication standpoint, with the corporate business unit(s).
- The BU's typically have more influence and control over the investment decisions.
- The CVC takes on a degree of technology scouting responsibility for the businesses.
- Investment strike zone for technology or market maturity is aligned with the business product roadmap, allowing for technology infusion opportunities.
- The CVC function is more focused on driving strategic partnerships with investments, and pushing new commercial opportunities and resource support for portfolio companies.
- Investing as LPs of outside funds provides sourcing and proxy presence in the startup ecosystem

- Participation in the broader ecosystem is via the LP fund, and are typically less involved in deal discovery and early stage investing.
- Access to technology/IP is mostly limited to portfolio companies.

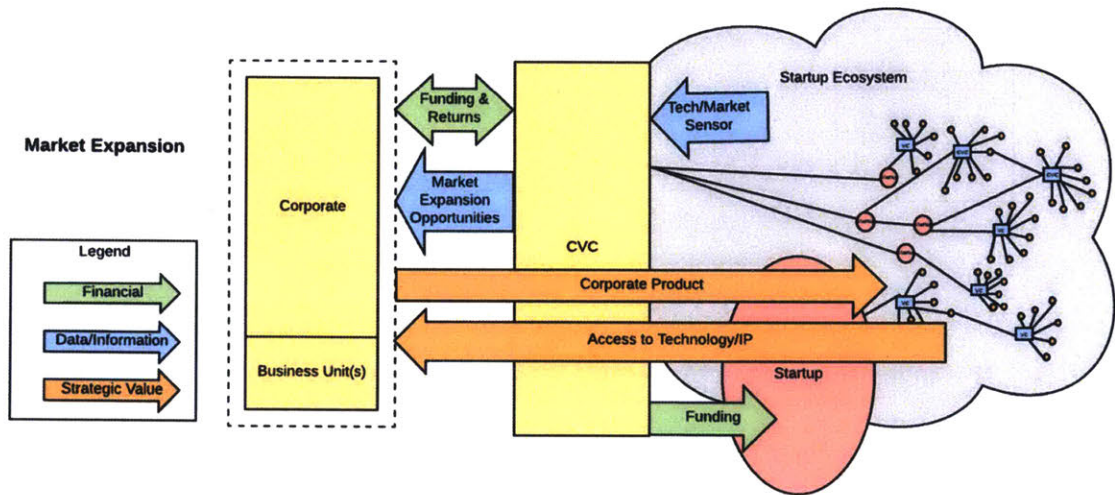
Market Anticipation



- Similar to the Market Sustaining taxonomy, the Market Anticipation is also closely aligned with the business units, both organizationally and from a communications standpoint.
- Rather than functioning as technology scouts for the parent organization, the CVC outfit functions as technology and market scanners. They are sensors deployed in the innovation ecosystems to detect emergent themes that are of strategically relevance in the future – either offensively or defensively.
- As the “eyes and ears” providing a window on technology, the CVC invests at earlier stages and on newer, unproven, and high risk innovations.

- These investments can “virtualize” a corporate’s R&D efforts, often with less risk exposure.
- Investment activity resemble bets placed on “what’s next”, to avoid being disrupted, or to respond early on an emergent technology platform, market trend, or business model.

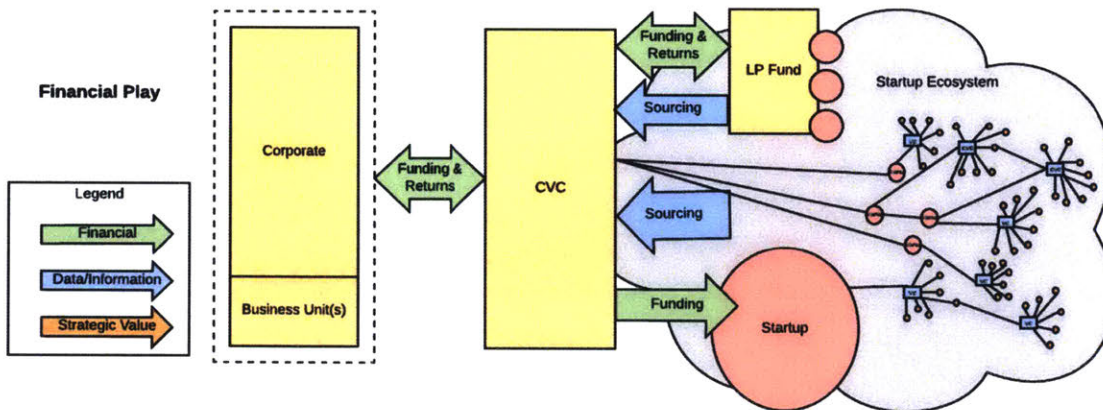
Market Expansion (or Market Orchestration)



- Unlike the Market Sustaining or Market Anticipating taxonomies, Market Expansion exhibits a weaker link between the CVC unit and its corporate parent.
- This weaker connection may be intentional, providing a degree of freedom for the CVC to invest in startups that are more loosely aligned to current business strategies.
- These investments often target “white space” segments to create opportunities for expansion or entry into new markets.

- These investments may also involve a push of a company’s product into the startup ecosystem, where the CVC participation in the startup ecosystem is to increase the company’s presence and influence.

Financial Play



- This investment objective emulates institutional VC investing behavior, and is unlikely to survive long-term. Without strategic value, a corporation can easily decide to shut down a financial returns-only CVC as soon as a higher yield investment is identified within one of the business units.

Multiple “Funds” for Multiple Investment Strategies

Of the 18 CVCs interviewed, five indicated having more than one fund or virtual funds for investments along different strategic objectives. For example, one CVC had a dedicated fund established for investments with almost purely financial returns – but aimed at technologies with little to no current alignment with their business units, but with potential of one day becoming of strategic interest. Another CVC had three “virtual funds” used to invest in three categories of various degrees of BU alignment. One virtual fund would be dedicated to

investments that are business unit supported, marked by partnership or co-development deals. A second virtual fund would be dedicated to business unit aligned, which are investments that are of strategic interest to the businesses, but lack the financial support for pursuit within the business unit. A third virtual fund aimed at supporting the “window on technology” function of the CVC for the business units, providing funding for investments on technologies that may eventually become disruptive or competitive to their current business offerings.

The Challenge of Measuring Strategic Value

Attempting to capture value within the immediate system boundary of a corporate’s businesses is a very difficult endeavor. It may be done through several means such as recording the direct value extraction from investments through technology infusion into current or planned product offerings, or by measuring the number of novel technologies introduced to the parent organization. Other approaches such as multi-attribute utility analysis or real options pricing have been attempted as well. None of these direct or indirect measurements appear to be industry standard, or even practiced with regularity. Only two CVCs interviewed had indicated they had a measure for the conversion of direct investments to increased revenue. However, most indicated this to be very difficult or even impossible to do with accuracy.

Nearly all CVCs acknowledged the presence of strategic value, and even the priority of strategic value in CVC investments. There has yet to be a quantitative measure of strategic value that is both repeatable and not excessively resource consuming. What appears more worthwhile an endeavor is to ensure that coherent frameworks and conduits of strategic value delivery are in place, and a disciplined approach towards execution is maintained.

Proxy indicators of strategic value include:

- Provided that good financial returns are observed, as long as the business units find the CVC valuable, the CVC is delivering strategic value.
- Provided that a clear strategic alignment framework is in place, financial returns indicate the CVC is delivering strategic value.

The traditional convention that CVCs invest in startups as a pipeline for acquisition appears to be largely confined to Biotech, Pharma, and Healthcare focused CVCs who invest in more nascent technologies as an augmentation or virtualization of their R&D efforts. While the provision of optionality in pursuing new technologies and business models that may eventually disrupt the corporate's current business is still acknowledged, in practice, the exercise of such options in the form of acquisition represents a very small fraction of all investment deals.

Conclusions

After extensive research on the topic of capturing and measuring the strategic value of CVC investments, both in the existing literature and in primary research with leading CVC groups, several conclusions have been made. First and foremost, after interviewing industry thought leaders who have grappled with this topic and reviewing the gathered data from this research, CVC appears to be as much at risk of succumbing to changes in financial environments and corporate leadership as it has ever been. The reason is that as a whole, CVCs are not measuring their performance on an existential objective – the delivery of strategic value to the parent corporation.

While it is also true that the measure of strategic value in CVC remains a difficult endeavor, the revelation that so few even attempt to measure strategic value capture is concerning. This concern is due to the fact that a growing portion of all VC funding (44% at time of this report) in the US comes from CVC, and the stability of this funding source appears to stand on merely an assumption that such investments are of strategic importance to a corporation. One can easily conclude that without the ability to justify a CVC's existence on clear strategic metrics, some portion of this funding might disappear in a market downturn. With the increasing significance of CVCs in driving the development of new technologies, such a massive funding discontinuity event would prove devastating to the wellspring of American innovation.

One might also conclude that with so few CVCs attempting to measure strategic value, some CVCs could be critiqued as merely corporate branding exercises masquerading as external innovation vehicles. This in itself, if true, is not necessarily a bad thing – there are numerous positive effects that a CVC brings to a corporate brand. These may include the broadcasting of an innovative corporate culture highly sought by top talent. This may also involve advancing the image of a large, high-inertia corporation capable of participating in fast-developing and emergent areas of technology. With respectable financial returns, CVC as a branding exercise pays for itself while fueling the broader innovation ecosystem. If the lack of strategic value measure is in fact due to the lack of strategic value in terms of advancing and/or expanding the corporate's business offerings, it may well be that the CVC exists to advance and/or expand the corporate's branding and should seek to measure effectiveness to that end.

However, the predominant motivation remains that corporations know they need to be more innovative, and CVC is a “first order” operation that is easily understood and adopted to this end. Despite the difficulties in measuring the value of CVCs, it is often one of the few options available for corporates to tap into external innovation ecosystems. Thus, the question of “is it worth it” is often of secondary importance when CVCs are perceived as a need.

This is not to detract from the reality that corporates are capable and responsible for many types of innovations unattainable by any individual startup. Products of immense societal significance, from jet engines, to MRI machines, to mobile networks, all serve as counterpoints to criticisms that corporations are unable to produce world-changing innovations. The growing collaboration between corporates and the broader innovation ecosystems as evidenced by the rapidly growing portion of startup funding attributed to CVCs highlights an increasing acknowledgement of synergies that exist between the two worlds – driven by bi-directional value delivery whether that be strategic, branding, or some other objective.

CVCs have the potential of being a more “enduring” startup funding source than institutional investors. Most CVCs invest off the corporate balance sheet and can take advantage of the ability to be patient on returns compared to traditional 10 year funds by investing in nascent technologies that will require many years to mature towards commercialization. CVCs can afford to invest at this level of technology risk, not rush startups towards unsustainable growth, and at the same time diversify their bets on emergent technologies early in the technology S-curve. Further, if able to show a measure of strategic value to the parent corporation in a time of financial downturn, CVCs may prove to be more

survivable than they are perceived to be today. Yet what remains a need are proven and repeatable methods of measuring strategic value, and widespread adoption of these methods. This will need to come from the industry as CVCs have access to the relevant data and have visibility on the deals and the systemic effects of CVC investments on the businesses. The CVC community would be well served to share best practices in measuring value as 44% of startup investments (and growing) claims strategic value as an existential objective that remains largely unmeasured.

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