Comparative Analysis of Japanese and Western Corporate Venture Capital

by

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ABSTRACT

Corporate Venture Capital (CVC) is one of methods to facilitate open innovation for companies, and the companies have invested in startups by CVC for a long time in the world. In Japan, more and more large companies have established their CVC, and they have invested in the startups in the last five years to follow up American and European companies. However, while American companies have already implemented investments in startups for a long time and have succeeded in obtaining returns from the investments by their CVC, the effects of the investments by Japanese companies are still unclear, and many failures has been reported in Japan.

This thesis focuses on a comparison analysis of Japanese CVCs with Western CVCs. In this thesis, I will research a purpose, investment policy, prioritized return and operations management for their CVC, and conduct a comparative analysis between Japanese and Western CVC by leveraging public resources and personal insights obtained from interviews. I research pioneers in both Japanese and American CVC in high tech field, then we analyze a comparison of Japanese, American and European CVCs in heavy industry. To deepen the analysis of the latest Japanese CVCs, I research other Japanese CVCs which focus on digital transformation fields.

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I am deeply grateful to interviewees: Les Vadasz, Paul D Bosco, Sue Sigel, Frank Andrasco, Nobuyuki Akimoto, Kenichi Funaki, Takashi Nishikawa and Koichi Narasaki. Their experience for CVC enabled me to analyze CVCs deeply and understand the difficulties and significant factors to operate CVC in real world. I wish to express my special thanks to Dr. Bryan Moser, Professor Yaichi Aoshima and Kiyoyuki Tsujimura for constructive feedback to narrow down my thesis topic, their supports and connections to interviewees.

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LIST OF ACRONYMS AND ABBREVIATIONS

CVC	Corporate Venture Capital
VC	Venture Capital
NTT	Nippon Telegraph and Telephone Corporation
CEO	Chief Executive Officer
CIO	Chief Innovation Officer
CTO	Chief Technology Officer
CFO	Chief Financial Officer
HVG	Hitachi Ventures Gmbh
GCV	Global Corporate Venturing
MVP	Minimum Viable Product
IP	Intellectual Property
ROI	Return of Investment
ROE	Return of Equity
MOIC	Multiples on Invested Capital

Chapter 1. Introduction

1.1. The trend of CVC in the world

Corporate Venture Capital is an internal organization that invests in startups, and one of the tools to lead open innovation for companies. Globally, the amount of CVC-backed funding and CVC-backed deals has gone up. According to research by CBINSIGHT, the amount of the investment has increased from $32.9 billion in 2016 to 73.1 billion dollars in 2019. (See Figure 1.1) Along with CVC backed-funding, the number of CVC-backed deals has increased from 2,181 in 2016 to 3,359 in 2020, as Figure 1.2 shows. [1] In 2020, the most active CVC is Google Ventures (GV), and Salesforces Ventures, Intel Capital, and Mitsubishi UFJ Capital follow.

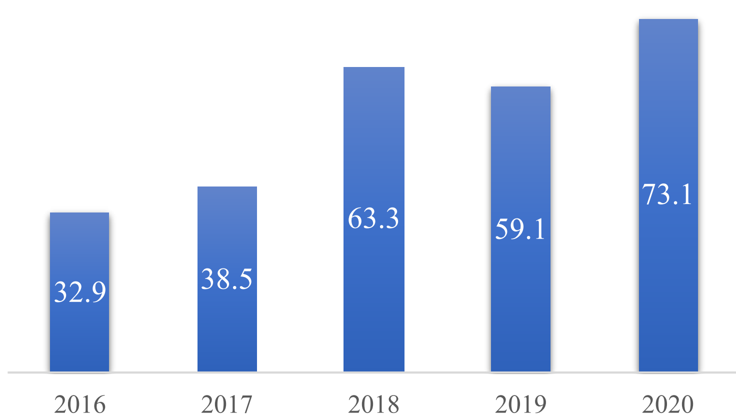

Figure 1-1 Annual global disclosed CVC-backed funding [$B], 2016 – 2020. Source: [1]

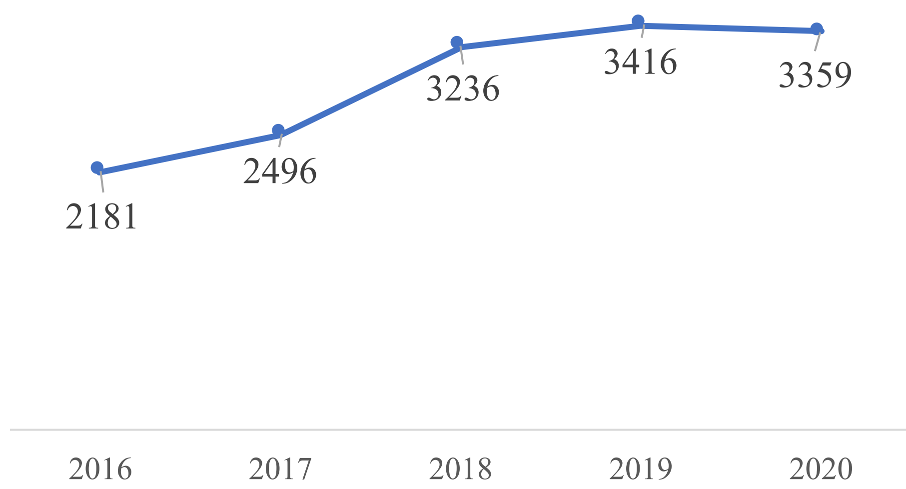

Figure 1-2 Annual global disclosed CVC-backed deals, 2016 – 2020. Source: [1]

CNINSIGHT conducted research in terms of geographic perspective, and the report states that North America had the largest share of CVC-backed deals in 2016. However, the number of CVC-backed deals share has increased in Asia in the last five years, and now Asia conducts CVC-backed deals the most actively. (See Figure 1.3 and 1.4) In Asia, Japan and China have conducted the most CVC-backed deals in the last five years.

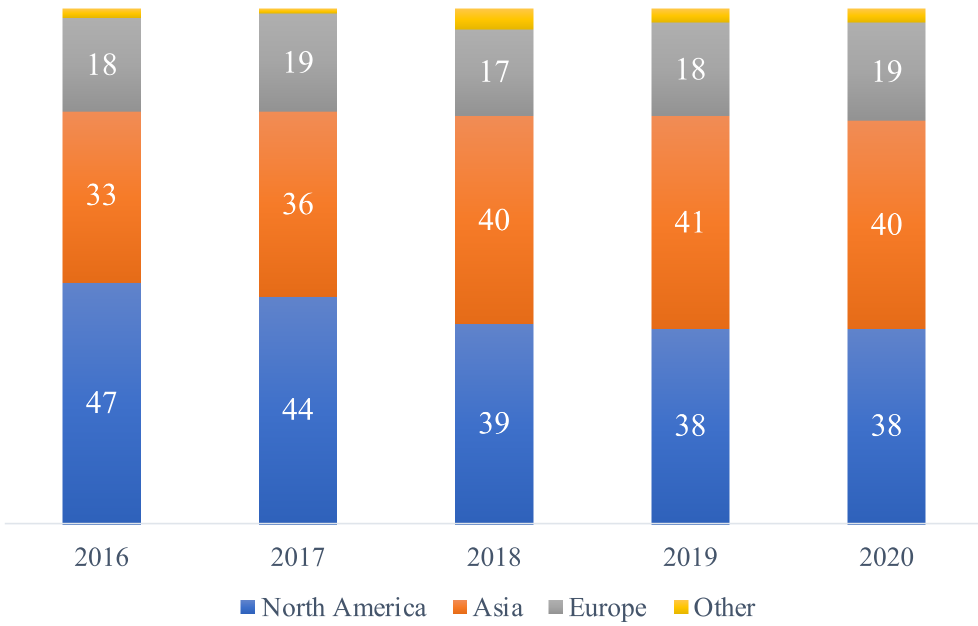

Figure 1-3 Annual global CVC-backed deal share by continent, 2016 – 2020. Source:[1]

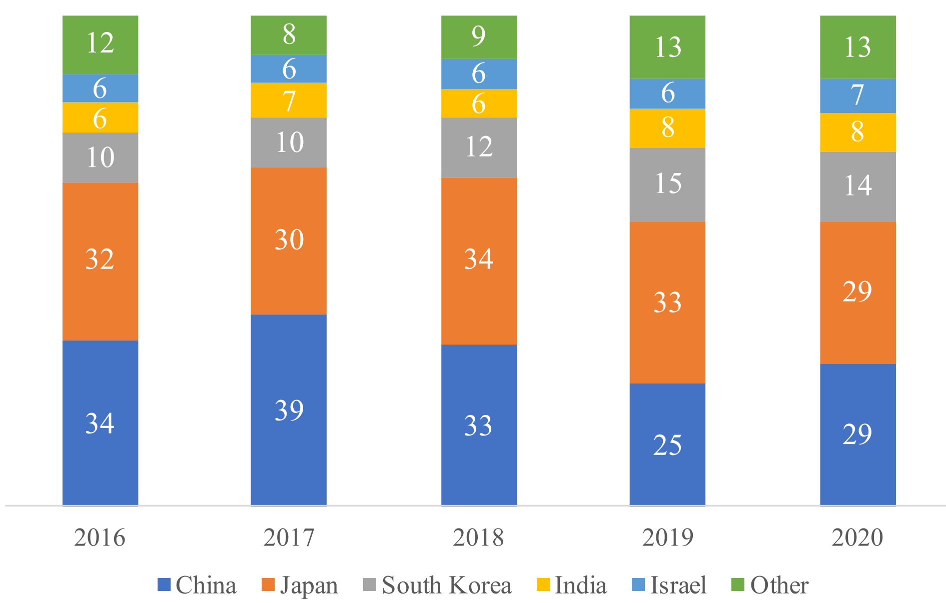

Figure 1-4 Annual CVC-backed Asian deal share by continent, 2016 – 2020. Source: [1]

1.2. The trend of CVCs in Japan

More and more Japanese large companies have established their own CVCs and invested in startups all over the world since 2011. The investments and the deals by CVCs increased dramatically from 2016 to 2019 in Japan. Based on the research by CNINSIGHT, in terms of CVC-backed-funding, the amount of investments has gone up from $0.7 billion in 2016 to $2.1 billions in 2019. As well as CVC backed-funding, the number of CVC-backed deals has almost doubled, from 230 in 2016 to 451 in 2019. [1]

In 2020, COVID-19 caused a pandemic, and it influenced the whole world, leading to the reduction of both the amount of CVC-backed-funding and the number of CVC-backed deals. However, $1.5 billion was invested by CVCs, and 395 CVC-backed deals were conducted in 2020. [1] In fact, the pandemic reduced the activities of CVCs, but their activities are much higher than in 2016. (See Figure 1.5 and 1.6) According to the research conducted by Japanese Venture Corporate Association, almost 80% of CVCs answered that they would increase their investments more than before the pandemic or maintain them as the same as before. [2]

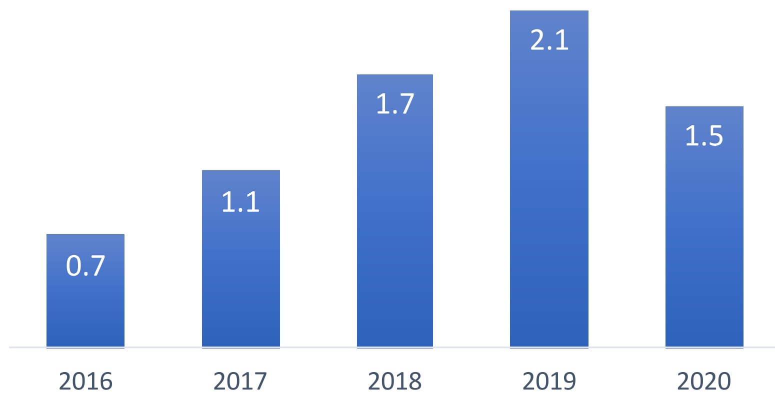

Figure 1-5 Annual disclosed CVC-backed funding [$B] and deals to Japan 2016 – 2020. Source: [1]

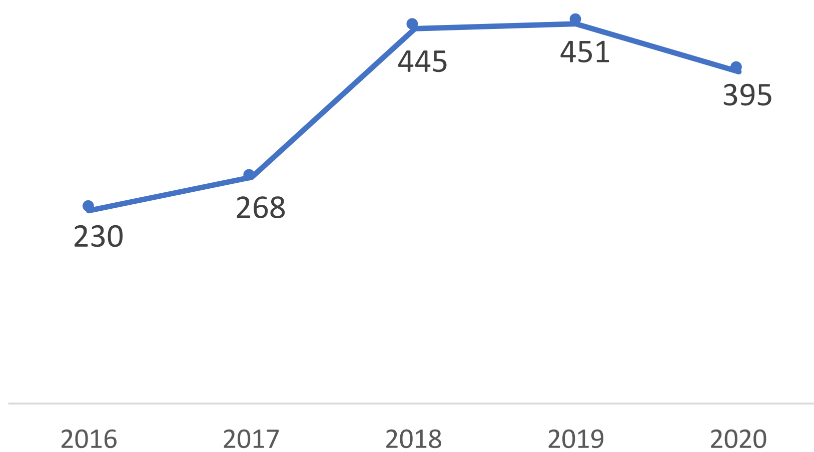

Figure 1-6 Annual disclosed CVC-backed deals to Japan 2016 – 2020. Source: [1]

On the other hand, Japanese CVCs have faced a number of problems, and these problems have been reported by the Japanese government. [3] While American companies have implemented CVCs and succeeded in obtaining returns, the achievements by Japanese CVCs have been unclear. In fact, the purpose of CVCs is more complex than the purpose of Venture Capital. Compared to the purpose and metrics of Venture Capital in terms of obtaining financial returns, the goal of CVCs is to get both strategic returns and financial returns, and CVCs' purposes and priorities depend on each company.

1.3. Research Objectives

This section discusses the research questions and objectives. As mentioned previously, while American CVCs have succeeded in obtaining returns, many failures have been reported by Japanese CVCs. Hence, I conducted a comparative analysis of Japanese CVCs and American-European CVCs. Based on the above, the research questions are as follows.

1. How do the purposes and investment policies of Japanese and Western CVCs differ?
2. How different are prioritized returns and operations management of Japanese and Western CVCs?

In the present thesis, in order to analyze the above differences, I researched information that each Japanese and Western CVCs have published. In addition, I interviewed key persons who have established CVCs or operated them. Then based on the information, I analyzed the differences among the CVCs.

There are 979 CVCs, which actively investment in startups. actively in the world in 2020. The number of CVCs decreased a few in 2020, however, the number of CVCs has increased in the last five years. [1] In this research, I select Intel Capital, which is one of the most prominent CVCs in the world and ranked in top 3 CVCs in 2020. I also select Cisco Investments, which is another famous and historical CVC in high tech industry as well as Intel Capital. In addition to the CVCs in high tech industry, I research GE Ventures, which is the CVC of GE, and next47, which is the CVC of Siemens in large industry companies. GE Ventures is nominated as one of the top 20 CVCs in 2018, and next47 is chosen as one of the most active CVCs which invest in advanced manufactures in 2020. [1] To compare these Wester CVCs with Japanese CVCs, I research Docomo Ventures, which one of the most famous and pioneering CVCs in high tech industry in Japan. I also select Hitachi Venture GmbH as a representative CVC, which is one of the largest industrial companies like GE and Siemens in Japan. Additionally, in order to deepen the latest trend of Japanese CVCs, I analyze the CVCs of Panasonic and SOMPOHD, which are new Japanese CVCs and focus on corporate transformation by a digital transformation.

The rest of the thesis is organized as follows: In chapter 2, I conduct a comparative analysis among Docomo ventures, Intel Capital and Cisco systems in the high-tech industry. In chapter 3, I analyze Japanese and Western CVCs in heavy industry. I conduct a comparative analysis among Hitachi Ventures GmbH as a Japanese CVC, GE Ventures as an American CVC, and Next 47, which is the CVC by Siemens as a European CVC in this field. In Chapter 4, to deepen the analysis of the latest trend and characteristics of Japanese CVCs, I research Conductive Ventures and SOMPOHD, Japanese CVCs established in the last five years, which focus on digital transportation. In chapter 5, based on the analysis of these CVCs, I propose fundamentals and strategies to operate a CVC. Finally, Chapter 5 concludes this research and mention future research directions.

Chapter 2. Comparative Analysis in High-Tech Industry

This chapter compares American and Japanese CVCs in the high-tech field. I analyze NTT Docomo Ventures, Inc. as a pioneer of Japanese CVCs. To conduct a comparative analysis, I compare NTT Docomo Ventures, Inc with Intel Capital and Cisco Investments, which are selected as pioneers of American CVCs.

2.1. Analysis of Docomo Ventures

Background

NTT Docomo Inc (NTT Docomo), one of the largest mobile phone companies in Japan, was spun off from Nippon Telegraph and Telephone Corporation (NTT) in 1991. [4] Although the majority of NTT Docomo's share had been owned by NTT for a long time, NTT Docomo became a 100% subsidiary again on December 29, 2020. [5]

NTT, the largest telecommunication company in Japan is owned by the Japanese government. NTT was incorporated according to NTT law, and NTT is the holding company of NTT Group, which consists of the following companies: NTT East, NTT West, NTT Communications, NTT Data, NTT Docomo, and others. [6]

NTT Docomo Ventures, Inc. (Docomo Ventures) is a 100% subsidiary of NTT Docomo. Docomo Ventures has been in charge of investments in startups funded not only by NTT Docomo but also by NTT Group. NTT established their CVC firm called "NTT Partners, Inc" (NTT-IP) in 2008. Similarly, NTT Docomo also created their investment division, called "Docomo Capital" in 2005. [7] However, Docomo Capital had invested in startups as a Limited Partner. As a result of internal discussion within NTT Docomo and NTT Group, they made a decision to establish Docomo Ventures as a CVC that operates their investments funded by NTT Docomo and NTT Group.

I interviewed Nobuyuki Akimoto in November 2020, he was the CEO of Docomo Capital and Vice CEO of Docomo Ventures. He described the background of the establishment of Docomo Ventures in the following.

"The first investment department in NTT Docomo was Docomo Capital, which was established in 2007. The purpose of Docomo Capital is to get information about startups which NTT Docomo is interested in. Their investment style was LP investment. However, Docomo Capital could not achieve enough profits, which means that we could not obtain good information and startup by using LP (Limited Partner). We concluded that we had to invest by ourselves. That's why we determined to establish our CVC, NTT Docomo Ventures in 2013. NTT Group also had the same need and movement to create a CVC, NTT Partners, Inc (NTT-IP). After internal discussion in NTT

Group, they decided that investing in startups through "NTT Docomo" would be the best way, because NTT Docomo is the best-known NTT Group company in the US. This is the reason why Docomo Ventures also manages another fund from NTT Group in addition to NTT Docomo."

Docomo Ventures now manages JPY 70 billion fund in total from NTT Docomo and NTT Group. They have already invested in more than 100 startups from the seed stage to later stages all over the world. Their investment areas are Fintech, Communication, Security, Media Content, BigData, Cloud, IoT/Drones, Marketing/Advertisement, Medical/Healthcare, Robotics, Power/Batteries, AI, Enterprise, and Education. [8]

Purpose and Investment Policy

CVC has its own purpose, and it depends on the owner companies. Docomo Ventures states the investment policy of their corporate venture capital on their website: "We produce co-innovation. […] NTT Docomo Ventures promotes innovation among startups everywhere and within NTT Docomo and NTT group." [9]

On the other hand, Akimoto explained the transition of the purpose and the investment policy of Docomo Ventures when they established it in the following:

"At the beginning of establishment of Docomo Ventures, its purpose and investment policy were to invest in a disruptive technology that has a big impact on society in the future and long-term. Even if they could not confirm any clear synergy effects on NTT Docomo or NTT group, Docomo Ventures attempted to invest in the startups that had a big potential and impacts from the long-term view. Investing in disruptions for the long-term perspective by obtaining equities of startups made a sense as a strategy."

The purpose and the investment policy described in published information are different from what Akimoto explains when they established Docomo Ventures. The published explanation seems to say that Docomo Ventures focuses on innovation that is close to their business area of NTT Docomo and NTT Group. Akimoto explained the transition of their purpose and investment policy as follows, and their policy has been very influenced by the change of the CEO and board members.

"After the CEO and board members were changed, the purpose and investment policy of Docomo Ventures were also changed. The new board members were less interested in CVC than the previous board members who established the CVC."

He explained that the expected result of their investment was dramatically shifted from the long-term perspective to a short-term perspective. Along with this change, the board members decided that the investment area should be close to business fields that NTT Group and NTT Docomo provided.

"From the new board member's perspectives, the poor short-term results of investment that were made with a view of the long-term effects seemed a bad choice. Sometimes board members focus only on short-term results. For them, long-term effects did not matter. The new CEO and board members saw only short-term results, and the results seemed not to make sense. It became the most important that NTT Docomo or NTT group could apply startups' technologies or busines models to their business soon. In the end, their fundamental investment policy became "No collaboration with NTT Docomo and NTT group, No investment."

In addition, he also pointed out that the stake holder structure influenced the operation.

"It was also difficult for Docomo Ventures to communicate with existing NTT groups, because the establishment of Docomo Ventures caused a conflict in NTT group. The establishment of Docomo Ventures forced the other NTT group to conduct the investment in startups by themselves. It was very hard for Docomo Ventures to create that relationship with existing business units in NTT group. And this relationship pressured Docomo Venture to focus more on collaboration with NTT group and obtain short-term results."

Prioritized Returns

The purpose and the Investment policy directly influence the output generated by the investment. When Docomo Ventures was established, the purpose of their CVC was to find disruptive technologies or business models, and their object to find disruptions for the long-term period. However, since they were exposed to the change of board members, the policy of the investments has changed.

Akimoto explained that Docomo Ventures felt heavy pressures that they had to contribute to the growth of NTT Docomo and NTT Group as soon as possible. This pressure shifted their prioritized returns from the long-term period to the short-term period. In terms of financial returns, ROI in the short-time period has been more prioritized than the long-term period. In addition, regarding strategic returns, applying startups' solutions to existing businesses became more essential than the disruptions.

In addition, the investment policy caused problems for NTT Docomo and NTT Group. Akimoto explains as follows.

> *"This shift generated a kind of vicious circle. The startups that could create synergies immediately with NTT Docomo or NTT groups were very narrowed down and limited. In fact, these companies would subsidiaries rather than startups, because the synergy with NTT groups was mandatory. The investments in these startups caused constraints that NTT Docomo and NTT group could not shift*

to the other startups in the other area, even if they would find another better startup in the similar industry area field due to the fact that they invested. This is a kind of vicious circle."

On the other hand, in the case that Docomo Ventures focused on a financial return in the short term, there has still been a dilemma. Akimoto explains as follows.

"In addition, even though Docomo Venture obtained approximately JPY 100 million as a profit by investment, Docomo is a large company with sales over JPY 5 trillion, from the view of the board members, this result does not seem to be very good."

He pointed out that one of the purposes of investing in startups is that it enables investors to obtain the information about the new potential market. This information enables investors to invest in other potential startups in the same industry. However, the synergies that the invested startups have with NTT Docomo or NTT Group to some extent make it difficult for the investors to invest in similar startups that have more potential growth. In Japanese culture, having a relationship with the first partner prohibits having another relationship with a similar startup, even if it looks more promising. The initial investment seems like a commitment to continue the relationship.

Lessons Learned

Experiences generated lessons learned, and Akimoto lists the following as what he learned from experiences through Docomo Ventures.

> *"We (Docomo Ventures) were influenced by Japanese typical culture, human resource rotation and change of people". He emphasized that that Japanese CVC must be influenced heavily by the change of board members."*

Additionally, he also describes that Japanese culture struggles to implement startup investments by their own typical cultures. He explains, "While investments in startups tend to fail or have high risks, Japanese culture typically does not accept failures, and this culture makes it hard to take the risks that CVCs have to take."

Summary

According to the interview of Akimoto, the purpose of Docomo Ventures is unclear, and their investment policy is very fragile and lacks consistency. The changes of the executive members and CEO have influenced their investment policy, and their expected returns have been also influenced by the executive members. The CEO and senior level commitments for the CVC are also limited; in other words, there is no strong leadership to implement the CVC.

Expected returns on CVC have been varied along with their investment policy depending on the CEO and board members at the time. “No collaboration with NTT Docomo and NTT Group, no investment” is currently the investment policy, and this policy demands both strategic returns and financial returns in the short term. The strategic returns for them are blurry, but something that NTT Docomo and NTT Group are able to apply startups’ technologies to their existing business to get synergy effects.

In addition, Docomo Ventures has struggled to manage CVC internally. Docomo Ventures has been in charge of operation of not only NTT Docomo’s fund but also NTT Group, but this configuration of stake holders has internal conflicts because Docomo Ventures has a less good relationship with NTT Group. The integration of Docomo Ventures with the rest of the business units of NTT Docomo and NTT Group has not worked well.

Finally, Japanese general business culture, in which people hesitate to take a risk, has influenced their investments. Investments in startups have more risks than investing in existing businesses, and long-term investments have more risks than short-term investments. As a result, the general Japanese culture tends to avoid high-risk and long-term investments.

2.2. Analysis of Intel Capital

Background and Purpose

Intel Capital is the CVC of Intel Corporation (Intel) and one of the most famous CVCs in the world. People have researched Intel Capital a lot as a pioneer of CVC before. Intel is famous for Platform Leadership, and their innovation, growth strategy and execution have been well researched. Intel Capital was established, as a division named a Corporate Business Development group (CBD) of Intel Corporation in 1991, and it was renamed as Intel Capital in 1993. [10]

In the book, "Platform Leadership" published in 2002, the authors A. Gawer and M. Cusumano describe the purpose of the establishment of Intel Capital as follows: "To create grow demand for Intel microprocessors and complementary hardware and software products". [11]

Now Insight has named Intel Capital as the third most active CVC in the world in 2020. [1] Their fund size is so huge, $12.9 billion in total, and now they have invested $300 to $500 millions every year in startups. [12] [13] Intel Capital has invested in startups over the world across all stages. [14] The following are the main areas of their investments: Edge, 5G, Autonomy, Client, Gaming, the Cloud, AI, Cybersecurity, Enterprise applications and Silicon Design & Manufacturing. [15]

Investment Policy and Prioritized Return

In my 2021 interview, Les Vadasz, who was a founder of Intel Capital, addressed the investment policy of Intel Capital while he operated Intel Capital. He explained their investment policy as follows.

> *"#1 lesson is that we never treated, I never treated Intel Capital as just simply ventur[ing] investment of investing money to make money."*

The goal of Venture Capital is to make money by their investment. It is obvious for them that financial return is prioritized the most. However, CVC needs to think of both strategic returns and financial returns. Vadasz also explained that strategic return was very important and if they cannot obtain the strategic returns, investing was a waste of money.

> *"We invested money for strategic reasons. Now a little caveat (consideration) here. You have to invest with financial discipline. Because companies that don't succeed, they do not help you. So, you have to want to invest in the companies that will succeed, that's likely to succeed. Intel Capital if it invests in this manner, will make money. But that's not the #1 reason why Invest. If Intel Capital does not make any money, it may be that other companies are failing that it invested in and that does not accomplish its strategic purpose either. But If Intel Capital only invests for making money, it is not going to help the strategy of the company, then, it's a waste of money. That's not*

the business of a company like Intel to be a venture capitalist, just making money on money. the #1 business of intel is intel's business, and it invests to help intel's business."

On the other hand, although financial returns are easy to measure, the strategic returns are hard to define and measure. Vadasz explained Intel Capital's ways to manage strategic return as follows:

"Financial return is always easy. It's a number. The strategic return is not a number. For strategic return, you have to ask yourself. Did this work or did this not work. Every time we made any investments, we ask two questions for every investment: "what do we give (to the company)? and what do we get (from the company)? […] Measuring strategic return is on a case-by-case basis and it's never a number, it's always a more subjective measure. But it has to be done with rigor. […] when my Investment manager reporting to me, they made a presentation, they always had to answer the questions before we made the investment: Why are you doing this investment, what are you going get out of the investment. And that has to be more than money, it has to be strategy, what strategy does it help and how"

In addition, when startups need microprocessors, Intel Corporation provides the microprocessors to them. Intel Corporation sends their engineers to solve issues that the startups have. These are examples of strategic support by Intel Capital and Intel Corporation. Vadasz addresses their policy and what they give to the startups as follows.

"When you say what we give, many times it's not just money. We will have to do some technical issues or, we will have to introduce the potential customers, or some other things, other than just money. We generally did more than we just give a money. Because again, part of reasons why you are strategic, because you wanna make sure they can help us."

Strategic returns depend on the individual companies, but Vadasz listed up several clear examples of strategic return for Intel Capital. The first one is the investment in wi-fi tech startups. Wi-fi enables people to access the Internet everywhere like hotels and airports if this technology is applied. More and more people can access the Internet in these areas, and more and more people will buy notebook PCs. Then, the purchasing of notebooks increases the market for microprocessors of Intel Corporation. The second example is a manufacturing production line of microprocessors. To produce new microprocessors, sometimes Intel Corporation needs new technologies to produce them, and then they invest in the startups related to the new production line. If Intel Corporation produces more and more new microprocessors by applying the startups' technologies, the startups will succeed, and then Intel Capital will also receive financial returns, too. Vadasz explained the importance of the investment in startups as follows.

"Look at a problem of a big technology company. As you know, to create a market out of new technology, there has to be many players. A company cannot do everything by themselves. Just imagine Intel, in its next-generation production line, I mean that takes many years to develop, and

there are many new technologies that coming to this next generation production line. And many of these technologies are created by small companies, and you want to make sure that that technology is available to you when you are ready to start your next generation line. So, what do you do? You create business relationship with them? Sometimes you even have to invest some many. Sometimes you even have to provide them some technical supports in order to make sure that they can deliver what you need. So the big companies is in the business investing in small companies for the purpose of making sure that they can do their own business. That happens in the high-tech company, especially a big high-tech company."

Vadasz summarized Intel Capital's fundamentals of investment policy and prioritized returns in the following.

"If you focus right on the strategic return, then you will have financial return. I would expect, I would say that a company succeeds in the activity, if they don't lose money and they get a lot of strategic return. In my mind, when you look strategic venture capital, if you get strategic return, and you don't lose any money, you're doing well. When you make money, you'll get strategic returns very well."

Operations Management

Internal conflicts are another issue when operating a CVC, and Vadasz stated that the relationship between a CVC unit and the rest of business units is important.

> *"In my opinion, Corporate Venture Capital always have to integrate well with the rest of the company. It cannot be just a department by itself. It should be tied together with the rest of the operating groups (business unit) […] Venture unit has to report very high in the organization. In my opinion, CEO. […] you as the head of venture unit have to have good relations with senior managers of divisions and business units, you have to help them, you cannot be an obstacle. Many times, business units, don't understand venture markets, so they need help."*

Vadasz answered that the change of CEOs or board members had never changed or influenced the investment policy while he worked there. However, he also insisted that the commitments of the CEO and high-level personnel of Business Units are significant to operate CVC. He said:

> *"If the CEO do not understand that Strategic activity is first and financial return is the second, then it won't work. the CEO has to believe it and use it as a tool. That can be difficulty."*

Finally, he explained that long-term perspective is essential to execute CVC, and that perspective is the fundamental of startups. Vadasz mentioned the long-term perspective as follows.

"You cannot do corporate venture if you have to see short-term financial return. Because even venture capital industries cannot assure short-term financial return. Typically, startup companies take five to nine years to go to public. So, even Intel started in 1968, and it went to public 1974, that was six years."

Summary

Based on the research and interview with, it is obvious that Intel Capital has invested in investments consistently for a long time. The main purpose of their CVC is to grow demand for Intel microprocessors and complementary hardware and software products and their investment policy is that a strategic return is first. They distinguish their CVC from a VC that focuses on only financial return, and they have conducted their investment along with their investment policy for a long time

Their discipline makes prioritized returns very clear, and they believe that they will obtain a financial return, if they get the strategic return. The fundamental questions before judging investments, *"what do we give to the startups, and what do we get from the startups",* help them obtaining strategic returns well. Two examples that investing in startups related to wi-fi that increased the market for microprocessors and in the startups that are essential to generate their next production line are concrete cases to prove how strategic returns first generate financial returns. In addition, they understand the time period of seven to ten years that startups generally require to succeed, they understand that success takes time for startups, and the long-term perspective is essential.

Finally, top management commitment and an integration of CVC with the rest of business units are essential. Intel Capital has helped the CEO, board members and the rest of business unit understanding the importance of CVC and their investment policy, then Intel Capital has received the continuous strong commitment from top managements t even though the CEO and board members have been changed. Besides, by supporting the rest of business units that they are not familiar with venture market, Intel Capital has kept good relationships with them. Having commitment of top managements and good relationship with the rest of business unit has led the success of Intel Capital.

2.3. Analysis of Cisco Investments

Background and Purpose

Cisco Investments is the CVC of Cisco Systems, Inc. (Cisco). Cisco Investments was established in 1993 as the investment office of Cisco. As well as Intel Capital, Cisco Investments is one of the most active CVC firms globally, and it was ranked as the 8th most active CVC of the top 20 CVC firms in 2018. [16]

Not only for investments, Cisco is famous as a company that acquires other companies. In 2000, Cisco conducted 23 acquisitions by itself in a year. [17] In Platform Leadership, the authors explained that the purpose of establishing Cisco Investments was the following:

> *"Cisco management decided to acquire the complementary technologies they needed to implement their vision of providing broad networking solutions to customers and to continue fueling growth, they also decided to acquire companies with competing technologies that potentially could displace routers in some network applications."* [18]

However, as the latest research, it is analyzed that Cisco Investments has invested to more create a "complete solution" of networking hardware, software, and service rather than a specific platform like Intel or Microsoft. One of the reasons is that the networking protocols are open, so proprietary networking platform solution is not really Cisco's business. [19]

Now the fund size of Cisco Investment is so huge, $9.7 billion in total, and they have invested $250 to $300 million annually in startups, and they have had 120+ active portfolio companies. [20] [21] In addition, Cisco Investments has acquired more than 180 companies in the past. Their investment areas are as follows: Data Center, IoT, Enterprise Networking, Security, Big Data and Analytics. [22]

Investment policy and Prioritized Returns

In Cisco's Technology News Site, Cisco Investments describes its investments in startups. In the 2017 article, "5 Things You Didn't Know about Cisco Investments", Charles Cooper interviewed Rob Salvagno, Cisco's Vice President of Corporate Development, who described the purpose of investments as follows:

> *"invest in areas that will make us strategically smarter in areas that matter to Cisco today or could shape Cisco tomorrow."* [20]

Also, this article states that their investments differ from Venture Capitals in the following:

> *"You might describe Cisco Investments as the company's very own venture capital firm - but with a couple of major differences. Unlike your conventional VC firms, Cisco Investments' primary goal is strategic, and works as a complementary partner to a VC. Financial considerations, while important, play a secondary role."* [20]

In terms of returns, the article explains their investment policy as follows:

"Cisco Investments obviously aims to make smart financial investments when it puts money into portfolio companies. But the primary motivation is strategic. So, if that means no immediate returns, so be it. This is investing for the long term." [20]

in addition, other articles address the investment policy similarly:

"Cisco Investments' primary goal is strategic, and in many cases works as a complementary partner to VC firms. Financial considerations, while of high priority, play a secondary role, distinguishing Cisco from standard VCs and the investment approaches of many of its major networking rivals." [21]

I also directly interviewed Paul Bosco in February 2021, and he was Vice President and Executive Advisor for Cisco. He stated the importance of strategic returns as follows:

"In our world, the combination of organic incubation supported by executive team alongside the building of strategic investments and deals, but much more than finances, [….] obsession on customer what this new business looks like in their financials were all key to us getting off the ground."

Based on the above research and the interview of Bosco, although Cisco Investments attempt to obtain financial returns, their main return is obtained from the strategic returns.

In terms of the time period required to obtain their returns, Cisco Investments see its returns on investments from the long-term perspective. Especially, Salvagno states that they use longer-term perspective to evaluate the returns in case their investments areas are far from the business inside Cisco. [20]

Bosco had his own experiences acquiring companies, and he pointed out that obtaining talented leaders is as important as having good returns as follows.

> *"Another important aspect what we did was understanding acquisition. That kind of people, we did IP property, […] but to great degree, we require talents, the potential is understanding the leader was a really important peace."*

Operations Management

According to Bosco, Cisco Investments have been supported and worked well from the view of the organization, culture, and top management commitment. In the interview, Bosco explained these points in the following.

> *"General manager has ability to do acquisition that support sector or customer or business there in […] Firstly, General Manager is able to do both do acquisition, but then also integrate that acquisition that company maximize impact on first schedule as possible, and team support that […]*

Secondly, you also have strategy unit, looking for opportunity, new business. These teams work together. […] Strategy Team, financial team and we have Business unit, those work together […] Business Units focus on customer and product and service […] Strategy team supports Business Units, but also try to understand what area margin are, what area the company should be moving into."

The strong culture supports their investments activities, and top management has supported employees consistently. Bosco also explained that their investment policy and support have not been changed by the influence of the change of board members as in Japan, as follows.

"We had significant support from executive teams to go. [interview] […] Cisco did not rotation like Japanese companies, there is no influence like Japan, it is important that operated under one culture, transparent, open."

In addition, in terms of risk taking, the risk caused by the investments depends on the state of the business. For instance, in a declining business, Cisco Investments would minimize the risk. With a business that has high potential growth, Cisco Investments should take more risks. Bosco comments on his work experiences as follows:

"As a steady state of the business, vs declining business vs that company engage high potential future business."

Finally, regarding the acquisitions, Bosco explained to me the following as one of the most important lesson learned.

> *"I certainly think from the acquisition perspective, understanding how to translate the impact of acquisition and success within the company. […] You need to understand, how to connect resource and entity into the new business. […] #1 lesson is to understand the pass to maximize the impact, which normally involve a bunch of people."*

Summary

Cisco Investments have invested in startups consistently by following their purpose and investment policy. the primary purpose of their CVC is to to deepen or expand Cisco's networking hardware, software, and services solutions business and platform offerings. Likewise Intel Capital, Cisco investments avoid acting like a VC. Then, the investment policy emphasize that strategic returns are first. Cisco investment prioritize more strategic returns than financial returns. They see their investment results from a long-term view. In addition, they analyze the risks and necessary time period for returns case by case.

Cisco Investments invested in startups and obtained equity in them, but they also have conducted acquisitions as well. Obtaining talented people with investments in their startups is one of the strategic returns, and it has contributed to keep Cisco Investments innovative.

Their company structure and culture have supported their investment activities well. Cisco Investments have been supported from the CEO and board members, and these supports have not been influenced by changes in the membership. General managers have been trained to execute the acquisitions, and the company enables them to work with the rest of the organizations, strategy team, financial team, and Business Units.

2.4. Comparative Analysis of Docomo Ventures, Intel Capital, and Cisco Investments

In this chapter, I analyze Docomo Ventures as a Japanese CVC and Intel Capital and Cisco Investments as American CVCs in the high-tech industry. According to the information that I obtained from the public information and the interviews with key persons for each CVC, I conduct a comparative analysis of them and find that Docomo Ventures has clear differences from Intel Capital and Cisco Investments. Table 2.1 summarizes the comparison of Docomo Ventures with Intel Capital and Cisco Investments.

First of all, the purpose and investment policy of Docomo Ventures have been dancing around since they established their CVC, and they have not conducted their investments with consistent discipline, while Intel Capital and Cisco Investments have had their own strict investment policy and implemented investments along with a clear purpose. When Docomo Ventures was established, the purpose and investment policy of Docomo Venture were to find disruptive technologies and think of their returns from the long-term view when they established their CVC. However, the purpose and policy have been influenced and displaced by the change of the CEO and the board members at times, and now their purpose is to produce co-innovation within NTT Docomo and NTT group, and the investment policy is “no collaboration with NTT Docomo and NTT Group, no investments”. .

Secondly, there are several differences in terms of investment policy for Docomo Ventures when compared with Intel Capital and Cisco Investments. One thing is that Docomo Ventures has been pressured to seek financial returns strictly, while Intel Capital and Cisco Investments clearly prioritize the strategic returns rather than financial returns and both of them has avoided investing like a VC. The strong discipline of Intel Capital: confirming “what we get from a startup and what we give a startup”, enable them to obtain strategic returns by their investments. Sometimes financial returns have been more prioritized than strategic returns for Docomo Ventures, but even though they obtain a good financial return by their investments, the CEO and board do not evaluate it as good enough since the contribution to their gross profits is a small amount, so there is a dilemma for Docomo Ventures.

The other way that the investment policy of Docomo Ventures differs from Intel Capital and Cisco Investments is the investment period. Docomo Ventures has been pressured to obtain the returns in a short-term period according to their investment policy, “no collaboration with NTT Docomo or NTT group, no investment.” It is completely the opposite thought with the others. On the other hand, Intel Capital and Cisco Investments understand the characteristic of startups that take a long time to succeed, and they see their investments from the long-term perspective.

The structure of stakeholders for Docomo Ventures makes its operation inefficient. Not only NTT Docomo, NTT Group invested in startups through Docomo Ventures. While Intel Capital and Cisco Investments insist that the relationship between their unit and the rest of the organization is essential, Docomo Ventures has faced this issue and has not worked well with the rest of organization due to the complex stakeholder.

In addition, the commitment of top management at Intel Capital and Cisco Investments is very strong and consistent. One of reasons for the success of Intel Capital and Cisco Investments is that they have received support from the top management for their operations. However, commitment of the CEO and board members of NTT Docomo have been unstable. Given that the purpose and investment policy of Docomo Ventures have been fragile, without doubt, they lack the strong leadership and commitment of the top management teams.

The comparison of Docomo Ventures with Intel Capital and Cisco Investments clearly shows several important points to operate a CVC. First of all, the clear and consistent purpose is essential. Investment policy should be determined along with the purpose of CVC. If strategic returns are more prioritized than financial returns, the investment guideline and metrics should be established. Long-term perspective to receive returns is also essential. Finally, one of the most important things is that the CEO and board of members understand the purpose and investment policy, then give continuous support and commitment to the CVC in the long-term period. The CVC side also has to keep making efforts to help them undersetting continuously too. The integration of the rest of business units is significant to obtain strategic returns. The commitment of the CEO and the board members and helps that the CVC support the rest of business units must contribute to the integration.

Table 2-1 Comparison of Docomo Ventures, Intel Capital and Cisco Investments

	Docomo Ventures	**Intel Capital**	**Cisco Investments**
Established year	2008	1991	1993
Stakeholder	NTT Docomo and NTT Group	Intel	Cisco
Fund Size in total	JPY 70 Billion	$12.9 Billion	$9.7 Billion
Purpose	Former purpose was to find disruptions, but now to produce co-innovation within NTT Docomo and NTT group	To grow demand for Intel microprocessors and complementary hardware and software products	To deepen or expand Cisco's networking hardware, software, and services solutions business and platform offerings
Investment Policy	• No collaboration with NTT Docomo and NTT Group, no investment	• Strategic return comes first, financial return is second • Never treated Intel Capital as just venture investment	• Strategic return comes first • Avoid investments like VC
Prioritized Return	Priorities are inconsistent	Strategic return comes first, financial return is second	Strategic return is first, financial return is second
Investments period	Short-Term	Long-Term	Long-Term
Top Management Commitment	Unstable	Stable	Stable
Integration with BUs	Difficult, incomplete integration	Fully integrated	Fully integrated

Chapter 3. Comparative Analysis in Heavy Industry

This chapter researches American-European and Japanese CVC in heavy industry. As a Japanese CVC, I select Hitachi Venture GmbH (HVG). As an American CVC, I select GE Ventures, which is CVC of General Electric (GE). As a European CVC in heavy industry, I select next 47, which is the CVC of Siemens. Compared with CVCs in the high-tech industry, these three CVCs are relatively new, established in the last decade. I conduct a comparative analysis among them.

3.1. Analysis of Hitachi Venture GmbH (HVG)

Background and Purpose

Hitachi, Ltd. (Hitachi) is one of the largest companies in heavy industry in Japan, and Hitachi operates its business in many industries: IT, energy, mobility, smart life, automotive systems business, and others. [23] Hitachi established a CVC, Hitachi Venture GmbH (HVG), as a new CVC unit on June 1, 2019. [24] I directly interviewed Kenichi Funaki in December 2020, who is Deputy General Manager of the Corporate Venturing Office of Hitachi. He explained that the establishment of HVG is one of their activities to facilitate open innovation:

> *"To facilitate open innovation, the following three things are important: one is co-creation with customers, the second thing is R&D with universities and national laboratories, and the last thing*

is collaboration with startups. (The establishment of) CVC is to enhance the collaboration with the startups."

A news article, regarding the establishment of HVG, quotes the CEO of Hitachi:

> *"The purpose is to capture the occurring innovations and to support acceleration of the movements. Hitachi will deepen collaborations with invested startups to create new markets and to achieve mutual growth. I believe CVC activities will enable Hitachi to speedily develop new business models, innovative products and to deliver value to society."* [24]

Hitachi announced that their fund size was $150 million, and they hired Stefan Gabriel as the CEO. Gabriel founded the CVC of 3M and was the president of 3M's CVC. Gabriel explained that their main investment areas are mobility, energy, smart life, and IT, and HVG focuses on early-stage startups with rapid growth potential. [25] [26]

In my interview, Funaki of Hitachi states the purpose of the establishment of HGV in a complementary way:

> *"Our purpose is to find new technologies and business models that contribute to the growth of Hitachi's next businesses. We do not try to find unicorn startups but find startups that collaborate with Hitachi and contribute to our future growth."*

He mentioned that finding unicorn startups was not their main purpose. He stated that Hitachi's purpose was to become strategic partners with the startups and create the growth of the Hitachi's next businesses.

Investment Policy and Prioritized Returns

In Global Corporate Venturing Symposium, which was held on May 22-23, 2019, the CEO Gabriel described their investment policy and focus areas as follows:

> *"So, we will do this time, work with separate venture fund. We will do the same sector and same approach, having very small very lean organization out of Munich, out of Boston, we will do early-stage investment. We will have very lean team and very lean process. […] Key is how to connect business with startups, what is the maximum learning out of the startups for the businesses. So, we want to be a good investor, good partner for corporate strategy, we want to support to identify global exciting scalable technology all over the world. So, we need to apply to a lot of processes to keep very lean and speedy."* [25]

He explains that connecting Hitachi's businesses to startups is significant.　On the other hand, to prioritize returns from investment, Funaki emphasized the significance of financial returns as follows:

> *"We regard a financial return as important. Only getting a strategic return on investment is not enough. Getting financial returns is fundamental."*

He stated the importance of the financial return to continue the CVC.

Operations Management

Funaki explained the background to hire Gabriel as the CEO of HVG as follows: “Hiring Gabriel as the CEO of HVG comes from one of our lesson learns in the past.” He noted that Hitachi had tried their investment in startups in Silicon Valley by themselves, which means Japanese before, but it did not work. Hiring foreigners who are professional in CVCs and not having Japanese employees is important for Hitachi’s CVC.

Additionally, in terms of the operation of the CVC, he explains that HVG is an independent organization, and HVG makes decision about the investments by itself.

> *“We, Corporate Venturing office, discuss with HVG and our office sometimes proposes potential startups that we want to invest in; however, the decision whether HVG invests or not is made by HVG. We also defer the decision on an investment period (long-term or short-term) to HVG.”*

Summary

Hitachi established HVG in order to facilitate their open innovation in June 2019, and HVG was established more recently than other CVCs. The main purpose is to capture innovations and collaborate with startups and create new markets for Hitachi's next businesses. They focus on early-stage startups that have the potential for rapid growth, and HVG aim to collaborate with startups and leverage each other. Financial returns are highly prioritized, and I analyze that the financial returns are essential to continue the CVC.

HVG is independent from Hitachi, and HVG makes decisions about investment by itself. HVG and Hitachi venturing office discuss areas and portfolio of the investments, but it is assumed that the integration with the rest of business units is limited.

3.2. Analysis of GE Ventures

Background and Purpose

General Eclectic (GE) established its CVC, GE Ventures, in 2013. The fund size of GE Ventures is $150 million a year, and their investment areas are energy, healthcare, software, IT, cybersecurity, data analytics, data management, robotics, advanced manufacturing. [27] [28] I interviewed Sue Sigel in April 2021. Sigle had been the CEO of GE Ventures from Jan 2013 to July 2019 and the CIO of GE from October 2017 to August 2019. She has also 30 years' work experiences in VCs in Silicon Valley. [29] She noted that GE Ventures now operate $1.5 billon fund in total. She explained to me the detail of background of GE Ventures when she launched it as follows.

> *"Jeff Immelt, the CEO at that time, understood that he had to change the culture of Six Sigma only. Because Jack Welch really focused too much on Six Sigma. [...] Everyone became such Six Sigma enthusiasts and really making their ways towards black belt. When Jeff took on the CEO-ship, he realized that GE has always been about innovation, Tom Edison, you know, 1092 patents, we have 82,000 patents in our portfolio. But we need to make sure we continue on the forefront, or we are not innovating our methodologies and business models.*

So, one of the things what he asked me to do, and he identified me, as somebody external to the company, who was in venture capital, because of all of my corporate experience previously. You know other venture capitalists do not have corporate experience, so they do not necessarily fit into the corporation. But because I have that experience, he identified me to come in and start working on that."

In addition, she stated that Immelt mentioned the following four perspectives that GE had to know at that time: "

① *We need to help others stay aware of what was going on externally;*

② *We need to learn what the startups do, we're just as smart as they are, why cannot we do it, too, meaning this speed of innovation;*

③ *How do we partner with them; and*

④ *Should we consider investments to buy them, what should our model be."*

She explained, "He was very satisfied that he had a good R&D group, […] but he knew that he needed to bring outside in a bit more. So that people inside were looking outside." She points out the issue that Immelt had at that time in the following.

"He could see how much startups were creating solutions that we were not creating. His whole issue was to keep that outside tension in, he made sure that people were very aware of helping us learn the methodology of startups. How fast they moved, how much risk taking they took."

Sue emphasizes the characteristic of startups as follows:

"Their(startups) methodology, not waiting till perfection. Going through 15 stage gates. But frankly to get it to MVP. If you get it to MVP, you test it and you modify it. You do not wait. And if the customer does not buy it, they kill it. […] They kill it fast. They kill a product that they are doing, and then they pivot. […] This notion of pivot become something super important to GE, because GE never pivoted. GE does not pivot. Pivot became a verb, a very active verb within GE. And People were encouraged to pivot if necessary. As they got more and more familiar because we did a lot of trainings for the whole organization on innovation."

Not only GE Ventures, but also Sigel launched other corporate entrepreneurship tools such as incubators the program that she called "Catalyst", that created a partnership with GE's R&D groups with external universities, and licensing GE's IP.

Investment Policy and Prioritized Returns

Sigel describes in detail the investment policy and prioritized returns of GE Ventures while she worked in the following.

"The Venture Capital community is very insular, […] Becoming a Corporate Venture Capitals, there's a whole bunch of complexity to it, […] Remember for GE, 100 million dollars was put into PS, so producing 100 million dollars is a bottom line, is a lot. […] So part of the reason for why CVC was established, was for strategic learning and strategic returns. But you cannot have strategic returns without financial returns. I fully believe it.

Because I hear a lot of CVCs say, it doesn't matter, we do not invest for financial returns, then I say, you are not legitimate, because you know what […] something VC syndicate. Other VCs say what? You cannot get the best CEO, people never respect you, entrepreneurs are like, what? you are gonna attract the wrong entrepreneur, because you aren't worry about returns. Therefore, they are not looking for a sustainable business model. You really have to have financial returns in order to has long-term strategic returns. So, you really have to think about that carefully."

In addition, she explains that they have its own strategy to minimum their risk to invest. She explains it to me as follows:

"In that, we developed a strategy of, 80:20 […], 80% late stage, 20% early stage. so we were minimizing as a barbell strategy, we were minimizing risk in terms of return profile. All of this was done upfront to get to the decisioning, and it helped to make sure your financial returns were here. Because we've already developed a thesis up here, strategic alignment was there too. That's how we were getting the prioritization of both."

Also, she explains the metrics for both financial returns and strategic returns as follows.

"We have to produce the Metrics by which we want to be measured. So we had ROI as one of the metrics of course, we had all the typical financial metrics. ROI, ROE and MOIC […] In addition to that, we created a whole bunch of strategic metrics. The strategic metrics were

- *How many partnerships did our portfolio companies have with GE*
- *How many startups that were not in our portfolio companies did we have partnerships with, that we introduced to the Business Units.*

Sigel states that "52% our portfolio which is like 125 companies, had partnerships with Business Units in GE. Those partnerships could be commercial partnerships, distributions, they could be co-development"

Operations Management

From the words that Immelt said to Sigel when Immelt assigned Sigel to be the CEO of GE Ventures, it is obvious that the CEO committed to support GE Ventures. In addition to the CEO, executive board members committed to the operation of its CVC. Sigel stated that she established an investment committee for operation management of GE Ventures and described importance of the governance. She explains it as follows.

> *"We have the process in order to make investment. I established an investment committee. And essentially, the voice of investors, the voice of my CFO, the voice of my general counsel, the voice of CTO, which I had brought from Central Research from GE and the business unit that this would inform, sometimes the startup would inform many business units. […] We did a whole process, there was a memo that had to be written, a pre-read which had to be done first in order to say, we're gonna do it, they would tell us about, we would tell them what risks we wanted to understand, the mitigations, that we decide what kind of investment we do whole vote. There was all this voting It was a lot of feedback.*
>
> *The reason why I'm telling you all is because governance process is super important in terms of making sure the quality of financial investment was there. Because it was the same sort of process I used when I was in my financial VC firms, that we checked market, we checked team, we*

checked IP, we checked regulatory, we checked competition, we bring them to every single decision. So that's why we measure financial return."

She also stated that the relation of the rest of the organization and business units was definitely important and senior management of the business units got involved in the investment committee. She emphasized, *"Never forget you are not core of the company. Build yourself for relevance, for the maximum service you can provide to build the company, so they can make that right financial returns and financial decisions."*

Summary

GE had taken startups and what was happening outside GE seriously. GE launched GE Ventures to understand startups, what they were doing, and how they were different from inside GE, and how to collaborate with them. In other words, the purpose was to facilitate their open innovation by leveraging external resources. Sigel launched not only investments in startups, but also other programs like incubation and licensing to facilitate open innovation.

While GE Ventures tried to obtain both strategic returns and financial returns, and it set metrics clearly, the investment policy of GE Ventures prioritized financial returns and the mindset of VCs. Sigel strongly insisted that GE Ventures could gain strategic returns by obtaining financial returns and financial returns were essential. Additionally, to minimize the financial risk, she divided the original investment balance, 20% for early-stage startups and 80% for later-stage startups.

The top management of GE, which included Sigel as CIO of GE, strongly committed to GE Ventures and investments in startups by the investment committee. They took strong leadership and supported the activities. Siegel had taken seriously the significance of the integration of the rest of the organization, and she had handled it very carefully.

3.3. Analysis of Next47

Background and Purpose

Siemens is one of the largest companies in heavy industry in Europe. Siemens launched “Siemens Venture Capital (SVC)” in February 2014, and then in October 2016, they separated it as a new unit, named next47, with €1 billion fund size for five years. [30] [31] L In November 2016, Siemens announced that they assigned Lakshmikan (Lak) Ananth as a head of next47. [32] Lak had experience working as a venture capitalist in Silicon Valley before, and he also had worked to lead innovation in Hewlett Packard Pathfinder (HPP) and Cisco Systems (Cisco). [33]

I interviewed Mr. Frank Andrasco, who had worked as a director of next47 from June 2014 to July 2019, in January 2021. He explains that *“Siemens reorganized SVC into next47. They reorganized SVC before having a leader.”*

In a presentation regarding next47, next47 stated their mission as follows.

> *“Fostering and anticipating disruptions and visionary opportunities, we invest in innovative ideas and turn them into viable businesses to fuel Siemens’ sustainable growth. We attract curious and entrepreneurial minds and create a dynamic organism to enhance Siemens’ approach to innovation.”* [34]

Now next47 focuses investments on early-stage startups in the areas of artificial intelligence, autonomous machines, distributed electrification, connected mobility and so-called blockchain applications. [33]

Investment Policy and Prioritized Returns

Andrasco explained next47's investment policy in my interview as follows.

> *"We will invest first and find the synergies after. […] next47 invests in startups without any synergies with Siemens. Synergies are not necessary."*

He mentioned several examples like a video camera with a cloud connection that generated synergies, which improved Siemens's existing products after the investments, but he explains that next47 does not care about the synergies for Siemens's existing businesses for their investments.

> *"Next47 does not focus on strategic synergies. Next 47 focus on [mak]ing deals that the partners want to do. They do not have any connections with Siemens. It's completely independent of Siemens. They are not looking necessarily for strategic synergies of any investments."*

In addition, he explains their general tendency that next47 follows the investment by Silicon Valley VCs.

> *"They do not invest in series A companies these days, they are waiting and looking at whom the other big Silicon Valley VCs invest in at first. […] They believe that Silicon Valley is the center of the*

innovation universe, a bias."

Andrasco also explains that next47 acts as venture capital very much.

Regarding the prioritized returns for next47, he said that the financial returns are the highest priority in the following.

> *"Financial return is the most prioritized, because next47 believes that's the best way to get the best technology. Because the best technology is generally what gives you the best return. […] The long-term financial return is focused. In terms of the short-term result, publicity is focused. The company knows that we invest in innovation. It promotes Siemens as an innovator."*

He also shared the current status that the leader of the next47 had gotten a mandate right then [January 2021] to run their own venture capital. He says, "*We have to wait to see that it will work. It may work, but it will take more years. In my opinion, they have not proved that they have succeeded in the long run."*

Operations Management

Andrasco pointed out that the commitment and support of top management was essential to have the CVC succeed. He explained this point and the case of next47 as follows.

"The next CEO of Siemens is a sponsor of next47. That's why next47 can invest so much money. A long-term commitment of the CEO is necessary to make CVC succeed. That's challenging for CVC. If the CEO is not interesting in CVC, it's over."

Besides, he describes the prioritized points for Siemens and next47 in the following.

"In my opinion, talking to executives how exciting things are is important. Keeping exciting is a key. Exciting means innovative, new customers, growth, new capability. The CEO of each startup meets the executives of Siemens every six months. That keeps things exciting. But inside next47, a financial return is the most important. For the parent company (Siemens), how exciting the activity is, is important. It's not the synergies in fact. However, I assume that executives feel synergies if we report to them exciting activities such as innovations, new customers, growth, new capability. If next47 seems to be innovative, Siemens feel that they are innovative."

In terms of the integration of the rest of the business units, Andrasco stated that next47 was completely independent from the rest of Siemens's busines units, and he described their relationship as follows.

"Siemens asks next47 about several deals that Siemens want us to invest in. We are making investments for them, so we manage the investment. It's called business unit deals. However, we won't [count] the business unit deals [as our achievement]. These deals are considered lower importance for next47."

Finally, Andrasco also mentioned the relationship with startups. He explains that it was in very rare case that Siemens sent its engineers to startups. On the other hand, he stated that next47 took a seat on the board, which generally other CVCs do not take, because of the risk of lawsuits. He explained it as follows.

"We always take the board member seat. They want fair data for Siemens and Siemens's business. We have not considered the risk very much. We had a policy. Next47 gets out of the company very quickly if the company [has] a problem. There is a risk."

Summary

Siemens launched its CVC funds in 2014 and renamed it next47 in 2016. The purpose of the CVC was to grow the next disruptions, which contributed to create businesses for Siemens 's future sustainable growth. According to the interview of Andrasco, next47 acted as VCs do. It was completely independent from Siemens, and the investments did not concern any synergies with Siemens's existing businesses. Next47 prioritized only financial returns, and the next challenge of next47 will be completely independent financially from Siemens.

The top management and the CEOs have supported next47 very well. Next47 also has kept a good relationship with the CEO of Siemens by showing him pitches by startups. On the other hand, in terms of the relationship with the rest of business units, next47 did not prioritize it, and next47 was completely independent from them.

As a result, next47 is a CVC, but very close to a VC. Taking a board member seat in startups is also evidence that next47 operates like VCs. Given that next47 is pressured to be more independent financially from Siemens, it is assumed that next47 will act more like VCs in the future.

3.4. Comparative Analysis of HVG, GE Ventures and Next 47

In this chapter, I analyze the CVCs in heavy industry based on public information and my interviews with the key people. For a representative of Japanese CVC in heavy industry, I selected HVG. For a representative of American and European CVCs, I analyzed GE Ventures and next47 in Sections 3.1-3.3. Table 3.1 shows the comparison of them. HVG is established relatively newer and has a smaller fund size than GE Ventures and next47.

The purpose of CVC is slightly different among them. In the case of GE, GE took the impact generated by startups seriously, and GE aimed to understand the characteristics that startups have and how GE incorporate with them. More or less, Hitachi and Siemens had same background and understood an importance to facilitate open innovation with startups, then they established HVG and next47. However, regarding Siemens and next47, their purpose is just to anticipate next disruptions and opportunities, and they are not strict to create synergies with startups. Finding new unicorns is what they are more interested in like VCs. The purpose of HVG is general and to find disruptions or innovations and grow them as their future growth businesses by collaborations.

One common perspective among the three CVCs is that all of them, HVG, GE Ventures and next47, assign a professional outside the company to head the CVC. Sue Sigel was in charge of the establishment and operation of GE Ventures as well as CIO of GE, and next47 assigned Lak to head it. Both of them have work experiences in a VC and corporate experiences. Stephan Gabriel, the CEO of HVG, also had good corporate and investment experience as well.

Regarding the investment policy, all three CVCs were influenced by the culture of VCs, and they prioritize financial returns. Especially, next47 is very close to a VC, and next47 acts like a VC. Like a VC, next47 tried to take a board member seat, while other CVCs do not take seats due to the risk. The investment policy of investing first and thinking of synergies and/or not caring about synergies with their existing businesses is a very interesting strategy that next47 has. While GE Ventures prioritizes that they are able to obtain strategic returns by getting financial returns, they set metrics in terms of both financial and strategic returns, and they organized the investment committee and try to obtain strategic returns and collaborations with their existing businesses. Furthermore, to minimize financial risks, Sigel applied the strategy of allotting 20% for early-stage startups and 80% for later-stage startups.

Investment policy directly becomes a mirror of a CVC's prioritized return. Next47 does not prioritize strategic returns for S Siemens at all; next47 prioritizes only financial returns. According to the fact that next47 is required to be independent financially from Siemens in the future, next47 will be almost the same as a VC. GE Ventures prioritizes financial returns more than strategic returns, but they consider strategic returns too. HVG also says that financial returns are fundamental. All three CVCs see their returns in the long-term period, but the CVCs in heavy industry prioritize financial returns more than the high-tech industry does.

Top management and CEOs support the CVC individually. Considering the background of the establishment of a CVC in GE and the comments of Immelt, the CEO of GE supported the CVC and Sigel, who was in charge of GE Ventures. Next47 and HVG were also supported by their CEO and top management. In terms of the integration with the rest of business units, GE Ventures is a good example that integrated its CVC with the rest of business units. Sigel understands the significance of integration with the rest of the business units and stakeholders. She established the investment committee including business units to judge the investments and integrated GE Ventures with the rest of business units. On the other hand, the integration of the rest of business units in next47 and HVG is limited. HVG and next47 are independent from the rest of the business units, and both next47 and HVG can judge the investment by themselves.

In comparison of HVG with GE Ventures and next47, HVG was established more recently than the other two CVCs, and HVG fund size in total is much less than others. However, as same as GE Ventures and next47, Hitachi assigned the professional outside the company, and HVG prioritizes the financial returns as well. However, HVG also aims to seek collaborations, as a strategic return. While GE Ventures applied the more concrete investment policy and metrics, it is still unclear how HVG will pursue strategic returns with good financial returns. In addition, the integration of HVG with the rest of businesses unit is limited, therefore, how to balance and obtain both financial and strategic returns without a good integration and relationship with the rest of business units might be future challenging issue. There is a possibility that HVG will act like more a VC as well as next47 in the future.

Table 3-1 Comparison of HVG, GE Ventures and Next47

	HVG	**GE Ventures**	**Next47**
Established year	2019	2013	2014
Stakeholder	Hitachi	GE	Siemens
Head of CVC	Stefan Gabriel	Sue Sigel (until July 2019)	Lak Ananth
Fund Size in total	$150 Million	$1.5 Billion	€ 1 Billion
Purpose	To capture innovations, collaborate with startups and create new markets for Hitachi's next businesses.	To understand startups and facilitate innovation by incorporating with them	To anticipate next disruptions and business opportunities, then fostering them.
Investment Policy	• Focus on early-stage startups that have the potential for rapid growth • Collaboration with Hitachi	• Financial return is essential to get long-term strategic return • 20% early stage, 80% later stage	• Investment without synergy with existing businesses • Act like VCs
Prioritized Return	Financial return is fundamental	Financial return (No financial returns, no strategic returns)	Financial return only (no strategic returns)
Investments period	Long-Term	Long-Term	Long-Term
Top management commitment	Stable	Stable	Stable
Integration with BUs	Independent	Fully integrated	Independent
Board member seat	N/A	N/A	Take board member seat

Chapter 4. Competitive Analysis of New Japanese CVCs and Digital Transformation

This chapter analyzes Japanese CVCs, which were established in the last five years. Their main purposes is a corporate transformation by a digital transformation. They take the issue that their current existing businesses have been and will have been disrupted seriously, then they established their own CVC to help their corporate transformation. Here, I select the CVC of Panasonic, which is a major Japanese electronics companies and SOMPOHD that is one of largest insurance companies in Japan.

4.1. Analysis of Conductive Ventures

Background and Purpose

Panasonic is one of the most famous legacy electronics companies, which was established by Konosuke Matsushita. Panasonic provides various home appliances such as TVs and cameras, electronic devices for car and home. Panasonic established Conductive Ventures as their CVC with their first fund, $100 million in April 2017, in Silicon Valley in the U.S. In addition to this first fund, Conductive Ventures announced that they established a second fund, of $150 million, which increased 50% from the size of the first fund, in April 2020. [35] [36] Now Conductive Ventures focus on the investments in these areas: mobility, robotics and industry 4.0 in hardware, and SaaS, Marketplaces /RetailTech, and Data/AI in software. [37]

I interviewed Mr. Takashi Nishikawa in February 2021. He is General Manager of Venture Strategy Office (VSO) and Vice President of Conductive Ventures. He explained the purpose of the establishment of Conductive Ventures as follows in my interview:

> *"The purpose and the ultimate goal of the establishment of Conduct Ventures is to create a new enterprise by acquisition or Joint Venture after the investments, then to contribute to change our business portfolio."*

Nishikawa described the background of Conductive Ventures as well as the purpose. He pointed out that Panasonic had failed to understand the paradigm shift since 2007. As an example, Panasonic believed that people still watch TV and if the company added new functions to their TV product even after Apple began selling iPhones, then people would demand new TVs. He also explains that,

> *"Panasonic had made efforts to improve their products even if customers had not demanded them."*

He stated that Panasonic's existing businesses have been disrupted and will be disrupted. Therefore, he said, "Finding new business fields and changing their portfolio is the purpose of Conductive Ventures"

Investment Policy and Prioritized Returns

In my interview, Nishikawa described differences between Conductive Ventures and Intel Capitals as follows.

> *"Our existing businesses have been disrupted; therefore, we do not have a product like microprocessors of Intel. So we cannot do the same with CVC like Intel Capital."*

He mentions that Panasonic does not have a product like microprocessors that Intel has and grow the demand. Thus, Panasonic cannot follow the model of Intel Capital. Besides, according to their purpose for their CVC, he mentioned that the investment of Conductive Ventures does not have any constraints, for instance, synergies with their existing businesses.

As a prioritized return, he explained that a financial return was a requirement. Nishikawa pointed out the importance of the financial return as follows:

> *"A financial return is the most important. It must be achieved. Without a success of the financial return, the CVC dies. […] From the view of the CFO, if the CVC does not generate a good financial return, he (or she) tries to kill the CVC. On the other hand, if the CVC becomes profitable, it is difficult for the CFO to kill the CVC."*

Nishikawa added that one of big failures for Japanese CVCs was that they do not how important it was to keep surplus cash in order to make their CVC survive. He also noted that the financial return should not be evaluated in the short-term period, but in the long-term period.

In terms of other returns, Nishikawa stated two returns: one is the list of acquisition targets, and the other is corporate intelligence about a new portfolio or businesses. He explained that the list generated by the CVC was more reliable than the list proposed by investment banks. Through the CVC's activities, Panasonic can establish a good relationship with startups, and its activities enable Panasonic to understand the value of the startups by themselves. In terms of the corporate intelligence, he stated that it would be the best if Panasonic could create a new enterprise from the CVC, but even if they could not achieve it, it would be good enough that other employees get ideas for future Panasonic's businesses from the CVC and then create a new enterprise by themselves in the future.

As an example, that related to increase corporate intellectuals, Nishikawa mentioned one software company that visualize data that enable workers to understand where and when how much weight of materials move around construction field. This technology is not something that have a synergy with their existing businesses directly, but he explained that it would give other employees a new idea or thought.

Operations Management

The President of Conductive Ventures is Carey Lai, and Conductive Ventures hired Paul Yeh as Managing Director. Lay has a background as Co-Founder of LUMA Capital Partners and Investment Director at Intel Capital. Yeh was Partner at Kleiner Perkins Caufield & Byers. Both of them are professionals in startup investments. Nishikawa explained, *"To achieve our goal, we hire professionals in the Venture Capital field."* In order to make them work as professionals, he noted that their salary systems differ from other employees of Panasonic. They can receive carried interest, a type of performance fee, while the other employees of Panasonic cannot.

Also, Conductive Ventures is independent from Panasonic, and Conductive Ventures makes decisions on the investments. Nishikawa described their independent decision making in the following.

> *"We can make decisions on investments by ourselves. We report the result of which startups we invested in periodically."*

Conductive Ventures does not have the constraints of synergies with existing business units, which enables operators of Conductive Ventures to act more independently. Nishikawa also added that business units conduct the investments which focus on synergies with existing business by themselves.

In terms of relationship with startups, Nishikawa stated that Conductive Ventures take a board member seat on startups as much as possible. If it is difficult or they judge that they do not need to get involved, Conductive Ventures takes an observer seat. Thus, Conductive Ventures implement investments like a VC.

Summary

Panasonic established their CVC, Conductive Ventures, in Silicon Valley in 2017. Given that Panasonic faced the problem that their existing business had been disrupted, the main purpose of their CVC was to find a new growth business and change their business portfolio. It focuses on investing in disruptive technologies and businesses, and it does not care any synergies with Panasonic's existing businesses.

Conductive Ventures prioritize financial returns, and this is a requirement of their operation. Creating a list of acquisitions and joint ventures to create new business through CVC and obtaining corporate intelligence are other important returns. Conductive Ventures assigned professionals in VCs as a head of its operation. Conductive Ventures does not aim any strategic synergies for their existing businesses, and it is independent from the rest of the business units.

4.2. Analysis of SOMPOHD

Background and Purpose

Sompo Holdings, Inc. (SOMPOHD) is one of the largest insurance companies in Japan. SOMPOHD has made efforts to disrupt current its existing businesses by itself in the last five years. I interviewed Mr. Koichi Narasaki in December 2020, who is a chief digital officer (CDO) of SOMPOHD and the president of the subsidiary of SOMPOHD, Sompo Japan Nipponkoa Insurance Inc. (SJNK). He explained the recognition and motivation that the CEO of SOMPOHD had when he talked to Narasaki in the process of his headhunting as follows.

> *"When I was headhunted and met the CEO of SOMPOHD, he explained to me that current insurance service was not good for customers at all, and to survive, the CEO said to me that SOMPHD needed to disrupt [its business] by itself before other players or disrupters disrupted the existing businesses."*

Since Narasaki joined SOMPOHD in 2016, he has been in charge of not only digital transformation, but also corporate transformation in SOMPOHD. To begin with the transformation of SOMPOHD, he established SOMPO Digital Lab in Tokyo and Silicon Valley in April 2016. [38] This lab is to accelerate open innovation. SOMPOHD had tried to create new businesses and conducted pilot tests with people who had been working for software industries in the U.S.

SOMPOHD published that SOMPOHD and SJNK established the CVC Fund in July 2017. The name of the CVC Fund is TransLink Capital Partners (SOMPO)I, L.P. The fund size is $40 million. The structure of the CVC is Limited Partners (L.P.), and SOMPOHD and SJNK entrust the operation of their CVC fund to TransLink Capital, L.L.C. (TransLink). [38] TransLink Capital is a VC which is located in Silicon Valley. The co-founder of TransLink is Mr. Nobuyuki Akimoto, who was the Vice CEO of Docomo Ventures before.

In terms of the launch of the CVC fund, SOMPOHD and SJNK said, *"The move is intended to accelerate the Group's digital strategy, […]."* [39] They clearly stated that the purpose of the CVC fund was to accelerate digital transformation.

Investment Policy and Prioritized Returns

TransLink manages the CVC fund of SMPOHD and SJNK, and Narasaki explained the role of their CVC. He distinguishes it from other tools in the following.

> *"Regarding the investment that the goal is to obtain synergy, the headquarters handles it and makes a decision if SOMPOHD invests or not. In terms of long-term and disruptive technologies or businesses, the CVC is in charge of the investments."*

Their CVC focuses on disruptive technologies and businesses, and on seeing their returns in the long-term period.

In terms of prioritized returns, he states that TransLink is a VC; therefore, financial return is required, and it is the most prioritized. He emphasized the importance of the financial return for the CVC as follows.

> *"The CVC does not work well without good financial returns. If people in a company see that investments do not seem to work well, which means they do not produce enough profits, they think it's a waste of money. But if the investment produces profits and financial returns, they cannot abandon it."*

Narasaki pointed out that creating financial returns was the reason why SOMPOHD and SJNK entrust the management of their CVC fund to TransLink.

Operations Management

The investment structure entrusting TransLink with decision making directly relates to the operation management. Narasaki stated the operation of TransLink as follows.

> *"A financial return is the most important for TransLink; Therefore, even if SOMPOHD and SJNK find startups that they want to invest by leveraging their CVC fund, TransLink*

investigates it. If TransLink judges that the investment will not generate enough financial returns, TransLink can reject the proposal from SOMPOHD and SJNK. TransLink has a right to make a decision."

Summary

SOMPOHD established its CVC fund and entrusted the operation of the fund to TransLink. The purpose of CVC is to find disruptive technologies and business models in the long-term perspective, and they distinguish the purpose of the CVC clearly from the existing businesses. By entrusting the operation of CVC fund to TransLink, it enables the CVC to be independent from the rest of business units. Then, the investments for their existing business, which aim to obtain synergies, are handled by SOMPOHD.

While their CVC focuses on disruption and the long-term perspective, TransLink is a VC, so it prioritizes financial returns the most. To continue the operation of CVC, SOMPOHD believes that good financial returns are essential. The operation of the CVC is completely independent from SOMPOHD. However, the CEO clearly addresses the importance of disruption, and he committed to conduct the corporate transformation by digital transformation.

4.3. Analysis of the latest trend Japanese CVCs

In addition to Docomo Ventures in high-tech industry in chapter 2 and HVG in heavy industry in chapter 3, here I analyze the other Japanese CVCs: Conductive Ventures and TransLink Capital Partners (SOMPO)I, L.P. in this chapter. Table 4.1 shows the comparison of Japanese CVCs: Docomo Ventures, HVG, Conductive Ventures, and SOMPO I, L. P. The three CVCs, HVG, Conductive Ventures and SOMPO I, L. P were established more recently than Docomo Ventures. From the comparison among them, there are several trends in the latest Japanese trends.

First of all, While Docomo Ventures is headed by internal people from NTT Docomo (Mr. Takayuki Inagawa has been the CEO of Docomo Ventures since 2018 and he has worked for NTT Docomo for a long time), the other three CVCs assigned the head of the operation from an external organization. Stephan Gabriel from 3M New Ventures heads HVG, Conductive Ventures assigned Carey Lai from a VC as the president, and SOMPO I, L. P entrusted the operation of their CVC fund to TransLink. The three CVCs determined to assign a professional from a VC or who has work experiences in VC firm as a head of their own CVC.

Secondly, the CVCs that were established more recently focus on financial returns rather than strategic returns. According to the interview of the key persons of the CVC, HVG, Conductive Ventures and SOMPO I, L.P believe that the financial returns are essential to continue the CVC. Even though

Docomo Ventures' prioritized return is unstable, they are often pressured to create the financial returns. In addition, except for Docomo Ventures, the Japanese CVCs see their investment as resulting from the long-term period rather than the short-term period.

Finally, along with the CVCs recently assigning a professional to operate their CVC, the CVCs are independent from the rest of BUs. While Docomo Ventures has struggled to integrate their CVC with the rest of the organization and create synergies with their existing businesses, Conductive Ventures and SOMPO I, L. P do not expect their CVC to create synergies with their existing businesses. Due to the fact that their existing businesses would be disrupted, they expect their CVC to create a new enterprise and contribute to corporate transformation. Therefore, they do not get CVC involved in the rest of existing BUs and make the CVC independent from them.

Regarding HVG, it cooperates and adjusts their investments with the corporate venturing office in Hitachi. However, the integration of HVG with the rest of BUs is limited: HVG can determine the investments by itself. Therefore, HVG is independent from the rest of BUs as well as Conductive Ventures and SOMPO I, L. P. On the other hand, Hitachi also expect that HVG will contribute to grow new market by collaboration of Hitachi's existing businesses with startups. How Hitachi will balance strategic returns with their existing businesses and financial returns, and how they avoid dilemmas that sometimes happen in terms of collaboration with existing businesses, will be analyzed in the future.

Table 4-1 Comparison of Japanese CVCs: Docomo Ventures, HVG, Panasonic Ventures, and SOMPOHD

	Docomo Ventures	**HVG**	**Conductive Ventures**	**TransLink Partners (SOMPO) I, L. P.**
Established year	2008	2019	2017	2017
Stakeholders	NTT Docomo and NTT Group	Hitachi	Panasonic	SOMPOHD and SJNK
Fund Size in total	JPY 70 Billion	$150 million	$250 million	$40 ~$80 million
Head of Operation	Insider (Takayuki Inagawa)	Outsider (Stephan Gabriel)	Outsider (Carey Lai)	Outsider (Entrusted TransLink)
Purpose	Former purpose was to find disruptions, but now to produce co-innovation within NTT Docomo and NTT Group	To capture innovations, collaborate with startups and create new markets for Hitachi's next businesses	To create a new enterprise and change business portfolio	To accelerate digital transformation and disrupt their existing business
Investment Policy	• No collaboration with NTT Docomo and NTT Group, no investment	• Focus on early-stage startups that have the potential for rapid growth • Collaboration with Hitachi	• Independency (no synergies with existing businesses) • Financial returns are the most important	• Focus on disruptions by independency and long-term perspective • Financial returns are essential
Prioritized Return	Priorities are inconsistent	Financial return is fundamental	Financial Return	Financial Return
Investments period	Short-Term	Long-Term	Long-Term	Long-Term
Integration with BUs	Not independent	Independent	Independent	Independent

Chapter 5. Strategic Choices and the Black Hole of CVCs

In this chapter, based on the research on Japanese and Western CVCs and the comparative analysis of them, I analyze the fundamentals required to operate a CVC, strategic choices, and the priorities of strategic returns and financial returns. In addition, I describe the "Black Hole" of CVCs, which creates a big difficulty to operate a CVC due to the fact that the CVC has to think of both strategic returns and financial returns.

5.1 Fundamentals of CVCs

The research on Japanese and Western CVCs, especially the analysis of Western CVCs, finds that several common qualities make CVCs successful.

1) Long-term perspective

Startups take a long time to succeed. It generally takes eight to twelve years. Therefore, it is very difficult that CVCs aim to receive returns in the short term after the investment. The businesses that startups create are not existing businesses; instead, startups try to create new markets. CVCs should understand this characteristic that startups have and recognize a fundamental that the long-term perspective is essential when CVCs invest in startups.

2) Continuous commitment and support by top management

It is crucial that a CEO and board members commit to a CVC and support it continuously. A CVC needs a long-term period to receive returns from startups, so continuous commitment and support for CVC is important to make one successful. One of the tragedies for CVC is that top management stops committing to and supporting CVC when a CEO or board members are changed. On the other hand, CVCs have to keep informing top management about their activities and results to receive their commitment and support.

3) Clear purpose and consistent investment

A CVC should have a clear purpose and investment policy. Unclear purposes and inconsistent investment policies influence the operation of CVCs and do not follow the first fundamental of CVCs, a long-term perspective. To implement an investment over a long-term period, a clear purpose and stable investment policy should be established. In addition, the commitment of the top management of CVCs is significant to create a clear purpose and stable investment policy. Clear purposes and consistent investment policies identify prioritized returns of CVCs and lead them to select strategic choices to avoid the “Black Hole” of CVCs, as I describe below.

5.2 Four Quadrants by Priorities of CVCs

While VCs focus simply on financial returns, the operation of CVCs is more complex than VCs because CVCs have to consider strategic and financial returns. However, the analysis of Japanese and Western CVCs includes several cases to consider how CVCs should prioritize strategic and financial returns. For instance, Intel Capital and Cisco Investment clearly state that they do not invest like a VC, and they prioritize strategic returns first, putting financial returns second. On the other hand, the investment policy of next47 is the opposite of the investment policy of Intel Capital and Cisco Investment. Next47 invests like a VC and focuses on financial return first, then strategic returns.

GE Ventures is distinguished from Intel Capital, Cisco Investment, and next47. GE Ventures takes the importance of financial returns and prioritizes it rather than strategic returns. GE Ventures aims to obtain strategic returns but also prioritize financial returns and minimize financial risk. GE Ventures has tried to hold a good balance between strategic returns and financial returns.

Figure 5.1 shows four quadrants of CVCs' priorities for strategic returns and financial returns. The horizontal axis means the relative priority of strategic returns, and the vertical axis shows the relative priority of financial returns. The four quadrants represent the priorities for strategic and financial returns.

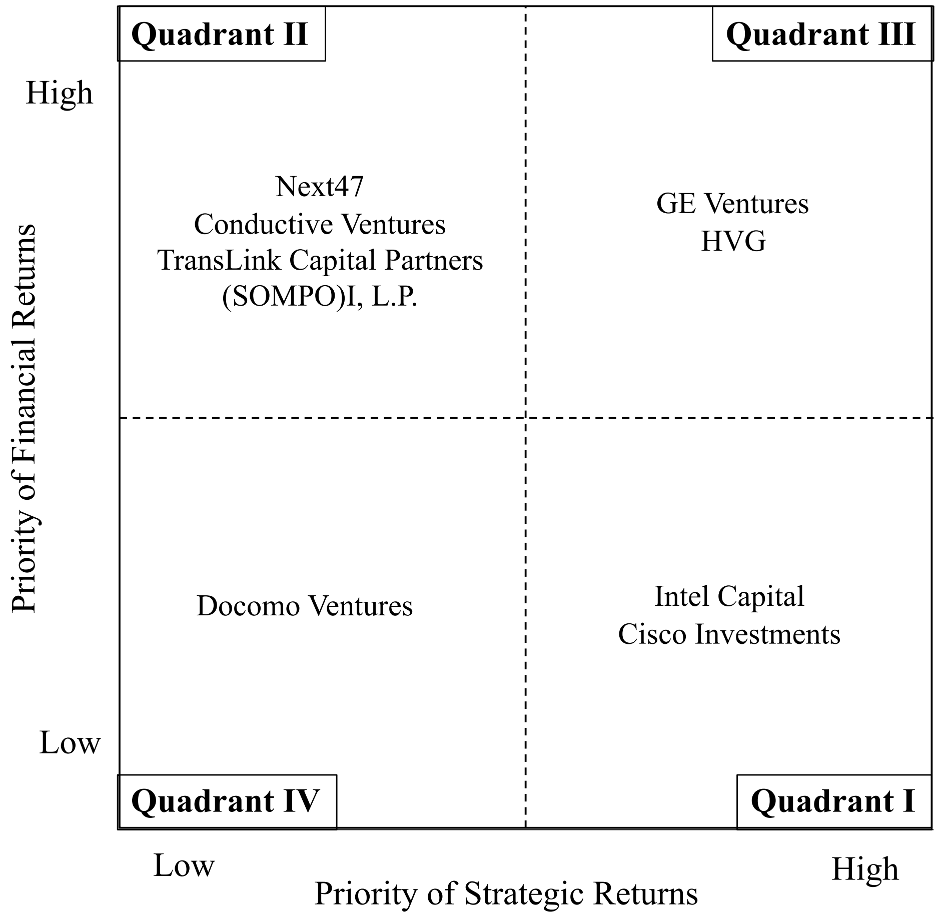

Figure 5-1 Four Quadrants of Priority of Strategic and Financial Returns

Quadrant I:

The CVCs in this quadrant prioritize strategic returns more than financial returns. The priority of strategic returns is high, and that on financial return is low; in other words, strategic returns are first, and financial returns are second. Intel Capital and Cisco Investments are good examples of CVCs in this quadrant.

Quadrant II:

This is the other end of Quadrant I, and a CVC in it prioritizes financial returns over strategic ones. The priority on financial returns is high and is low on strategic returns. In other words, financial returns are first, and strategic returns are second. Next47 and Conductive Ventures are representative examples of this quadrant. SOMPO I, L. P, which entrusted the operation of its CVC fund to TransLink, also examplifies this quadrant.

Quadrant III:

This quadrant represents CVCs that prioritize both strategic returns and financial returns. Such CVCs aim to obtain both strategic and financial returns, ignoring neither kind. These CVCs set clear metrics for both strategic and financial returns and achieve them. This goal might be challenging and ambitious for CVCs. GE Ventures is a good example of this quadrant.

Quadrant IV:

This is the other end of Quadrant III, and the CVC does not prioritize returns. The CVC does not determine whichever returns it prioritizes, strategic or financial ones, or the CVC does not address how it aims to achieve both strategic and financial returns. The goal of such a CVC and its metrics is unclear, so ambiguity about the priority of returns causes unstable investment policies and leads to dilemmas for CVCs. The past experience of Docomo Ventures makes it an example of this quadrant.

The position of CVCs in these quadrants brings a characteristic importance of the financial independence and the integration with the rest of the organization including business units. Figure 5.2 shows the relationship of each quadrant with the financial independence and the integration with the rest of the business units. The horizontal axis indicates the CVC's degree of integration with the rest of the business units. The vertical axis shows the degree of the CVC's independence from the rest of the business units or a parent company.

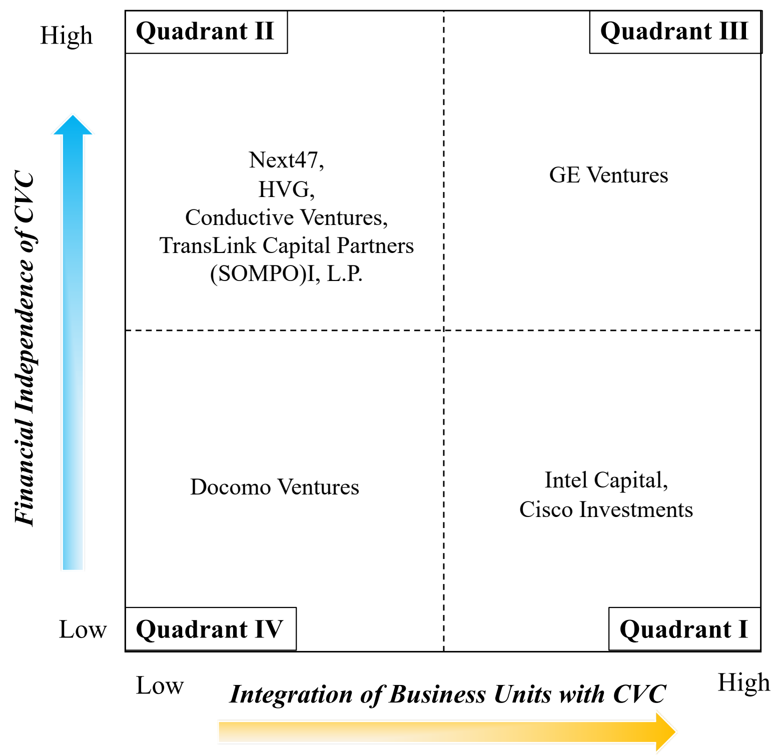

Figure 5-2 Relationship of quadrants with financial independence and integration of business units.

The right side of Figure 5.2 means that a CVC prioritizes strategic returns; in this case, the integration of a CVC with the rest of organization including business units is an essential function to operate the CVC. The CVC must collaborate with existing business units and think about what kind of strategic returns the company should obtain from startups and what the CVC can give to startups. Therefore, the more a CVC aims to obtain strategic returns, the greater the required integration of the CVC with the rest of the business units.

Here, I describe only GE Ventures and shift HVG from Quadrant Ⅲ to Quadrant Ⅳ in Figure 5.2. This is because while HVG prioritizes both financial and strategic returns, HVG's integration with the business unit is limited. HVG is able to determine the investments by itself; even if Hitachi suggests potential investments, HVG can reject the suggestion. HVG adjusts investments only in areas with a corporate venturing office in Hitachi. HVG is very independent from the parent company. HVG was established more recently, in 2019, than the other CVCs. One of the challenges for HVG and Hitachi might be how they pursue strategic returns and what kind of strategic returns they obtain.

The top part of Figure 5.2 shows the relative financial independence of a CVC from the rest of the organization or parent company. In the case that a CVC prioritizes financial rather than strategic returns, with good financial returns, the financial independence of the CVC becomes important. One of the reasons why financial independence is important is that the money for CVC funds come from profits generated by existing business units. Thus, if strategic returns to the CVC are low and synergies with existing businesses are unclear, the rest of organization may be reluctant to support the CVC. Therefore, when the CVC does not obtain enough financial returns and depends on the rest of the organization, the CVC faces the risk of being stopped.

5.3 Strategic Choices and the Black Hole of CVCs

Based on quadrants determined by the priority of financial returns and strategic returns and the related factors of the financial independence and the integration of business units, I formulate three strategic choices for CVCs and a Black Hole for CVCs.

Strategic Choice I: Strategic Intensive CVC

This is a CVC that focuses on strategic return first, and on financial return second. The main purpose of the CVC is to obtain strategic returns such as to expand the demand or deepen its existing products and services, complements of its existing businesses. Strategic return is difficult to measure, so the CVC has to create clear metrics for strategic returns or identify what kind of strategic returns the CVC can get and what it can give. The strategic returns relate to its existing businesses; therefore, the CVC needs strong integration with the rest of the business units to find and obtain strategic returns.

The risk of this strategic choice is that strategic returns are difficult to measure quantitatively. However, when the contribution of the investment to the growth of the demand or expansion of existing business is obvious, the investments should be made. Decreasing the priority of strategic returns by considering financial returns should be avoided in this strategy because it leads to the “Black Hole” of CVCs that I describe later.

Strategic Choice II: Independent CVC

This is a CVC that focuses on financial returns first and strategic returns second. The investment policy is to obtain good financial returns, and the investments are judged from a financial perspective. The CVC acts like a VC, and the CVC does not try to get any strategic returns for existing businesses. The CVC has to be independent from the rest of organization and business units rather than integrated into them. This strategy works in cases when existing businesses are completely disrupted or when creating synergies with existing businesses with disruptive technologies or businesses is hard. Examples of the purposes of the CVC are to find disruptions or new markets, unrelated to existing businesses.

The risk of this strategic choice is that it is hard for the CVC to convince and get support from the rest of the organizations and business units because the CVC will not provide strategic returns for existing businesses. However, if the CVC loses financial dependence, the CVC may fall into the “Black Hole” and face the risk of being stopped. The CVC does not need to provide any synergies with effects or direct strategic returns for existing businesses; however, the CVC should insist on indirect strategic returns for the company, such as finding disruptions, growing markets, or creating new business opportunities. Increasing corporate intelligence and creating a list of M&A are also indirect strategic returns.

Strategic Choice III: Hybrid CVC

This is a CVC that prioritizes both strategic returns and financial returns and aims to obtain both when they choose to make investments. The choice of investments is conducted from the perspectives of both strategic and financial returns. The CVC must set clear metrics for both strategic returns and financial returns. The investment policy should have a strategy to minimize financial risks. Even if there are good strategic returns, but obtaining enough financial returns is difficult, the CVC does not make investments. The integration of a CVC with the rest of an organization and its business units is significant to obtain strategic returns, but the CVC also should be independent financially from the rest of the organization to judge the investment from a financial perspective.

The risk of this strategic choice is that it is simply challenging. The CVC has to consider both strategic and financial returns and balance them. The CVC needs to show high financial performance that can be independent from the rest of the organization while the CVC has to integrate with the organization to pursue strategic returns for existing businesses. Once the CVC loses control of them, the CVC might fall into the "Black Hole" of CVCs. This Black Hole occurs when a CVC fails to determine its priorities for strategic and financial returns, resulting in confusion about purpose, goals to achieve, and time period for assessing achievements.

The Black Hole of CVCs

Difficulties to operate the CVC come from two kinds of returns: strategic and financial. Any ambiguity in prioritizing returns causes a big dilemma for a CVC, and the dilemma complicates important logistics to make the CVC successful: financial independence and integration into the rest of the organization. In the Black Hole, the purpose and investment policy lose their way; as a result, the CVC achieves nothing. It is very hard for top management to support the CVC, and the CVC will be pushed to end. One of the other signs that the CVC is falling into the Black Hole is that the CVC pursues returns in a short-term period, which is completely against a fundamental principle of investing in startups.

The Black Hole causes a CVC to fail. If the integration of a CVC into the other business units is weak and the financial dependence is low even though strategic returns are unclear for existing businesses, the CVC has a risk of being stopped. The fundamental investment period for a CVC shifts from long term to short term. In the Black Hole, the head of a CVC needs to consider whether the CVC should invest or not. Investments by business units might be more reasonable.

However, as I mentioned before, every strategic choice of a CVC has the potential to fall into the Black Hole. This is the Black Hole, which CVCs try to avoid. Once prioritized returns become ambiguous, the CVC faces the risk of falling into the Black Hole. Therefore, CVCs always should review their prioritized returns and the risk of falling into this Black Hole. To avoid falling into the Black Hole, the fundamental features of CVCs are the following: 1) a long-term perspective, 2) continuous commitment and support by top management, and 3) a clear purpose and investment policy .

Figure 5.3 shows the matrix that plots the three strategic choices and the Black Hole of CVCs.

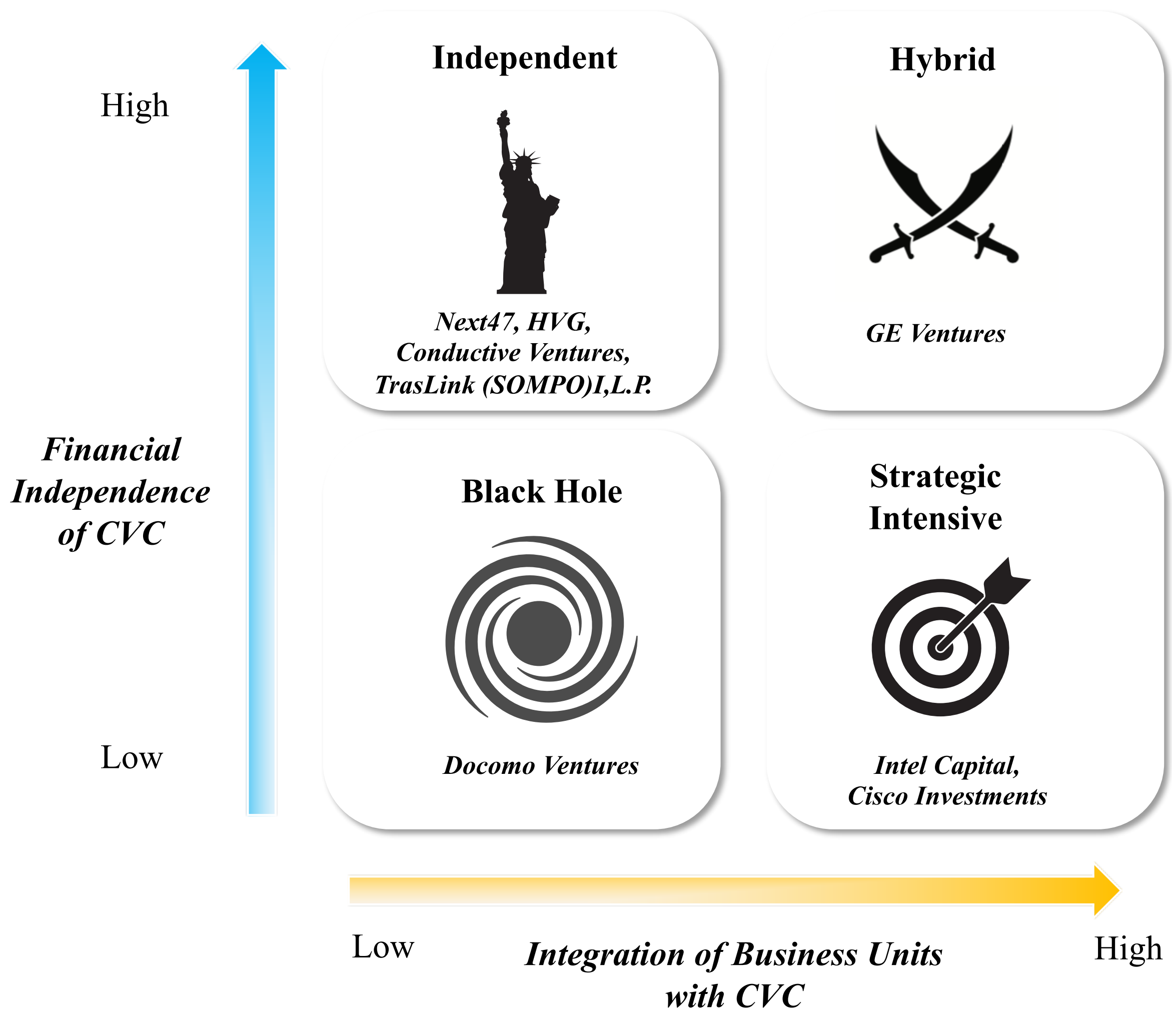

Figure 5-3: Strategic Choices and the Black Hole of CVCs. (Images from iStock.)

Chapter 6. Conclusion and Future Work

I have researched Japanese and Western CVCs, and I have conducted a comparative analysis of several of them. Based on the research and the comparative analysis, I suggest several strategic choices and describe the Black Hole of CVCs.

6.1 Conclusion

First of all, I have researched pioneers of CVCs in high tech industry, and I have conducted a comparative analysis of Docomo Ventures, Intel Capital, and Cisco Investments. The analysis of Intel Capital and Cisco Investments shows that they prioritize strategic returns more than financial returns and that they have a policy of investing according to the prioritized returns. Also, both of them strongly believe that the integration of a CVC with the rest of the organization including business units is crucial to make the investments successful. The CEO and top management have supported and committed to the CVC for a long time. On the other hand, Docomo Ventures has struggled to operate with consistent prioritized returns and an investment policy. The change of the CEO and board members influenced prioritized returns and investment policy at that time. Its unstable investment policy makes the CVC demand returns on the investment in a short-term period.

Secondly, I have analyzed CVCs in heavy industries: HVG, GE Ventures, and next47. One common quality among them is that they assign a professional who has worked in a VC firm and had corporate experiences outside the company as the head of a CVC and considers financial returns essential for CVCs. GE Ventures has prioritized not only financial returns, but also strategic returns and established its investment policy to minimize financial risks. GE Ventures integrates investment with the rest of the organization including busines units by operating an investment committee and aims to obtain strategic returns and minimize any potential financial risks. On the other hand, next47 prioritizes financial returns first, with strategic returns second. Next47 acts like a VC and plans to be more financially independent from the parent company, Siemens. HVG, which was established more recently than the others, also is independent from Hitachi, and its integration with the rest of Hitachi's organization is limited.

Thirdly, I have researched relatively new Japanese CVCs, which aim for a corporate transformation by digital transformation. The analysis of Conductive Ventures and the CVC of SOMPOHD shows that these CVCs prioritize financial returns and focus on disruptive technologies and business models. The CVCs do not aim to obtain strategic returns with their existing businesses because those businesses have been and will be disrupted. Therefore, the main purpose of each CVC is to find disruptions and capture new opportunities, markets, and enterprises. This purpose and the investment policy are close to next47's.

In this case, the financial independence from the rest of organization is important to keep the CVC alive because the rest of organizations would see that the CVC wastes money if financial returns are not good.

The analysis of Japanese CVCs and Western CVCs gives us insights to lead their operation to be successful. Firstly, investments in startups should be viewed over a long-term period. It takes a long time for startups to succeed. Thus, returns on investment should be viewed over a long-term period. Secondly, to see the returns in the long term, continuous commitment and support by top management are also essential. Finally, a clear purpose, a consistent investment policy, and prioritized returns of the CVC should be established to avoid falling into the Black Hole of CVCs.

In addition to the fundamentals to operate CVCs, the analysis shows three basic strategic choices based on prioritized returns: Strategic Intensive, Independent and Hybrid. A Strategic Intensive CVC prioritizes strategic returns more than financial ones. In this case, Strategic Intensive CVC must integrate the CVC well with the rest of the business units to pursue strategic returns. An Independent CVC is the opposite of a Strategic Intensive CVC. The CVC prioritizes financial returns over strategic ones. In this strategic choice, the CVC does not need a strong integration with the business units but needs financial independence from them. The last strategic option is a Hybrid CVC. A Hybrid CVC aims to obtain both strategic and financial returns. A Hybrid CVC must be strongly integrated with the rest of the business units to obtain strategic returns. As well as integration, a Hybrid CVC needs high financial independence from the rest of the business units to judge the investment from the financial perspective.

The analysis of strategic choices based on prioritized returns shows the “Black Hole” of CVCs. This is caused by the dilemma of prioritized returns of a CVC. In the Black Hole, prioritized returns of CVCs become ambiguous, which shakes the investment policy of the CVC and, furthermore, makes the purpose of the CVC unclear. Falling into the Black Hole leads CVCs to fail or achieve nothing. To avoid falling into the Black Hole, a CVC should prioritize its returns, and then select its strategic choices along with financial independence and the integration of business units. Also, to stay away from the Black Hole, the fundamentals of a CVC are three: a long-term perspective, a continuous commitment and support by the CVC; and a clear purpose and investment policy.

6.2 Future Work

The research and the comparative analysis of Japanese and Western CVCs have led to strategic choices and confirmed the existence of the Black Hole of CVCs. However, influences on a company's portfolio by CVC are not analyzed in this research. The research of chronologies of CVC's investments and analysis of the effects on portfolio of companies after the investments will show more specific evaluation. Several companies have enough data for such analysis. Researching performances of CVCs remains a future work.

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