JAPANES VENTURE CAPITAL: INDUSTRY EVOLUTION, STATUS AND PROSPECTS

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ABSTRACT

This dissertation addresses four exploratory research questions. (1) How has the Japanese venture capital (VC) industry evolved and in particular how has its evolution differed from the evolution of the U.S. VC industry? (2) What are the factors that have contributed to creating differences in the Japanese VC industry from that of the U.S.? (3) What factors characterize the nature of competition among key Japanese venture capital firms and how will these factors influence the evolution of the Japanese VC industry? (4) What are the implications of this study for stakeholders in the Japanese VC industry, including policy makers, business leaders and VC professionals?

The identification of milestones in the evolution of the U.S. VC industry provides a baseline for evaluating the evolutionary stage of the Japanese VC industry. To explore the structure and competition in the Japanese VC industry, case studies of 17 leading Japanese VC firms were conducted.

In summary, this study concluded that the Japanese VC industry is still an infant industry and is struggling to develop. The study found that several factors (insufficient social recognition about VC and the role of VC as a social financial system, undeveloped equity markets for new ventures and small businesses, lack of technological knowledge spillover and entrepreneurial challenge, lack of government support and burdening with the past successful industry systems) have created obstacles for developing the Japanese VC industry as an efficient social financial system. Two leading affiliated venture capital firms (AFVCFs), JAFCO and NIF, and some of the newly formed independent venture capital firms (IDVCFs have adopted an operating model similar to the standard model in the U.S. VC industry. These firms may become key players in the evolution of the Japanese VC industry.

However, the VC industry in Japan faces challenges from traditional social values and from the nature of the Japanese economic system, which places a high value on reliability, history, and tradition. Such values in the socio-economic system definitely have influenced the development of the VC industry, and will continue to do so in future.

CHAPTER ONE
Introduction

1.1 The Purpose of the Research

In the United States, where the concept of venture capital originated, venture capital was recognized as a very important element for economic growth and industry renovation even at a very early date. For example, in 1948 Husband and Dockerey (1948) suggested that venture capital is the new lifeblood of business; the insurance of vitality in the future, and the seed corn of the economy. In addition, the U.S. Department of Commerce Panel on Venture Capital in 1970 (1970) described venture capital as an investment in something new with high risks and high potential reward, seed money, unsecured investment, and investment motivated by the prospect of large capital gains and it also revealed that venture capital is indisputably the most important source of initial equity capital for new firms. The commentary in these references suggests that venture capital was recognized as an important factor in U.S. economic growth at a very early date.

On the other hand, the dominant concept of venture capital in Japan is somewhat different and the recognition of venture capital is quite recent. For example, Hamada's studies (1996 and 1998), among the most popular studies on venture capital in Japan, define venture capital as "excess capital accumulated in companies that could not be used effectively in regular business operations, such as expanding facilities or selling or producing goods." Hamada also showed that established Japanese companies, securities firms, banks, etc., stimulated by investment activities in capital markets use their internally accumulated capital to invest in other businesses to earn extra profits. This idea suggests that generally venture capital in Japan is still being considered as just "extra money." Further, since the end of World War II, Japanese industry has been renewed primarily through the leadership of Keiretsu groups, whose companies introduced new technologies and innovative products. (This is discussed more extensively in sections 5.4.4 and 5.4.1). Risk taking capital to finance these innovations and technological

developments was provided by financial companies connected to the Keiretsu groups. In addition, the Institute for Monetary and Economic Studies of Bank of Japan (1995) indicated that banks establish their own venture capital firms to develop relationships with potential future clients who will borrow money from them, while securities firms establish their version of venture capital firms to have the opportunity to manage the initial public offerings of new ventures. As this example suggests, the Bank of Japan, the highest authority among Japanese banks and the Japanese business and financial community, even recently might have misunderstood the role of venture capital in the economy, at least as it is understood in the United States.

Such differences in interpretation and definitions of venture capital and in the understanding of the role of venture capital in the economy suggest that the U.S. and Japanese venture capital industries seem to be based on different philosophies. Although Japanese some venture capital firms have recently started adopting the U.S. venture capital operating model (Hamada, 1998 and 1996; Wickham, Rice and Kuroki 1997; Kuroki, 1997; Kamijo and Hata, 1996), there is insufficient information about these venture capital firms. The few studies of these firms have concentrated primarily on showing the history of each of the firms, their characteristics, and the management approaches of a very limited number of cases. These studies did not project how the Japanese venture capital firms are going to develop or even whether Japanese venture capital will survive to take on a major role in Japanese industry renewal and economic growth. Thus, the purpose of this dissertation is to understand how the Japanese venture capital industry has evolved, how its evolution differs from the evolution of the U.S. venture capital industry, what factors contributed to create such differences between the two VC industries, and how competition among leading VCFs in the Japanese VC industry is affecting the evolving Japanese venture capital industry. Another aim of this research is to address the implications of this study for stakeholders in the Japanese venture capital industry, including policy makers, business leaders and VC professionals.

First, the study will review relevant theories of industry structure and change to develop a model to evaluate the U.S and the Japanese VC industries. Second, the study will describe key events in the evolution of the U.S. venture capital industry; important structural and contextual factors that have influenced the development of the U.S. venture capital industry; and how the evolving U.S. venture capital industry differs from the general pattern of industry development. Third, the study will describe the level of development of the Japanese venture capital industry and will compare the situation in Japan with that in the U.S. Fourth, the study will investigate three kinds of Japanese venture capital firms: venture capital firms affiliated with large financial institution groups (hereafter, referred to as AFVCFs); independent venture capital firms, financially independent from any financial institution groups (hereafter, IDVCFs); and government venture capital organizations (hereafter, GVCO), and will describe how they vary in their organizational structures and business approaches. Fifth, the study will illustrate how leading AFVCFs and newly formed IDVCFs compete with each other and how this competition influences other venture capital firms, especially after the 1998 deregulation of investment conditions by the Japanese government. The study also analyzes the potential for standardization of industry practices among Japanese venture capital firms and suggests how the industry might evolve. Finally, the study explores the implications of the case study analyses for stakeholders in the Japanese VC industry, including policy makers, business leaders and venture capital professionals.

The study will present a model of dynamic change in the Japanese venture capital industry that can be tested as the industry evolves. This will allow researchers in Japan and in countries with emerging economies to be able to use these findings to craft policies to accelerate their own venture capital industries' transformation into more efficient agents of economic development and job creation. The scope of this study is limited to Japanese venture capital firms that are registered as members of the association organized by the Venture Enterprise Center (VEC). The VEC is the official organization representing all venture capital firms in Japan; it is equivalent to the National Venture Capital Association (NVCA) in the U.S. (VEC, 1998). This study excludes private

individuals or business angels who may intermittently invest funds in entrepreneurial ventures, as well as in-house venture capital departments or divisions within corporations. There is no information publicly available for these entities and conducting primary research in this area is beyond the scope of this study.

1.2 The Objectives of This Study

Listed below are the four exploratory research questions that have driven this study.

- How has the Japanese VC industry evolved and in particular how has its evolution differed from the evolution of the U.S. VC industry?

- What are the factors that have contributed to creating differences in the Japanese VC industry from that of the U.S.?

- What factors characterize the nature of competition among key Japanese VCFs and how will these factors influence the evolution of the Japanese VC industry?

- What are the implications of this study for stakeholders in the Japanese VC industry, including policy makers, business leaders and VC professionals?

To explore the first two questions, the study will examine the relevant literature of industry analysis and present a framework to evaluate the developmental stage of the U.S. VC industry in sections one and two of chapter two. From that analysis, the study will create milestones for the development of the U.S. VC industry in chapter four. Then, in chapter five the study will evaluate the evolutionary stage of the Japanese VC industry based on the milestones identified in chapter four. The specific aims of the case study portion of this study discussed in chapters six, which answer the remaining two questions, are outlined in chapter three.

1.3 Relevance of This Research

Although the U.S. has been struggling to cope with an economic recession for the past two years, in the decade of the 1990s the U.S. enjoyed unprecedented economic success. For example, the average economic growth rate changed from 1.0% in 1991 4.1% in to 2000 (2001, 1.2%) and the average unemployment rate dropped to 4.8% in 2001 from 6.9% in 1992 (General Index of Imidas, 2003). Small and medium size companies (less than 100 employees) especially had created new jobs at an annual rate of 66% (as of 1998) while large companies listed in Fortune 500 had lost 2.5% of their total employees every year for the same period (NVCA, Coopers & Lybrand, and VentureOne, 1998). Furthermore, the studies of Taylor, (2001), Gompers and Lerner, (2000), and Bygrave and Timmons (1992), among others, showed that small and medium size companies supported or assisted by venture capital firms had significant influence over the development of leading modern industries, such as the personal computer industry and the telecommunications industry.

By contrast, since 1991 the Japanese economy has been having a difficult time in creating new industries to generate high economic growth and provide new job opportunities. For example, the unemployment rate in Japan hit 5.8% in May 2002, historically the highest rate since 1945 (General Index of Imidas, 2003), while the annual GDP growth rate dropped to −0.4% in 2001 from 5.3 % in 1990 (General Index of Imidas, 2003). In reality, the situation is worse than these figures indicate. In fact, if the Japanese government included people who are still inside of companies but do not have any real assigned job in the figures for calculating unemployment, the Japanese unemployment rate would have been about 8-10% (Kouhata; Jibe and Sotoya, 2002). [It is a well known fact in Japan that the Japanese government and large companies, especially companies of the Keiretsu groups, are afraid of creating panic in the society. Therefore large companies, encouraged by government incentives such as tax breaks and other favorable policies, maintain excess labor forces within the company rather than releasing them into unemployment.] As sections 4.2 and 5.2 illustrate, in the U.S. there are more new firm creation activities than in Japan and even after entering the 21st century the Japanese economy is shrinking.

Recently Japanese researchers, such as Okabe Yoji (1999) and Matsuda Shuichi (1998 and 2001), showed that differences between the two countries' economic performance are caused by large differences in establishing new ventures and supporting systems, including the venture capital industry. Okabe's study in 1999 suggested that the Japanese business community does not realize the real meaning and value of venture capital and has not been developing the venture capital industry effectively. Also my previous studies, one in 1997 and the other in 1999 (Kuroki, 1997 and Kuroki, Rice and Abetti, 2000), suggested that the development rate and actual function of the Japanese venture capital industry in the renovation of the economy lag far behind those in the U.S. This indicates that understanding how the Japanese venture capital industry has developed and suggesting how it may evolve in the future is crucial for Japan's economic revival.

1.4 Organization of the Dissertation

This dissertation consists of six chapters. Chapter one introduces the topic and the purpose of the research, focusing on understanding how the Japanese VC industry has developed and suggesting how it will develop in the future. In addition, it includes the motivation for the research, including background information concerning the current state of the Japanese economy.

Chapter two reviews the literature relevant to understanding how an industry develops, especially the "industry evolution model," and to illustrate the conceptual background and research framework best suited to examine how the VC industry has grown or evolved both in the U.S. and Japan.

Chapter three reviews the overall research design and methodology adopted in this study to investigate the Japanese VC industry. The chapter illustrates the reasons for utilizing the collective case study approach and its limitations, including the role and contribution of a preliminary exploratory study.

Chapter four reviews important literature regarding the identification of key events (milestones) in the development of the U.S. VC industry. In the process, the study

also examines important structural and contextual factors that influenced the development of the U.S. VC industry, especially in terms of supply and demand, to illustrate a venture capital industry evolution model. Then, the study evaluates how the evolving U.S. venture capital industry differs from the general industry development model.

Chapter five reviews important literature pertaining to the Japanese venture capital industry, including the supply and demand side of the industry. The study also describes and identifies the development stage of the Japanese venture capital industry by using comparable milestones from the development of the U.S. VC industry. The study then evaluates how the evolving Japanese venture capital industry differs from the U.S. VC industry development.

Chapter six reports and analyzes the results of research on 17 Japanese VCFs -- focusing on each company's profile, organization structure, decision making process, etc. The study will discuss how leading AFVCFs and newly formed IDVCFs compete with each other and how this competition influences others, especially after the 1997 deregulation of investment conditions by the Japanese government. Then, the chapter discusses the potential for any of these VCF models to become the industry standard for managing VC funds in Japan and suggests how the industry is going to evolve.

Chapter seven explores the possible alternative evolutionary paths of the Japanese VC industry; presents the implications of this study for entrepreneurs, corporations and institutions, financial institutions, and policy makers; and discusses the limitations of the study and its overall contribution to the field of VC research. Then, the chapter concludes with suggestions for future research and a summary of key findings.

1.5 Summary of Secondary Research Contrasting U.S. and Japanese VC Industry Evolutions

Note: This is a summary of chapter four and five for readers who do not wish to review the detailed descriptions of the U. S. and Japanese VC industries.

The U.S. VC Industry Evolution

As section 4.1.1 shows, the first professional form of U.S. VCF emerged in Boston, Massachusetts as AR&D, formed in 1946. Fifty-six years later, the cumulative VC investment has grown to $250 billion, spread mostly among the top five major business states -- California, Massachusetts, Connecticut, New York and Texas. However, the U.S. VC industry has developed more as a supplemental industry, supporting the development of other industries. VCFs do not provide and produce tangible goods and services as their final products. They provide VC funds and management techniques and services to new ventures and nurture and develop them to be successful companies that can attain IPO. The VC industry and VCFs earn their profits by supporting the creation of new firms and new industries, but not directly by selling products and services to buyers and consumers.

In the evolutionary processes of the VC industry, VCFs responded to strong regional demand of new technological ventures needing more equity investment and strong regional suppliers of VC funds emerged in specific business areas such as Boston, Massachusetts; Palo Alto, California; New York City; Austin, Texas; and the state of Connecticut, as section 4.1.3 describes. The VC industry increased its presence as a major industry because VC invested companies in key industries -- Intel, National Semiconductor, and Advanced Micro Devices in the semiconductors industry, Apple and Dell in the personal computer industry, and Genentech in the biotechnology industry –had successfully developed into world class competitive firms. In the development of these industries, VCFs provided management advice to increase the efficiency of new ventures' operations and provided risk capital to establish the stable operation of new ventures, as discusses in section 4.4.1. At the same time, U.S. government policy changes and the health of the U.S. economy also directly impacted the development of the VC industry. For example, as section 4.4.3 discusses, after the government introduced a new capital gains tax and SBIR program in 1982, the volume of the VC investment started to increase. Then, right after the Internet related investments boom crashed in 2000, annual VC investment volume in 2001 went down 57% to $40 billion, as table 4.2 shows.

In conclusion, the U.S VC industry had emerged and concentrated its development in the business areas in Massachusetts, California, New York, Texas, and Connecticut, where there are positive social attitudes toward formation of new firms and there are enough resources -- land, capital, labor, information, and knowledge -- that potential new entrants into the industry can access easily. The U.S. VC industry has taken advantage of these favorable conditions to develop into a fully-grown industry itself, focusing on specific areas of strong regional demand and strong suppliers and taking advantage of favorable government policies.

The Japanese VC Industry Evolution

Key factors that helped the development of the U.S. VC industry are identified through review of the literature in section 4.5. This provides a foundation for analyzing and evaluating the evolutionary stage of the Japanese VC industry. All identified factors are classified into evolutionary stages in chronological order, as figure 1.1 shows and all important events are also summarized and illustrated in table 1.1. Then, table 1.2 summarizes key findings comparing the U.S. and Japanese VC industries

Industry Evaluation

Industry Specific Factors

In the case of the U.S. VC industry's development, two standards are identified: an industry standard for managing VC funds (partnerships for managing VC funds) and a standardized role of VCFs (as role models of venture capitalists to be established and expanded within the industry). Based on these two criteria, in the Japanese VC industry a standard form of managing VC funds, "toshijigyo-kumiai," was introduced in 1983 (discussed in section 5.1.1). However, this standard form was not effective for encouraging venture capitalists to establish more VCFs and collect more VC funds until the Japanese government introduced the Toshijigyo-kumiai Yugensekinin Act in 1998 (discussed on page 158). Throughout the analysis of Japanese VCFs in 1990s there are some standards of roles and services of VCFs that can be recognized. However, there has never been a culture of venture capitalists as role models. This information suggests that the Japanese VC industry is not ready to shift to the growth stage of the industry.

Demand Condition Factors

In the U.S. case there is a constant flow of entrepreneurial activities, especially technology based new ventures, and entrepreneurs are recognized as important elements in economic developments. As section 5.2 shows, entrepreneurial activities have not traditionally been admired and respected in Japanese society. Technology based new ventures in particular were not encouraged or nurtured in society. Entrepreneurs were not recognized as important factors in economic development even throughout the 1990s (discussed in section 5.2). This information also suggests that the Japanese VC industry is not ready to shift to the growth stage of the industry.

Supply Condition Factors

In the U.S. case equity investments by VCFs and venture capitalists are recognized as important elements in economic development. The value of the VC industry in capital markets for small businesses was extremely high. In Japan, while the role of financial institutions is still a large element in economic development (see section 5.3), equity investment of VCFs and venture capitalists and the role of the VC industry in economic activities and the evolution of the economy have never been recognized as important factors in capital markets for small businesses, even in 2001 (see section 5.3 and 5.4). This information further suggests that the Japanese VC industry is not ready to shift to the growth stage of the industry.

Technological Factors

In the U.S., technological development had been recognized as a key factor for creating new industries in a society. Further, technological development had been supported and maintained by many institutions, such as new ventures and VCFs. In Japan, technological development has also been recognized as a key factor in creating new industries in society. However, the government and business leaders still believe and perceive that such development needs to be carried out by large companies rather than new ventures (see section 5.2), suggesting again that the Japanese VC industry is not ready to shift to the growth stage of the industry.

Economic Factors

The U.S. government and business leaders realized that its continuous economic development couldn't rely only on the performance of traditional industries. They developed structures whereby new industries and new ventures relying on new technologies could be developed and nurtured. Since the mid-1990s, the Japanese government and leaders of business sectors have come to recognize that the country's continuous economic development could not rely only on the performance of traditional industries (see section 5.4.2 and 5.4.3), which, by relying on Keiretsu systems, have not been functioning well. This information suggests that there are some elements providing for a shift to the growth stage of the Japanese VC industry.

Governmental Factors

In the U.S., policy makers of the government and leaders of the business sector have worked to create and accept new policies that could stimulate the transformation of industries and create new leading industries. In Japan, it seems all necessary rules and acts are in place to help new ventures and VCFs. However, efforts by the government still have not been enough to change capital market structures from the heavy involvement of government affiliated financial institutions and banks in providing debt finance for small businesses and new ventures to the equity market. Although the Japanese government has recently shown an interest in and made efforts to support the development of the Japanese VC industry on the one hand, on the other, the government still allows securities firms and their affiliated VCFs (AFVCFs) to monopolize the IPO market, making it very difficult for independent VCFs to compete (discussed in more details in section 7.2.3). This information suggests that the Japanese VC industry is not ready to shift to the growth stage.

Social Structural Factors

In the U.S., business and government leaders had recognized the importance of VC and venture capitalists, and venture capitalists especially were recognized as crucial personnel for the development of new ventures, new industry, and the VC industry. In

Japan some business leaders and some policy makers seem to have recognized the importance of VC and venture capitalists since the mid-1990s (see sections 5.3.1 and 5.4.3). However, this study cannot find any evidence indicating that they recognize venture capitalists as crucial personnel for the development of new ventures, new industry, or the VC industry, suggesting again that the Japanese VC industry is not ready to shift or grow to the growth stage of the industry.

The above analysis and evaluation of factors suggests that the future of the Japanese VC industry is still uncertain and that support systems in society, government and business sectors are not enough to expand and nurture the Japanese VC industry as an important financial system in the capital market. The above information overwhelmingly suggests that the Japanese VC industry is still in the emerging stage of its industry evolution. The activities of VCFs or venture capitalists are not yet socially valued. On the other hand, the U.S. VC industry had positioned itself as an important social financial system for new ventures, especially after 1980. Even though most major events and efforts to develop the VC industry happened after 1980, the classical concept of VC, nurturing new ventures and expanding entrepreneurial movement, has been in place for the past fifty years of the VC industry history. As chapter three illustrates, the U.S. VC industry has been functioning as an important economic institution. In Japan JAFCO and NIF have been the primary leaders in developing the Japanese VC industry and both of them are the subsidiaries of securities firms. This situation has affected the development of the VC industry since their inception in 1972. Furthermore, subsidiaries of financial institutions remain the prime movers of the Japanese VC industry today. The VC industry in Japan has not taken sufficient action to position itself as an important financial system for the past thirty years. Although the Japanese government has introduced some important legislation similar to that in the U.S., the role of the VC industry in the financial market for small business and new ventures has not changed much at all. All of this information suggests that the VC industry in Japan will likely not develop either as quickly or as extensively as it did in the U.S.

Table 1.1 Historical Events for the Development of the Japanese VC Industry

Year	Evolution of the Japanese VC Industry	
1970	**- Birth of the First Japanese Venture Capital Firm**	Emerging Stage
	'72 KED was established (section 5.1.1)	
	'73 JAFCO was established (section 5.1.1)	
	- Emerging high-tech ventures -	
	In 1970s, a total of seven VCFs were established and all of them are subsidiaries of major financial institutions (section 5.1.1)	
1980	**- Standard form of collecting VC funds -**	
	'82 The first Toshijigyo-kumiai was introduced by JAFCO (section 5.1.1)	
	'83Deregulation of the IPO market (section 5.1.1 & 5.4.3)	
	Establishment of new VCFs increased slightly (section 5.1.1)	
	'89 Introduction of Japanese SBIR program (section 5.4.3)	
1990	**- Social Recognition of VC -**	
	'98 Deregulation of IPO market: two other IPO markets, NASADAQ Japan and Mothers emerged. (sections 5.3.2 and 5.4.3)	
	● Capital gains tax rate decrease ('98): 27% > 20%. (section 5.4.3)	Growth Stage ?
	● Removal of investment restrictions on pension funds ('98) (section 5.4.3)	
	Establishment of new independent VCFs increased.(section 5.4.3, p.158)	
2000	VC funds reached record high volume and total number of VCFs reached about 185. (section 5.1.1)	

Figure 1.1 Japanese VC Industry Evolution Factors and Changes of VC Funds, 1987-2000

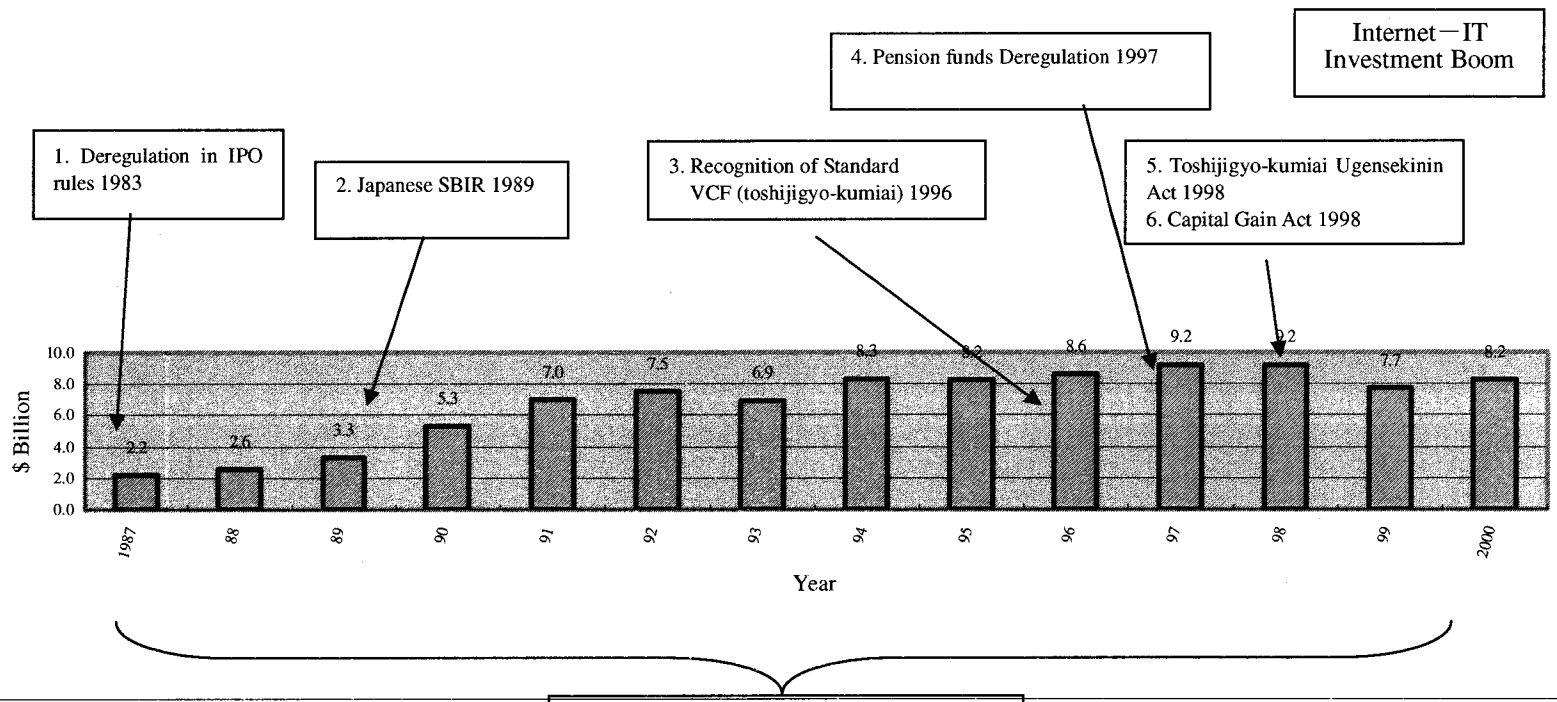

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Table 1.2 Japan-U.S. Comparisons

	JAPAN	U.S.
Number of VC Firms	185 (2001/06)	689 (2000) 761 (2001)
Amount of Annual Investment	$ 2 B (2001/03) $1.5 B (2001)	$ 103.8 B (2000) $40 B (2001)
Total VC fund	$8.2 B (2001/03)	$200 B (2001/07)
Number of New Initial Public Offerings	157 (2000/12) 87 (2001)	230 (2000/06)
Over-the-Counter Market and NASDAQ: # of Registered Enterprises	988 (2000/12)	4,600 (Average of the 1990s)
Number of Newly Established Enterprises	About 10,000 (1998)	About 900,000 (1993~1997)
Ratio of Starting New Enterprises	3.5% (1996~1999)	16.6% (1996~1997)
Ratio of Closing Enterprises	5.6% (1996~1999)	13.5% (1996~1997)

Sources: The Author

Chapter Two
Research Framework and Review of Relevant Literatures (Conceptual Background)

The chapter reviews the literature relevant to understanding how an industry develops, especially the "industry evolution model," and to illustrating the conceptual background and research framework best suited to examine how the VC industry grows or evolves both in the U.S. and Japan.

2.1 Industry Evolution Model and Research Framework

There are several different approaches used in conceptualizing an industry development and environment. The Industry Evolution Theory (Model), which emphasizes evaluating the changing characteristics and structures of an industry and classifying an industry's evolutionary conditions into four progressive stages (emerging stage, growth stage, maturity stage and decline stage), is a useful model for this research. For example, Rakowski and Bejou (1992) used the Industry Evolution Model to examine the impact of deregulation introduced in the airline industry on characteristics of industry competition and the resulting structural changes. They illustrated the effect deregulation had on the evolution of the industry. Also, Swaminathan (1998) used the theory as his framework to analyze the U.S. brewing industry and found that a specific brewing company's strategy was consistent with the general characteristics of the brewing industry's "evolutionary" stage. Furthermore, Shim (1994) used this theory as the framework to investigate the evolutionary differences between the U.S. and Japanese robotics industries and showed that the Japanese robotics industry's evolutionary stage was far ahead of that of the U.S. by analyzing the specific supply and demand conditions in each country over time. These examples suggest that the changes in an industry can be classified into different stages, whereby each stage exhibits its own conditions and structures. These researchers used the Industry Evolution Model as a framework to analyze and extract conditions and structures unique to a particular industry's stage of development. In 1992 Bygrave and Timmons illustrated the historical development of the U.S. VC industry, concluding that the industry was in the expansion stage through an analysis of external and internal environmental factors affecting the VC industry. Hence, their research findings suggest that, by analyzing

the U.S. VC industry's evolutionary path and conditions in the framework of the Industry Evolution Model, this study should be able to identify milestones that help characterize the evolution of the U.S. VC industry, and subsequently compare these to milestones in the evolution of the Japanese VC industry to illustrate its evolution.

In the following paragraphs, we briefly illustrate the industry evolution model and factors influencing the evolution of the industry are presented in chapters three and four.

2.1.1 Industry Evolution Model

Industry Evolution Theory (also referred to as industry life cycle theory) is one of the most widely used frameworks for conceptualizing an industry's environment and conditions in terms of the degree of progress (Swaminathan, 1998; Shim, 1994; Miles, Snow and Sharfman, 1993; Rakowski and Bejou, 1992; and Wasson, 1978). It is the industry-level equivalent of the highly popular marketing concept - product life cycle, with the industries comprising many firms sharing common characteristics and conditions (Shim, 1994; Grant, 1991 and 1998; Porter, 1980). Such industries' conditions and the degrees of progress can be described and classified into four different stages: the emerging stage, the growth stage, the maturity stage and the decline stage (Rakowski and Bejou, 1992; Grant, 1991).

Emerging Stage: the industry condition when innovations are introduced into the market and no clear standardized products or production technology exist (Grant 1991 and 1998; Miles, Snow and Sharfman, 1993; Rakowski and Bejou, 1992; Porter 1980). There is a great deal of uncertainty among competitors as well as customers due to frequent product design changes, considerable variance in product quality, and lack of brand or name recognition (Grant, 1991 and 1998; Porter, 1980). In this stage, firms rely on relatively labor intensive production processes; hence firms have lower profit margins and many firms in the industry have not yet recognized the keys to success (Miles, Snow and Sharfman 1993; Rakowski and Bejou, 1992; Porter, 1980).

Growth stage: the industry condition entering into a period of increasing sales volume due to entrance of early adopting competitors and increased customer recognition of the benefits of the new product (Grant, 1991 and 1998; Miles, Snow and Sharfman, 1993; and Onkvisit & Shaw, 1989). In this stage, some firms have already succeeded in

reducing uncertainty among customers through improvements in product design and quality and the establishment of standardized product and production processes (Grant, 1991 and 1998). These firms show significant profits bringing in turn more new entrants.

Maturity stage: the industry condition shifting into a period of slowing sales. Most customers are very knowledgeable of the industry's products and services, and replacement sales are predominant (Grant, 1998). Overcapacity problems arise as the market becomes flooded with more entering firms (Rakowski and Bejou, 1992; and Grant, 1998) and standardization of products makes it more difficult for each firm to differentiate its products (Rakowski and Bejou, 1992; and Grant, 1998). This results in price competition, especially when flooded markets increase consumer demand for lower prices. As a result, many firms unable to successfully compete on the basis of price may fail, merge with other firms, or liquidate their businesses (Rakowski and Bejou, 1992; and Grant, 1998).

Decline stage: the industry at this stage faces new competition from new industries providing superior products, thus sales start falling and fierce price wars occur (Rakowski and Bejou, 1992; and Grant, 1998). As a result, some firms may exit and others might be acquired by competitors. Uncertainty reigns, particularly among firms in the industry.

Although there are arguments about the duration of stages and the lack of clear distinctions among each stage (Chen, 1996; Miles, Snow and Sharfman, 1993; Schnaars, 1991), the theory has been applied to analyze the growth pattern of several industries. For example, Rakowski and Bejou (1992) used the "Industry Evolution Model" to examine the impact of introduced deregulation in the airline industry on characteristics of industry competition and the resulting structural changes. Shim (1994) used this theory as the framework to investigate the evolutionary differences between the U.S. and Japanese robotics industries. Furthermore, Swaminathan (1998) used the theory as the framework to analyze the U.S. brewing industry and found that a specific brewing company's strategy was consistent with the general characteristics of the brewing industry's "evolutionary" stage. These examples suggest that industry evolution model is a valuable approach to provide insights concerning the complex interrelationships between various factors and an industry's evolutionary changes.

2.1.2 Industry Evolution and Development Factors

While the previous paragraphs illustrate the potential usefulness of the industry evolution model to evaluate the progress of both the U.S and the Japanese VC industries, the following paragraph of this section illustrates factors influencing the evolution (development) of the industry that this study needs to consider in order to create a framework to evaluate the development stage of the U.S. VC industry. From this discussion will emerge milestones for evaluating how the Japanese VC industry has evolved, enabling a comparison of the evolution of the Japanese VC industry with the evolution of the U.S. VC industry. Further the factors that have contributed to creating differences between the Japanese and U.S. VC industries will be presented.

There are two key driving factors in the Industry Evolution Theory that function to change or develop industry structures and competitive conditions from one stage to the next: demand growth and the creation and diffusion of knowledge (Grant, 1998 and Porter, 1980). Demand growth determines the intensity of rivalry in the industry and "it sets the pace of expansion required to maintain share, thereby influencing the supply and demand balance and the inducement the industry offers to new entrants (Porter, p.164)." The creation of knowledge in the form of product innovation is a key factor for an industry coming into being and emerging (Grant, p.243). Speed and quality regarding knowledge diffusion with respect to product innovation and production technology will determine the standardization of products or production technologies, product designs, quality, etc. (Grant, p.244). The evolutionary stages of the industry exhibit different features, briefly described in the previous section, and each feature is created by diffused proprietary knowledge and how well competitors in the industry adapt key knowledge and develop their own advantages (Grant, pp.243-246). Based on the above information, the demand growth and the creation and diffusion of knowledge in the industry are factors that will be considered in assessing the development of the VC industry.

In addition to these two key driving factors, there are other factors that have been applied to analyze industry development and that will be considered in this research. Among many industry development studies, Porter's (1990) the "diamond of national advantage theory" was the one of the most influential studies. The theory classified forces and factors of a nation that shape the business environment and industry development. By

analyzing the patterns and the evolution in several industries in ten leading trading nations (Japan, the U.S., Italy, Germany, etc.) Porter identified four attributes through which firms in a country promote or impede the creation of competitive advantage within their industries. Those four attributes are as follows. 1. "Factor conditions. The nation's position in factors of production, such as skilled labor or infrastructure, necessary to compete in a given industry." These types of factors include economic conditions of nations, physical resources, and capital resources. 2. "Demand conditions. The nature of home demand for the industry's product or service." 3. "Related and supporting industries. The presence or absence in the nation of supplier industries [supply] and related industries that are internationally competitive." 4. "Firm strategy, structure, and rivalry. The conditions in the nation govern how companies are created, organized, and managed, and the nature of domestic rivalry [including information regarding industry structure and competition]" (Porter, 1990, p.71). In addition to the four attributes, Porter also illustrated the role of government and chance events as important factors influencing industry development. While the industry evolution theory emphasized two key factors, the "diamond of national advantage theory" reclaimed the importance of two traditional forces, demand conditions and supply conditions, influencing the development of the industry and suggested two other factors as key industry development factors: factor conditions and firm strategy, structure, and rivalry factors. Porter's use of the specific term, "factor conditions" is his own and unique: factor conditions, including physical resources, human resources and capital resources, indicate broadly the economic condition of the nation and they are also considered as important industry development factors in other studies, but named differently. For example, McMillian's study on the Japanese robotic industry in 1985 illustrated that the Japanese economic conditions in the 1970s, such as the labor shortage in the Japanese manufacturing industry, increasing production efficiency competition in the Japanese automobile industry, and the economic threat in the period of the first oil crisis were the important factors for the development of the Japanese domestic robotic industry in the 1970s and 1980s (McMillian, 1991). This study illustrated the several business conditions for the development of the Japanese robotics industry in 1970s and 1980s and classified these conditions as economic factors while Porter's study might classify the described conditions as factor conditions. Therefore, this study suggests that the economic

factors are the forces that this study needs to consider in measuring the development of the VC industry.

In addition, considering firm strategy, structure, and rivalry factors as important forces influencing industry development are also discussed in other industry studies. For example, Cool and Dierickx (1993) analyzed the U.S. pharmaceutical industry from the perspective of firm strategy differences and rivalry conditions during the period 1963-82 and compared profitability between firms with similar strategies and others during the periods of 1963-69 and 1980-82. The study found that a substantial decline in industry profitability is not caused by changes in the structural elements of number and size of firms but by increasing rivalry within firms with similar operating strategies. This strategy analysis of the U.S. pharmaceutical industry illustrates the notion that the impact of rivalry on a firm's profitability depends on the strategic location of its various rivals. Furthermore, in 1997 Smith, Grimm and Wally analyzed the U.S. airline industry and classified the industry into three similar strategy groups: the 'niche-seeker' group; the 'high-end flyer'; the 'entrenched-dominant' group. (The 'niche-seeker' group operates in the lowest number of airports and has high operating costs and a lack of economies of scale. The 'high-end flyer' group has high marketing costs and only serves short air routes, but leads in revenues from first class passengers. The 'entrenched-dominant' group has the lowest operating and marketing costs of all groups. It serves the broadest number of airports and has managers with the most industry experience). In analyzing the airline industry, the study found that there were not significant profit differences among similar strategy groups, but found that differences in the types of competitive behavior adopted by each firm influenced the structural changes that lead to more competition between the 'high-end flyer' group and the 'entrenched-dominant' group. The result of this study also suggests that researchers could illuminate differences among firms' competitive positions by classifying the industry into different strategic rivalry groups. Thus, this study suggests that a firm strategy, structure, and rivalry factors analysis is a meaningful construct in analyzing and illustrating a firm's competition within the industry.

Although applying the concept of measuring the role of chance events in industry development might be relatively hard in this dissertation, considering the above information, Porter's idea of analyzing the factor conditions (including analysis in

economical conditions), demand conditions, related and supporting industry conditions (supply conditions) and conditions of firm strategy, structure, and rivalry in industries (industry specific factors) in conjunction with an analysis of the roles of government are important factors for this study to consider when measuring the VC industry development. Furthermore, a general business environment analysis model (e.g. Grant, 1998), that classifies all the influences impacting a firm's decisions and performance into six general environmental factors (economic, technological, governmental [political], natural, demographic and social structural factors) and three industry specific factors (competitors, suppliers [supply] and customers [demand]), should be used as an additional guideline in creating the research framework for this study. Among a total of nine factors, the importance of two general environmental factors (economic and governmental) and three industry specific factors (competitors, suppliers [supply] and customers [demand]) were already illustrated above.

The following paragraph discusses and describes the importance of the four remaining factors. Among the four factors, changes in demographic structure and natural environment should not have major affects on analyzing the development of the VC industry in this study. Further, because firms in the VC industry never directly deal with changes in these categories, this study does not need to treat these as essential factors affecting the development of the VC industry. This is consistent with other studies. For example, Dowling, Boulton, and Elliott's study (1995) on "the global telecommunications industry" used specifically four environment factors: technological change, changes in market demands, deregulation, and globalization factors, to illustrate environments affecting the global telecommunication service industry. Cooper (2000) developed "the critical-issues grid" to analyze and evaluate the key industry development factors affecting SONY's videotape recorder business by applying four environmental factors: economic, technological, social and governmental (political). Both of these studies excluded changes in demographic structure and natural environment.

The last two factors, technological factor and social structural factor, are additional factors that this study needs to consider for the following reasons. Technology development occurs as part of industry knowledge diffusion, specifically related to developing new products that reflect patterns of earlier technological capabilities of firms

in an industry as well as a firms' process of absorbing technologies (McKendrick; Doner and Haggard, 2000). Such technologies affect the development of the industry both internally and externally. An example of this would be the use of technological information and knowledge of new product clusters when participating firms recognize and collocate to pursue new market opportunities, develop new technologies, and obtain design knowledge from competitors, suppliers and customers leading to the development of the industry (Sohal, Morrison and Pratt, 2002; Dosi, 1988). All of these processes happen in an internal industry environment. Technological developments in the outside of the particular industry also affect industry development. For example, according to Mizogami (2000) recent key technological developments for the computer game software industry occurred in the telecommunication industry. In the computer game industry, there are two giant hardware makers, Sony and Nintendo. To survive, most computer game software makers had to produce their products to run either on Sony's or Nintendo's hardware. Before the development of computer networking systems using the Internet, computer game software makers did not consider the distribution of their software products on computer networks (Mizogami, 2000). Now, of course, the computer game software makers can deliver their products to consumers without depending on hardware makers. Thus, the analysis of development of an industry requires consideration of internal and external technological factors. Although the VC industry has not dealt with internal technological developments directly and there are no tangible VC technologies, except the know-how of investment and managing VC funds, many VCFs have invested in new ventures that are developing key technologies. (Additional details are provided in section 3.4.1). Hence, this study intends to include technological factors as an additional force influencing the development of the VC industry.

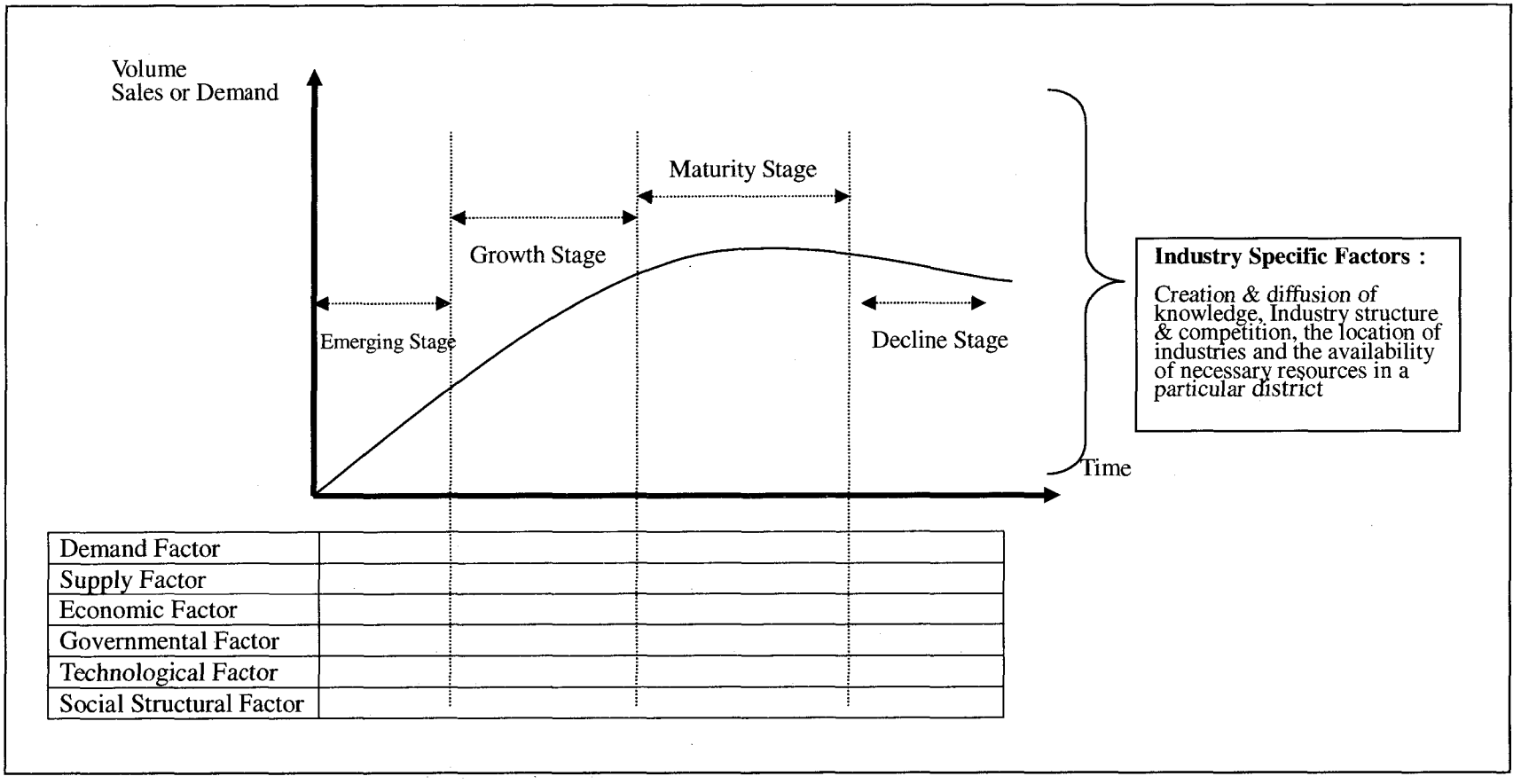
Social structural factors in industry development include changes in social values (work ethic and cultural values) and how a society perceives the creation of a new industry or a new product around which that new industry is formed (Porter, 1980; Montana and Charnov, 1987). For example, Marshall (1960) showed that mutual knowledge and positive perceptions of new products among the people in an industry district will reduce the transaction costs in local production flows, facilitate the evolution of skills and qualifications of the workforce, and promote innovation and innovation diffusion among

firms in the district. Furthermore, McKendrick, Doner and Haggard (2000) said, "all else being equal, countries that value new venture formation or do not hinder entry into new branches of industry are more likely to be among the early hosts and a business culture that rewards new economic activity is likely to be among the early entrants (p.41)." Thus, social structural factors also determine the development of the industry and analysis of the social structural factors is necessary for this study to illustrate the VC industry development.

Industry location and concentration is an additional factor affecting the development of an industry that this study needs to consider (e.g. Marshall, 1960; Porter, 2000; Hill and Brennan, 2000). Historically, many industries were localized and concentrated in limited areas and formed industry districts (Marshall, 1960; Porter, 2000; Hill and Brennan, 2000). Such localization and concentration of industries into industry districts arose due to physical conditions, such as the character of the climate and the soil, the existence of mines or easily accessible ports, cheap laborers, etc. (Marshall, 1960). This suggests that industry location and concentration and physical condition in a particular business district or area is one of the factors influencing industry development. Porter (2000), Hill and Brennan (2000) and others have presented the concept of an "industry cluster," a geographically proximate group of firms and associated institutions that complement each other's capabilities, compete against each other or share common resources (e.g., technology, specialized labor). They also have close buy-sell relationships with other industries in the region or become driving forces to create and preserve regionally specific competitive industry advantage and development. Based on the above regional industry clusters theory, the industry cluster (district) will be formed singly or by a combination of several forces -- strong regional demand, strong regional suppliers, a university research base, availability of skilled scientists and engineers, government procurement and investments in basic research, favorable government industry policies, etc. (Porter, 2000; Mower and Nelson, 1999). Thus, this study considers the location of industries and the availability of necessary resources in a particular district as factors that can determine the development of an industry.

Based on the literature reviews of industry development, this study concludes that both general industry environmental factors (technological, economical, governmental and social structural factors) and internal industry environmental factors (industry specific factor, supply condition factor and demand condition factor) shape the structures and the evolving stages of an industry. (Industry specific factors include conditions of firm strategy, structure, and rivalry in industries; creation and diffusion of knowledge; the location of industries and the availability of necessary resources in a particular district.) In conjunction with the industry evolution model, this study introduces an industry evolution matrix, as figure 2.1 shows, and uses this framework to identify key evolutionary events or "milestones," in the U.S. VC industry development in chapter three. Then, the study applies the identified milestones to evaluate and determine the evolutionary stages of the Japanese VC industry in chapter four.

Figure 2.1 Industry Evolution Matrix



2.2 Factors Affecting the Industry Evolution

While the previous paragraphs introduced the industry evolution matrix model that this study uses to illustrate factors influencing the evolution of the VC industry, the following paragraphs illustrate traits or conditions that this study uses to assess factors affecting the evolution of both the U.S. VC industry and the Japanese VC industry.

2.2.1 Internal Industry Environmental Factors

Industry Specific Factors

As the previous sections described, industry specific factors include conditions of firm strategy, structure, and also rivalry within industries; creation and diffusion of knowledge; the location of industries and the availability of necessary resources in a particular district. Describing and evaluating firm-level strategy for U.S. VCFs and measuring the availability of necessary resources of VC in a particular district itself are not central to this research. Instead, this study concentrates on describing structures and competitions within the VC industry, the path of knowledge creation and diffusion in the VC industry, and the location of the VC industry in illustrating industry specific factors.

Also by applying Porter's points (Porter, 1985 p.164) of measuring long-run changes in growth, reduction of uncertainty, diffusion of proprietary knowledge, changes in input and currency costs, structural changes in adjacent industries to measure structures and competitions and knowledge creation and diffusion in the industry, this study evaluated the study of Bygrave and Timmons (1992), describing the evolving U.S VC industry, and proposed the following six factors at the right side of Table 2.1, as necessary evaluation points (traits or conditions) to describe the evolving stage of the VC industry.

Table 2.1 Evaluation Points for Industry Evolution

Demand Growth	Long-run changes in growth	Changes in VC investment and number of VCFs
Diffusion of Knowledge	Reduction of uncertainty	Familiarity with VC investments and its management
	Diffusion or proprietary knowledge	Diffusion or introduction of partnership structure of managing VC funds
Structure, Competitions, Location and Others	Changes in input and currency costs	Changes in source VC funds
	Structural change and competition in adjacent industries	Structural changes and competition in the VC industry
	Location of an industry*	Location of the VC industry

(Cited from Michael Porter's with 'Competitive Strategy', P164; Exception of *)

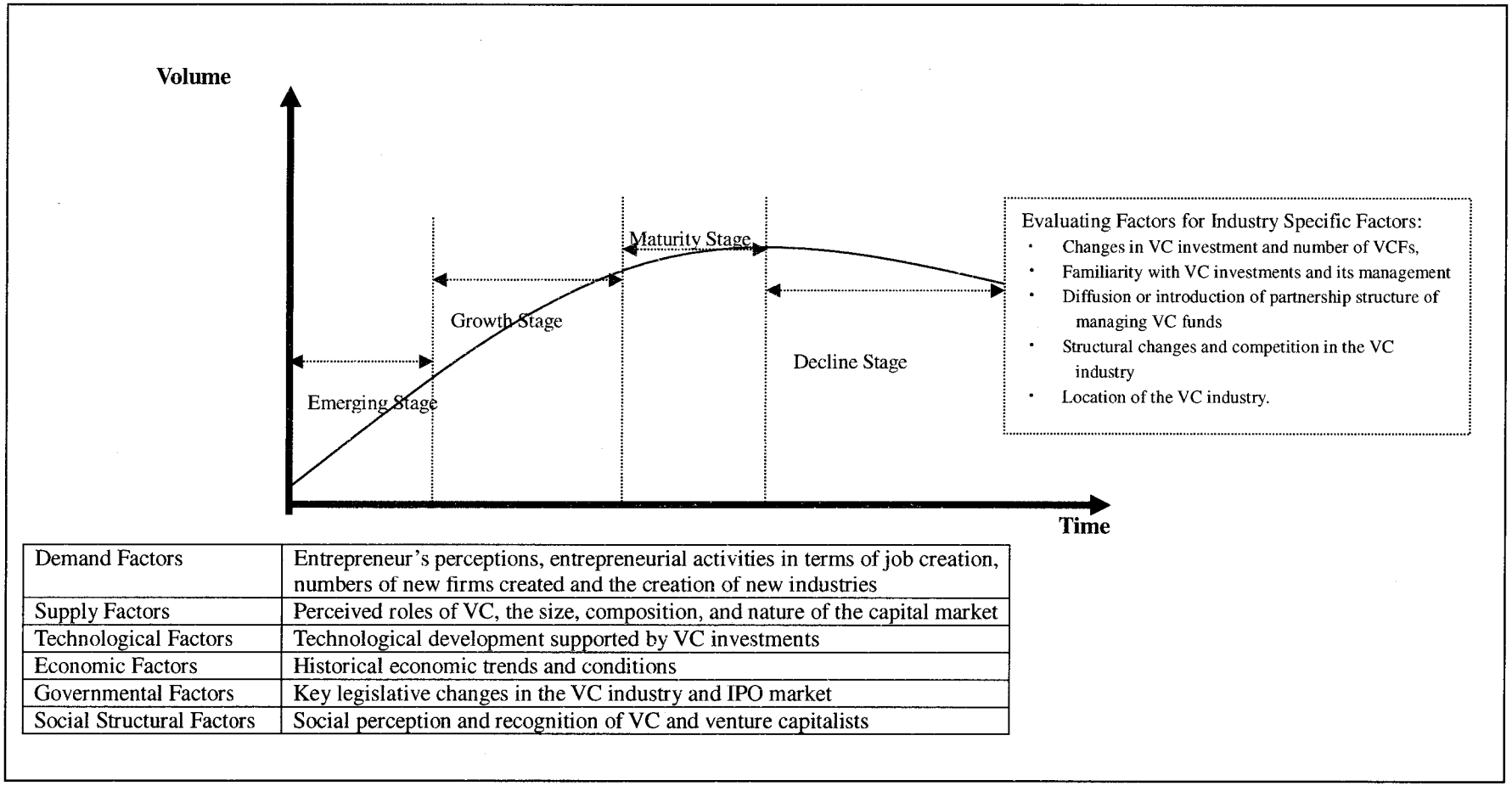
(Created by the author in conjunction Bygrave and Timmons [1992]).

Then, figure 2.2 shows these criteria in the industry evolution matrix. The structures and competitions, the path of knowledge creation and diffusion, and the location of the VC industry in the U.S will be discussed in detail in sections 4.1.1, 4.1.2 and 4.1.3 in chapter four and those of the Japanese VC industry will be discussed in sections 5.1.1, 5.1.2 and 5.1.3 in chapter five.

Demand Condition Factors

According to Shim's study (1994), comparing the U.S. and the Japanese robotic industries, industry demand conditions can be described with data concerning behavioral factors (customer's perceptions) and structural factors (the size, composition and nature of the robot customers). The study suggested that the size, composition and nature of the robot industry's customer base can be posited as major structural factors related to the conditions of robot demand and the perceived benefits and problems of the robot industry's influence on customer demand. Based on that study, this study illustrates how entrepreneurs are perceived in both the U.S. and Japan to show the behavioral aspects of demand for VC.

Figure 2.2 Framework for This Study



Demand Factors	Entrepreneur's perceptions, entrepreneurial activities in terms of job creation, numbers of new firms created and the creation of new industries
Supply Factors	Perceived roles of VC, the size, composition, and nature of the capital market
Technological Factors	Technological development supported by VC investments
Economic Factors	Historical economic trends and conditions
Governmental Factors	Key legislative changes in the VC industry and IPO market
Social Structural Factors	Social perception and recognition of VC and venture capitalists

The study then illustrates historical changes in entrepreneurial activities in terms of composition and number of firms created, and the economic roles of such firms to show the structural elements of demand for VC. Figure 2.2 shows these evaluation points in the industry evolution matrix. The demand conditions of the U.S. VC industry will be discussed in sections 4.2 in chapter four and those of the Japanese VC industry will be discussed in sections 5.2 in chapter five

Supply Condition Factors

Supply conditions function in the same manner as demand conditions. According to Shim's study (1994), a specific industry's supply conditions can be described with information regarding its behavioral factors (supplier's strategic behavior) and its structural factors (the size, composition, and nature of the robot supplier). The study suggested that the recognized behavior of suppliers influence on supply conditions and the size, composition and nature of the robot industry's customer base can also be posited as major structural factors related to the conditions of the robot supplier industry. Based on that study, this study shows the perceived roles of VC in economic development to illustrate the behavioral aspects of supply for VC and the size, composition and nature of the capital market for small businesses to show the structural elements of supply for VC in the two countries. Figure 2.2 shows these criteria in the industry evolution matrix. In particular the behavioral aspects of supply for VC and the size, composition and nature of the capital market for small businesses to show the structural elements of supply for VC will be discussed in sections 4.3.1 and 4.3.2 in chapter four and those of the Japanese VC industry will be discussed in sections 5.3.1 and 5.3.2 in chapter five.

2.2.2 General Industry Environmental Factors

Technological Factors

For the purposes of this research, the study analyzes and illustrates some of the major technological developments in the U.S. in chapter three because these facilitated investment activities of venture capitalists, hence the development of the VC industry (Bygrave and Timmons, 1992; Ono, 1998). In chapter four the study illustrates those activities in Japan, for comparison. Figure 2.2 shows these criteria in the industry evolution

matrix. In particular, the major technological developments, involving VCFs in the U.S will be discussed in section 4.4.1 in chapter four, and those of the Japanese VC industry will be discussed in section 5.4.1 in chapter five.

Economic Factors

Describing specific economic factors that influenced the development of the US VC industry itself would require a detailed study of dissertation length. Hence, this research will describe the economic conditions of the U.S. in chapter three to illustrate especially that periods of slow economic development or economic stagnation coupled with industry developmental threats from other nations contributed to create an economic environment that facilitated the development of new industries, such as personal computers, semiconductors, biotechnology, etc. in the 1980s (Ono, 1998, P31-65). Then in chapter four the study describes the economic conditions of Japan in comparison. Figure 2.2 shows these criteria in the industry evolution matrix. The slow economic development or economic stagnation in the U.S. coupled with industry developmental threats from other nations will be discussed in section 4.4.2 in chapter four and those of the Japanese VC industry will be discussed in section 5.4.2 in chapter five.

Governmental Factors

For the purposes of this research, changes in tax policy, especially capital gains tax, policies affecting economic recovery, and regulation or deregulation of investment policy will be illustrated according to Bygrave and Timmons's study (1992) and others analyzing the effects of government regulations on the VC industry. Figure 2.2 shows these criteria in the industry evolution matrix. Governmental influences on the U.S VC industry will be discussed in section 4.4.3 in chapter four and those on the Japanese VC industry will be discussed in section 5.4.3 in chapter five.

Social Structural Factors

For this study, data regarding social structural factors, especially how societies perceive VC and the activities of VC, will be collected and described to evaluate the affects of social structural factors. Figure 2.2 shows these evaluating points in the industry

evolution matrix. Social structural factors of the U.S. VC industry will be discussed in section 4.4.4 in chapter four and those of the Japanese VC industry will be discussed in section 5.4.4 in chapter five.

2.3 Summary

This chapter illustrated the research framework that will be used to analyze and evaluate both the U.S. and the Japanese VC industries. Basically, this study seeks to identify factors influencing the evolution of the VC industry by analyzing internal industry environmental factors and general industry environmental factors. The primary framework used to measure these factors is the industry evolution model, a model that classifies the degree of industry development into four progressive stages (emerging, growth, maturity and decline stages). Each evolutionary stage shows a distinctive set of traits and structures. The factors employed in this study are internal industry environmental factors (industry specific factors, supply condition factors and demand condition factors) and external industry environmental factors (technological, economical, governmental and social structural factors). Industry specific factors include conditions of firm strategy, structure, and rivalry in an industry, creation and diffusion of knowledge, the location of an industry and the availability of ncessary resources in a particular district.

Chapter Three
Overall Research Methdology and Design

The chapter describes the research design and methodology used to collect data presented in chapter six.

3.1 Research Methodology

The study investigates a total of 17 VCFs to illustrate their characteristics and to shed light on the Japanese VC industry. (The size and the amount invested in 2000 for each of these 17 firms are provided in table 3.1.) The study will present a model of dynamic change in the VC industry that can be tested as the industry evolves so as to allow researchers in Japan and in countries with emerging economies to use these findings to craft policies to accelerate their own VC industry transformation into more efficient agents of economic development and job creation.

The Scope and Selection of Sites

The scope of this study is limited to Japanese VCFs that are registered as members of the association organized by the Venture Enterprise Center (VEC)[1] and have business activities in either Tokyo or the Kansai area (including Osaka, Kyoto and Kobe). The study focuses on these two geographic areas because these two regions house the majority of business activities in Japan, as table 3.2 and 3.3 show, and the majority of Japanese VCFs in the Japanese VC industry concentrate their activities in either Tokyo or the Kansai area, as table 3.4 shows.

[1] The VEC is the official organization representing all venture capital firms in Japan. It is equivalent to the National Venture Capital Association (NVCA) in the U.S. (VEC, 1998).

Table 3.1 Type of VCF, investment and funds size of sample firms in Japan, in 2000 (in $U.S. millions)

Type of VCF	Name of Studied VCF	Investment Amount of Studied VCFs, 2000 (except * 1999)	Total Size of Managing VC Funds of Studied VCFs, 2000 (except * 1999)	Other Information
AFVCF	JAFCO	480	2,000	Total Size of VC Investment of the Industry: about $2 billion in 2000
	NIF	270	1,013	
	NEDO	39 *	150 *	
	Nikko Capital	81	445	
	Orix Capital	58	120	
	Sanwa Capital	50	198	
	Sub-Total	$978 (48.9%)	$3,931 (47.9%)	
IDVCF	Global VC	2.7	7.3	Total Size of Managing VC Funds of the Industry: about $8.2 billion in 2000
	ICT	2.0	10	
	JAIC	110	562	
	WVT	150	2,000	
	OGI Capital	2.0	2.0	
	Classic Capital	0.5	2.0	
	Angel Securities	15	30	
	Future VC	11	50	
	Maria VC	0.5	1.7	
	Sub-Total	293.7(14.7%)	2,665 (32.5%)	
GVCO	Hiroshima VCO	1.9	2.6	
	VEC	20	218	
	Sub-Total	$21.9 (1.1%)	$220.6 (2.7%)	
Total of Three Types of VCFs		$1,336.1 (66.8%)	$9,213.1 (92.2%)	

Source: the Author, (% are circulated based on $2 billion annual investments and $8.2 billion of the total VC funds for each corresponding columns.)

Table 3.2 GDP 2000 by Area

Tokyo Area	$1.5 trillion	39.5%
Kansai Area	$0.7 trillion	18.4%
Other Area	$1.6 trillion	42.1%
Total GDP Size in Japan	$3.8 Trillion	100%

Source: The Bureau of Business Census, 2001

Table 3.3 Number of Small Businesses by Area

Tokyo Area	1,215,000	23.8%
Kansai Area	788,500	15.5%
Other Area	3,099,100	50.7%
Total Number of Small Businesses	5,102,600	100%

Source: The Report of Small Businesses 2002

Table 3.4 VC Investment by Area 2000

Tokyo Area	$5.3 billion	53%
Kansai Area	$1.0 billion	10%
Other Parts of Japan	$0.7 billion	7%
Foreign Countries	$ 3.0 billion	30%
Total VC Investment	$10 billion	100%

Source: The Report of VEC 2001

In the process of selecting specific cases, this study followed the guidelines of Miles and Huberman (1994) and used a snowball or chain sampling approach (identifies cases of interest from people who know which cases are information-rich) and an intensity sampling approach (information-rich cases that manifest the phenomenon of interest). Then, the study carefully evaluated the list of VCFs provided by VEC and selected VCFs. The three AFVCFs in the pilot study - JAFCO, NIF and NEDO - were selected because they were the three leading VCFs in terms of volume of investment in the 1990s. Also the two IDVCFs in the pilot study - Global VC and ICT - were selected based on the recommendation of the representative of VEC. In addition, the GVCO in the pilot study - VEC - was selected because this organization was the only VCF operated by the government at the national level. HVCO was selected based on ease of access. The remaining three AFVCFs included in the study - Niko Capital, Orix Capital and Sanwa Capital - were selected because they showed a strong tendency to be influenced by their affiliated firms. The remaining IDVCFs included in the study - JAIC, WorldView, OGI Capital, Classic Capital, Angel Securities, Future VC, and Maria VC - were selected based on outstanding performance during the previous three years, according to data provided by VEC. The companies selected in this fashion represent information-rich cases that should reveal the structure of the Japanese VC industry and characteristics of Japanese VCFs in great detail, though the sample is by no means comprehensive or representative. However, the 17 Japanese VCFs selected for this study controlled more than 64.7% of the total annual VC investment in 2000 and managed more than 83.1% of

the total accumulated VC funds in 2000. (See table 3.1) Therefore, analysis of each VCF and an understanding of the aggregate picture of the behavior of the 17 VCFs should provide sufficient data to evaluate the Japanese VC industry.

This study excludes private individuals or business angels who may intermittently invest funds in entrepreneurial ventures as in Japan it is almost impossible to find and identify them. Moreover, the study excludes in-house venture capital departments or divisions within corporations because there is no information publicly available. Moreover, corporations are very reluctant to provide the necessary information or accept outside interviews. Including them would require a completely new research framework that is beyond the focus and scope of this study.

3.2 Research Design

The study uses a collective case study approach as an instrument to develop in-depth knowledge about the structure of the Japanese VC industry and to find specific answers for the research questions. This approach is appropriate for the following reasons. The nature of the research questions - to describe what is going on inside of the Japanese VCFs and the Japanese VC industry - is appropriate for this methodology. Because there is not much prior research on this topic, there are no established theories or frameworks related to the Japanese venture capital industry; hence this is an exploratory study designed to provide descriptive data upon which theories and frameworks can be built in future research efforts. This study requires extensive time and resources for data collection in the field and the detailed data analysis of "text" information. (See chapter 6). My research skills in the Japanese language and understanding of Japan's complex business culture provide an advantage for this research. Furthermore, the case study method involves the examination of a phenomenon in its natural setting and this is especially appropriate for research in new topic areas, with a focus on "how" or "why" questions concerning a contemporary set of events (Eisenhardt, 1989).

There are, however, some limitations to this research design. First, because of the difficulty in collecting data from all Japanese VCFs, the sample size of VCFs is relatively small and selective. Consequently, generalizing the findings to trends of the entire industry may be difficult. However, this study investigates a total of 17 Japanese

VCFs which together controlled about 64.7% of the total annual VC investment in 2000. (See table 3.1 on page 183). These are the firms that appear to have the most influence on the evolution and direction of the industry as a whole. Second, the case study approach has weaknesses in replicability of data collection procedures and validity of measurement. To help ameliorate these weaknesses, the interview questionnaire was developed based on previous studies analyzing VCFs in both the U.S. and Japan. In support of this position, a pilot study on seven Japanese VCFs was conducted to confirm the feasibility of this approach. (See section 3.4).

Although my knowledge and my research skills in the Japanese language and my understanding of Japan's complex business culture provides an advantage for this research, being a Japanese researcher entails certain biases in terms of interpretation of the responses. Although every effort will be made to ensure objectivity, these biases may shape the way I view and understand the data I collect and the way I interpret it. In particular, I have analyzed the data under the assumption that responses from the affiliated VCFs follows the companies' guidelines in responding to this kind of survey.

3.3 Data Collection

The collective case study approach requires and involves the widest array of data collection as the researcher intends to build an in-depth picture of a case (Yin, 1994; Creswell, 1998). Thus, this study includes the matrix of information sources listed in table 3.5 to show the extensive data collection efforts in this Japanese VC industry case study. The matrix contains three types of data: publicly available company data (the VEC's past survey), internal company documents and interviews with key decision-makers of each VCF (venture capitalist) for the columns, and specific VCF information (e.g., JAFCO, NIF, NEDO) in the rows. These data from multiple sources should increase the reliability and appropriateness of this study's approach. The data gathering and analysis for this study will proceed in two stages, as the following paragraphs describe and table 3.6 shows.

Table 3.5 Japanese VCF Data Collection: Type of Information by Sources

Sources / Information	Interviews	Company Documents	Archival Record from VEC's study
JAFCO	Yes	Yes	Yes
NIF	Yes	Yes	Yes
NED	Yes	Yes	N/A
Global VC	Yes	Yes	Yes
ICT	Yes	Yes	N/A
VEC	Yes	Yes	Yes
HVPC	Yes	Yes	N/A
Niko Capital	Yes	Yes	Yes
Orix Capital Co.	Yes	Yes	Yes
Sanwa Capital	Yes	Yes	Yes
JAIC	Yes	Yes	Yes
WorldView	Yes	Yes	Yes
OGI Capital	Yes	Yes	Yes
Classic VC	Yes	Yes	N/A
Angel Securities	Yes	Yes	Yes
Future VC	Yes	Yes	Yes
Maria VC	Yes	Yes	Yes

Created by the Author

Stage I:

Because of the relatively small amount of research on Japanese VCFs, the purpose of the first stage of this study was to develop in-depth understanding of changes in the Japanese VC industry and to identify the detailed characteristics of Japanese VCFs through collection of publicly available documents (the Survey Responses of the VEC's study in 2000) and internal company documents;and by conducting a series of semi-structured interviews with key decision makers of seven VCFs. In order to get useful results, the processes described in table 3.6, which had been adapted from the pilot study, were followed in each case.

Table 3.6 Research Purpose, Processes and Samples: Stages I and II

Stage	Research Purpose	Processes	Sample
I	Investigate three kinds of Japanese VCFs: AFVCFs, IDVCFs and GVCO. Examine the feasibility of any of these VCFs becoming the industry standard for managing VC funds	1.Secondary Research: Public Information Collect publicly available company documents (company annual reports and their responses to the VEC's past VC survey) to understand the background of each VCFs. 2. Secondary Research: Internal Company Document Collection Collect internal documents that help the researcher to understand each firm's culture and organization structure. 3. Primary Research: Semi-structured Interviews Conduct semi-structured interviews along with questionnaires to key decision-makers (CEOs, or the main venture capitalists) of each VCF.	3 AFVCFs 2 IDVCFs 2 GVCO
II	Further analyze and evaluate the three types of VCFs. Identify and describe conclusive trends in the Japanese VC Industry	Repeat processes utilized in Stage 1, as described above.	3 AFVCFs 7 IDVCFs

Created by the Author

Stage II:

The purpose of data gathering and analysis in stage II is to expand the findings from the study in stage I and collect sufficient additional data to develop specific answers to this study's research questions. (See p.5). Secondary research in both Stage I and II included collection of publicly available company documents (company annual reports and their responses to the VEC's past VC survey) and internalcompany documents that help to describe each firm in more detail. With this data as a baseline, primary data was gathered through semi-structured interviews and questionnaires with key decision-makers (CEOs, or the main venture capitalists) of each firm. (See Appendix A.) Semi-structured interviews were used because they both allowed me to collect data in similar categories from different people, and also to ask extended firm specific questions (Creswell, 1998; Goetz & LeCompte, 1984). In addition, although the study collects data from three sources, interviews with key decision-makers at each firm played a central role in the data collection for each case study.

3.4 The Pilot Study

The pilot study of this research, based on semi-structured interviews with ten people from seven VC organizations was conducted from May 1998 to February 1999. The purpose of this study was to measure the validity and applicability of the pilot study's questionnaire, developed through previous studies in the U.S. and Japan. Specific questions about venture capitalists' decision-making criteria were developed and modified from the study of Tyebjee and Bruno (1984), with their permission, exploring the nature of Japanese VCFs and the Japanese VC Industry, ensuring the reliability of the questionnaire for assessment of Japanese VCFs. The questionnaire consists of four sections with a total of thirty questions. Section one asks about the company background; section two asks about the interviewee background; section three asks about the decision-making criteria; and section four asks about the conditions for VC investment. (See Appendix A for a copy of the entire questionnaire.) During the interviews, I asked specific questions regarding the conditions for VC investment. I put emphasis on asking how each venture capitalist perceived the future of industry and what factors were currently limiting their activities to help with later analysis and projections of future trends in the industry.

Also, while conducting the pilot study, particular attention was paid to ensure each interviewee fully understood the meaning of each question. Questionnaires were faxed to each interviewee in advance of their respective interviews to give them an opportunity to review questions and collect necessary data to respond to questions. I then explained the meaning of each question during the interview process before receiving specific answers. Moreover, to ensure that my interpretations of each interviewee's answers were accurate, I repeated back each interviewee's answers during the process of the interviews to see whether any further clarification was necessary. To further increase the reliability of the interview processes, I used a tape-recorder during the interviews with each interviewee's permission.

3.5 Data Analysis

Data analysis is an interactive synthesis. In order to get effective results, the results of interviews, internally collected data, and publicly available collected data were interpreted, integrated, and sorted to show the distinct characteristics of each firm. The data from each firm has been classified according to the following factors to find specific answers to the research questions.

Company Profiles

Brief history; characteristics of financial resources (sources of VC funds), business activities of VCF. Non-financial Resources: available human resources (staff) and capabilities of each employee. Investment and Business Strategy: geographic location of investment, development stage of investment in new ventures; number of investments, investment amounts, investment periods; network ability of firm.

Organizational Structure

Joint stock company (similar to S Corporation in the U.S.); functional & hierarchical organizational structure, flat or horizontal organizational structure

Decision-Making Process

Main processes of decision-making are deal origination, screening (generic screen), evaluation (first-phase evaluation, second-phase evaluation), structuring; post investment activities, etc.

Decision-Making Criteria

Each firm must have its own decision-making criteria. This research will identify such criteria.

Investment Policy, Preferences and Some of Selected IPO Performance

Describes each VCF's investing policies and preferences; shows the result of some IPO performances of the firms that VCFs invested in.

After organizing the information gathered during the initial interviews for each firm, I went back out in the field to retrieve missing information and data when it was necessary.

Chapter Four
The U.S. Venture Capital Industry and Its Evolution

To better understand VC, this chapter looks at the U.S. VC industry in terms of the following criteria: industry specific factors, demand and supply conditions of the industry, and technological, economic, governmental and social structural factors shaping the evolution of the industry. The chapter consists of five sections. Section one illustrates industry specific factor analysis of the U.S. VC industry. Section two illustrates the demand conditions of the industry and section three illustrates the supply conditions of the industry. Section four describes technological, economic, governmental and social structural factors in the evolution of the VC industry. Finally, section five discusses and summarizes the milestones for the evolution of the U.S. VC industry.

4.1 Industry Specific Factors

This section examines three industry specific factors -- (1) the path of knowledge creation and diffusion, (2) industry structure and competition, and (3) the ographical concentration of the U.S. VC industry -- that will be used to characterize and evaluate the evolutionary stages of the U.S. VC industry over time.

4.1.1 The Path of Knowledge Creation and Diffusion in the U.S. VC Industry

The following paragraphs describe the path of knowledge creation and diffusion in the U.S VC industry. In previous studies, the origin of VC was described as a risk-taking capital investment made by wealthy individuals and families in new companies before the 20th century (Shame, 1974; Bartlett, 1988; Bygrave and Timmons, 1992). For example, at the beginning of 20th century Alexander Malcomson invested his personal fortune to help Henry Ford establish the Ford Motor Company, while the Rockefellers invested a portion of the family's wealth in Eddie Rickenbacker's establishment of Eastern Airlines (Bartlett, 1988; Shames, 1974). In studying these investments, the researchers did not find evidence that these investments were called "venture capital", yet their studies suggest that at the beginning of 20th century there was no clear distinction between VC and the investments of wealthy individuals and families

to help the financial needs of new companies. In short, there was no concept of "venture capital" as a form of enterprise.

While these studies showed that the origin of VC might have been investments of wealthy individuals and the families, Wilson (1984, pp.16-23) revealed that one of the early uses of the term "venture capital" occurred in 1946 when millionaire financier John Whitney established J.H. Whitney & Co., a new type of investment company that he described using the terms, "venture capital" and "venture capital investment." According to Wilson, Whitney and his associates set up a partnership, used more than $10 million of their personal assets to help start-up companies, and named their investments in new ventures as "venture capital." However, the modern era of VC with funds collected from several different investors being organized and managed by professional managers, started with the foundation of American Research & Development (AR&D) in 1946 (Gompers and Lerner, 2000, p.6; Bygrave and Timmons, 1992, pp.16-18; Bartlett, 1988: Shames, 1974).

George Doriot, a professor at Harvard University, Ralph Flanders, the president of the Federal Reserve Bank of Boston and other professors from Harvard and MIT who were concerned about the lack of new company formation and the difficulties faced by new ventures in raising capital, organized AR&D in Boston, Massachusetts (Bygrave and Timmons, 1992, pp.16-18). This company relied solely on an equity investment approach. It invested for a long term period and was prepared to live with losses and negative cash flows for years, focusing on the investment return over five to ten years (Bygrave and Timmons). AR&D helped new ventures by developing management teams, tracking and providing technical and management assistance, and attracting additional capital (Bygrave and Timmons). AR&D's approach to new ventures suggested that a VCF, controlling and monitoring VC funds, needed to understand fundamental business operations and financial requirements facing startup and early-stage companies. AR&D was structured as a publicly traded closed-end organization.

During the 1950s and 60s there were no official records about VC firms or the industry (Gompers and Lerner, 2000). In fact it was too small to be recognized as an industry. The only available record is the study of Smith, J and Smith, R. (2000), which reported in 1969 that only $200 million of VC investments were recognized. There were

only handfuls of VCFs by 1970. Some VCFs were structured with limited partnerships and some were structured as publicly traded closed-end organization, like AR&D (Gompers and Lerner, 2000). They competed with Small Business Investment Companies (SBICs). In this early development of organized VC firms, wealthy individuals and families contributed a large portion of VC funds and influenced their development. For example, as table 4.1 shows, wealthy individuals and families accounted for 32% of the VC funds in 1978, while pension funds accounted for 15%, insurance companies 16%, big corporations 10% and others 9% (Gompers and Lerner, 2000). According to Gompers and Lerner, before 1980, many VCFs had managed to strike a balance between making an attractive return on investment and helping new ventures' growth. However, after 1980 as more capital from pension funds, banks and insurances started to provide the majority of VC funds, it became relatively difficult to balance investment and growth. While the VC industry itself had welcomed new entrants, such as SBICs in 1950s and 1960s, until the mid-1970s the VC industry did not undergo any major developments (Bygrave and Timmons, 1992).

Table 4.1 Sources of Venture Capital Funds (Independent VCFs), 1978 & 1996-2001.

	1978	1996	1997	1998	1999	2000	2001
Total (Billions of $)	0.45	11.8	17.1	29.4	58.8	104.9	40.3
Share Distributed by: (%)							
Pension Funds	15.0	58.3	39.5	60.1	43.5	40.1	41.6
Big Corp.	15.0	19.9	25.2	11.9	14.2	3.7	0.1
Endowments	9.0	11.9	16.6	6.3	17.2	21.1	21.8
Individuals	32.0	6.9	12.5	11.3	9.6	11.8	0.1
Banks/Insurance Companies	20.0	3.1	6.3	10.4	15.5	23.3	36.4
Total %	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: NVCA yearbook 2002, except 1978: Gompers and Lerner, 2000.

However, on a micro basis, venture capitalist Arthur Rock[1] adapted and advanced the partnership form for VCFs. Heactively invested in new ventures, such as Intel and Apple, and involved himself in managing them (Gompers and Lerner, 2000; Bygrave and Timmons, 1992). But the performance records of these VCFs were not reported in any studies in the 1970s. It was only after 1980 that the successes of a handful of venture capitalists were reported (Gompers and Lerner, 2000; Bygrave and Timmons, 1992). Also, according to Bygrave and Timmons (1992) and Gompers and Lerner (2000), significant structural changes in the management style of VC funds were carried out during the 1970s. The partnership style of VC funds management became the standard organizational form for managing funds. For example, there was no public record available of the number of independent VCFs employing a partnership style before 1980 (Gompers and Lerner, 2000). But in 1980 their style of organization accounted for 40% of a total of 87 VC firms and they monitored at least $533 million in VC investments. By comparison, the whole industry monitored a total of $500 million in 1978 (Gompers and Lerner, 2000). Furthermore, according to the study of Gompers and Lerner (2000), since 1980 the number of independent VCFs using a partnership style as a percentage of the total number of VCFs had been increasing steadily.

Through the 1990s about 80% of VCFs were recognized as independent VCFs with a partnership style. Obviously, the recognition and knowledge diffusion regarding the partnership style of VC funds management in 1970s was one of the significant events in the development of the U.S VC industry. In addition, in the late 1970s, after several key pieces of legislation were introduced and revised by the U.S. government, such as the reduction of the capital gains tax rate from 49% in 1969 to 28% in 1978 and the removal of the investment restriction on pension funds in 1979, VC investments began to gradually increase again (Gompers and Lerner, 2000; Bygrave and Timmons, 1992).

In the 1980s new legislation accelerated the formation of new VCFs and the new commitment of VC funds and the results can be seen in table 4.2 and figure 4.1. In 1980, for example, the Small Business Investment Act redefined VCFs as business development

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[1] Note: Arthur Rock became a legendary venture capitalist after his investment success in Apple Computer, Intel, Systems, etc (Bygrave and Timmons, 1992).

companies and eliminated their registration requirements as investment companies. The Economic Recovery Tax Act of 1981 reduced the capital gains tax rate from 28% in 1978 to 20% in 1981 (Bygrave and Timmons, 1992; JAFCO, 1998). Clearly, lawmakers saw the VC market as one of the keys to stimulating a sluggish economy. The depressed performance of the VC industry in 1970s was reversed and more entrepreneurial activities accompanied this VC growth trend. (The impact of new legislation will be discussed in section 4.4.3.) From 1990 to 2001, as table 4.2 and figure 4.1 show, fundraising by VCFs continued to prosper. Funds raised by VCFs in 2000 increased by another 20 percent to $92.9 billion, surpassing the record high of $60.0 billion achieved in 1999. The accumulated VC investments amounted to $ 209.8 billion in 2000, and a record $103.5 billion of VC funds was invested in 2000 alone (NVCA, 2002). Commitments from pension funds and endowments continued to increase from 24.0 percent of total contributions in 1978 to 61.2 percent in 2000 (Table 4.1). The share contributed by financial institutions such as banks and insurance companies also increased, from 16.0 percent to 23.3 percent. With regard to the number of deals and capital for expansion financing, LBOs, acquisitions, and other investments accounted for 38% of the deals and 57% of the capital invested (NVCA, 2001).

Though the investment activities of some US VCFs have been declining since the 2001 economic recession and the IT investment boom crash in the United States, as table 4.2 shows, funds raised by VCFs in 2001 decreased by about 57 percent from $93 billion in 2000 to $40.3 billion. However, the entire industry together still monitors over $250 billion of VC funds and the number of independent VCFs increased by 10% to 761 in 2001, from 693 in 2000, see figure 4.1 (NVCA, 2002). This information shows that despite economic uncertainty in 2001 the U.S. VC industry was still able to attract significant capital – more than in any previous year with the exception of 1999 and 2000.

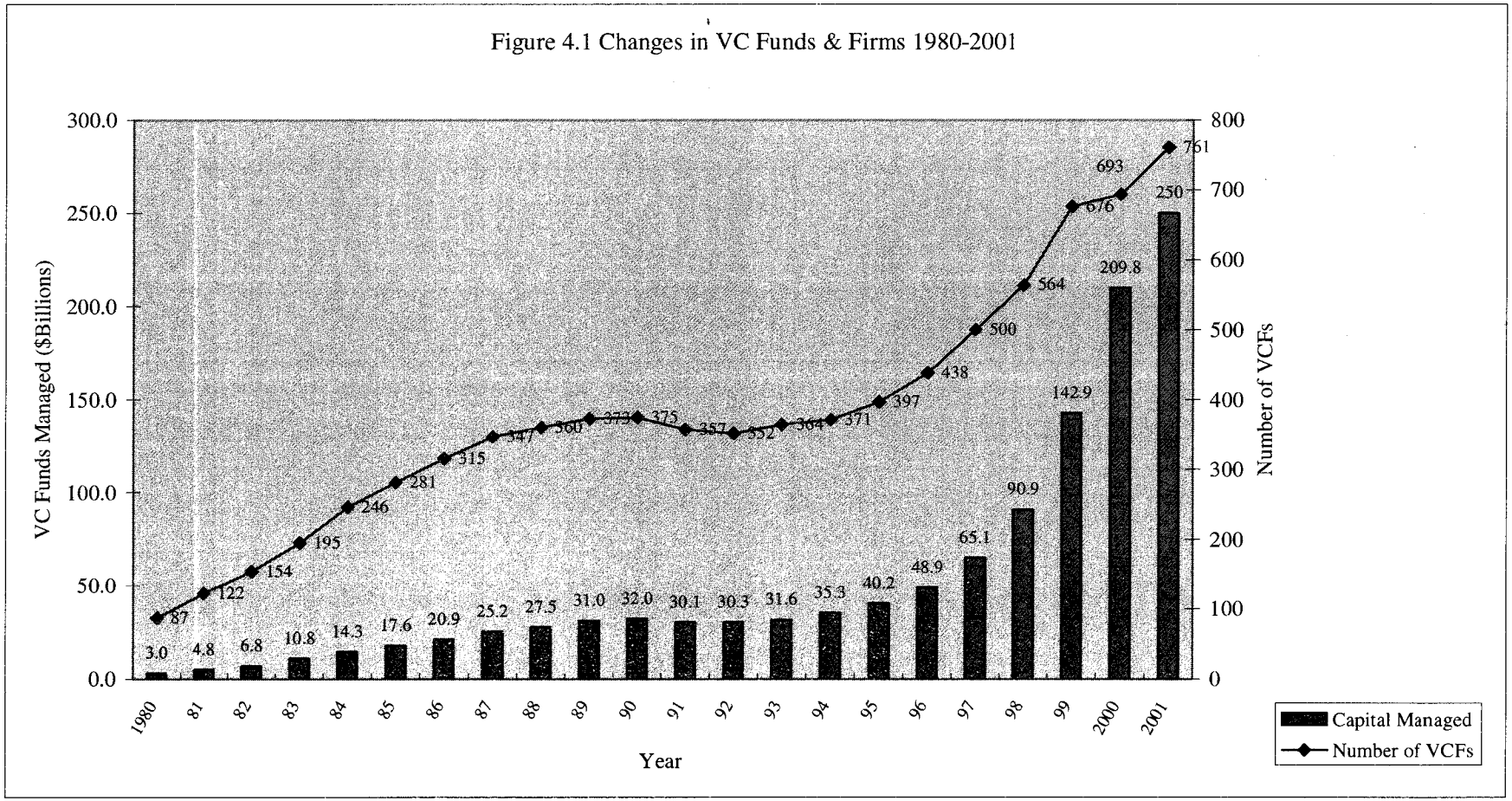
Although the industry itself seemed to be in the middle of the growth stage in the 2000s, the structure of the VC industry is showing new dimensions. For example, the significant role of venture capitalists and VCFs based on the idea that "classic" VC added value by forming, building, and harvesting, has been replaced today by financial investors who emphasize LBOs, generation of transaction fees, and obsession with short-

Table 4.2 New Commitments, Disbursements of the Venture Capital Industry, 1979-2001

Year	Capital Commitments to Venture Funds ($B)	Disbursements to Funded Companies ($B)	Total Investment Number of Funded Companies
1979	0.6	0.5	N/A
1980	2.1	0.6	472
1981	1.6	1.3	773
1982	2.0	1.8	1,088
1983	4.2	3.1	1,309
1984	3.2	3.3	1,396
1985	3.1	3.4	1,360
1986	3.7	4.1	1,467
1987	4.8	4.5	1,686
1988	4.5	4.9	1,553
1989	5.6	4.7	1,540
1990	3.1	3.3	1,317
1991	1.7	2.5	1,088
1992	5.0	5.1	1,294
1993	4.5	4.9	1,150
1994	7.6	5.3	1,191
1995	9.9	5.5	1,325
1996	11.8	11.2	2,002
1997	17.1	17.2	2,697
1998	29.4	22.0	3,149
1999	60.0	59.4	3,969
2000	93.0	103.5	5,412
2001	40.3	40.6	3,798

Source: NVCA yearbook 2002.

Figure 4.1 Changes in VC Funds & Firms 1980-2001



Source: NVCA yearbook 2002

term gains (Gompers and Lerner, 2000). With this new style of VC investment, startup financing has declined from 43% of investment deals in 1983 to only 23% in 2001 (NVCA, 2002). Further, the number of start-up financing deals decreased to 2% of a total VC investment, i.e. $825.6 million out of $40.6 billion in 2001 (NVCA, 2002). Also the source of VC funds has changed dramatically. As table 4.1 shows, wealthy individuals and families now represent only 0.1% of VC funds, while pension funds account for 41.6%, insurance companies (financial institutions) 36.4%, big corporations 0.1% only, and endowments and foundations 21.8% (NVCA, 2002). Thus the influence of wealthy individuals and families has significantly declined while the role and influence of private and public pension funds have increased.

In the historical development of the U.S. VC industry, the processes of knowledge creation and diffusion have been dynamic. The next section will analyze the U.S. VC industry from the perspective of industry structure and competition.

4.1.2 The U.S. VC Industry -- Structure and Competition

According to Pratt (2001), the VC industry in the U.S. has been made up of four major segments: firms of independent VCFs, divisions of large companies, small business investment companies (SBICs), and subsidiaries of financial institutions. Their historical numbers are summarized in table 4.3. (This study formally excludes the public equity market and the informal venture capital market (business angels) but discusses them briefly

Table 4.3 Number of U.S. VCFs classified by affiliation and year

Affiliation		1970	1980	1991	2000s
Independent VCFs	a	N/A	87	358	761
SBICs	b	585	267	171	261
Bank and securities corps.	c	27	40	67	83
Large corporations	d	N/A	N/A	14	250*
Total					1,119

Sources: a. NVCA Yearbook 2002, b. SBIC program statistical package, 2000.
c. Pratt, 1996 & 2001, d. VEIS (1998), *an article of Stein, T. (2002).

in the context of supply conditions of VC funds. See section 4.3.2)

Independent Venture Capital Firms (Independent CFs):

The most common type of VCF is an independent venture capital firm (independent VCF) that has no affiliation with any other financial institution (Sahlman, 1990; Bygrave and Timmons, 1992). Independent VCFs are generally privately held partnerships managed by professional managers (Sahlman, 1990; Bygrave and Timmons 1992; NVCA, 2001). (Partnership and professional managers will be discussed in section 4.1.4.) Independent VCFs raise money from public and corporate pension funds, banks and finance companies, endowments and foundations, wealthy individuals and families, insurance companies, strategic investors and other investors to invest in new ventures.

Generally, independent VCFs have no affiliations with any other financial institution in order to avoid their influence (Bygrave and Timmons, 1992 and NVCA, 2002). There were only 87 such independent VCFs in 1980 (NVCA, 2002, as figure 4.2 shows), but they continued to increase gradually and by 2000 there were 761 independent VCFs in the U.S. (NVCA, 2002). Although recent US government tax code changes allowed Limited Liability Partnerships (LLPs)[2] and Limited Liability Companies[3] (LLCs) as alternative forms of VCF, the limited partnership style of independent VCFs is still the predominant organizational approach in the VC Industry (NVCA, 2002). Most recently, Gompers and Learner (2000, pp.134-137) and an article "Regional Forum of a Southern Technology Council" (2000) indicated that there were too many independent VCFs in the states of California and Massachusetts and that these circumstances created severe competition among VCFs, often resulting in improper investment decisions. According to these studies and others, the formation of new VCFs and 60-70% of the U.S. VC fund investments occurred in California and Massachusetts. In the late 1990s funds under management increased substantially, with more capital per partner. VCs frequently engaged in "herding"-- making investments that were too similar to one another. To

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[2] Limited Liability Companies (LLCs): The LLC business form has the characteristics of both a corporation and a partnership. Limited liability is available for the members, similar to that provided to corporate shareholders. All members, some members, or nonmembers of the LLC may manage the business. The number and the type of members is not restricted (for example, sole proprietors, individuals, trusts, corporations, partnerships, etc., may all be members of an LLC)
[http://www.dor.state.or.us/InfoC/101-613.html]

[3] Limited Liability Partnerships (LLPs): Professionals may organize and practice in LLPs. Professionals include accountants, architects, attorneys, chiropractors, dentists, landscape architects, naturopaths, licensed nurse practitioners, psychologists, physicians, podiatrists, radiologic technologists, and licensed real estate appraisers, etc. The personal liability of professionals in LLPs remains the same as professionals practicing in professional corporations or limited liability companies.
[http://www.dor.state.or.us/InfoC/101-613.html]

counter this trend, VCFs tried to make investments in less popular technological areas and their returns suffered as a result.

Divisions of Large Companies:

In the late 1960s and early 1970s, a number of large companies established investment vehicles to find opportunities that were congruent with the parent company's product lines or developing technology after they were spurred by the success of a few independent VCFs (NVCA, 1998). For example, GEVENCO, now called GE Equity, was established by General Electric to acquire innovative technologies (Bartlett, 1988). Xerox established Xerox Technology Ventures in 1988 (Gompers and Lerner, 2000). Most recently Intel Capital, Intel's strategic investment program, was established in the early 1990s as one of the largest worldwide corporate venture programs investing in the technology segment, touting itself as "being the pre-eminent building block supplier to the worldwide Internet economy (Intel Annual Report, 2001)." These corporate VC programs may be loosely organized programs affiliated with existing business development programs or may be self-contained entities with a strategic policy and mission to make investments for parent companies (NVCA, 2001; Bygrave and Timmons, 1992; and Shames, 1974). Thus, entrepreneurs in these new ventures can focus their attention on developing innovative new products and rely on the parent company's financial, legal and marketing ability (Gompers and Lerner, 2000). These corporate VC funds are also staffed by individuals with backgrounds resembling those of independent VCFs. However, they employed much lower incentive-based compensation structures than those of the latter.

The historical development of this type of investment vehicle resembles the pattern of recent economic trends. Soon after the capital market for new public offerings started to decline in 1973, many corporate VC programs were also abandoned. Then, during the late 1970s and early 1980s corporate VC programs started to increase

dramatically. In 1986, they managed approximately $2 billion of VC investments (Gompers and Lerner, 2000). While the U.S. economy recorded higher performances during the 1990s, corporate VC programs also increased their VC presence by overseeing about 20% of all VC commitments in the 1990s on average (Gompers and Lerner, 2000).

In 2002, about 250 organizations of this type were recognized by researchers (Stein, 2002). Despite its historical record, this style of VC organization did not become the standard organization for the U.S. VC industry. According to the study of Gompers and Lerner (2000), there are three structural failures in the management style of corporate VC programs. First, they could not clearly manage their organizational mission. They always struggled to balance the importance of capturing strategically important technological information and of obtaining attractive financial returns. Second, the parent firm's commitment to the programs was unstable and often changed. In many cases, new management teams abandoned programs because they perceived the investments as expendable "pet projects" of old management teams. Third, corporate VC programs did not provide adequate compensation for their employees. Even when programs succeeded, payments to the VC managers were generally limited because they were still compensated under corporate HR policies (Gompers and Lerner, 2000).

Small Business Investment Companies:

In 1958, the Small Business Administration (SBA) established small business investment companies (SBICs) - public version of VCFs, to supplement activities of private VCFs (Bygrave and Timmons, 1992; Pratt, 1996). SBICs are privately held and managed companies, which receive licenses from the Small Business Administration (SBA). Based on government regulations and their responsibility for paying back money to the SBA, SBICs borrow money from the SBA and make debt or equity investments in new ventures. While a lot of the operations of SBICs were regulated by SBA's rules, the management team of each SBIC was given the authority to make final investment decisions. In 1962, there were 585 SBICs in the market and they showed a major presence as investment vehicles for small businesses (Bygrave and Timmons, 1992). But by 1993 there were only 171 SBICs (Pratt, 1996). SBICs' influence in the market declined because their investment activities were constrained by the SBA, while private

independent VCFs increased their influence. Although the influence of SBICs had waned in the 1980s, government rejuvenation programs in the 1990s started turning the situation around.

In 2000 SBICs committed capital investment of $17.1 billion or 1.6% of the total capital market (NVCA, 2001 and see section 4.3.2). During the historical development of its activities, SBICs also have invested in a number of new ventures that achieved high growth, such as Federal Express, Cray Research, and Teledyne (Smith, R. and Smith, J. 2000). However, because they often adopt an interest-bearing financing approach, SBICs are suitable financing methods for new ventures with more limited growth potential and the ability to achieve profitable operation quickly, but not for technology based new ventures that typically sustain losses for several years (Smith, R. and Smith, J. 2000).

***Subsidiaries of Financial Institutions*:**

According to Pratt (1996 and 2000), financial institutions, such as banks and insurance companies, started establishing VC subsidiaries in the late 1960s. Financial institutions viewed VC investment as an extension of their lending businesses. Such organizations only lent money to new ventures; they did not provide management support services as the other three types of firms in the professional VC market did. In 1997, 83 such companies were active in the VC market (VEIS, 1998). However, they also did not take a major role in the development of the U.S. VC industry for reasons similar to those of divisions of large corporations.

In summary during the 1950s and 1960s in particular the power of SBICs dominated the U.S. VC industry. Then, since the beginning of the 1980 when the influence of SBICs waned significantly, independent venture capital firms (independent VCFs) that had no affiliations with any other financial institution (generally privately held partnerships headed by professional managers) started to dominate the industry. The VC organizations of divisions of large companies and subsidiaries of financial institutions did not develop as dominant approaches to management of VC.

4.1.3 Locations of the U.S. VC Industry

An additional element of importance regarding U.S. VCFs is the geographic concentration of investments and activities. According to Gompers and Lerner (2000); Porter (2000); Bygrave and Timmons (1992); and Hoffman (1972), VCFs have been concentrated in a limited number of areas. For example, Bygrave and Timmons (1992), analyzed the distribution of VCFs and investments based on data from 1988, illustrating that two-thirds of the total pool of $29 billion of VC funds was managed by VCFs in three states: California (26%), New York (25%), and Massachusetts (15%). More recently, a study by Gompers and Lerner (2000) also showed that the top five states - California, Massachusetts, Texas, New York, and Connecticut - attracted about 60% of a total VC fund investment in the 1990s.

The study of Porter (2000) as well explained that the geographic concentration of VCFs in the industry cluster areas of Boston, Massachusetts and Silicon Valley, California had been formed and encouraged by the influence of interconnected relationships between venture capitalists and (potential) entrepreneurs who were eager to exchange vital information about technological development and VC investment opportunities. In fact, according to the NVCA annual report 2002, even at the time of the current economic downturn, the top five states -- California, Massachusetts, Connecticut, New York, and Texas -- attracted about $33.4 billion of VC funds, about 82.8% of the $40.27 billion VC industry. (See table 4.4.) Thus, it is clear that the VC industry in the United States flourishes in limited geographic areas and concentrates in areas where there are more resources available and more positive social attitudes to new firm formation and the risk investment activities.

Table 4.4 Top 5 States by VC Committed in 2001

State	$ Millions	Portion (%)
California	13,546.0	33.6
Massachusetts	9,522.0	23.6
Connecticut	4,654.8	11.5
New York	3,270.1	8.1
Texas	2,365.1	5.9
Sub-Total	33,358.0	82.8
Remaining States	6,907.4	17.2
Total	40,265.4	100

(Source: NVCA report 2002 and modified by the author)

4.1.4 Additional Discussion of Creation and Diffusion of Knowledge in the U.S. VC Industry

Since 1945 knowledge about VC and approaches to managing VC funds have spread throughout the U.S. There have also been numerous studies of VCFs in the U.S., especially after 1980. Such studies are focus primarily on three topics - services and activities of VCFs, management structure of VCFs, and decision-making. The following sections explore each topic more fully.

Services and Activities of VCF

Bygrave and Timmons (1992) described the classical roles of venture capital at the micro level by analyzing the activities of AR&D. Based on their study, VCFs add value to new ventures in several ways, including identifying and evaluating business opportunities; developing management teams, implementing entry or growth strategies, negotiating and closing investments, tracking and coaching the companies, providing technical and management assistance; and attracting additional capital, directors,

management, suppliers and other key stakeholders and resources (Bygrave and Timmons, 1992, p.13). This study became the standard for describing the activities and services of VCFs. Further, Bharat and Omesh (1995) examined performance differences of post-IPO firms between VC-backed firms and non-VC backed firms and suggested VCFs can create additional value for firms that completed the IPO with venture capitalists as part of the management team. The roles of VCFs have expanded since the mid 1980s (Gompers and Lerner, 2000). Therefore, additional studies analyzing the modalities of utilization of funds of VCFs by Gompers and Lerner (2000) and Bygrave and Timmons (1992) provide useful guidelines for describing the current roles of VC. For instance, both studies showed that some VCFs create value by applying modern financial management techniques in LBO deals or merger and acquisition deals, rather than managing the development of new ventures.

Based on the above, this study suggests the following roles of VC at the micro level: 1) VCFs provides assistance for new ventures in managing business operations, such as technological developments, market and strategy analysis, management of the organization and personnel; 2) VCFs take a leading role for new ventures in raising additional capital and acquiring other necessary resources, including talented personnel; and 3) VCFs creates value (capital gains) by applying financial management techniques to companies in transitional stages, though not at the start-up stage.

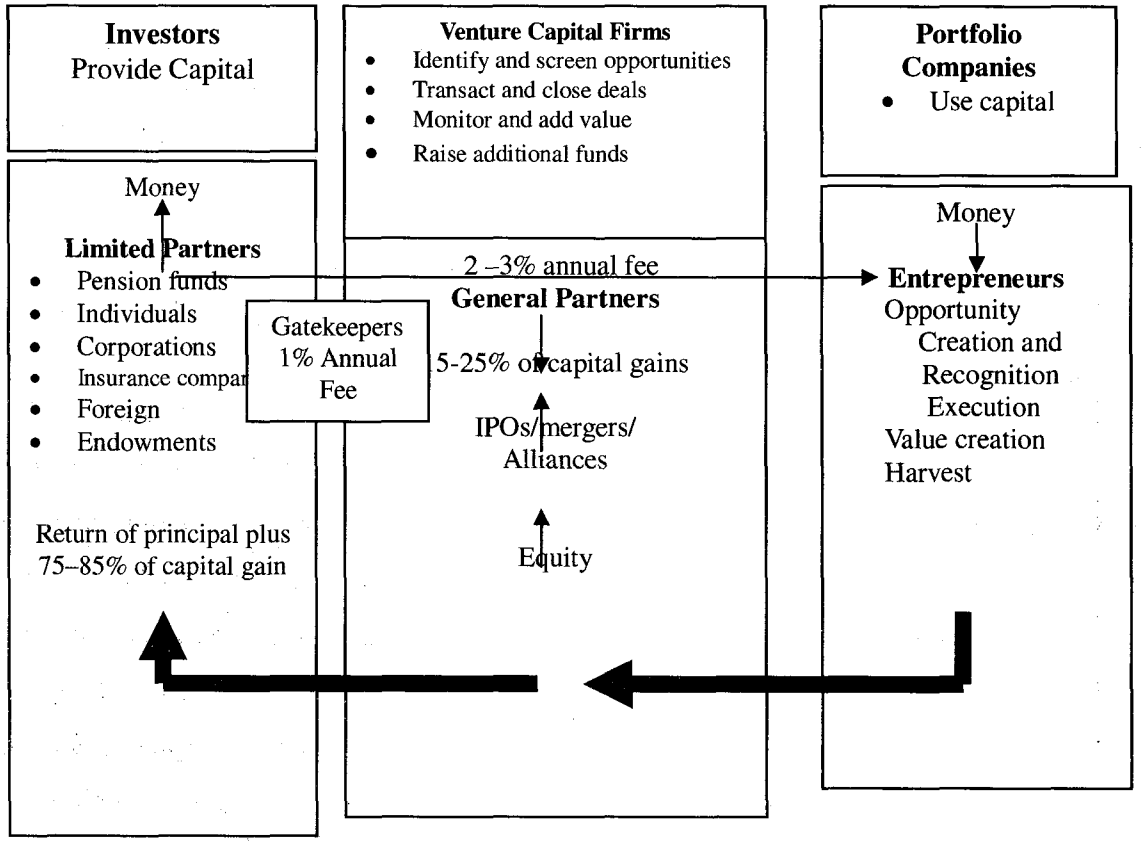
Management Structure and Description of VCFs

U.S. VCFs use partnerships as their most popular management structure for managing collected VC funds, while Japanese VCFs use a joint-stock corporation to manage their funds (Hamada, 1998). Under the partnership organizational structure, VCFs make contracts with both outside investors supplying VC funds and entrepreneurial ventures. Such partnerships became the most popular management structure for VC funds in the U.S. in the 1980s (Gompers and Lerner, 2000). According to Gompers and Lerner (2000); Bygrave and Timmons (1992) and others, partnerships include two types of partners: general and limited. General partners act as organizers of the funds, accepting full personal responsibility and legal liability for managing the capital. They typically contribute 1% of the capital and receive 15% to 25% of the return on investments

(Bygrave and Timmons, 1992). General partners play the role of professional fund managers. On the other hand, limited partners provide 99% of capital and receive 75% to 85% of the return (Bygrave and Timmons, 1992). Limited-partners gain certain tax advantages because their incomes are not subject to corporate tax, but rather to individual personal income tax (Sahlman, 1990). Limited partners -- whether institutional investors, pension funds, or wealthy families -- are not directly involved in the management and investment decisions. These relationships and the flow of capital are illustrated below in figure 4.2.

In addition, according to Smith, J. and Smith, R. (2000), each VCF commits a substantial amount of time to marketing its funds to prospective investors and to managing relationships with existing investors. VCFs have three to four professional managers who are usually former corporate managers of big companies, CEOs, investment consultants, engineers, scientists, or successful entrepreneurs who have launched ventures of their own. After each partnership reaches its investment goal or the end of its contracted agreement, all cash and securities are distributed and the partnership is terminated (Sahlman, 1990). The average life of a VC fund partnership is about 10 years (Bygrave and Timmons 1992; Sahlman, 1990). VCFs frequently invest heavily in the first half of a fund life and manage the remainder conservatively until the new ventures' liquidation through an IPO, merger, acquisition or bankruptcy.

Figure 4.2 Flows of VC in the U.S.



Adapted from Bygrave and Timmons (1992), P11.

Decision-Making Issues

This topic seems to attract VC researchers' attention most of all. Since research on VC attracted the attention of academics in the 1980s, there are at least eight major studies that have attempted to identify and describe decision-making criteria used by VCFs (Zacharakis and Meyer, 1998). These studies, though the criteria identified in study vary to some extent, suggest the following as the decision-making criteria of VCF.

VCF investment requirements

- Must fit within lending guidelines of venture firm re. stage, size of investment and industry focus,
- Proposed business must be within geographic area of interest,
- Proposals recommended by someone known to venture capitalists preferred,
- Proposed industry must be the kind of industry invested in by venture firm,

Nature of the proposed business,

- Projected growth should be relatively large within five years of investment,
- Economic environment of proposed industry must be attractive,
- Industry must be capable of long-term growth and profitability, etc.
- Economic environment should be favorable to a new entrant,

Strategy of the proposed business

- Selection of distribution channel(s) must be feasible
- Product must demonstrate defendable competitive position

Financial information on the proposed business

- Financial projections should be realistic

Characteristics of the proposal

- Must have full information
- Should be a reasonable length, easy to scan, have an executive summary

Characteristics of the entrepreneur/team

- Relevant experience or reject
- Management must be willing to work with venture partners

- Entrepreneur who has successfully started previous business given special consideration

(Adapted from Kuratko and Hodgetts [1997, as based on Hall and Hofer (1993) "Venture Capitalists' Decision Criteria in New Venture Evaluation," Journal of Business Venturing (January, Vol. 37)]

Although there are some recent studies suggesting that there is some doubt whether venture capitalists really understand their decision-making criteria (Zacharakis and Meyer, 1998), the above tells us that the decision-making criteria of venture capitalists are well established for evaluation of potential investments in new ventures.

4.1.5 Discussion and Summary

The information in these sections has described three industry specific factors: the path of knowledge creation and diffusion, structures and competitions, and the location of the U.S. VC industry. Based on this information, the following section will discuss and evaluate the evolutionary stages of the U.S. VC industry.

1945 -- 1970s: VC demand growth, knowledge creation and diffusion and the geographic concentration within the VC industry during the period from 1945 to the late 1970s are summarized in table 4.5. During this period, there were only handfuls of VCFs. It was too small to be recognized as an industry. In 1969 only $200 million of VC investments were recognized and by 1979 VC investments still totaled only $450 million. The influence of VC within the US economy was limited during the 1960s and 1970s. This research found that during this period no dominant management style had been adopted by VC funds. The AR&D organizational form (structured as a publicly traded closed-end organization), the limited partnership form, and the SBIC form competed for attention.

Table 4.5 Evaluation of the U.S VC Industry (1945~1970s) [Adapted from Table 2.1]

Changes in VC investment and number of VCFs	Only handful of VCFs. Before 1980, less than 100 VCFs; VC investment accounted only $ 450 million in 1979.
Familiarity with VC investments and its management	No major academic study explored VC investment and its management.
Diffusion or introduction of standard style of managing VC funds	There was no standard management form of VC funds. A publicly traded closed-end organization, limited partnerships and SBICs were competing organizational forms.
Changes in source of VC funds	Contribution of wealthy individuals and family were the largest.
Structural change and competition VC industry	SBIC were the leading VC organizations.
Location of the VC industry	Dominated byBoston, MA. and Palo Alto, CA.

Created by the Author

Wealthy individuals and families contributed a large portion of VC funds, as table 4.1 shows. During this period VCFs were easily controlled by VC managers and their interests had priority. In addition during this period only a few successful venture capitalists (such as Arthur Rock and those at AR&D) had opportunities to attain success. This suggests that in general VCFs and venture capitalists had not yet been recognized as keys to economic success and that VC organizational forms and processes were still evolving. Also VCFs were only recognized in the limited geographical regions, in particular Boston, MA. and Palo Alto, CA. This suggests that the VC industry was not recognized outside its small community and those activities of VCFs or venture capitalists were not widely valued throughout society.

Reflecting the conditions described in the above, this study suggests that during the period from 1945 to the late 1970s the US VC industry was in the emerging stage of its evolution.

1980s to 2001: The demand growth and the knowledge creation and diffusion of the VC industry during the period from 1980s to 2001 are summarized in table 4.6. As the above information illustrates, the number of VCFs has been increasing at an annual rate of 20-25% and also the volume of VC funds has been increasing at an annual rate of

Table 4. 6 Evaluation of the U.S VC Industry (1980s --2001) [Adapted from Table 2.1]

Changes in VC invest- ment and number of VCFs	Number of VCFs increased from 87 in 1980 to 246 in 1984; by 2001 there were 761 VCFs
Familiarity with VC investments and its management	Knowledge spread throughout the 1980s. Competition among VCFs became more severe.
Diffusion or introduction of standard style of managing VC funds	Limited partnerships became an industry standard for management of VCFs.
Changes in source of VC funds	Pension funds, banks and insurance companies provided about 78% of VC funds. Contribution of wealthy individuals and family declined from 32% in 1978 to 0.1% in 2001.
Structural change and competition VC industry	80% of VCFs were independent VC firms that adopted the limited partnership form of management.
Location of the VC industry	Geographic spreading occurred, but the industry continues to be concentrated in a limited number of regions: Boston, MA.; Palo Alto, CA.; Houston & Austin, Texas; New York City; Connecticut.

Created by the Author

approximately 30% a year since the mid 1980s. (See figure 4.1 and table 4.2). This data suggests that VCFs by the mid-1980s had recognized the key success factors for managing VC investments and the knowledge to achieve success diffused throughout the industry during the early 1980s. This is why the number of VCFs and the volume of VC funds started increasing rapidly after 1980. The majority of VCFs had adopted a partnership structure for managing VC funds in 1980s. Also academic researchers started to conduct more research about activities of VCFs in the 1980s. (See section 4.1.4.) This also suggests that uncertainty about VCFs had diminished throughout the 1980s.

Recently, many VCFs have been experiencing difficulty differentiating their services and approaches from others and there has been severe competition among VCFs to find attractive new ventures in which to invest. The severe economic downturn in 2000 and 2001 affected the magnitude of aggregate annual VC investment and activities of VCFs. The annual aggregate VC investment declined from $60 billion in 1999 and $93 billion in 2000 to $40.3 billion in 2001 and a total number of funded new ventures had declined from 5,412 companies in 2000 to 3,798 in 2001, as table 4.2 showed. This new situation indicates there may be a fundamental shift in the industry. However, as figure

4.2 shows, the number of VCFs and cumulative volume of invested VC funds have continued to increase. As table 4.2 showed, the $40.3 billion VC investment in 2001 still surpassed the investment in 1996, before the Internet bubble economy started. The VC investment volume in 2001 and the continuing VC investment in 2002 suggest that on an annual basis VC investments will fluctuate in relation to changes in the economy, but the VC industry maintains its influence as an important driver within the economy.

Based on the above, this study's evaluation is that the U.S. VC industry may be in transition from the growth stage to the maturity stage, but this study proposes that during the period from the 1980s to 2001 the U.S. VC industry was in the growth stage of its evolution. To determine in which evolutionary stage the U.S. VC industry exists clearly and identify pressures influencing the evolution stage of the VC industry, the following section illustrates internal industry environmental factors (demand conditions and supply conditions of the VC industry) and external industry environmental factors (technological, economic, governmental and social structural factors) of the U.S. VC industry.

4.2 Demand Conditions of the U.S. VC Industry

This section reviews how entrepreneurs of new ventures backed by VCFs and venture capitalists have been perceived in the U.S to illustrate the behavioral aspects of the demand conditions of the VC industry and to investigate the relationship between demand conditions and the development of the U.S. VC industry. However, as there are no such studies available and since such a study requires an additional dissertation length study, this section instead reviews landmark studies describing how entrepreneurs have been perceived in the U.S. to illustrate behavioral aspects of the demand conditions of the VC industry, then illustrates the actual entrepreneurial activities in terms of job creation, numbers of new firms created and the creation of new industries by VC backed firm to show the structure of the elements of the demand conditions.

4.2.1 Understanding Entrepreneurs

A positive environment to nurture entrepreneurs has been recognized in the U.S. in the landmark studies on entrepreneurs, such as studies of Schumpeter (1961, etc.), Leibenstein (1966), Kirzner (1979 and 1985), and others. According to Schumpeter's "The Theory of Economic Development" (1961), entrepreneurs disturb the equilibrium in the market by providing new combinations, thereby stimulating "creative destruction," which creates new growth. An entrepreneur initiates creative destruction through five types of processes: the introduction of a new good, the introduction of a new method of production, the opening of a new market - in particular an export market in a new territory, the conquest of a new source of supply of new materials or half-manufactured goods, and the creation of a new type of industrial organization. These processes lead entrepreneurs to new opportunities to create wealth. Schumpeter also suggested, "[Entrepreneur] is not only the vehicle of continual reorganization of the economic system but also the vehicle of continual changes in the elements, which comprise the upper strain of society (Schumpeter, 1951, p.33)." This suggests that processes carried out by entrepreneurs are the essential features of capitalism and that they are the prime movers of economic development. Schumpeter's studies reflect the early attention of US researchers to the challenge of explaining reasons for continuous economic growth. They focused on the role entrepreneurs in economic activities and perceived entrepreneurs' activities as beneficial to society.

Leibenstein (1966) tried to show the positive contributions of entrepreneurs by illustrating their roles in reducing the inefficiency of existing firms and organizations. He introduced the X-efficiency theory to measure the degree of inefficiency in the use of resources within an organization. Leibenstein suggested that an X-inefficiency arises either because a firm's resources are used in the wrong way or because they are wasted. He indicated that ineffective use of resources can become an opportunity for an entrepreneur. In his theory, inefficient use of resources, a high X-inefficiency, within an organization would create opportunities for an entrepreneur. An entrepreneur in his study would respond to causes of the inefficient uses of resources, the X-inefficiency, in creative ways. An entrepreneur's role is in fixing the inefficiency and filling in the gaps in the organization. Such activities by entrepreneurs, Leibenstein asserts, create economic

growth. Because Leibenstein's study illustrated activities of entrepreneurs only inside an organization, his study suggests that an entrepreneur could only improve the economy within the organizations, not individually, and that entrepreneurs are part of a larger organization. However, as the above paragraphs illustrate Leibenstein also recognized that activities of entrepreneurs are a benefit to society.

While Leibenstein described the behavior and motivation of entrepreneurs in reducing inefficiency in the organization, Kirzner described entrepreneurs at the market level. Kirzner (1979) tried to define an entrepreneur based on oversights in neoclassical economic theory. In the theory, the competitive markets create an equilibrium where people in the market achieve maximum utilization of materials and avoid waste. Thus in the neoclassical economic theory, a market consists exclusively of economizing and maximizing individuals. Neoclassic economists believed that those individuals, with perfect knowledge, would establish an equilibrium in the market (Kirzner, 1979). However, because we do not live in a world of perfect knowledge, there will be disequilibrium in markets. There arises an ability to exploit opportunities based on one's alertness to such disequilibrium in markets (Kirzner, 1979). Alertness enables entrepreneurs to intervene in the market through their entrepreneurial activities: arbitrage, in which a current price discrepancy is discovered and acted on; speculative activity, which involves arbitrage across time -- a discrepancy between current and future prices; innovative activity, involving the creation of an output, method of production, or organization that had not previously been in use (Kirzner, 1985), while other individuals simply respond by changing their buying and selling plans in light of the newly quoted price. An entrepreneur changes disequilibrium in markets into his profits and wealth.

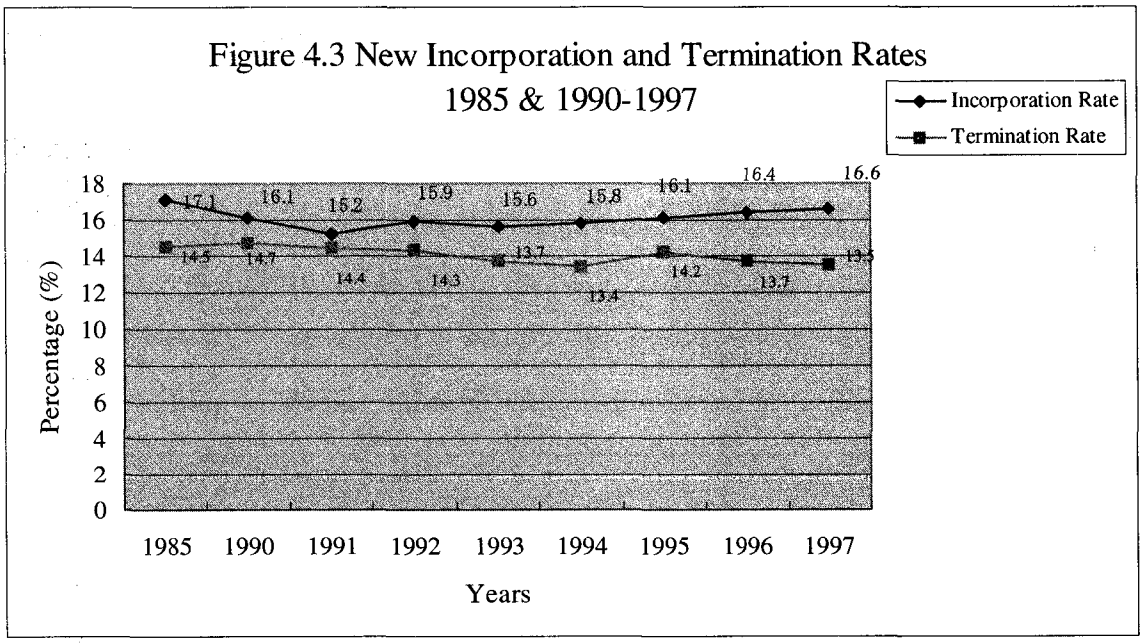
Furthermore, Drucker (1985) illustrates entrepreneurs as people searching for the sources of innovation and changes. He notes that entrepreneurs are masters of systematic innovation consisting of purposeful organized searches for changes and the systematic analysis of opportunities. Entrepreneurs find business opportunities in changes within the enterprise and the industry or in changes outside the enterprise and the industry, such as demographic changes (population changes); changes in perception, mood or meaning; and new knowledge in both the scientific and non-scientific field. Drucker indicates that entrepreneurs search for the clues to innovation and change both within the enterprise and

the industry or beyond them. Recently, Kuratko and Hodgetts (1997) reemphasized the creativity of entrepreneurs and indicated that entrepreneurs act as catalysts for economic change. According to them, uniquely optimistic and committed entrepreneurs work creatively to establish new resources or endow old ones with a new capacity, all for the purpose of creating wealth.

4.2.2 Entrepreneurial Activities: New Firm Creations, Job Creation and Creation of Industries

The proceeding analyses of entrepreneurs clearly show that entrepreneurs are very important factors in economic activities. Without their activities an economy is not able to evolve. While reviewing the perception of entrepreneurs suggests that in the U.S. there has been a positive environment for entrepreneurs that has influenced entrepreneurial activities, this section describes actual entrepreneurial activities in terms of job creation and numbers of new firms created in the U.S. to show the structural elements of the demand conditions of the VC industry. Figure 4.3 illustrates that in the U.S. there are more companies founded and liquidated every year than there are in Japan .

Figure 4.3 New Incorporation and Termination Rates
1985 & 1990-1997

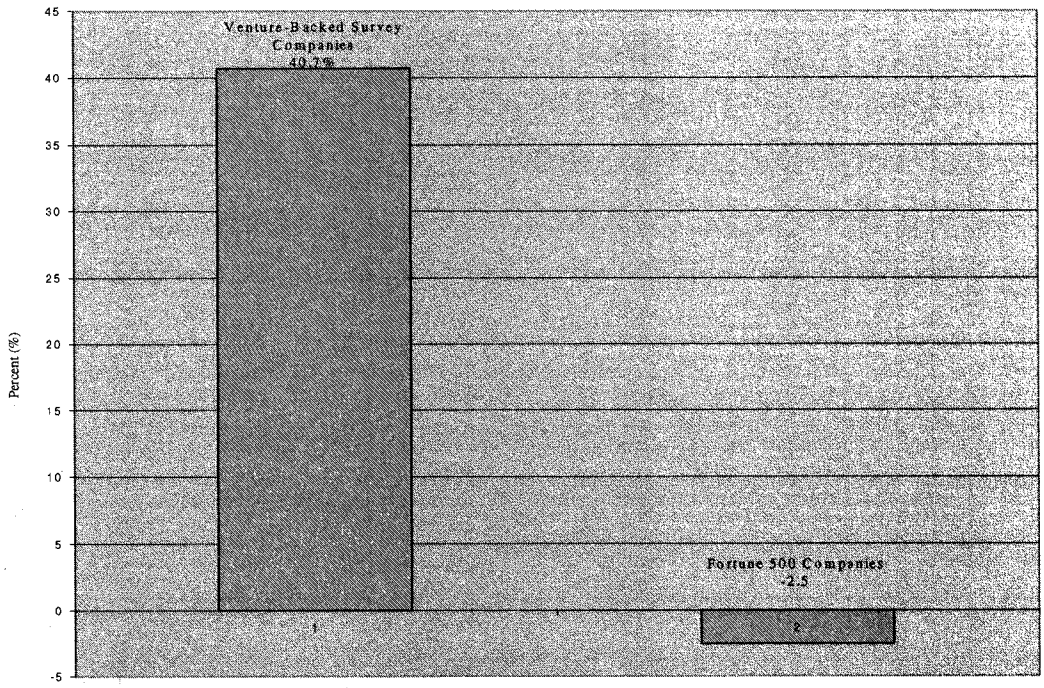


Source: U.S. Small Business Administration 1998, [81-94]; U.S. Small Business Administration 1999, [95-97].

On average, more than 900,000 new firms were established every year during the 1990s and about 80~90% of these firms will be terminated within three years. (U.S. Small Business Administration, 1999). But still these new ventures manage to produce net increase of about 200,000-300,000 jobs per year. (U.S. Small Business Administration, 1999). The numbers suggest that there are more people who try to create new job opportunities, new markets, and new wealth in the U.S than there are in Japan. Although the correlation between the country's economic performance and ratios of starting and closing companies requires more analysis, because large increases in small business coincides with periods of economic expansion, it appears that entrepreneurial activities have a significant influence on a country's economic performance (Ono, 1998).

While the above information showed that there are significant entrepreneurial activities in the U.S., previous studies also reveal increasing employment created by VCF-backed companies. For example, the study by NVCA, Coopers & Lybrand, and VentureOne Capital (VEIS, 1998) showed the specific economic contribution of companies backed by venture capital. The study analyzed the 400 companies backed by VCFs and found about 60% of the companies studied were less than 5 years old. 18% had achieved an initial public offering, and 82% of them were still held privately. According to that research, on average these companies' employment increased at an annual rate of 40.7% from 1992 to 1997. On the other hand, during the same period large companies on the Fortune 500 list terminated about 2.5% of total employment each year, as figure 4.4 shows. In addition, the unprecedented study conducted by WEFA (2001), revealed that U.S. companies originally backed by VCFs created 4.3 million jobs in the country and generated $736 billion in revenues in the year 2000, as table 4.7 shows.

Figure 4.4 Compounded Average Annual Job Growth, 1992-1997
Adapted from NVCA 1998 and modified by the Author.



1: VCF backed Companies Annual Job Growth,
2: Fortune 500 Companies Annual Job Decrease.

Table 4.7 Job Created & Revenues Generated By VCF Backed U.S. Companies; by Industry for 2000

Industry	Jobs Created	Revenues Generated (Billions)
Consumer	1,126,462	131.89
Computer Related	850,187	204.24
Medical/Health	646,429	80.29
Communications	293,722	60.94
Industrial/Energy	265,238	55
Electronics	237,308	54.42
Biotechnology	61,090	14.55
Other	802,696	134.6
Total	4,283,132	735.93

Source: NVCA Yearbook 2002

Furthermore, according to a study by JAFCO (2001), leading high technology companies -- Intel, National Semiconductor and Advanced Micro Devices in semiconductors industry; Apple and Dell in personal computers industry; Genentech, Amgen, and Genzyme in biotechnology industry; and Federal Express in the express package industry, have all been helped and invested in by VCFs to achieve their goals and successes. In total, these leading companies backed by VCFs together employed about 680,000 people, generated more than $120 billion in global sales, and spent more than $9 billion in R&D expenses in 2000. These figures suggest that when venture capitalists and entrepreneurs work together, society can achieve economic growth much more efficiently. Entrepreneurs, with the cooperation of venture capitalists and venture capital firms, created these new industries, new companies and new jobs.

4.2.3 Summary

In the U.S. the study of entrepreneurs and their behavior is well developed. Studies have shown that entrepreneurial activities are important factors in the economy. Without the activities of entrepreneurs, an economy is not able to evolve efficiently. Information about creation of new jobs, new companies and new industries showed that VCFs contributed greatly to entrepreneurial activities in the U.S. Technology based new ventures, such as Intel, Apple Computer, Dell Computer, Genentech, etc., in 1970s and 1980s especially required the management and financial support of VCFs. To satisfy the management and financial needs of new ventures, VCFs involved themselves heavily in these new ventures, and in this way the VC industry also evolved. This section of the study recognizes that in the U.S. there have been strong demand conditions that require the development of the VC industry and it suggests that to accelerate the development of the VC industry a society needs not just simple entrepreneurial activities but more technology based new venture development.

4.3 Supply Conditions for the U.S. VC Industry

To illustrate the behavioral aspect of supply conditions of the VC industry this section shows perceived roles of VC in economic development and illustrates the size, composition and nature of the capital market to show the structural elements of supply for the VC industry and the sources of VC funds as an indicator of the evolution of the industry.

4.3.1 Social Perceptions of VC

The following paragraphs show how US society perceives VC and the VC industry, based on analyzing past research on VC.

VC was recognized and studied as early as the 1940s in the U.S. For example, Husband and Dockerey (1948) provided one of the earliest descriptions and researchers' perceptions of VC:

> [It] is the new blood of business; the insurance of vitality in the future. Venture capital is the seed corn of the economy. In comparing venture capital to seed corn, both yield the same results. Some will sprout a rich crop of new products and wealth for the entire community; some of the seed will fail to sprout which is a factor of risk (p.15).

The comment by Husband and Dockerey suggests that VC should not be illustrated just as risk capital but also as an essential factor in creating economic growth.

Wilson (1984) further clarified roles of VC by describing it as a process of creating companies and an important economic system in the U.S. According to Wilson, VC is a process to develop highly sophisticated enterprises to address new market needs and to commercialize the ideas that new technologies are generating. In addition, because VC provides a smooth transition of capital from declining industries to emerging industries, it is a competitive economic system (Wilson). Furthermore, Doerflinger and Rivkin (1987) showed how VC is an important system at the national level.

> As in decades past, what is needed to maintain America's competitive edge is not just money, but smart money – money provided by people, who understand path-breaking technologies and, just as important, know how to use them to dominate world markets (p. 5).

In addition, they illustrated the importance of focusing on technology based innovations:

> No nation can remain the leader of the world economy unless it does develop the leading-edge industries, and to make this critical transition, capital must be intelligently shifted out of mature, low-technology industries and into high-technology enterprises (p. 8).

As these comments show, VC is money used in intelligent ways to increase a country's competitiveness. VC influences the development of future industries that are critical to the economic health of the nation. This information suggests that mastering effective allocation of VC can affect a nation's economic prosperity. Based on these studies, this study recognizes the following perception of VC in U.S. society. VC is an essential factor in economic growth, in the process of new creating companies, as a mediator for transforming industries, and as a system for affecting the economic survival of a nation. VC is an economic system that transforms a nation's industry structures from declining industries to emerging industries and promotes the effective utilization of capital.

While the above section of the study illustrates positive perceptions of VC in economic development, the following section illustrates the size, composition and nature of the capital market and the sources of VC funds to show the structural elements of supply conditions for VC industry.

4.3.2 Structure of Capital Market

The capital market for small businesses in the U.S. consists of two sources with seven segments: Equity Financing Sources (Self, Friends, and Family; Business Angels; Venture Capital Firms; IPO markets) and Debt Financing Sources (Private Financial Institutions; Small Business Administration; and Small Business Investment Companies [SBICs]) (Kuratko and Hodgetts, 1997; Nomura Research Institute, 1992).

Equity Financing Sources

***Self, Friends, and Family*:** According to J. Smith and R. Smith (2000), Kuratko and Hodgetts (1997), and Megginson, Scott, and Megginson (1987), these include entrepreneurs' personal savings and equity investments by friends and family. People who start a small business have invested a substantial amount of their own money in it before seeking others' capital investment. Though there is no precise recent data available on the extent to which personal finances of the entrepreneur, family, and friends are applied in new venture finances, according to J. Smith and R. Smith, these people invested at least a total of $524.3 billion.

***Business Angels* (*The Informal Venture Capital Market*):** According to a report by Price Waterhouse (1996), wealthy individuals and families' influence has diminished in the VC market. However, such movement may only be in the formal market. According to Freear, Sohl and Wetzel (1990), individuals and families are still significant sources of VC funds, especially early startup funds. Such individuals and families, including founders of startup companies, friends or business associates of entrepreneurs, other entrepreneurs, employees, and others form the informal VC market. These individual investors, called "business angels," and other unspecified individual investors throughout the U.S. are playing an important role in venture business, especially start-up capital. Also, according to Wetzel (1987) and Freear, Sohl and Wetzel (1990), a "business angel" is an individual investor who can make an investment of about $50,000-$500,000 in a new venture. Further, a business angel: (1) is upper middle class with an annual income of over $100,000; (2) possesses detailed knowledge of and usually works in the field in which the company does business; (3) provides not only capital but management advice, but without going through a recognized investment organization; (4) concentrates on companies in the start-up stage. A business angel sticks with a high risk investment for a long period of time and obtains return on the investment by selling off after going public. Such investments controlling VC are estimated at between $25 billion and $62 billion, compared to $45 billion for formal VCF investments in the 1980s (Wetzel). Because the same study suggested that the total investments of business angels could

account for from 2 to 3 times that of professional VC investors, this study estimates that business angels may have invested more than $200 billion in 2000.

Venture Capital Firms (VCFs): As indicated in sections 4.1.1 and 4.1.2 in aggregate all U.S. VCFs currently (as of 2002) have $250 billion under management.

IPO Market (The Public Equity Market): The public equity markets for new ventures in the United States are composed of four markets: NASDAQ National Market, NASDAQ Small Cap Market, the OTC Bulletin Board Market and the Pink Sheet Market (Securities Market in the U.S.A., 1998), as outlined in Table 4.8. The number of registered companies in the NASDAQ Market (NASDAQ National Market and NASDAQ Small Cap Market) increased from 3264 companies in 1984 to 4500 companies in 2000. Although the market experienced minor turbulence in 1987, 1991 and 1993, (for example, the number of registered companies decreased to 4094 companies in 1991 [Kutsune, 1998]), an expansion tendency in the market continues through the increasing the number of M&A activities and IPOs through the 1990s. In 1997 NASDAQ acquired the AMEX market (one of four major national level stock markets in 1997), thus strengthening its position in capital markets.

Table 4.8 The U.S. Public Equity Market

Market Companies [a]	Number of [b]	Number of IPO [c]	Raised Capital [d]	Total Market Size
NASDAQ	4,600	160	$9 billion	$2.6 trillion
Pink-Sheet	20,000	N/A	N/A	N/A

Sources: a. Osaki, 2000 (average of 1995-1999), b. NVCA, 2002 (average of 1995-2001), c. NVCA, 2002 (average of 1992-2001), d. Denawa, 2000 (average of 1995-1999).

Moreover, it is a market of rich international color and various securities, such as priority stocks, common stocks, corporate bonds, warrants, unit trusts, and foreign securities (NASDAQ Japan, 2001). In the OTC Bulletin Board and Pink Sheet market there are more than 20,000 companies registered, serving the financial needs of small and medium-sized enterprises and regionally operating companies. However, studies of the VC industry do not have accurate information about them. The growth of the IPO market in NASDAQ was also remarkable: on average 50 companies a year went IPO in the 1980s, tripling a decade later when an average of 162 companies a year went IPO (Gompers and Lerner, 2000). In 1999 in particular, more than 258 companies went IPO. In the 1990s the NASDAQ market totaled $2.6 trillion on average, with about 4600 companies registered in this market (Osaki, 2000). In the 1990s, on average, in the public equity market, about 160 VC-backed companies a year raised about $9 billion by the time of their initial pubic offerings (IPOs) (NVCA, 2002).

Debt Financing Sources

There are three types of private financial institutions: Commercial Banks, Finance Companies, and others (Kuratko and Hodgetts, 1997; Megginson, L. and Megginson, S.).

***Commercial Banks*:** There are about 11,000 commercial banks in the U.S (Kuratko and Hodgetts, 1997). Although some banks offer unsecured short-term loans, most of them provide loans secured by receivables, inventories, or other assets. In about 90 percent of commercial banks' loans, the banks require stocks, machinery, equipment, and real estate as collateral. According to the U.S. Small Business Administration (2001a), these institutions together managed a total business loan portfolio of $1,324 billion in 2001.

***Finance Companies*:** According to Kuratko and Hodgetts (1997), these companies are asset-based lenders who lend money against assets such as receivables, inventory, and equipment. These companies often provide better and longer-term deals to small businesses, especially to buy equipment, than banks and S&Ls do. On average they

provided about $87 billion to small businesses in 1990s (U.S. Small Business Administration, 2001b).

***Others*:** in addition, trade credit, account receivable factoring, leasing companies, and insurance companies can serve as additional sources of debt financing for new ventures (Kuratko and Hodgetts, 1997). Although "Savings and Loan Associations" (S&Ls) had been another source of debt funding for small firms, after the crisis in the S&L industry in the 1980s Congress now restricts their commercial lending activities. Also, credit cards can be considered an excellent source of no-traditional debt financing (Kuratko and Hodgetts; Megginson, L. and Megginson, S., 1997). In 2000 alone, U.S. small business raised about $241billion from these sources (The U.S. SBA, 2001).

***Small Business Administration* (*SBA*):** According to the U.S. U.S. Small Business Administration (2000), the primary purpose of the SBA is to help small firms find capital. The SBA tends to permit longer periods of repayment. The usual repayment period is five years or less. It has requirements very similar to those of banks in credit risk and the the borrower must meet the eligibility requirements. It also guarantees the repayment for lenders, such as banks and savings & loan institutions, of 90% of the loan to a maximum of $500,000 (U.S. Small Business Administration, 2001b). Its "loan program" will provide small businesses with financing for real estate acquisition, building construction, renovation, purchase of machinery and equipment, purchase of inventory, working capital, etc. SBA provided a total of $10.5 billion in 1999 for guaranteed loans and direct loans. On average the SBA provides $9 billion annually of loans for small businesses (U.S. Small Business Administration, 2001b).

***Small Business Investment Companies* (SBICs):** As stated in section 4.1.2 SBICs invested a total of $4.8 billion in 1996 and managed $17.1 billion of VC funds in 2000.

4.3.3 Funding Sources for the U.S. VC Industry

Sources of funding for the VC industry were discussed earlier. In summary, past studies suggested that sources of VC funds from wealthy individuals and families represent only 0.1% of VC funds, while pension funds accounted for 41.6%, insurance companies (financial institutions) 36.4%, big corporations 0.1%, endowments and foundations 21.8% (NVCA, 2002). Thus the influences of wealthy individuals and families have declined, while the role and influence of private and public pension funds have increased, as table 4.1 shows. Also past research suggests that capital gains of investors realized through the IPO market may be recycled into VCFs. Therefore, the structure of supply conditions of the VC industry consists of two sections: the VC industry itself and second the IPO market. However, in the past there have been no studies analyzing exactly how much capital raised in the IPO market is fed back into VC funds. Because the capital feedback into VC funds is necessarily less than the money raised in the market, this study estimates a total of less than $9 billion was recycled back into VC funds. The total size of sources of VC funds was about $40.1 billion in 2001.

4.3.4 Summary

This section identifies and shows that the capital market for small businesses consists of two sources with seven segments: Equity Financing Sources (Self, Friends, and Family; Business Angels; Venture Capital Firms; IPO market) and Debt Financing Sources (Private Financial Institutions; Small Business Administration; and Small Business Investment Companies [SBICs]). Analyzing changes over time in the sources and uses of small business financing indicate that the VC industry is only a moderate segment of the capital market for small businesses, as table 4.9 shows. The total size of the capital market was about $1.66 trillion and VC only provided about 10% of the capital. However, as a source of equity financing, VC still controls more than 35% of the market. This suggests the VC industry has become a strong factor influencing the structure of the equity capital market.

Table 4.9 Total Structure of the Capital Market for Small Businesses

Equity Financing Sources $ billions		Debt Finance Sources $ billions	
Self, Friends	524	Commercial Banks	1324
VC*	250	Finance Companies	87
Business Angels	300	Others	241
SBICs	17.1	SBA	9
IPO	9.0		
Total	1,100.1	Total	1,661

Source: Created by the author from the above

4.4 Technological, Economic, Governmental and Social Structural Factors

This section describes technology, economics, government and social structure as factors influencing the development of the US VC industry.

4.4.1 Technological Factors

Technology seems to attract the interests of VCFs and venture capitalist and their attention results in more money being invested in technology based new firms (Gleba, 1996; Bygrave and Timmons, 1992; Florida and Kenney, 1988). Because technology based new firms lack necessary capital and knowledge to successfully develop business operations, VCFs bring them into their portfolios (Gleba; Bygrave and Timmons; etc.). According to the study of Ono (1998), Bygrave and Timmons (1992), NVCA (2001) and others, there are several technologies that have attracted the attention of VCFs or venture capitalists since the 1960s. Such technologies include computer peripheral technologies (printing, memory, display technology), semiconductor technologies (VLSI design and fabrication technology, custom chip design), genetic technologies (DNA technology, monoclonal antibody technology, and molecular design technology), and so on. Dozen of companies developing these innovative technologies received investment from VCFs. Table 4.10 provides examples of well-known firms focused on computer related technologies and biotechnology that received VC.

Table 4.10 Investment in Technology Based New Firms Invested by VCFs

Computer Related New Companies, 1960 ~	
Minicomputer	DEC, DataGeneral, 1960~
Fail-safe system	Tandem Computer, 1970~
Workstation	Sun Microsystems, Silicon Graphics 1980~
Supercomputer	Cray Research 1980s~
Personal Computer (PC)	Apple (1975), Compaq, Dell, (1980~)
PC peripheral	Seagate, Conner Peripherals (1975~)
Equipment	Chips Technologies, Cypress Semiconductor (1970~)
Software	Microsoft, Lotus Development, Oracle (1978~)
Network Technology	Novell, (1970~) Cisco Systems, Bay Networks, Netscape, PSINet (1990s~)
Biotechnology New Companies, 1970 ~	
Genentech (1980~), Amgen, Chiron, Centocor, Cetus, Genzyme, etc. Other: Federal Express (1970s), (1980s~) Home Depot, Office Depot, Qualcom, etc.	

Sources: JAFCO report, 1998; Year in each category show the approximately of the year that VCFs started investment in each firm.

Though it is impossible to illustrate how much VC investment each technology based new firm received from VCFs, this study uses data from NVCA Yearbook 2001 to illustrate the level of investment in technologies of these new firms attracted from VCFs by looking at the amount of money invested on an industry basis. See table 4.11. According to NVCA yearbook 2002, computer hardware attracted the greatest VC investment from 1982 to 1986, with a total of $4.7 billion. The communications industry attracted the greatest VC investment from 1988 to 1997, a total of $10.2 billion. Since 1998 the online specific industry had attracted the most -- $80 billion of investments. Therefore, this study suggests technological industries such as computer peripheral technologies (printing, memory, display technology), semiconductor technologies (VLSI design and fabrication technology, custom chip design), and genetic technologies (DNA technology, monoclonal antibody technology, and molecular design technology) stimulated and accelerated the development of the U.S. VC industry. It is clear that technology based new firms attract investments form VCFs and trends in developing technologies determine the flow of VC and shape the structure of the VC industry.

Table 4.11 VC Disbursements Selected Year, 1982-2000 by Industry ($ Millions)

	1982	1984	1986	1988	1990	1992	1994	1996	1998	2000
Online Specific	0.0	0.0	0.0	0.0	0.0	0.0	147.4	1,206.9	4,532.5	48,062.6
Communications	209.5	448.3	506.6	832.2	393.5	1,031.4	779.0	1,609.9	3,470.1	17,713.8
Computer Software & Services	143.2	440.6	455.1	391.1	587.6	607.6	699.9	1,646.7	3,885.8	14,407.4
Other Products	116.0	180.9	530.5	977.1	443.7	1,346.5	1,108.4	2,328.1	2,505.8	5,360.5
Medical & Health	108.5	290.7	357.4	542.3	485.1	792.5	707.4	1,202.9	2,503.2	3,628.8
Semiconductor & Other Electronics	215.6	409.4	453.6	410.3	219.9	220.6	226.3	458.8	1,115.2	6,161.6
Consumer Related	122.6	234.5	411.1	512.1	249.4	248.5	235.1	302.4	557.3	1,667.1
Computer Hardware	584.2	935.7	754.4	365.3	261.0	299.6	377.7	919.4	1,263.3	2,297.1
Biotechnology	79.0	120.0	272.4	365.3	261.0	299.6	377.7	919.4	1,263.3	2,770.8
Industrial/ Energy	214.4	280.6	316.1	289.7	217.5	162.5	209.9	470.2	696.3	1,423.8
Total	1,792.9	3,340.7	4,057.2	4,685.4	3,118.7	5,008.8	4,868.8	11,064.7	21,792.8	103,493.5

Source: NVCA Yearbook 2002.

4.4.2 Economic Factors

Describing economic factors that influenced the development of the US VC Industry itself would require a detailed study of dissertation length. Hence, this study summarizes Haruda and Suzuki's work (1998) to illustrate the economic performance of the U.S since 1960, but also attempts to identify economic factors that significantly affected the development of the US VC industry. According to Haruda and Suzuki, from the end of the Second World War to the 1960s, many companies in the U.S. supported by excellent production methods and development of new products, showed the capability to fully supply more attractive products at lower prices than its overseas rivals. However, during the postwar high economic growth period of 1970s companies in Europe and Japan and companies in late-coming industrialized countries, such as NIES of Asia, established their competitiveness with new technologies from the U.S. by relying on lower wages. Then, these countries began to develop more efficient production methods which started threatening the competitive advantage held by the U.S. in standard mass production industries, such as steel, electronics, automobiles, etc. since late 1970s. Consequently, a sharp drop in the competitiveness of U.S. manufacturing companies in the international market surfaced from the late 1970s to the mid 1980s (Haruda, and Suzuki). The market share of U.S. companies, which once occupied more than the half of the global industrial productions market, fell to about 30% in 1980, and the world market share of primary manufactured products, such as steel, electronics and automobiles, also decreased greatly (Haruda and Suzuki). The volume of trade in industrial goods also fell to a deficit at the first half of the 1980s, and the level of deficit continued to increase rapidly after 1985. The U.S. already had a trade deficit in raw materials such as fiber, miscellaneous goods and steel starting in the 1960s, and automobiles in the early 1980s, but the trade balance in semiconductors, communication equipment, electronic products and scientific and chemical tools, alos became negative by the mid 1980s (Haruda and Suzuki).

However, in the 1990s the U.S. industry regained remarkable vitality through the revival of its manufacturing industry. While its main competitors -- Japan and Germany -- were struggling with a serious economic downturn, U.S. industrial production increased sharply in high-tech goods, such as computers and communication equipment (Haruda

and Suzuki). For example, since 1992 Intel has occupied approximately 80% of the market in the microprocessor unit (MPU) industry; in the personal computer industry US brand products, such as Dell, Apple, IBM and Compaq, had more than 70% of the market share by 1997; Microsoft software controls more than 90% of the operating system segment; and the application software packages of US firms, such as Oracle and PeopleSoft had over 75% of market share (Haruda and Suzuki). In terms of VC, an investment boom in capital equipment, led by innovation in information technology occurred in the 1990s. Such innovations had not only supported business expansion, but also contributed greatly to the increase in efficiency of production and management. As a result the market share of US industrial products had become No. 1 again by 1995 and the U.S. has continued dominating markets since then (Haruda and Suzuki).

With only this limited description of the past forty years of U.S. economic performance, this study cannot suggest which economic factors really affected the development of the U.S VC industry. However, in conjunction with analysis of technology factors this research can suggest at least that industries [the microprocessor unit (MPU) industry, the personal computer industry, the operating system (OS) industry and the application software packages industry] attracting a substantial percentage of VC investment have become the leading U.S. industries, taking over from manufacturing-intensive industries, such as steel, electronics and automobiles, mature industries that did not attract VC investment. During the economic downturn over the past several years, the investment activities of some US VCFs have been declining. However, the entire industry together still manages over $250 billion of VC funds. This evidence suggests that under pressures of economic threat from other nations, or stagnation in traditionally established industries, a country's economy may need to find more aggressive opportunities in newly emerging industries and these areas are opportunities that attract VC investment.

4.4.3 Governmental Factors

Studies of Gompers and Lerner (2000), Ono (1998), Bygrave and Timmons (1992) and Soja and Reyes (1990) illustrated several key legislative changes that influenced the development of the US VC industry. They are classified into two types: direct impact legislation and indirect impact legislation.

Direct Impact Legislation

Five direct impact legislative changes were identified in the above studies:

- *Revenue Act* (1978): Changes in this rule lowered capital gains tax rate from 49.5% to 28% (Bygrave and Timmons, 1992): This change provided capital gains tax incentive for VC investors and VC fund providers. The committed capital investments increased from $457 million in 1978 to $1.3 billion in 1980 (Gompers and Lerner, 2000).
- ERISA's "*Prudent Man*" *Rule* (1979): Changes in this rule allowed pension fund managers to invest in high-risk assets, including VC funds. In 1979 pension funds provided only 15% of total VC funds; in 1980 pension funds provided more than 31% of the funds (Gompers and Lerner).
- *Small Business Investment Incentive Act* (1980): Changes in regulation reclassified VCFs as business development companies instead of investment companies. VCFs were no longer required to register as investment advisers with the Securities and Exchange Commission (SEC) (Bygrave and Timmons, 1992). Fewer reporting requirements and the elimination of the risk of violating investment adviser regulations gave investors more flexibility.
- ERISA "*Safe Harbor*" *Regulation* (1980): It removed the responsibility of venture capitalists to serve as fiduciaries of pension fund assets invested in VC funds. This gave venture capitalists more freedom and eliminated serious risk exposure by accepting pension funds in limited partnerships (Bygrave and Timmons, 1992). As a result, though pension funds only contributed about $210 million in 1979 into VC funds, in 1982 they provided more than $760 million (Gompers and Lerner, 2000).
- *Economic Recovery Tax Act* (1981): It changed the capital gains tax rates from 28% to 20% (Bygrave and Timmons, 1992). As a result, VCF investment increased from $1.3 billion in 1980 to $1.8 billion in 1981 (Gompers and Lerner, 2000).

While the above legislation has been recognized as key legislation directly affecting the development of the US VC industry, the following paragraphs describe some legislation that has indirectly affected the development of the industry.

Indirect Impact Legislation

Two pieces indirectly impacting legislation have been identified in past studies:

- *Small Business Innovation Development Act* (1982). This act introduced a new program, the small business innovation research program (SBIR program), which involved small businesses in federally funded research and development. "Small businesses in the SBIR program have produced innovations of critical importance in a wide variety of high-technology fields, including biology, medicine, education, and defense. The program is a catalyst in the promotion of research and development, the commercialization of innovative technology, the development of new products and services, and the continued excellence of this nation's high-technology industries (Department of Defense, 2001, 09/06)."

This statement of the Department of Defense indicates the U.S. government helped the development of crucial technology based firms in 1980s and 1990s. Analysis of demand conditions of the VC industry (section 4.2) and technology factors (section 4.4.1) already illustrated that activities of technology based new ventures in the U.S affected the development of the VC industry. Thus, this fact and the above paragraph together suggest that the SBIR program also supported the development of the VC industry.

- Deregulation in IPO rules (1978 and 1979). The Securities and Exchange Commission (SEC) reduced the requirements for companies to make IPO in the NASDAQ market (Ono, 1998). As a result, the number of firms making IPO in 1981 increased to 63 from just 8 in 1979 (Gompers and Lerner, 2000).

Deregulation in IPO rules at the SEC was not government legislation. However, the organization is recognized as a watch dog for the securities market. Therefore, this study suggests these changes as having an effect similar to government regulatory changes in the VC industry.

4.4.4 Social Structural Factors

The following paragraphs restate and summarize how U.S. society recognizes VC (which was previously discussed in section 4.3.1) and in addition it shows how venture capitalists are recognized in various segments of society.

Social Perception about VC

This study presented the following perception of VC in U.S. society in section 4.3.1. VC is an essential factor in economic growth, a process of creating companies, a mediator for transforming industries, and a system for determining the economic survival of a nation. VC is an economic system that transforms a nation's industry structures from declining industries into emerging industries, and promotes the effective utilization of capital. In the U.S. VC has been recognized as a very important element in economic development since 1970s. (See section 4.3.1).

Recognition of Venture Capitalists

In addition to the above analysis, the past studies of VC also reveal that some venture capitalists are crucial to the development of both new ventures and the US VC industry. For example, Ono (1998); Bygrave and Timmons (1992) recognized Arthur Rock, a venture capitalist, as the key person in the establishment of Intel in the 1960s and Apple Computer in the 1970s. Although the three founders of Intel (Robert Noyce, Gordon Moore, and Andrew Grove) are recognized for their entrepreneurial success, Arthur Rock also played a key role in the success of Intel, providing $2.5 million of venture capital without any formal business plan in place. He also provided management advice. Moreover, Rock established a VCF called Venrock Associates in San Francisco in 1969, and helped finance Apple Computer, the personal computer and venture business which Steven Jobs and Stephen Wozniak started in their parents' garage. Another legendary example of a successful venture capitalist is Eugene Kleiner, previously a Fairchild Corporation engineer (Wilson, 1984). He founded a VCF, Kleiner Perkins, (the present KPCB, Kleiner Perkins Caufield & Byers) with Thomas Perkins and others in 1972. Their VCF helped to establish many new ventures, such as Tandem Computer, Sun Microsystems, Compaq Computer, Genentech, etc. These venture capitalists have been

recognized by academic researchers, news writers, industry analysts, and so on, all of whom showed their respect for these venture capitalists in their writings and research, suggesting that some venture capitalists have become role models and are admired in society, not just as investors but as entrepreneurs who took on crucial roles for developing new ventures and new industries.

In analyzing social structural factors in the development of the VC industry, this study suggests that in the U.S. the importance of VC and venture capitalists has been recognized for a long time and that venture capitalists especially have been recognized as crucial personnel for the development of new ventures, new industry, and the VC industry and have earned society's respect.

4.4.5. Summary

In analyzing four factors (technological, economical, governmental and social structural factor), the study recognizes the influence of these factors on the development of the U.S. VC industry. But the most important factor seems to be the social structural factor -- the social perception that VC is an economic system that transforms a nation's industry structures, from declining industries to emerging industries, and promotes the effective utilization of capital. Social structural factors are also reflected in recognition of venture capitalists, i.e. that they are also entrepreneurs who play crucial roles in developing new ventures and new industries. Without a positive social perception of VC and recognition of venture capitalists, a country cannot introduce proper governmental policies to respond to economic threats in the market nor create an environment in which VCFs can support technology based new ventures.

4.5 Summary of the U.S. VC Industry Evolution and Milestones

This section consists of three parts. Part one summarizes the U.S. VC industry development. Part two evaluates and determines the developmental stages of the U.S. VC industry and summarizes factors shaping the development of the industry. The last part presents milestones in the development of the U.S. VC industry. Then, all identified factors are classified into two development stages (emerging stage and growth stage) in chronological order, as table 4.12 shows (p107).

4.5.1 The U.S. VC Industry Evolution

As section 4.1.1 shows, the first professional form of U.S. VCF emerged in Boston, Massachusetts as AR&D, formed in 1946. Fifty-six years later, the industry of accumulated VC investments has grown to $250 billion, spread mostly among the top five major business states -- California, Massachusetts, Connecticut, New York and Texas. However, the U.S. VC industry has developed more as a supplemental industry, supporting the development of other industries. As section 4.1.4 showed, VCFs do not provide and produce tangible goods and services as their final products. They provide VC funds and management techniques and services to new ventures and nurture and develop them to be successful companies that can attain IPO. The VC industry and VCFs earn their profits by supporting the creation of new firms and new industries, but not directly by selling products and services to buyers and consumers.

In the evolutionary processes of the VC industry, VCFs responded to strong regional demand of technological new ventures needing more equity investment and strong regional suppliers of VC funds in specific business areas such as Boston, Massachusetts; Palo Alto, California; New York City; Austin, Texas; and the state of Connecticut, as section 4.1.3 described. But in the course of its evolution, the VC industry has not had direct support from some institutions that have supported the development of other new industries (e.g., university research bases, availability of skilled scientists and engineers, government procurement and government investments in basic research, as outlined above). For example, as section 4.4.1 showed, the VC industry increased its presence as a major industry because VC invested companies in key industries -- Intel, National Semiconductor, and Advanced Micro Devices in the semiconductors industry, Apple and Dell in the personal computer industry, and Genentech in the biotechnology industry – which had successfully developed into world class competitive firms. In the development of these industries, VCFs provided management advice to increase the efficiency of new ventures' operations and provided risk capital to establish the stable operation of new ventures, as discussed in section 4.4.1. At the same time, U.S. government policy changes and the health of the U.S. economy also directly impacted the development of the VC industry. For example, as section 4.4.3 discussed, after the government introduced a new capital gains tax and SBIR program in

1982, the volume of the VC investment started to increase. Then, right after the Internet related investments boom crashed in 2000, annual VC investment volume in 2001 went down 57% to $40 billion, as table 4.2 shows.

In conclusion, the U.S VC industry had emerged and concentrated its development in the business areas in Massachusetts, California, New York, Texas, and Connecticut, where there are positive social attitudes toward formation of new firms and there are enough resources -- land, capital, labor, information, and knowledge -- that potential new entrant into the industry can access easily. The U.S. VC industry has taken advantage of these favorable conditions to develop into a fully-grown industry itself, focusing on specific areas of strong regional demand and strong suppliers and taking advantage of favorable government policies.

4.5.2 Industry Stage Evaluation

Emerging Stage (1945~ late 1970s)

***Industry Specific Factors*:** As discussed in section 4.1.5, this study illustrates that during the period from 1945 to the late 1970s the US VC industry was in the emerging stage of its evolution. During this period, the VC industry was too small to be recognized as an industry. (Total VC investment reported was less than $500 million per year before 1980.). Also, there was no dominant VC fund management style. Instead, knowledge of VC management was disseminated only within the small community of venture capitalists.

***Demand Conditions*:** This study found that entrepreneurial activities have been well recognized since 1945 (see section 4.2). However, the study did not recognize many technology-based new ventures backed by VCFs in the 1960s and early 1970s, although some venture capitalists supported the development of emerging industries, as was the case in the relationship between Arthur Rock and Intel. (See section 4.1.1 and 4.4.4). This suggests that there was some demand for VC investment, but it was limited. Thus, the demand conditions to develop the VC industry were also limited during this emerging stage.

***Supply Conditions*:** This study identified that the needs of VC for small businesses were less than $200 million in 1969 and less than $450 million in 1978. (See table 4.1). Also there were legal restrictions that hampered the creation of VC funds. (See section 4.4.3). This suggests that the supply conditions for the VC industry were not well constructed. Thus, the supply conditions to develop the VC industry were constraining during this period.

***Technological Factors*:** The study found that technology development funded through VCFs before the 1980s was limited, except in a few cases, such as semiconductor technologies. This study suggests that technology development did not influence significantly the development of the US VC industry before 1980.

***Economic Factors*:** The study found that before the 1980s the U.S economy did not face a severe economic threat from other countries. Also generally traditional industries -- such as steel, electronics and automobiles -- had performed well during this period. (See section 4.4.2). This study found there were no significant economic factors affecting the development of the US VC industry before 1980.

***Governmental Factors*:** Several key legislative changes, such as the *Revenue Act,* ERISA's "*Prudent Man*" *Rule*, *Small Business Innovation Development Act*, etc., had been introduced in the period from 1978 to 1982 (see section 4.4.3). The impact of these regulatory changes did not show up until the 1980s. Therefore, this study suggests that governmental factors did not have a great influence on the VC industry during the 1945-1970s. However, governmental factors in conjunction with other factors stimulated the VC industry to shift into the growth stage in the 1980s.

***Social Structural Factors*:** In analyzing social structural factors in the VC industry, this study found that in the U.S. the importance of VC and venture capitalists have been recognized for a long time and venture capitalists especially have been recognized as crucial personnel for the development of new ventures, new industries, and the VC industry. But these did not have a significant affect on the VC industry during the

emerging stage. Yet without a basic level of recognition of venture capitalists, the U.S. VC industry could not have shifted to the next stage of its development.

Growth Stage (1980s to 2002)

***Industry Specific Factors*:** As discussed in section 4.1.5, this study concludes that during the period from the 1980s to 2002 the US VC industry was in the growth stage of its evolution. The number of VCFs have been increasing at an annual rate of 20-25% and also the volume of VC funds has been increasing at an annual rate of an approximately 30% a year since the mid-1980s. (See figure 4.1 and table 4.2). This data suggests that some VCFs before the mid-1980s had recognized the key success factors of VC investments and the knowledge to enable success diffused throughout the industry during the early 1980s. By the mid-1980s the majority of VCFs had adopted a partnership structure for managing VC funds. (See sections 4.1.1 and 4.1.4). Due to these conditions, this study proposes that during the period from the 1980s to 2002 the U.S. VC industry was in the growth stage of its evolution.

***Demand Conditions*:** The study illustrated that VCFs contributed greatly to entrepreneurial activities in the 1980s and 1990s. Technology based new ventures, such as Apple Computer, Dell, Genentech, etc. in 1970s and 1980s, had required the management and financial support of VCFs (section 4.4.1). This study recognizes that in the U.S. there were strong demand conditions for technology based new ventures that drove the development of the VC industry since the mid 1980s.

***Supply Conditions*:** This study identified and showed that the volume of VCF investment has increased rapidly since the early 1980s, until the 2001-2002 decline related to the recent economic downturn. The crash of the Internet investment boom hampered the annual VC investment as table 4.1 showed. The aggregate of funds invested in 2002 was $40.3 billion, less than 43% of $93 billion in 2000. However, the amount still surpassed the total investment of $9.9 billion in 1996, before the Internet investment boom started. Also modification of legal constraints prohibiting pension funds to be sources of VC funds or requiring the registration of VCF's by the SEC allowed many

investors and institutions to allocate capital as sources of VC funds. Total VC funds under management in 1983 exceeded $10 billion; by 2001 that total had grown to about $250 billion.

***Technological Factors*:** The study found that while traditional industries such as steel, electronics, automobiles, etc faced severe competition from companies in Europe, and Japan, and the NIES of Asia in the 1980s, economic recovery in the late 1980s and 1990s was greatly accelerated by the inputs of technology based new ventures backed by VCFs in the personal computer, semiconductor, and biotechnology industries during this period. (See section 4.4.1). This study suggests that technological development greatly influenced and accelerated the development of the US VC industry during this period.

***Economic Factors*:** The study found that in the 1980s the U.S economy had faced a severe economic threat from other countries. The U.S. economic recovery (summarized in section 4.4.2) suggests that the pressures of economic threat from other nations and stagnation of traditional industries stimulated the U.S. economy to pursue new opportunities in new industries.

***Governmental Factors*:** Several pieces of key legislation, such as the *Revenue Act,* ERISA's "*Prudent Man*" *Rule*, the *Small Business Innovation Development Act*, etc., were introduced in the period of 1978 to 1982. (See section 4.4.3). These influences started taking effect in the VC industry in the 1980s.

***Social Structural Factors*:** In analyzing social structural factors in the VC industry, this study found that in the U.S., the importance of VC and venture capitalists have been recognized for a long time and venture capitalists in particular have been recognized as crucial personnel for the development of new ventures, new industry, and the VC industry. But this knowledge and recognition was not diffused throughout the U.S. during the emerging stage. However, this early recognition of the importance of VC and venture capitalists helped the U.S. economy adapt and diffuse the knowledge of VC and venture capitalists rapidly beginning in the 1980s, significantly affecting the VC

industry during the growth stage of the industry evolution. (See section 4.3.1).

4.5.3 Milestones for the Evolution of the U.S. VC Industry

In analyzing the evolutionary stages of the U.S. VC industry and factors shaping its development, this study identified the following factors, or "milestones," that shifted the evolutionary stage of the U.S VC industry from emerging stage to growth stage and accelerated VC development. The factors discussed below are plotted into figure 4.10 to show the relationship to the growth pattern of the U.S. VC industry.

Industry Specific Factors: Two standards were established: an industry standard for managing VC funds (partnership form for managing VC funds) and standardized roles of VCF (the roles of the venture capitalist) that were established and adopted throughout the industry.

Demand Condition Factors*:* A constant flow of entrepreneurial activities, especially technology based new ventures, was created and nurtured in society. Entrepreneurs were recognized as important for economic development.

Supply Condition Factors: Equity investments by VCFs and venture capitalists were also recognized as important elements in economic development. The role of VC industry increased in importance within capital markets for new ventures and small businesses.

Technological Factors*:* Technological development was recognized as a key factor for creating new industries in a society. Further, technological development was supported and maintained by many institutions, such as new ventures and VCFs.

Economic Factors: It was recognized that continuous economic development could not rely only on the performance of traditional industries. Structures were established to develop and nurture new industries and new ventures relying on new technologies.

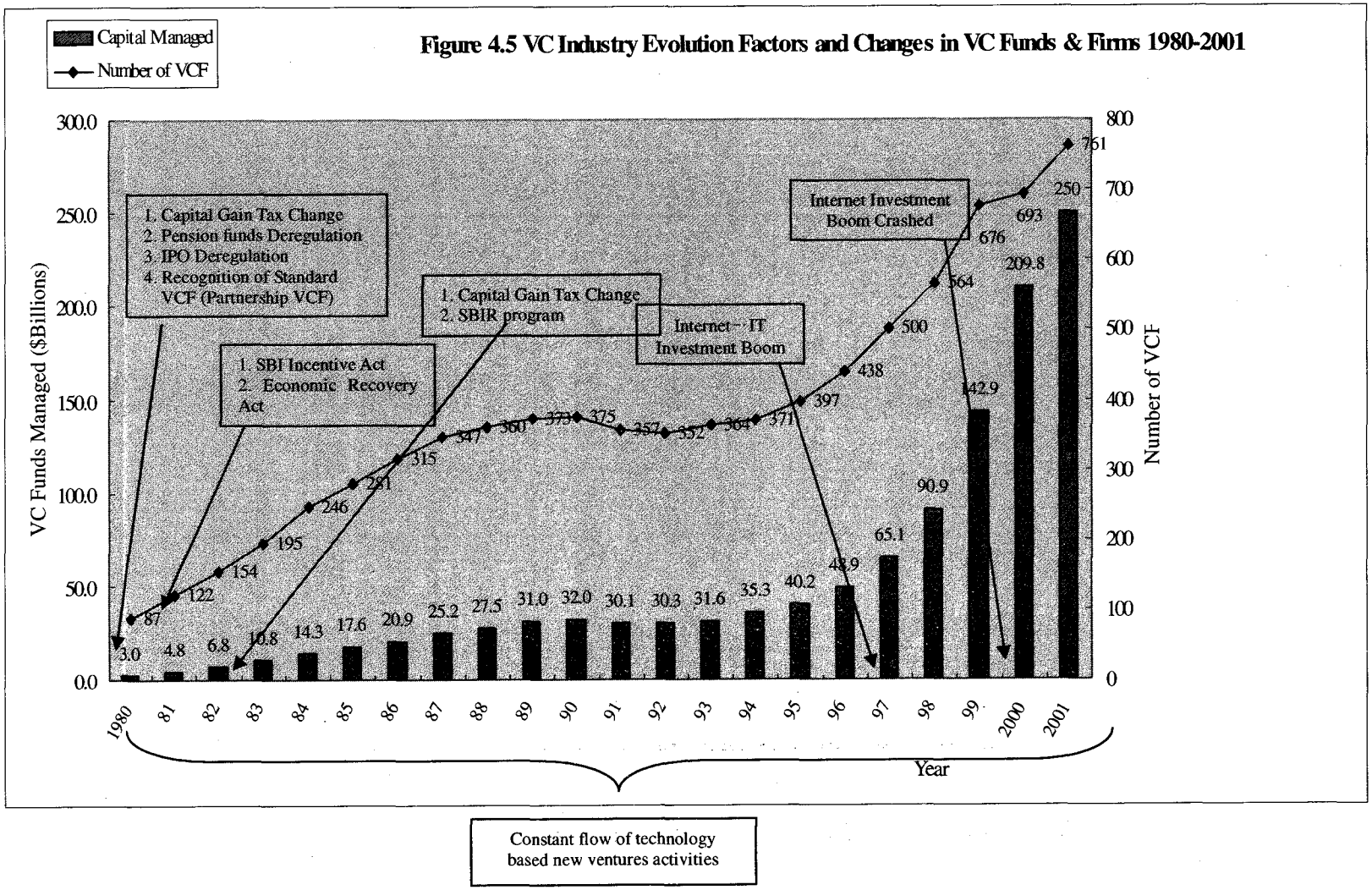
Governmental Factors: Government policy makers and business leaders were open to creating and accepting new policies that could stimulate the transformation of industries and create new leading industries. The creation and adoption of key legislation was the most crucial supporting action undertaken by the government.

Social Structural Factors: The importance of VC and venture capitalists was recognized throughout the business community and government as crucial for the development of new ventures, new industries, and the VC industry.

Table 4.12 Historical Events for the development of the U.S. VC Industry

Year	Development of the U.S. VC Industry	
1940	—**Birth of Classical Venture Capital** — '46 American Research & Development (AR&D) was founded. (section 4.1.1) '58 SBIC system was introduced by SBA. (section 4.1.1)	**Emerging Stage**
1960	Big companies and financial institutions joined the VC market (section 4.1.1) ● '68 Arthur Rock introduced the partnership form of VCF. (4.1.1)	
1970	—**Slow development of VC investment (1970~1975)** '74-75 Economic depression (section 4.4.2) **Knowledge diffusion of management form of VC: partnership model** (p.48) —Emerging high-tech ventures — ● Capital gain tax rate: decrease (1978): 49% > 28%. (section 4.4.3) ● Removal of investment restrictions on pension funds (section 4.4.3) ● '78-81 Deregulation of IPO. (section 4.4.3)	
1980	'80 Introduction of Small Business Investment Incentive Act (section 4.4.3) '81 Economic Recovery Tax Act. '82 SBIR program was introduced (section 4.4.3) '83- Diversification of the VC Industry: M&A and LBO (p.49) '88 Slow Down of new IPO (pp. 84-85)	**Growth Stage**
1990	'90-91 Slow down of VC commitments —**IT investment boom** —(section 4.4.2) '94 Number of NASDAQ stock dealings exceeds those of NYSE (pp. 84-85)	
2000	VC funds reached record high volume. (section 4.1.1) - IT investment bubble crashed	

Source: Author



Chapter Five
The Japanese Venture Capital Industry and Its Evolution

This chapter looks at the Japanese VC industry in terms of the following criteria: industry specific factors, supply and demand conditions of the industry, and technological, economic, governmental and social structural factors shaping the evolution of the industry. The chapter consists of six sections. Section one analyzes industry specific factors in the Japanese VC industry. Sections two and three illustrate the demand conditions and supply conditions of the industry, respectively. Section four describes the technological, economic, governmental and social structural factors in the context of the evolution of the Japanese VC industry. Finally, section five discusses and evaluates the evolutionary stage of the Japanese VC industry according to the developed milestones in chapter four (see section 4.5.3)

5.1 Industry Specific Factors

This section of the study describes and illustrates the Japanese VC industry in terms of three factors: the path of knowledge creation and diffusion, structures and competitions, and the locations of the Japanese VC industry.

5.1.1 The Path of Knowledge Creation and Diffusion in the Japanese VC Industry

The following paragraphs describe the path of knowledge creation and diffusion in the Japanese VC industry by illustrating the historical development of the industry. Analyzing historical data and the existing studies of the Japanese VC firms reveals that the first VCF in Japan, Kyoto Enterprise Development (KED), was organized in 1972, followed by other companies, such as Nippon Enterprise Development (NEDO, described and discussed in chapter six) and the Japan Associated Finance Company (JAFCO, described and discussed in chapter six), currently the largest VCF in the country (etc. Hamada, 1996 and 1998). According to Hata (1996), members of the Chamber of Commerce in Kyoto established KED after their representatives had visited VC firms in Boston, Massachusetts in 1971. While AR&D in the U.S. was established to support the development of new ventures' financial and managerial needs, KED was established to

create capital gains for investors, although the members of the firm had tried to copy the roles of the U.S. VC firms which they had visited (Hamada, 1996 and 1998; Hata and Kamijo, 1996). Therefore, it invested heavily in the later-stage development of companies that were not new ventures but existing small businesses and that had records of profits for several years. In 1980, KED was dissolved. Unfortunately, researchers have not identified the reasons for KED's dissolution and how their activities were carried over in Japan (Hata and Kamijo, 1996).

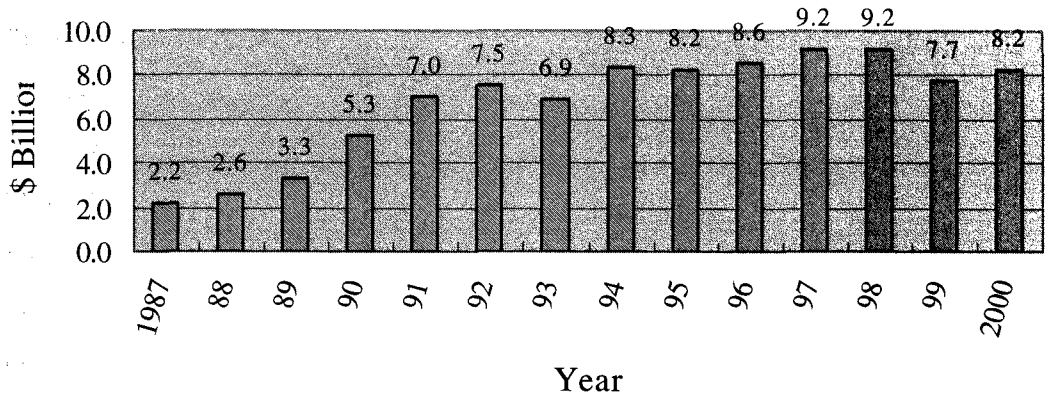
In 1973 JAFCO, currently the most influential VCF in Japan was founded by Nomura Securities Firm group. JAFCO was founded under the leadership of Kitaura Kiichirou, the CEO of Nomura in the 1970s. He and his associates also had visited an investment banking firm, which was doing a similar job with VC firms in 1971, and he thought that it was necessary for Nomura to create its own VC firm to become a leading Japanese securities firm and investment bank (Hamada, 1998). The reasons for establishing JAFCO are indicative of why other Japanese VC firms were founded in 1970s. In the early 1970s, Japan had a total of seven VCFs (Hata, 1996). All of them were subsidiaries of financial institutions, such as Daiwa Securities and Sanwa Bank and, with the exception of KED, were established as diversification plans of their parent companies (Borton, 1992 and Hata and Kamijo, 1996). Despite each VCF's effort to make profits, they could not generate profits in the 1970s, due to the two oil crises and a lack of knowledge about managing VC (Hata, 1996). Also the Japanese IPO market in the 1970s existed for small and medium sized firms that were reliable and had a long history of making profits, but the Japanese did not serve new ventures requiring additional capital for their growth or future success (Hamada, 1996 and 1998). A minimum of 30 years in business was required before new ventures had a chance to make IPO. It was extremely difficult for VCFs to make IPOs for their new ventures. Therefore, VCFs shifted their operational effort from investments in new ventures to loans, leasing, factoring, consumer loans, and regular stock market investments (Hamada, 1996 and 1998).

According to Hata (1996), in 1983 the Japanese government deregulated financial markets by introducing the "Tentou-Shijo Kiseikanwa Hou" (or, roughly translated, the "Deregulation of the Over-the-Counter Market Act"). This deregulation made it a little easier for VCFs to make investments for new ventures managing toward

IPO. This act enabled the creation of capital gains and provided strong motivations for VCFs to collect more capital and obtain knowledge of managing VC from U.S. VCFs (Yamakawa, 1996; Hamada, 1996 and 1998). Also in 1984 JAFCO created and introduced the "toshijigyo-kumiai" program, the Japanese version of a quasi-partnership scheme. (Details are discussed in section 5.1.3, Hamada, 1996 and 1998). This also made it a little easier for VC firms to collect funds. However, this method did not function as well as expected, due to legal constraints. According to Hamada (1996 and 1998) and others, members forming the "toshijigyo-kumiai" had to take full and unlimited responsibility when a scheme lost money, which meant that they had to be prepared to cover the entire loss of their investments in new ventures. (This legal condition did not change until the Toshijigyo-kumiai Yugensekinin Act [Limited Liability of VC Funds Investment Act] was introduced in 1998.) During the early 1980s many securities firms and banks established their own VC firms, but there were no independent VCFs similar to those in the U.S. (Hamada, 1996 and 1998; Hata and Kamijo, 1996). If an independent VC firm formed and founded its own "toshijigyo-kumiai" to collect VC funds based on the legal conditions in 1980s, it had a great chance of losing everything, not only its invested capital (Hamada, 1996 and 1998; Hata and Kamijo, 1996). After brief success in the early 1980s, Japanese VCFs failed again due to the failure of some popular venture capital backed businesses (Hamada, 1996 and 1998; Hata and Kamijo, 1996). For example, Sord and Cosmo-Eighty in the personal computer business went bankrupt due to mismanagement in the expansion stage of their businesses (Abotsu, 1994). VCFs could not earn the business community's trust as important and financially necessary organizations in the capital market (Hamada, 1996 and 1998). Again VCFs shifted their operational efforts from investments in new ventures to loans, leasing, factoring, consumer loans, and regular stock market investments (Hamada, 1996 and 1998). Furthermore, although the Japanese government introduced the Tentou-Shijo Kiseikanwa Hou (discussed in section 5.4.3) in 1983, on average a minimum of 25 years in business was required before new ventures and small companies made IPO (Hata and Kamijo, 1996; Hamada, 1996 and 1998). JAFCO and NIF monitored about 50% of total VC investment throughout the 1980s (Hata and Kamijo, 1996).

Since the major failure of VCFs in the early 1980s, Japanese VCFs and the Japanese VC industry seemed to go underground. No academic research had been done at the firm or industry level and there were few or no public records about them (Hamada, 1996 and 1998; Hata and Kamijo, 1996). However, since about the mid-1990s, the Japanese VC industry has been slowly gaining social recognition. Now Japan's total accumulated VC investments amount to more than $8.2 billion in 2000 (VEC, 2001). In 2000 alone, its VC investments accounted for $2.3 billion. Among those investments, equity investments comprised about 99 percent of the $2.3 billion in VC investments (VEC, 2001), compared with 50 percent of $1.5 billion in 1995 (JAFCO, 1998). Until the mid-1990s such Japanese VC funds involved convertible bonds, warrant bonds, debenture bonds, and loans -- which would not be considered VC in the United States (Hamada, 1996 and 1998). But in 2002 Japanese VCFs only made investments in common stocks and preferred stocks of new ventures and bought convertible bonds, warrant bonds and debenture bonds that new ventures would issue (VEC, 2001). Figure 5.1 shows the historical trends of VC investments in Japan. While this section illustrates the path of knowledge creation and diffusion in the historical development of the Japanese VC industry, the next section of the paper focuses on the structures and on a competitor analysis of the current VC industry.

Figure 5.1 Accumulated VC Investment in Japan, 1987-2000



Sources: 1987-96, JAFCO report, 1998; 1997-2000, VEC report 2001.

5.1.2 The Japanese VC Industry Structures and Competition

This research applies Hamada's (1998) three-fold classification of the professional VC industry: subsidiaries of financial institutions (VCFs), government organizations and other -- for understanding the Japanese VC industry. The following paragraphs describe subsidiaries of financial institutions, one of the government organizations (the Venture Enterprise Center [VEC]), and other.

Subsidiaries of Financial Institutions **(VCFs):**

As section 5.1.1 showed, during the 1970s there were only seven VCFs and all of them were established as subsidiaries of financial institutions, such as Nomura Securities Firm, Daiwa Securities Firm, and of banks such as Sanwa Bank (Hamada, 1996 and 1998). Throughout the 1980s the number of this type of VC firms stayed level at about 80 and their total VC investment amounted to only $100-200 million annually (Yamakawa, 1996). The number of this type of Japanese VC firms exceeded 100 finally in 1992 (Kamijo and Hata, 1996). Most of these firms were subsidiaries of financial institutions, with the exception of 4 or 5 companies (Kamijo and Hata, 1996). At least this number suggests that the evolutionary stage of the Japanese VC industry at this time was similar to that in the U.S. in 1980. However, Hamada (1996 and 1998) noted that only about 50-60 of the Japanese VCFs were actually in the VC investment business, while the rest of the companies were "living dead" - companies that existed on paper but did not show any VC investment activities.

In the 1990s, more than 72% of Japanese VCFs were still subsidiaries of large companies. For example, table 5.1 shows that 89 of 123 VCFs in the Japanese VC industry (including the top ten most active VCFs) was subsidiaries of financial institutions (Hamada, 1998). On the other hand, a full 66% of VCFs in the United States were independent firms (see table 4.3 on page 54). Also, in researching Japanese professional VCFs, some confusion exists about the sources of VC funds. According to Borton's study (1992); manufacturers and financial institutions supply about 90% of VC funds, 5% from pension funds, and 5% from individuals.

Table 5.1 Japanese VCFs classified by capital relationship (as of 1997)

Affiliation	Number of Company
Bank	16
Securities Firm	22
Insurance Companies	10
Bank/Securities Firm: Joint Business	41
Foreign Company	4
Others	30
Total	123

Subsidiaries of Financial Institutions

Source: Hamada, 1998

However, Venture Forum 21 (1995) and other studies found that the Japanese government prohibited corporate and public pension funds from investing in VC funds. Abotsu (1994) also pointed out that wealthy individuals and families were not recognized in the sources of funds for VCFs. Thus, according to Abotsu (1994), generally recognized sources of VC funds for VCFs in Japan had included only financial institutions (banks, securities firms, and insurance companies) and manufacturers (large companies). However, the prohibitions on investment of pension funds were revised in 1998, meaning that pension funds could now provide capital to form VC funds (details are discussed in section 5.4.3). As a result, in 2001 pension funds provide at least 5.8% of total VC funds (VEC, 2001). In comparison, in the U.S. they provided 41.6% (see table 4.1). The total number of Japanese VCFs increased from 123 in 1996 to 185 in 2000 (VEC, 2001). As part of this increase, more independent VC firms were founded since 1998 (VEC, 2001). However, there have been few studies about them and investigating this new type of Japanese VC firm is one of main focuses of this research.

Government Organization (the Venture Enterprise Center):

Kuroki, Rice and Abetti's study (2000) reported that there are approximately 47-50 government organizations involved in managing the financial needs of new ventures and that also manage their own VC funds, based on the Hiroshima Prefectural Government's report. Among these organizations, the Venture Enterprise Center (VEC) has been a role model for others. To support the financial needs of new ventures, the Ministry of International Trade and Industry, MITI, (currently known as the Ministry of

Economy, Industry and Trade) established VEC, a nonprofit organization, in 1975. VEC does not give loans or grants, but instead guarantees up to $450,000 or 80% of the total project loan. VEC guarantees encourage lending institutions to reduce interest rates and increase the amount of funds available for new ventures and stimulate investments of VCFs in new ventures (Hamada, 1996 and 1998). According to Hamada's studies and Kuroki, Rice and Abetti (2000), all other government organizations have functions similar to that of VEC.

***Others*:**

Major studies of Japanese VC firms, the studies of Hamada (1996 and 1998); Kamijo and Hata (1996) and Matsuda (2001), focussed on describing JAFCO, NIF and some other VC firms, which were subsidiaries of financial institutions. Therefore, this study can not illustrate specific information about VC firms in this category based on past research of Japanese VC firms. This area of investigation and information will be conducted and illustrated in chapter five using data collected as part of this study from independent VCFs in Japan.

5.1.3 Locations of the Japanese VC Industry

As discussed in section 5.1.1, the Japanese VC industry started to earn the recognition of society and researchers around the mid-1990s. Accumulated VC investments had totaled less than $2.2 billion in the 1980s (Hata and Kamijo, 1996). Although throughout the 1980s large traditional VC firms, JAFCO and NIF, had operations all over Japan, most Japanese VC firms' investments were concentrated in two geographical areas, the Tokyo area and the Kansai area, including Osaka, Kyoto and Kobe (Hamada, 1996 and 1998). Since there are no historical records available to show the breakdown of geographic investments in the 1980s, however, this study can not illustrate such a picture. In the 1990s, especially after the introduction of two acts in 1998, the Toshijigyo-kumiai Yugensekinin Act (Limited Liability of VC Funds Investment Act) and Toushi Rieiki Keigen Hou (Capital Gains Act), both of which are discussed in detail in section 5.4.3, more information became available. Table 5.2 shows the historical VC investment record based on the information.

Table 5.2 The Areas of VC Investment Committed 2000

Area or Country	1998	2000
Tokyo	32%	53%
Kansai area	10%	10%
East Asian regions (including Hong Kong, Singapore, Thailand)	35%	20%
Remaining areas in Japan	18%	7%
Other countries	5%	10%
Total	$2 billion	$2.3 billion

(Source: The report of VEC 2001 and modified by the author)

In fact, according to the VEC annual report of 2001, Tokyo and the Kansai area attracted approximately 63% of VC investments of $2.3 billion in 2000 and other areas of Japan only attracted 7% of total VC investment. The significant difference from the U.S. VC industry is that VC investments in other countries, the East Asian region, accounted for about 20% of the $2.3 billion in VC investment in 2000 and about 35% of the $2.0 billion in VC investment in 1998. By comparison, in the U.S. (illustrated in table 4.4) VC investment was committed to new ventures or companies predominantly in the five states (California, Massachusetts, Connecticut, New York, and Texas), which attracted about $33.4 billion in VC funds, about 82.8% of the $40.27 billion U.S. VC industry in 2001. A significant percentage of the VC funds collected in Japan was committed and spent on new ventures and companies in the East Asian region, including Hong Kong, Singapore and Thailand (see table 5.2). This information suggests that domestic entrepreneurial activities do not provide sufficient deal flow for the Japanese VCFs

5.1.4 Additional Discussion of Creation and Diffusion of Knowledge in the Japanese VC Industry

Utilizing the limited information from previous studies about VCFs in Japan, the following sections describe Japanese VCFs in terms of services and activities, management structures, and decision-making issues. This description will provide baseline knowledge about Japanese VC firms and their differences from the U.S. VC

firms, which will be extended by the data collected in this study and presented in chapter six.

Services and Activities of VCF

In analyzing Japanese VCF services and activities, previous studies found the following. A typical Japanese VCF spent time on networking, finding, identifying and evaluating investment opportunities; negotiating and closing investment deals, thereby providing financial assistance; and attracting additional capital, suppliers and other key stakeholders and resources (Hamada, 1996 and 1998: Hata and Kamijo, 1996). While a typical U.S. VCF provides services targeted at developing the management team of new ventures in its portfolio, including attracting additional directors and management; is involved in creating management policies, such as entry or growth strategies; and provides technical and management assistance (see section 4.1.4), Japanese VCFs stay out of these areas. This information shows that Japanese VCFs have not influenced the business activities or decision-making structures of new ventures as much as have U.S. VCFs. In addition, according to Hamada's study (1998) these large Japanese VCFs create value and secure their investment by making investments in thousands of investment proposals, while U.S. VCFs concentrate on a few good investment opportunities to secure their investments. This information suggests that large VCFs in Japan had more similar to U.S. investment companies rather than VCFs, according to Bygrave and Timmons' study (1992) analyzing the modalities of utilization of funds of VCFs.

However, the number of VCFs has increased dramatically since the mid-1990s (see section 5.1.1). Because Hamada's studies and Hata and Kamijo's study concentrated on investigating large VCFs, such as JAFCO and other VCFs affiliated with large financial institutions, and did not analyze or evaluate services and activities of other types of VCFs affiliated with neither financial institutions nor large manufacturing companies, at the time of their investigation, their information did not illustrate clearly the services and activities of Japanese VCFs. Therefore, additional studies analyzing and evaluating these institutions are necessary. Based on the above information, this study observes the following two functions of Japanese VCFs at the micro level: 1) Japanese VCFs focus

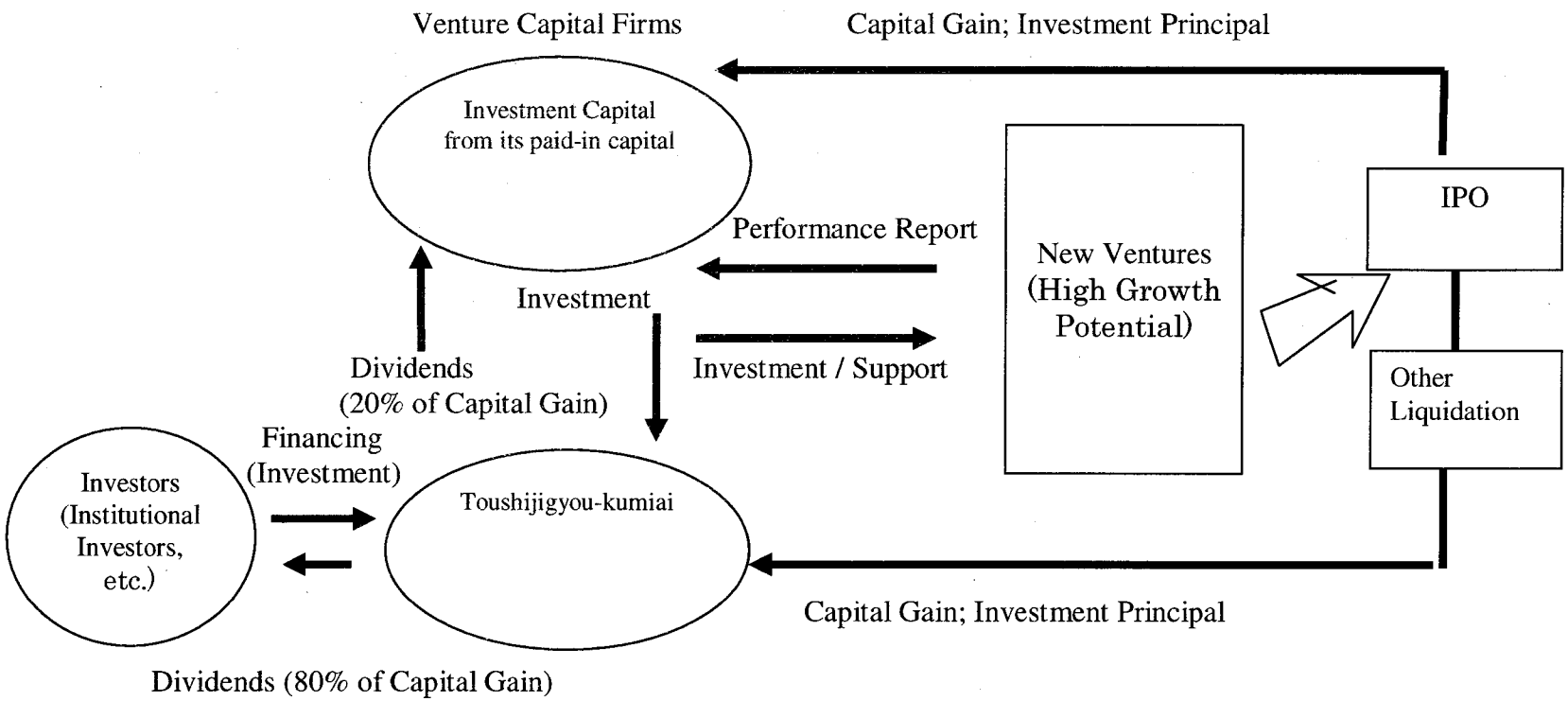
their services and activities in providing financial assistance and attracting suppliers, key stakeholders, and resources for new ventures; and 2) VCFs creates value (capital gains) by applying financial management techniques to new ventures in the late developmental stage.

Management Structure of VCFs and Description of Flow of VC Funds

While the prevalent form of VCF in the U.S. is a partnership, in Japan each VCF has a jointly invested equity base and such firms invest in new ventures from their pooled equity. This pattern started with the first VCF, KED. While only a few professional managers manage U.S. VCFs, traditional Japanese VCFs are managed by many managers and employees in many different departments, with no professional managers who can manage all VC investment activities by themselves. Each VCF consists of multiple-function departments, and manages VC funds through many different processes in many different departments. For example, until recently JAFCO had 350 employees divided into 11 different departments: industry analysis, consultation, investigation, investment planning department, and so forth (see chapter 6).

However, recently a "Toshijigyo-kumiai" (a "cooperative investment program") has grown in popularity as an investment method after Toshijigyo-kumiai Yugensekinin Act [Limited Liability of VC Funds Investment Act] was introduced in 1998 (Hamada, 1998). A VCF establishes this cooperative investment program with other VCFs and VC fund providers by forming a special agreement to avoid a corporate capital gains tax. Figure 5.2 shows the flow of capital to form such "Toshijigyo-kumiai" and shows the operations and key activities of involved parties. In this new approach, Japanese VCFs form a "Toshijigyo-kumiai" function as a separate unit from its parent VCFs and VC fund providers to manage their VC funds. VCFs are directly responsible for managing the VC funds of a firm's equity-based capital and VC funds of the Toshijigyo-kumiai base. When a Toshijigyo-kumiai is formed, a VCF typically contributes 10% of the capital and receives 20% of the return on investments (JAFCO, 1998). On the other hand, VC fund

Figure 5.2 Flow of Capital and Relationship among Japanese VCFs and Investors



Source: JAFCO, 1999

providers provide 90% of capital and receive 80% of the return (JAFCO, 1998). Such fund providers -- financial institutions, institutional investors and large manufacturing companies -- are not directly involved in management and investment decisions. Although there are some minor structural differences in the way they manage VC funds, the scheme for managing funds and distributing capital gains profits in Japanese VCFs operating under this new model is very similar to that of U.S. VCFs because they adapted some knowledge of the U.S. VC in 1970s and 1980s. In addition, according to Hamada (1996 and 1998), an entire organization, not a specific individual, committed a substantial amount of time to marketing its funds to prospective investors and to managing relationships with existing investors. This large organization base of a typical VCF generally has 100 --300 employees usually hired directly after they graduate from colleges or transfer from parent companies, such as financial institutions and securities firms, in contrast to U.S. VCFs which employ people with extensive VC industry knowledge and technology expertise (Hamada, 1998). Japanese VCFs frequently invest heavily in more than 1000 proposals a year and manage relationships with the firms they invested in and with their parent firms until the new ventures' liquidations, usually through an IPO. Furthermore, Japanese Commercial Laws created contextual differences in the way VC funds are managed. According to Hamada (1998), VCFs in Japan were only allowed to form the unlimited liability Toshijigyo-kumiai after the legislation was revised in 1998. Before that regulatory change, in Japan VCFs and VC fund providers had to be prepared to cover the entire loss of their investments in new ventures. In the case of a new venture's bankruptcy, both VCFs and fund providers had to take full responsibility.

Decision-Making Issues

Several studies have been conducted to identify decision-making criteria and processes. For example, Ray and Turpin's study (1992) identified the five most important factors for decision-making criteria of Japanese VCFs by analyzing mail survey responses. According to their study, Japanese VCFs identified the following as their top five criteria for evaluating investment proposals: 1) familiarity of the entrepreneurs with

the target market: 2) capability of the entrepreneurs to make a sustained effort; 3) capability of the entrepreneurs to evaluate and react well to risk; 4) growth rate of the market; and 5) investment liquidity and creation of new markets. Although their research contribution cannot be ignored, in their mail survey, they sent a total of 70 surveys and received only 18 completed questionnaires from which to conclude the above factors. Furthermore, although they claimed that they mailed questionnaires to 70 venture capitalists listed in a directory of Japanese venture capitalists, this study could not find whether such a directory ever existed at the time of their investigation. Also, their survey approach of sending a questionnaire directly to Japanese venture capitalists ignored standard Japanese business procedure, raising some questions of their research results and method reliability. More recently, Hamada's study (1998) illustrated characteristic differences among Japanese VCFs and flows of VC funds, but did not illustrate decision-making criteria of VCFs and venture capitalists. On the other hand, Yamakawa's study (1996) illustrated six important criteria in evaluating investment proposals: 1) context of a business plans and proposals, 2) review and reference of certified public accountants, 3) consultation with owners or CEOs of target companies, 4) factory inspections, 5) review of financial and tax statements, and 6) review of corporate policies. These criteria are significantly different from those of U.S. venture capitalists (see section 4.1.4). While U.S. venture capitalists have their own unique well developed checklists, Japanese VCFs' use evaluation criteria from existing information that any banker or lender can readily access.

5.1.5 Discussion and Summary

The information in these sections describes three industry specific factors, the path of knowledge creation and diffusion, structures and competitions, and the location of the Japanese VC industry. Based on this information, the following section will discuss and evaluate the evolutionary stages of the Japanese VC industry.

1970s --1990: The above information in conjunction with the evaluation points in table 2.1, demand growth, knowledge creation and diffusion, and location of the VC industry during the period from 1970 to 1990 are summarized in table 5.3. The Japanese VC industry learned the concept of VC investment from the U.S. in 1972 and created its own organizational structure for managing funds, adopting a traditional Japanese organizational structure (discussed about it in section 5.1.4) and developed its own services and approaches to new ventures based on domestic cultural and legal constraints.

During this period, there were only a handful of VCFs, and they refrained from managing new ventures' operations and did not provide members of the board of directors. The level of activity was so low that venture capital was not recognized as an industry. In the 1980s VC investment accounted for only about $100-200 million per year. This research also found that the traditional management style of JAFCO dominated Japanese VCFs. The Japanese VC firm was structured as a publicly traded closed-end organization and heavily influenced by the parent firm (as discussed earlier). Also, financial institutions and some large manufacturing firms provided all VC funds. Wealthy individuals and families and others did not contribute VC funds at all. (By comparison pension funds and endowments are large providers of VC funds in the U.S.). In fact until

Table 5.3 Evaluation of the Japanese VC Industry (1970s -- 1990) --Application of Table 2.1

Changes in VC investment and number of VCFs	Before 1980, only 7 VC firms; VC investment accounted for only $ 200-300 million in 1980s.
Familiarity with VC investments and its management	No major academic studies of VC investment and management.
Diffusion or introduction of standard style of managing VC funds	Most of VCFs adapted the style of JAFCO. However, there was no clear evidence about diffusion of VC funds management knowledge.
Changes in source of VC funds	Parent firms, financial institutions
Structural change and competition in the VC industry	In 1980s, the number of VC firm accounted about 80 companies. But JAFCO and NIF monitored about 40% of total VC investment.
Location of the VC industry	Tokyo and the Kansai area

Created by the Author

the introduction of Toshijigyo-kumiai Yugensekinin Act (Limited Liability of VC Funds Investment Act) and Toushi Rieiki Keigen Hou (Capital Gains Act) in 1998, wealthy individuals and families and others (pension funds and endowments) were prohibited from providing capital to VCFs. Studies about Japanese VC firms from the 1970s to 1990 show that they were homogeneous and behaved similarly in their approaches to new ventures because they were only limited VC firms. In addition, VCFs were primarily limited in geographical reach to Tokyo and the Kansai area. This suggests that the VC industry was not recognized outside its small community and those activities of VCFs or venture capitalists were not widely valued throughout society. These studies of the Japanese VC industry show that the industry had been growing very slowly, since the inception of KED in 1972, as figure 5.1 shows. Due to these conditions, this study concludes that during the period from 1972 to 1990 the Japanese VC industry was in the emerging stage of its evolution.

Since 1990: As the above information, in conjunction with the evaluation points in table 2.1, demand growth and the knowledge creation and diffusion of the VC industry during the period from 1990 to 2001 are summarized in table 5.4. The number of VCFs had increased from around 80 in the 1980s to over 100 companies by 1992. However,

Table 5.4 Evaluation of the Japanese VC Industry (1990-2002) [Application of Table 2.1]

Changes in VC investment and number of VCFs	Number of VCFs increased from 80 in 1980s to 185 in 2001; in 2001 accumulated VC investment amounted to over $8.2 billion.
Familiarity with VC investments and its management	Knowledge spread throughout late 1990s. VC investment started to earn social recognition around the mid 1990s.
Diffusion or introduction of standard style of managing VC funds	Toshijigyo-kumiai approach became the preferred investment scheme after 1998.
Changes in source of VC funds	Financial institutions, banks and insurance companies provided about 95% of VC funds. There were no recognized contributions of wealthy individuals and family in 2001. Pension funds provided about 5% of VC funds.
Structural change and competition in the VC industry	More independent VCFs were organized since 1998.
Location of the VC industry	Still geographically concentrated in Tokyo and the Kansai area.

Created by the Author

major expansion of the VC industry did not occur until the introduction of Toshijigyo-kumiai Yugensekinin Act (Limited Liability of VC Funds Investment Act) and Toushi Rieiki Keigen Hou (Capital Gains Act) of 1998. Since 1998, more independent VC firms have been established and the number of VCFs and the volume of VC funds have been increasing. Independent VCFs have adopted a toshijigyo-kumiai program for managing VC funds. Because there have been very few studies about VCFs in Japan and most studies still focus heavily on describing organizational structure and the operating procedures of JAFCO and NIF, studies of Japanese VC firms throughout 1990s also showed that they are homogeneous and behave similarly in their approaches to new ventures. Although many VCFs had been organized since industry knowledge was imported from the U.S. in the early 1970s, a clear standard form of managing VC funds, toshijigyo-kumiai, did not become a standard approach until 1998. This suggests that in general VCFs and venture capitalists started to earn their recognition as keys to economic success. Also academic researchers have started to produce more research about the activities of VCFs since 1995. This also suggests that uncertainty about VCFs has diminished throughout the late 1990s. However, studies are still limited. Due to these conditions, this study concludes that during the period from 1990 through the early 2000s the Japanese VC industry remained in the emerging stage of its evolution, though it could be argued that the industry has been shifting into the growth stage mode after 1998.

To determine in which evolutionary stage the Japanese VC industry exists and evaluate influential factors, the following section illustrates internal industry environmental factors (demand and supply conditions of the Japanese VC industry) and external industry environmental factors (technological, economic, governmental and social structural factors) of the Japanese VC industry.

5.2 Demand Conditions of the Japanese VC Industry

This section reviews how entrepreneurs of new ventures backed by VCFs and venture capitalists have been perceived in Japan to illustrate the behavioral aspects of the demand conditions of the VC industry and to investigate the relationship between demand conditions and the general development of the Japanese VC industry. However,

as there are no such studies available, this section instead reviews landmark studies describing how entrepreneurs have been perceived in Japan to illustrate behavioral aspects of the demand conditions of the VC industry, then illustrates the actual entrepreneurial activities in terms of job creation, numbers of new firms created and the creation of new industries by VC backed firms to show the structure of the elements of the demand conditions.

5.2.1 Understanding Entrepreneurs

Researchers in Japan introduced the term, "Kigyouka" to express entrepreneur's activities, in the same manner researchers in the U.S. do, only in the mid-1990s. One such researcher, Matsuda, S. of Waseda University, defines an entrepreneur as the following:

> An entrepreneur performs economic activities to establish or start new ventures to introduce new products or services, and bring the new era into the existing market (Matsuda, 2001, p.17)

As this definition shows, there are no significant differences between the understanding of entrepreneurs in Japan and in the U.S. (see chapter four). However, Japanese understanding of entrepreneurs has just recently emerged, especially after the Japanese economy started having difficulty recovering from the economic recession and period stagnation since the beginning of the 1990s. In fact, entrepreneurs are not socially welcomed or admired very highly, except in a few cases. For example, according to Kenrick (1991); Whitehill (1991) and others, socially Japanese people are eager to belong to big companies: the bigger, the better. People tend to look down on small and new companies. Also, even when people do business, they place a huge value on reliability, history, and traditions so starting a new venture and doing business through a new venture are extremely difficult because the company doesn't have these desired traits (Kenrick 1991; Whitehill 1991). Thus, a new venture creates a very negative impression; it is seen as possessing no reliability or history. Also, studies of entrepreneurs were not socially or academically recognized until the late 1990s. In fact, researchers in Japan had

their first conference on entrepreneurship in December 1998 (The Japan Venture Society, 1998). In addition, in analyzing past studies, this research found that there was no specific terminology to express the real meaning of "entrepreneur," such as that suggested by Schumpeter (see page 72): "[Entrepreneur] is not only the vehicle of continual reorganization of the economic system but also the vehicle of continual changes in the elements, which comprise the upper strain of society;" or Kuratko and Hodgetts (see page 75), who indicated entrepreneurs were the catalysts for economic change and the ones that work creatively to establish new resources or endow old ones with a new capacity, all for the purpose of creating new economic value. In fact this research found that there had not been a clear standard definition of entrepreneurs before the mid-1990s, as the following paragraphs illustrate.

Whitehill (1991) studied individual Japanese businessmen's success stories in the Meiji Era, from 1863 to 1910 and in the first half of the Showa Era, from 1914 to 1945. But his studies failed to identify and define entrepreneurs in Japanese society. Then, Rosovsky and Yamamura's study (1970) was one of the early studies to introduce the general concept of entrepreneurs to Japan. According to their study, Japanese entrepreneurs were dedicated heroes and nationalists who put the goals of the state and country before their own profits. These entrepreneurs showed their sacrifice for their country and their decisions and actions followed national policies. Entrepreneurs in Rosovsky and Yamamura's study often represented the interests of the government. They were not the vehicles of continual changes in the economic activities, nor did they work creatively to establish new resources or endow old ones with a new capacity, as Kuratko and Hodgetts suggested in their definition (see section 4.2.1), and other researchers in the U.S. illustrated. Also entrepreneurial processes in Rosovsky and Yamamura's study were a very necessary process to construct the Japan's social infrastructure, such as roads and railroads, and to establish the steel industry. In addition, the term "Kigyouka," which their study used to describe their entrepreneurs, indicates a person who manages a corporation, but not one who creates new products or new companies. This information also suggests that entrepreneurs in Rosovsky and Yamamura's study (1970) were only interested in managing a corporation and the same entrepreneurs were not interested in

introducing creative destruction and innovation into the market.

Furthermore, according to studies by Kiyonari (1972; 1975) and Nakamura (1966; 1976 and 1985) [the most recognized researchers in the field of studying small businesses and recognized for paying attention to the strong economic contribution of these enterprises in the 1960s and 1970s] during the late 60s and the early 70s - a period of high economic growth, a lot of people spun off from large companies and started their own companies. Together, their studies illustrated how the high economic growth conditions helped new ventures earn positive images in their effort to establish new companies. But the same studies failed to illustrate the important role and contribution of entrepreneurs in this economic growth period.

In the 1980s - a boom period for the formation of new ventures, such as the personal computer companies Sord Corporation and Cosmo Eighties, Kiyorari's (1986) research successfully illustrated contributions of small and medium sized enterprises, but again did not illustrate the roles or contributions of entrepreneurs. This fact suggests that Japanese research in the field of business management failed to introduce a clear understanding and definition of entrepreneurs. This fact also can be confirmed by Rosovsky and Yamamura's (1970) comments in their research:

> Post World War II, Japan resembled "Sengoku Jidai" (the period of Japanese civil-wars during the sixteenth century) when a man of ability could climb up to a position of power and fame even without a "proper" background. However, it is possible that in studying Japanese modernization the human being - specifically one form of human, the entrepreneur – has been neglected (Rosovsky and Yamamura's study, p.1).

Rosovsky and Yamamura's study comments clearly suggest that Japanese researchers before the mid-1990s did not pay attention to entrepreneurs. Besides the studies referenced above, this study was unable to uncover additional useful materials that could illuminate the evolution of the concept of entrepreneurship in Japan before the mid-1990s. The available information indicates that in Japan understanding about entrepreneurs and the contribution of their activities is very limited and that there had not been a positive environment to nurture or encourage entrepreneurs. The next section describes actual

entrepreneurial activities in Japan to show the structural elements of the demand conditions of the Japanese VC industry.

5.2.2 Entrepreneurial Activities in Japan

Creation of Jobs

On average, the Japanese economy from 1963 to 1983 added about 150,000 new companies every year (White Paper of Small Firms, 1984). However, during this period researchers did not study the contribution of small businesses to job creation. In fact, most researchers insisted that small businesses in Japan either would not survive against competition from large firms or they would be acquired or totally controlled by large firms (Takashiro, 1998; Masuda, 2001; etc.). Although the Japanese government's report on small businesses showed historical records of the number of employees, the same report did not identify increases in job opportunities within small businesses as a positive sign of economic development. However, the report illustrated lost job opportunities in large firms and indirectly evaluated people who took advantage of job opportunities in small businesses negatively (Ono, 1998). As a result, none of the government reports have ever illustrated how many new jobs have been created by small businesses. Lack of this kind of academic research and governmental ignorance also can be confirmed by looking at the past business environment in Japan. For example, according to the study of the Asian Pacific Communication (1990), the business systems in Japan for the past fifty years were designed to make it very difficult for independent entrepreneurs to start something, but easy for one of the large industry groups to launch new businesses to increase their profitability.

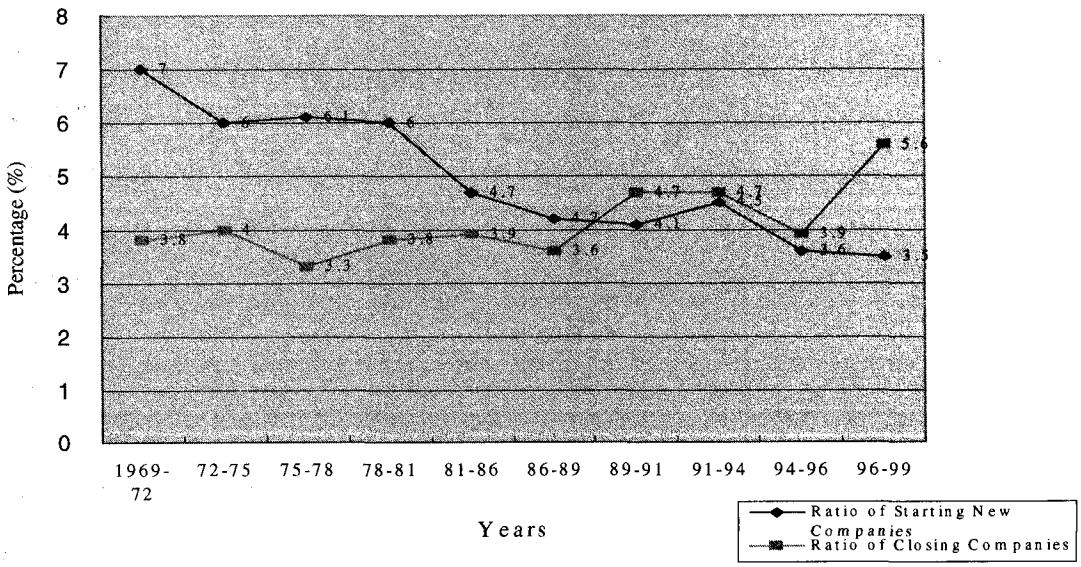
Furthermore, according to Business Tokyo (1991), within traditional business practices in Japan, large industrial group companies (Keiretsu Companies) usurp the business opportunities and customers of entrepreneurs by exerting their influence and financial power. Further, if large companies recognize that a small company is potentially valuable, one of them will acquire the company when it is young and growing, and make it one of their permanent suppliers by influencing banks and loan companies. On such occasions they usually do not follow the regulations of anti-trust laws (Business Tokyo,

1991). Therefore, based on the above reasons, this study concludes that in Japan both researchers and the government did not perceive that small businesses contributed to creating job opportunities in the past.

New Firm Creation

In terms of new firm creation, an analysis of the past fifty years of Japanese government records at the Small and Medium Sized Businesses Administration (SMBA) found that a complete historical record of new firm creation does not exist. However, according to partial records, for the four years 1996-1999, on average about 100,000 new firms have been created and more than 120,000 firms have been terminated annually (The White Paper of Small Firms, 2001). Over this period the statistical number of new firms finally became lower than the number of bankruptcies, as figure 5.3 shows. This suggests that in Japan there are fewer people interested in starting new companies than there are in the U.S. (see figure 4.3). This indicates that the Japanese economy is losing its dynamism and the economy is shrinking.

Figure 5.3 The Ratios of Starting and Closing of Companies in Japan



Source: The White Paper of Small Firms, 2001

Creation of Specific Companies and Industries

Based on the study of JAFCO (2001), section 4.2.2 showed that leading high technology companies -- such as Intel, National Semiconductor and Advanced Micro Devices in the semiconductor industry; Apple and Dell in the personal computer industry; Genentech, Amgen, and Genzyme in the biotechnology industry; and Federal Express in the express package industry, have all been helped and invested in by U.S. VCFs to help achieve their goals and successes. Thus, the following paragraphs illustrate the major or influential companies in the semiconductor, personal computer, express package and biotechnology industries in Japan, in comparison. Because entrepreneurs backed by VCFs have not been able to create leading companies and major industries in the past, this study cannot show the actual entrepreneurial activities in the same way as in chapter three. This study instead attempts to answer the following question. If entrepreneurs backed by VCFs did not create current leading companies and major industries in Japan, who did?

Semiconductor Industry

According to "Semiconductor Industry Plan and Summary of 1985 and 2001", in the 1980s the top five companies in the semiconductor industry were NEC, Hitachi, Fujitsu, Toshiba, and Panasonic, while in 2000 the top five companies were Toshiba, NEC, Hitachi, Mitsubishi Electronics and Fujitsu, as table 5.5 shows. Among these top five companies, none of them are independently operated firms and all of them belong to Keiretsu. For example, Toshiba is the center of Toshiba Keiretsu companies and it was founded in 1904 after two companies, Tokyo Electronics and Shibaura Electronics, merged. Furthermore, NEC was founded in 1899 as a strategic subsidiary firm of Sumitomo Keiretsu, which is the second largest Keiretsu in Japan. Sumitomo Keiretsu has more than three hundreds years of history (Okumura, 1992).

Table 5.5 Semiconductor Maker Ranking, 2000 ($ Million)

Ranking	Company	Production Volume in Dollars
1	Toshiba	1,100
2	NEC	958
3	Hitachi	770
4	Mitsubishi	680
5	Fujitsu	630
6	Panasonic	440
7	Sony	400
8	Sharp	396
9	Romu	367
10	Sanyo	318

Source: Semiconductor Industry Plan and Summary 2001.

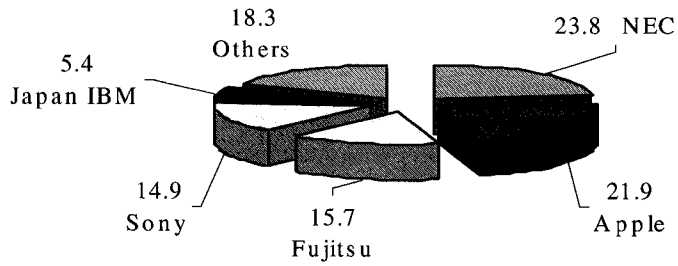
All leading companies in the semiconductor industry in Japan belong to Keiretsu, meaning that crucial technological developments in semiconductor technology were carried and accomplished by existing large companies, but not new ventures. In fact, according to the Ministry of Economy, Trade and Industry (2001), the top five companiesare the leading research companies in terms of submitting technological patents related to semiconductor technology.

Thus, this information suggests that major technological development in the semiconductor industry was not conducted by new ventures backed by Japanese VCFs. Japanese VCFs did not contribute the development of the Japanese semiconductor industry.

Personal Computer Industry

According to the "A Research for Information and Media Society 1990" (Dentsu Research Institute, 1990) the top five companies in the personal computer industry were NEC, Fujitsu, Toshiba, Hitachi and Mitsubishi in 1980s and according to "A Report of Research for Information and Media Society 2001" (Dentsu Research Institute, 2001) in 2000, the top five companies in the personal computer industry were NEC, Apple, Fujitsu, Sony and Japan IBM, as figure 5.4 shows. Among these top five companies, NEC and Fujitsu again belong to Keiretsu, as briefly described in the semiconductor industry

Figure 5.4 Market Share of the Personal Computer Industry 2000



Source: Information Media White Paper, 2001

section and their financial needs in developing personal computer technology were supported by banks of the Keiretsu. Among the top five companies, Sony is the only company established after World War II that is often considered a new venture by many Japanese researchers. However, even Sony has never been supported by VCFs. Thus, this information also suggests that major technological developments in the personal computer industry were not conducted by new ventures backed by Japanese VCFs, nor did Japanese VCFs contribute the development of the Japanese personal computer industry.

Express Package Industry

According to the "Kokudo-Kotsushou Report about Package Industry, 2000 (Ministry of Land, Infrastructure and Transport 2000)," the top five companies in the express package and package industry were Yamato Unyu, Nihontsun, Seinou-Nunyu, Fukuyama Tusun, and Sagawa Unyu. Among these top five companies, Yamato Unyu, Fukuyama Tusun, and Sagawa Unyu were independently operated firms and none of

them belong to any Keiretsu. However, all of them have been in business for a while. For example, Yamato Unyu was founded in 1929 and Fukuyama Tusun was founded in 1948. Although each firm contributed to the expansion of the industry after World War II, none of these companies in the Express Package Industry was a new venture backed by a VCF. In fact, in analyzing each company's profile this study found that each firm heavily relied on loans from banks and other financial institutions. This information coincides with information in section 5.3, illustrating that the operating capital of companies in Japan had to depend on capital loans from banks, government affiliated financial institutions and the Credit Guarantee Association.

Biotechnology Industry

According to the Chemical and Bio Companies Report 2000 (CMC, 2000), the top three companies heavily investing in research development in the biotechnology industry were the Sumitomo Pharmaceutical Company, Takeda Chemical Industry Company, and Daiichi Pharmaceutical Company. From the name of Sumitomo Pharmaceutical Company, it is obvious that this company is one of member companies of Sumitomo Keiretsu. As for the other two firms, the original form of Takeda Chemical Industry Company was founded in 1781 by Oumiya Chobei, who was a trader of Japanese traditional medicine and the company expanded the business in 1895 by starting to manufacture western medical medicine, while Daiichi Pharmaceutical Company was founded in 1918 as a manufacturer of penicillin in collaboration with the Japanese government.

5.2.3 Summary

In Japan the study of entrepreneurs and their behavior is not well developed. Studies have shown that entrepreneurial activities had not been recognized as important factors in the economy before the mid-1990s. Information about the creation of new jobs, new companies, and new industries showed that VCFs did not contribute greatly to entrepreneurial activities in Japan. In fact, key technological developments in the semiconductor, personal computer, express package, and biotechnology industry in the

1970s, 1980s, and the early 1990s were achieved by large companies belonging to Keiretsu. Because key technology developments in the semiconductor, personal computer, express package, and biotechnology industry were not achieved by new ventures, there was no need to have VCFs involved in management of new ventures in these industries. This finding confirms this study' results in chapter six, which investigates traditional Japanese VCFs known as AFVCFs and which shows that in the 1980s and early 1990s leading VCFs had invested in companies in the service industry and focused their investment in companies that were in a mature developmental stage. This section of the study recognizes that in Japan there have not been strong demand conditions that require the development of the VC industry until the mid-1990s.

5.3 Supply Conditions for the Japanese VC Industry

To illustrate the behavioral aspect of supply conditions of the Japanese VC industry, this section shows perceived roles of VC in the economic development of Japan. Then, the study discusses the size, composition and nature of the capital market to show the structural elements of supply conditions of the VC industry and the sources of VC funds.

5.3.1 Social Perception of VC

Arakawa's study (1992), one of the earliest studies of Japanese VC, illustrated the role of VC in Japan in 1990. According to his study, VC refers to companies or investors who fulfill the function of supplying capital to and supporting the growth of new ventures. Although Arakawa recognized the role of VC at the actual business level, he did not illustrate and define VC at a social system level, like Wilson did (see section 4.3.1). Furthermore, according to the Bank of Japan (1995), "banks establish their own venture capital firms to develop the relationship with potential future clients that will borrow money from the banks, while security firms establish their version of venture capital firms to create the opportunity to manage the initial public offerings of new ventures." The Bank of Japan, the highest authority among Japanese banks and other financial institutions, such as insurance companies and security firms, again recognized

only the roles of VC at the business level, but failed to illustrate and define the social perception of VC. Most recently, Hamada's studies (1996 and 1998) recognized the importance of VC and the VC industry and suggested that the Japanese economy needs to develop its own VC industry. However, his study also did not provide a clear assessment of the social perception of VC in the Japanese economic system, in the way Wilson did with respect to U.S. VCFs. To worsen the situation, Hamada suggested that VC is merely excess capital in a company that is not invested in capital goods improvement or production lines expansion.

Based on the above information, this study suggests that VC in Japan is not recognized as an essential factor in economic growth, in the process of creating new companies, as a mediator for transforming industries, or as a system for determining the economic survival of a nation. VC is simply excess capital that companies create and invest. While this section of the study illustrates clearly different perceptions of VC in Japan from those in the U.S., the following section illustrates the size, composition and nature of the capital market and the sources of VC funds to show the structural elements of supply conditions of the Japanese VC industry.

5.3.2 Structure of Capital Market

The capital market for small businesses in Japan consists of two sources (equity and debt financing sources) with eight segments: Equity Sources [Self, Friends, and Family; Business Angels; Venture Capital Firms; IPO markets] and Debt Financing Sources [Government Affiliated Financial Institutions, Venture Enterprise Center, Credit Guaranty Association, Private Financial Institutions] (Nomura Research Institute, 1992).

Equity Financing Sources

***Self, Friends, and Family*:**

This study found that there has been no official government report about this issue and no academic researchers have studied these financing sources. Because of the lack of secondary data, this study cannot provide any useful information about this category.

***Business Angels (The Informal Venture Capital Market)*:**

There is no official study that estimates the size of the informal VC market in Japan. In 1996, however, Kamijo, Hata and Matsuda (1996) studied successful entrepreneurs' investment approaches to try to further understand the informal VC market. Those entrepreneurs invested in new ventures through their companies or through "Toshijigyo-kumiai," (a special agreement with two or more other institutions to invest together). They did not invest in new ventures individually. By comparison, successful entrepreneurs in the U.S. invest in new ventures individually; such individual VC investors are called "business angels." Kamijo, Hata and Matsuda's study found that this type of informal VC investor is not recognized in Japan. Because there has been no research about the size and structure of Japanese business angels, this study can not estimate the significance of business angels in Japan.

***Venture Capital Firms*:**

As stated in sections 5.1.1 and 5.1.2, in total, all Japanese VCFs together managed about $8.2 billion of VC funds in 2000.

***IPO market (The Public Equity Market)*:**

In 1963, the regional over-the-counter (OTC) registration system was introduced in Japan and the Japan OTC Market was established in the same year (Suzuki, 1992). It consisted of seven regional offices in leading economic regions, such as Tokyo, Osaka and Hiroshima. Each regional office had been managed and operated separately from each other and did not have a nationwide networking system, such as NASDAQ in the U.S. In 1976, the Japanese OTC Security System was implemented to network all offices (Suzuki, 1992). However, the role of the Japan OTC Market was very limited. Only companies which profitable could be traded on this market. Only companies that had been in business for at least thirty years or that had an equivalent financial performance were allowed to go public on this market (Hamada, 1996 and 1998). The market was not for new ventures, but rather for small firms with well established reputations.

The name of the Japan OTC market changed to the "Japan Securities Dealers Association (called JASDAQ) in 1999. But the size of the market (see table 5.2) is far behind that of the NASDAQ market in the U. S. (See table 5.2). For example, in 2000, 886 companies were registered in the JASDAQ market (JASDAQ, 2001) while about 4,600 companies were registered in the NASDAQ market (Japan Securities Research Institute, 2002). Since the number of registered companies in the JASDAQ market was very small, the market values totaled only $102 billion while the NASDAQ totaled $2.59 trillion in 2000 (NASDAQ Japan Report, 2001). Therefore, the influence of the JASDAQ market as a source of VC funds has been very limited. In addition to the JASDAQ market, NASDAQ Japan was established as a joint venture of the NASDAQ and Soft Bank (the largest distributor of personal computer software systems in Japan) in 2000 and the Market of the High-Growth and Emerging Stocks (MOTHERS) was also established by the Tokyo Stock Exchange to give more opportunities for new ventures to go public (Denawa, 2000). According to the report of NASDAQ Japan (2001), all three markets together managed IPOs for 157 companies in 2000 and in total more than $17.6 billion was raised for the financial needs of small firms, as table 5.6 shows.

Table 5.6 Japanese Public Equity Market for Small Businesses, as of 2000

Name of Market	Number of Registered Companies	Number of Companies that Went IPO in 2000	Amount of Capital Raised	Total Market Value
JASDAQ	886	97	$1.2 B	$102 B
Mothers	33	27	$6.7 B	$7.2 B
NASDAQ Japan	69	33	$9.7 B	$12 B
Total Size of the Equity Market	988	157	$17.6 B	$121.2 B

Source: NASDAQ Japan Report (2001)

Debt Financing Sources

There are four types of institutions affiliated with debt financing: Government Affiliated Financial Institutions, the Venture Enterprise Center, the Credit Guaranty Association, and Private Financial Institutions (Commercial Banks) (Nomura Research Institute, 1992).

Government Affiliated Financial Institutions (Shoko-chukin, Chushokigyo Kinyu-koko, and Kokumin Kinyu-koko): These institutions were founded or reorganized after World War II, in the late 1940s and early 1950s, to respond to the capital needs of small businesses (Aoyama, 1999).

Shoko-chukin: It has its offices in each prefecture and major cities and the government provides operating funds (Aoyama, 1999). It also has been allowed to issue Shoko-saiken (a bond) to collect operating funds and collect funds from the deposit funds of member enterprises (Aoyama). To monitor this institution, the Ministry of Finance selects the president. On average, it provides loans of about $850 million a year and has accumulated loans of $114.3 billion (The White Paper of Small Firms, 2001).

Chushokigyo Kinyu-koko: Its operating funds are provided through deposits of the Postal Saving Systems (the Japanese government's operating banking system) and it is also allowed to issue Saiken (a bond) to collect operating funds from Japanese capital markets (Shobayashi and Iwata, 1998; and Aoyama, 1999). It provides long term loans for purchasing equipment and working capital. The Ministry of Finance also selects the president of the institution. Its main customers are enterprises employing more than 20 people and less than 500 (Shobayashi and Iwata). On average, the institution provides loans of $2.48 billion a year and has accumulated loans of $74 billion (The White Paper of Small Firms, 2001).

Kokumin Kinyu-koko: Its operating funds are also provided through the deposits of the Postal Saving Systems; it is allowed to issue Saiken to collect operating funds, and it also provides long term loans of equity investment and working capital (Shobayashi

and Iwata, 1998, p. 93--98; and Aoyama, 1999, p.205). The Ministry of Finance also selects the president of the institution. Its main customers are enterprises employing less than 20 people. On average, the institution provides loans of about $3.36 billion a year (Kinyu [translated as "Financial Market"], 2001) and has accumulated loans of $3.14 trillion (The White Paper of Small Firms, 2001).

All three institutions provide very similar services for small business in Japanese capital markets, but they maintain a certain level of competition among themselves (Shobayashi and Iwata, 1998).

Venture Enterprise Center (VEC):

As stated in section 5.1.1, this study estimates that VEC provided at least $100 million over the past five years.

Shinnyo-Hosho Kyokai (Credit Guaranty Association):

According to Aoyama (1999), this is a non-profit organization established through the cooperation between local governments and locally operating enterprises. It collects operating funds through membership fees from small businesses in each operating area. A member firm can borrow money from private financial institutions of up to $2 million interest free and this organization guarantees the payment in exchange for a fee of 1% of the loan. On average, this institution provides loans of $1.2 billion a year (Kinyu [translated as "Financial Market"], 2001) and has accumulated loans of about $40 billion (The White Paper of Small Firms, 2001).

Private Financial Institutions (Bank Loans):

This group of financial institutions consists of city banks, local banks, secondary local banks, and credit cooperatives. *City banks* are members of Keiretsu, such as Sumitomo Group, Mitsubishi Group, etc (Okumura, 1992; Business Tokyo, 1990). Its main customers are member companies of each Keiretsu and small firms doing business with members of the Keiretsu (Okumura, 1992; Business Tokyo, 1990)). *Local banks* (a total of 47 banks.) and *secondary local banks* (a total of about 90 banks) are institutions

located in each of the 47 prefectures and the majority of their loans are made to companies that have their headquarters in the same prefecture (Shobayashi and Iwata, 1998; and Aoyama, 1999). *Credit cooperatives* are also private financial institutions located in each prefecture and the majority of their loans are also made to companies that have their headquarters in the same prefecture (Shobayashi and Iwata; and Aoyama). On average, these four types of private financial institutions together make $103 billion loans a year (Kinyu [translated as "Financial Market"], 2001) and maintain a total of $2.9 trillion in accumulated loans (The White Paper of Small Firms, 2001).

Summary information for these eight segments of financial markets for small businesses: government affiliated financial institutions, Venture Enterprise Center, Local Loan Guaranty Association, Bank Loans, Business Angels, Investment Corporations, Venture Capital Firms, and IPO Market is presented in table 5.7.

Table 5.7 Total Structure of the Capital Market for Small Businesses, 2001

Equity Financing Sources	Cumulative Investment as of 2001 ($B)	Debt Finance Sources	Cumulative Investment as of 2001 ($B)
Self, Friends	N/A	Government Affiliated Financial Institutions	3,140
VC	8.2	VEC	0.1
Business Angels	N/A	Credit Guaranty Association	40
SMEIC	0.1	Private Financial Institutions	2,900
IPO	17.6		
Total	25.9	Total	6,080.1

Created by the Author

5.3.3 Funding Sources of the Japanese VC Industry

Sources of capital for the Japanese VC industry were also discussed in Section 5.1. In summary, past studies suggested that sources of VC funds from wealthy individuals and families represent only 1% of VC funds, while pension funds accounted for 0%, financial institutions 35.4%, big corporations 22.6%, VCF's pooled money 10.5%, foreign institutions 29.8% and other sources 1.7% (VEC, 2001). While foreign institutions have increased their presence as sources of VC funds from 15% in 1996 to about 29.8% in 2000 (VEC), financial institutions are still the most influential fund providers in Japan. Also, past research studies suggest partial sources of these funds are obtained through reinvetment of the capital gains of investors from the IPO market. Therefore, the structure of supply conditions of the VC industry consists of two sections: the VC industry itself and the IPO market. However, in the past there have been no studies analyzing how much capital raised in the IPO market is fed back in as a source of VC funds.

5.3.4 Summary

This section has identified and illuminated the capital market for small businesses. The market consists of two sources within seven segments: Equity Financing Sources (Self, Friends, and Family; Business Angels; Venture Capital Firms; IPO market) and Debt Financing Sources (Private Financial Institutions; Small Business Administration; and Small Business Investment Companies [SBICs]). Analyzing changes over time in the sources and characteristics of small business financing indicate that the VC industry is only a small segment of the capital market for small businesses in Japan, as table 5.7 shows. The total size of the capital market was about $6.1 trillion and VC only provided about 0.13 % of the capital, whereas in the U.S. VCFs provide about 10% of the capital market and 35% of the equity market (see section 4.3). This suggests the VC industry in Japan is a very small factor in influencing the structure of the equity capital market.

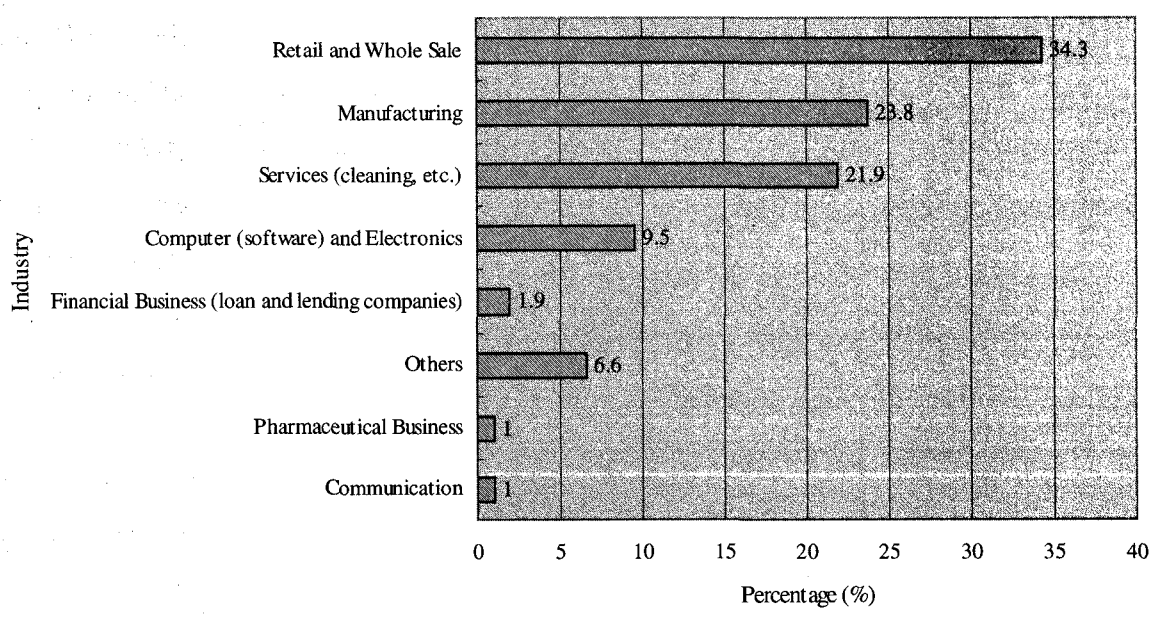
5.4 Technological, Economic, Governmental and Social Structural Factors

The four factors - technological, economic, governmental and social structural - previously used to describe conditions for the evolution of the U.S. VC industrywill serve as a framework to describe and evaluate conditions of the business environment of Japan which influences the evolution of the Japanese VC industry.

5.4.1 Technological Factors

While section 4.4.1 of this study showed that technological developments in industries, such as the computer peripherals, semiconductor, and biotechnology industries, stimulated and accelerated the evolution of the U. S. VC industry, there has not been any particular high technology industry developed by the capital and knowledge of VCFs in Japan, as section 5.2.2 illustrated. In fact, according to the study of JAFCO (1998), NIF (1997), and others, Japanese VCFs concentrated their activities in helping well

Figure 5.5 Industry Clasification of Companies Took IPO in the 1990s



Source: VEC 2001

established firms to undertake an IPO or in providing capital for small businesses in services and retail businesses and some manufacturing business, as figure 5.5 shows. Also, according to a study of VEC in 2001, even in 2000 Japanese VCFs invested heavily in transportation, finance and consumer service companies (VEC, 2001). Therefore, this study suggests technological developments in industries such as computer peripherals, semiconductor, and biotechnology, did not accelerate the evolution of the Japanese VC industry. It is clear that there have been no new ventures trying to develop new technologies that have attracted investments from VCFs and that trends in technological development did not determine the flow of VC or shape the structure of the Japanese VC industry.

5.4.2 Economic Factors

As section 5.1 and 5.2 illustrated, since VC or the VC industry has never been a major or influential industry in Japan, this study cannot attempt to identify economic factors that affected the evolution of the Japanese VC industry. Instead, this study will illustrate why the VC industry in Japan has never been a major or influential industry by illustrating economic conditions in Japan since the end of World War II. According to many studies about Japanese economic performance, in the 1940s, 1950s and 1960s Japan was still trying to recover from the damages of World War II and the country was still considered a developing country (Whitehill, 1991; McMillan, 1991). Thus, the Japanese economy had to deal with many problems, such as developing efficient industry policies, restoring social peace and rebuilding social infrastructure (McMillan, 1991). Even after Japan became a member of the industrially developed countries in the 1970s, the Japanese government and leaders of business sectors put their efforts into creating a favorable environment for large existing business groups, such as Mitsubishi, Mitsui, Sumitomo group, and etc. (McMillan, 1991; Whitehill, 1991). In addition, as table 5.8 shows (see next page), the Japanese economy had higher economic growth trends than the U.S. due to the excellent business performance of companies in the steel manufacturing, shipyard building, and construction business industries in those years (Nippon Steel Human Resources Development, 1988 and Abegglen & Stalk, 1985).

Table 5.8 Annual Average GDP Growth Rates of Japan and The U.S.

	Annual Average GDP Growth		
	1960-70	1970-81	1981-1990*
Japan	10.9%	4.7%	5.9%
U.S.	5.7%	2.4%	2.8%

Source: McMillan, C. (1991), except *: General Index of Imidas 1993

When the Japanese economy suffered the first oil crisis in 1973, the consumer electronics industry and the automobile industry emerged as new industries to lead continuous economic growth (Abegglen & Stalk). Those industries introduced new products and created many new job opportunities in the country. This information indicates that during the high economic growth periods, the government and leaders of the business sector did not recognize any importance in developing the VC industry in the way business leaders and the U.S. government recognized the importance of developing the VC Industry in the 1940s and the early 1970s (stated in details in section 4.1).

However, since the beginning of 1990s through 2002 the Japanese economy has been struggling to create new industries to lead high economic growth and provide new job opportunities. For example, the unemployment rate in September of 2001 hit the historic high of 5.8%, the highest since 1945 (General Index of Imidas, 2003), and the annual GDP growth rate dropped to – 0.4 % in 2001 from 5.3 % in 1990 (General Index of Imidas, 2003). Financial institutions claimed that they had over 50 trillion yen (over $500 billion) of bad loans in 2001 (Japan Almanac, 2002). Blue chips NEC and Fujitsu ran record losses in 2000 (Nihonkeizai-Shinbun, 2001), and the automobile maker Mazda became part of the Ford Motor Company in 1996 (Nihonkeizai-Shinbun, 1996). Clearly, the Japanese economy is in trouble. Such conditions affected the attitudes of public policy makers and leaders of business sectors, influencing them to create new ventures and develop the Japanese VC industry (Matsuda, 2001).

As section 4.4.2 suggested, when business systems or social systems in the U.S. created and developed the VC industry in the late 1970s and early 1980s, the country was

under pressures of economic threat from other nations or stagnation in traditional established industries. This condition is very similar to the one that Japan is facing now. Therefore, this study suggests that in the beginning of the 21st century the Japanese government and leaders of business sectors need to create more aggressive policies to develop the VC industry and establish a favorable environment in which entrepreneurs can create new ventures.

5.4.3 Governmental Factors

This section of the study uses the governmental factors identified in section 4.4.3 -- five key legislative changes that directly impacted the U.S. VC industry, and two additional legislative changes that indirectly impacted the U.S. VC industry -- as a framework for identifying comparable legislative changes in Japan, where they have occurred.

Direct Impact Legislation

Three direct impact legislative changes were identified:

1. *Nenkin-shiki's Investment Policy Change Hou* (*Deregulation of Pension Fund Investment Act*, 1997): Changes in this law allowed pension fund managers to invest in high-risk assets; including VC funds (Future Venture Capital <FVC>, 2000). This new legislation should have a similar effects to that created by ERISA's "*Prudent Man" Rule* (1979) and ERISA "*Safe Harbor" Regulation* (1980) in the U.S. Although the study of VEC in 2001 reported that about 5.6% of total VC funds (approximately $500 million) came from pension funds, as this study will illustrate in chapter six, this change has not yet altered the investment attitudes of Japanese pension funds.
2. *Toshijigyo-kumiai Yugensekinin Hou* (*Limited Liability of VC Funds Investment Act,* 1998): This new legislation ensures that VC fund providers, such as pension funds and individual investors, only have a limited liability in the case of VC funds' dissolution or bankruptcy of VCFs (FVC, 2000). Before this act was introduced, the responsibility of VCFs and fund providers was unlimited, meaning that even VC

fund providers had to take unlimited liability for their funds. As a result of introducing this new act, more independent VCFs had been established since the announcement of this new act in 1997.

3. *Toushi Rieiki Keigen Hou* (*Capital Gain Act,* 1998): Changes in this law lowered the capital gains tax rate from over 50% in 1996 to 20% (Kamijo, Hata, Matsuda, 1996 and Report of Tokyo Stock Exchange 2000). This change provided capital gains incentives for VC investors and VC fund providers. As a result, committed capital investments have increased from $1.5 billion in 1995 to $2.3 billion in 2000 (VEC, 2001). In addition to this fact, according to Ono (1998), before this new legislation was introduced, there were no significant incentives for forming independent VCFs or collecting large VC funds.

By looking at the description of each piece of legislation, it seems that each should have similar effects to those created in the U.S. by the Revenue Act (1978), ERISA's "Prudent Man" Rule (1979), Small Business Investment Incentive Act (1980), ERISA "Safe Harbor" Regulation (1980), and Economic Recovery Tax Act (1981). However, because in Japan all of them were introduced quite recently, no academic study has yet analyzed their impact. However, this study suggests that governmental factors in the Japanese VC industry reveal that the current evolutionary stage of the Japanese VC industry is very similar to the stage of the U.S. VC industry in the early 1980s.

While the above paragraphs of this section have recognized and illustrated some legislation directly affecting the evolution of the Japanese VC Industry, the following paragraphs describe some legislative changes that might have indirectly affected the evolution of the Japanese VC industry.

Indirect Impact Legislation

Three pieces of indirectly impact legislation have been identified:

1. *Chushou-Souzou Hou* (*Small Business Innovation Development Act*, 1989). The Japanese government introduced a new program, the Japanese version of the US Small Business Innovation Research program (JSBIR program), which involved

small businesses in governmentally funded research and development (Ono, 1998). However, according to Ono's study, "since its introduction none of the small businesses in the JSBIR program have produced innovations of critical importance in a wide variety of high-technology fields, including the personal computer and biotechnology industries. The program has not been functioning the way that the government expected."(p.174)

This statement of Ono' study indicates that the Japanese government policy has not functioned well to help the development of crucial technology in new ventures or small businesses in the past.

2. *Deregulation in IPO rules* (1983): the Tokyo Stock Exchange Commission (SEC) reduced the requirements for companies to make an IPO in the OTC market. However, according to many researchers, such as Ono (1998) and Hamada (1998), this deregulation did not introduce enough incentives for VCFs and firms planning to conduct an IPO. Therefore, the number of IPO companies increased only slightly from 15 in 1982 to 22 in 1984 (JASDAQ Report 2000).
3. *Deregulation of IPO markets* (1999): the Japanese government deregulated IPO market rules. As a result, two new equity markets formed, Mothers and NASDAQ Japan (established in 1999 and 2000 respectively, see section 4.3.2). Also, the Japanese OTC market changed its name to JASDAQ (see 4.3.2). All three markets reduced the requirements for having an IPO, resulting in an increase in the number of firms making an IPO, from just 62 in 1998 to 157 in 2000 (JASDAQ Report 2000).

Deregulation in Japanese IPO markets by the Japanese government helped formation of new equity markets and reorganization of the existing market, the Japan OTC market. Creating new equity markets, more useful and usable for new ventures, will provide a better environment where VCFs can achieve capital gains more easily than before and feed back capital to new ventures needing more capital for their business. Therefore, this study suggests these changes will provide more incentives for forming new independent VCFs and collecting VC funds.

5.4.4 Social Structural Factors

The following paragraphs restate and summarize briefly how Japanese society recognizes VC (section 5.3) and shows how venture capitalists are recognized in various segments of society.

Social Perceptions of VC

This study presented the following perception of VC in Japanese society from section 5.3. VC in Japan is not an essential factor in economic growth and in the process of creating new companies and it does not take the role of a mediator for transforming industries nor as a system for determining the economic survival of a nation, as U.S. VC does. In Japan VC is still simply excess capital that companies create and invest.

Recognition of Venture Capitalists

Because VC and the VC Industry are not highly regarded in Japanese society, there has not been positive recognition of venture capitalists, either. In fact, in Japan there are no venture capitalists like Arthur Rock, Eugene Kleiner and Tom Perkins who earned social recognition and respect. Venture capitalists have not been recognized by academic researchers, news writers, or industry analysts before the mid-1990s and none of these sources have shown their respect for venture capitalists in their writings and research. In Japan, venture capitalists are still largely considered just investors, not entrepreneurs, as they are perceived in the U.S. In addition to this analysis, past studies of VC have not identified venture capitalists as crucial personnel in the development of either new ventures or the Japanese VC industry.

In conclusion, this study finds that in Japan the importance of VC and venture capitalists has not been well recognized and that venture capitalists also have not been recognized as crucial personnel for the development of new ventures, new industry, and the VC industry, and have not earned society's recognition.

5.4.5 Summary

In analyzing the Japanese business environment in four external industry environmental factors (technological, economic, governmental and social structural), the study does not view these factors as significantly influencing the evolution of the Japanese VC industry. In Japan social perceptions about VC and recognition of venture capitalists are far different from those in the U.S. While U.S. VC is an economic system that transforms a nation's industry structures from declining industries to emerging industries and promotes the effective utilization of capital, and venture capitalists are entrepreneurs who take crucial roles in developing new ventures and new industries, such positive perceptions of VC and venture capitalists have never existed in Japan. Support and recognition within the social structure, the most important factor for the evolution of the VC Industry, does not exist. Without a positive and supportive social perception of VC and venture capitalists, Japan still cannot introduce proper governmental policies to develop the VC Industry and create an environment where VCFs support technology based new ventures.

5.5 Summary: Determining the Evolution Stage of the Japanese VC Industry

Based on the identified factors in section 5.4, this study analyzes and evaluates the environmental factors shaping the evolution of the Japanese VC industry and determines its current evolutionary stage in the following paragraphs. All identified factors are classified into evolutionary stages in chronological order, as figure 5.7 shows on page 168 and all important events are also summarized and illustrated in table 5.9 on page 167.

5.5.1 Industry Evaluation

Industry Specific Factors

In the case of the U.S. VC industry's development, two standards are identified: an industry standard for managing VC funds (partnerships for managing VC funds) and a standardized role of VCFs (as role models of venture capitalists to be established and expanded within the industry). Base on these two criteria, in the Japanese VC industry a

standard form of managing VC funds, "toshijigyo-kumiai," was introduced in 1983 (discussed in section 5.1.1). However, this standard form was not effective for encouraging venture capitalists to establish more VCFs and collect more VC funds until the Japanese government introduced the Toshijigyo-kumiai Yugensekinin Act in 1998 (discussed on page 158). Throughout the analysis of Japanese VCFs in 1990s there are some standards of roles and services of VCFs that can be recognized. However, there has never been a culture of venture capitalists as role models. This information suggests that the Japanese VC industry is not ready to shift or grow to the growth stage of the industry.

Demand Condition Factors

In the U.S. case there is a constant flow of entrepreneurial activities, especially technology based new ventures, and entrepreneurs are recognized as important elements in economic developments. As section 5.2 shows, entrepreneurial activities have not traditionally been admired and respected in Japanese society. Technology based new ventures in particular were not encouraged or nurtured in society. Entrepreneurs were not recognized as important factors in economic development even throughout the 1990s (discussed in section 5.2). This information also suggests that the Japanese VC industry is not ready to shift or grow to the growth stage of the industry.

Supply Condition Factors

In the U.S. case equity investments by VCFs and venture capitalists are recognized as important elements in economic development. The value of the VC industry on capital markets for small businesses was extremely high. In Japan, while the role of financial institutions is still a large element in economic development (see section 5.3), equity investment of VCFs and venture capitalists and the role of the VC industry in economic activities and the evolution of the economy have never been recognized as important factors in capital markets for small businesses, even in 2001 (see section 5.3 and 5.4). This information further suggests that the Japanese VC industry is not ready to shift or grow to the growth stage of the industry.

Technological Factors

In the U.S., technological development had been recognized as a key factor for creating new industries in a society. Further, technological development had been supported and maintained by many institutions, such as new ventures and VCFs. In Japan, technological development has also been recognized as a key factor in creating new industries in society. However, the government and business leaders still believe and perceive that such development needs to be carried out by large companies rather than new ventures (see section 5.2), suggesting again that the Japanese VC industry is not ready to shift or grow to the growth stage of the industry.

Economic Factors

The U.S. government and business leaders realized that its continuous economic development couldn't rely only on the performance of traditional industries. They developed structures whereby new industries and new ventures relying on new technologies could be developed and nurtured. Since the mid-1990s, the Japanese government and leaders of business sectors have come to recognize that the country's continuous economic development could not rely only on the performance of traditional industries (see section 5.4.2 and 5.4.3), which, by relying on Keiretsu systems, have not been functioning well. This information suggests that there are some elements providing for a shift to the growth stage of the Japanese VC industry.

Governmental Factors

In the U.S., policy makers of the government and leaders of the business sector have worked to create and accept new policies that could stimulate the transformation of industries and create new leading industries. In Japan, it seems all necessary rules and acts are in place to help new ventures and VCFs. However, efforts by the government still have not been enough to change capital market structures from the heavy involvement of government affiliated financial institutions and banks in providing debt finance for small businesses and new ventures to the equity market. Although the Japanese government has recently shown an interest in and made efforts to support the development of the Japanese

VC industry on the one hand, on the other, the government still allows securities firms and their affiliated VCFs (AFVCFs) to monopolize the IPO market, making it very difficult for independent VCFs to compete (discussed in more details in section 7.2.3). This information suggests that the Japanese VC industry is not ready to shift to the growth stage.

Social Structural Factors

In the U.S., business and government leaders had recognized the importance of VC and venture capitalists, and venture capitalists especially were recognized as crucial personnel for the development of new ventures, new industry, and the VC industry. In Japan some business leaders and some policy makers seem to have recognized the importance of VC and venture capitalists since the mid-1990s (see sections 5.3.1 and 5.4.3). However, this study cannot find any evidence indicating that they recognize venture capitalists as crucial personnel for the development of new ventures, new industry, or the VC industry, suggesting again that the Japanese VC industry is not ready to shift or grow to the growth stage of the industry.

The above analysis and evaluation of factors suggests that the future of the Japanese VC industry is still uncertain and that support systems in society or government and business sectors are not enough to expand and nurture the Japanese VC industry as an important financial system in the capital market. The above information overwhelmingly suggests that the Japanese VC industry is still in the emerging stage of its industry evolution. The activities of VCFs or venture capitalists are not yet socially valued.

5.5.2 Comparison of the U.S. VC Industry Evolution and Japanese VC Industry Evolution

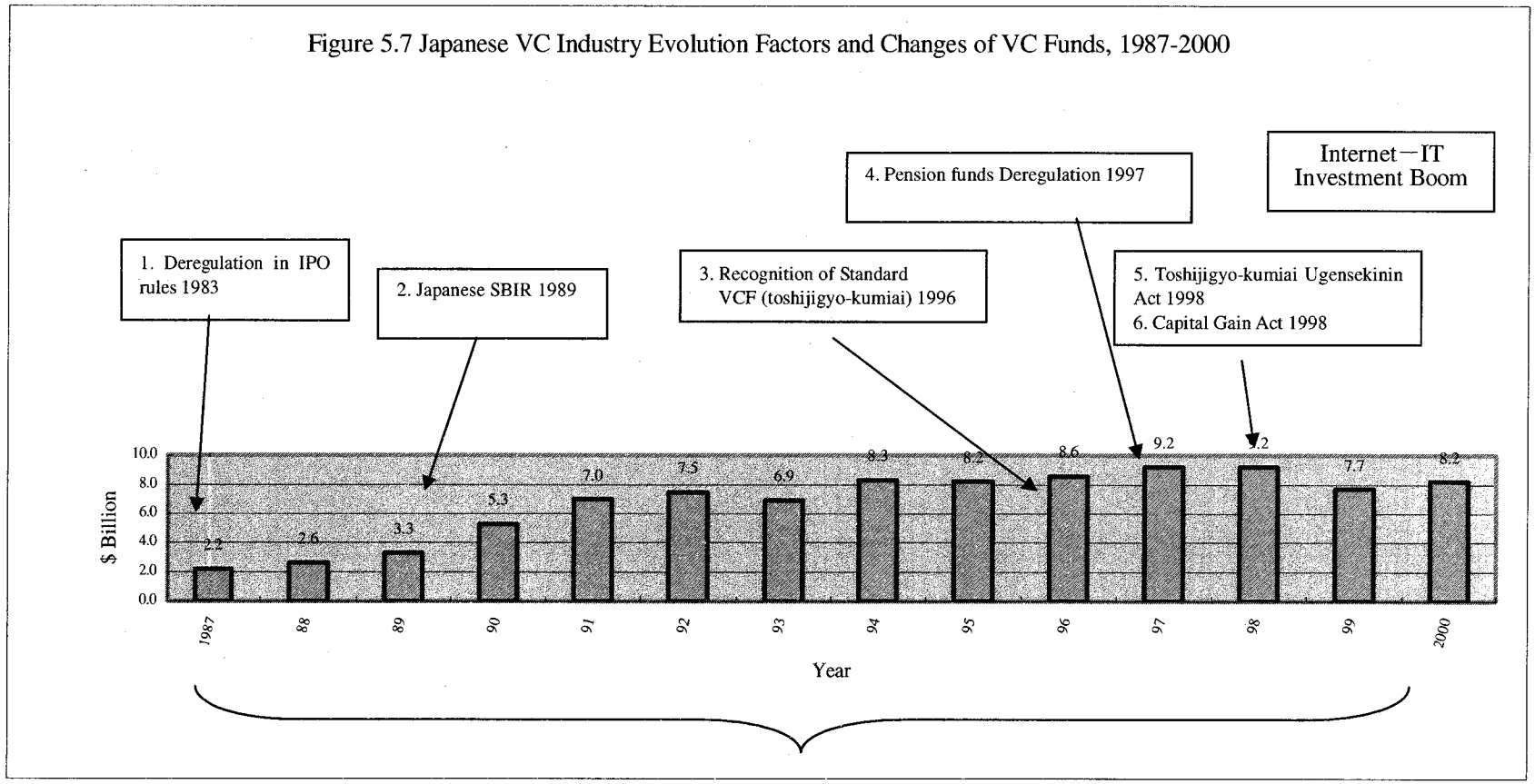
Table 5.10 summarizes key findings comparing the U.S. and Japanese VC industries. As chapter three illustrated, the U.S. VC industry had positioned itself as an important social financial system for new ventures, especially after 1980. Even though most major events and efforts to develop the VC industry happened after 1980, the

classical concept of VC, nurturing new ventures and expanding entrepreneurial movement, has been in place for the past fifty years of the VC industry history. As chapter three illustrates, the U.S. VC industry has been functioning as an important economic institution. In Japan on the other hand, JAFCO and NIF have been the primary leaders in developing the Japanese VC industry and both of them are the subsidiaries of securities firms. This situation has affected the development of the VC industry since their inception in 1972. Furthermore, subsidiaries of financial institutions remain the prime movers of the Japanese VC industry today. The VC industry in Japan has not taken sufficient action to position itself as an important financial system for the past thirty years. Although the Japanese government has introduced some important legislation similar to that in the U.S., the role of the VC industry in the financial market for small business and new ventures has not changed much at all. All of this information suggests that the VC industry in Japan will likely not develop either as quickly or as extensively as it did in the U.S.

Table 5.9 Historical Events for the development of the Japanese VC Industry

Year	Evolution of the Japanese VC Industry	
1970	**—Birth of the First Japanese Venture Capital Firm** '72 KED was established (section 5.1.1) '73 JAFCO was established (section 5.1.1) —Emerging high-tech ventures — In 1970s, a total of seven VCFs were established and all of them are subsidiaries of major financial institutions (section 5.1.1)	**Emerging Stage**
1980	**—Standard form of collecting VC funds —** '82 The first Toshijigyo-kumiai was introduced by JAFCO (section 5.1.1) '83Deregulation of the IPO market (section 5.1.1 & 5.4.3) Establishment of new VCFs increased slightly (section 5.1.1) '89 Introduction of Japanese SBIR program (section 5.4.3)	
1990	**—Social Recognition of VC —** '98 Deregulation of IPO market: two other IPO markets, NASADAQ Japan and Mothers emerged. (sections 5.3.2 and 5.4.3) ● Capital gains tax rate decrease ('98): 27% > 20%. (section 5.4.3) ● Removal of investment restrictions on pension funds ('98) (section 5.4.3) Establishment of new independent VCFs increased.(section 5.4.3, p.158)	**Growth Stage ?**
2000	VC funds reached record high volume and total number of VCFs reached about 185. (section 5.1.1)	

Figure 5.7 Japanese VC Industry Evolution Factors and Changes of VC Funds, 1987-2000



Created by the Author

Table 5.10 Japan-U.S. Comparison

	JAPAN	U.S.
Number of VC Firms (1)	185 (2001/06)	689 (2000) 76 (2001)
Amount of the-Year Investment (2)	$ 2 B (2001/03) $1.5 B (2001)	$ 103.8 B (2000) $40 B (2001)
Total VC fund (3)	$8.2 B (2001/03)	$200 B (2001/07)
Number of New Initial Public Offerings (4)	157 (2000/12) 87 (2001)	230 (2000/06)
Over-the-Counter Market and NASDAQ: # of Registered Enterprises (5)	988 (2000/12)	4,600 (Average of the 1990s)
Number of Newly Established Enterprises (6)	About 10,000 (1998)	About 900,000 (1993~1997)
Ratio of Starting New Enterprises (7)	3.5% (1996~1999)	16.6% (1996~1997)
Ratio of Closing Enterprises (8)	5.6% (1996~1999)	13.5% (1996~1997)

Sources:

[Japan]
1) VEC investigation, 2001/06 2) VEC investigation, 2001/06; 3) Nihon Keizai Shinbun The Nikkei venture capital investigation 4) Securities Dealers Association of Japan statistics, 2001; 5) Securities Dealers Association of Japan statistics, 2001; 6), 7), 8) The While Paper of Small Firms, 2001.

[United States]
1) VentureOne Corporation NVCA 2001 Annual Report; 2) VentureOne Corporation NVCA 2001 Annual Report 3) VentureOne Corporation NVCA 2001 Annual Report; 4) Securities Dealers Association of Japan data (sum total of NYSE, AMEX, and NASDAQ); 5) Securities Dealers Association of Japan data; 6) NASDAQ FACTBOOK (NYSE, AMEX, NASDAQ); 7) The Facts about small business, 1999 (average of 5 years), 8) The Statement of Small Business, 1998 Data was calculated by the author of this paper.

Chapter Six
Case Studies of Japanese Venture Capital Firms

This chapter presents the results of the detailed analysis of a total of 17 Japanese VCFs, based on a collective case study approach outlined in chapter three. The chapter consists of three sections. Section one classifies and describes eac of the VCFs studied with regard to company profiles, organizational structure, decision-making processes and criteria, and investment policies among the three types of VCFs: AFVCF, IDVCF and GVCO. Section two illustrates the evolution of Japanese VC industry based on the findings from the results of the study. Section three summarizes the chapter by presenting the expected evolutionary path of the Japanese VC industry. (The summary of all studied firms are presented in Appendix B, tables 1 and 2).

6.1 Typology of Japanese VCFs

This section classifies and describes each of the VCFs studied with regard to company profiles, organizational structure, decision-making processes and criteria, and investment policies.

6.1.1 AFVCF

Among the 17 VCFs studied, 6 firms (JAFCO, NIF, NEDO, Niko Capital, Orix Capital and Sanwa Capital) are classified in this category, based on their sources of VC funds and non-financial resources (see Appendix B, table 2). The following paragraphs describe the firm's company profiles, organizational structure, decision-making process and decision-making criteria, investment policies, and preferences and results of selected investments.

JAFCO

***Company Profile*:**

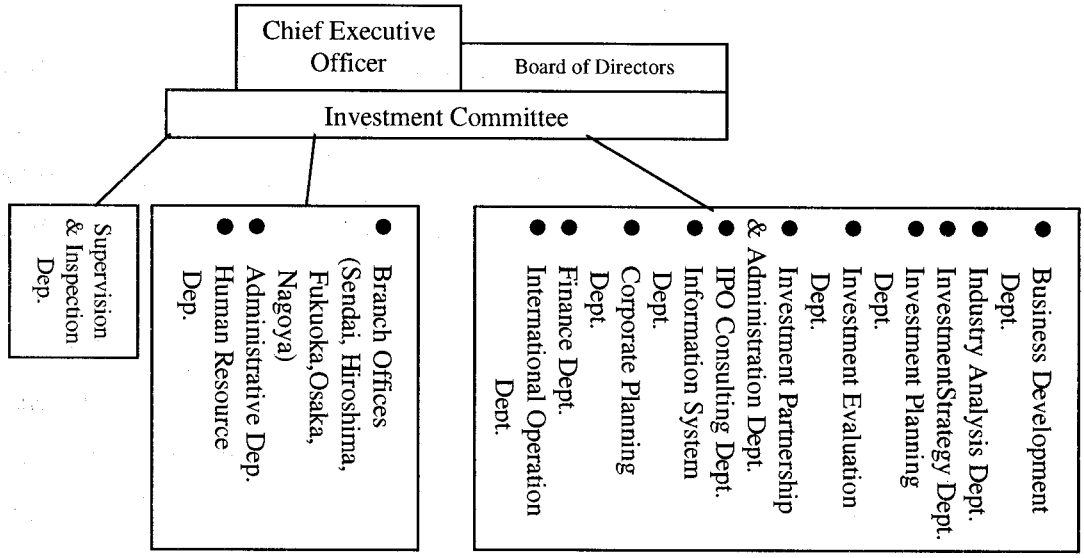
JAFCO is Japan's largest VCF in terms of number of employees and amount of money invested. It was founded in 1973 as a strategic subsidiary of Nomura Securities, which is the largest and the most influential security? (should it be singular or plural?) firm in Japan. Currently, JAFCO employed 350 people, invested $480 million in 190 companies and managed an accumulation of $2.1 billion in investments with 49 toshijigyo-kumiai (cooperative investment programs similar to the U.S. partnership investment agreement) in 2001. The firm evaluates 2,000 to 3,000 investment proposals annually and invests in about 200 to 250 of these proposals.

During the past 25 years, the company has invested in a total of 2,307 companies, from high tech companies, such as computer software firms, to retail service companies, such as furniture stores. As one would expect, the company has the most extensive network to search for and evaluate investment opportunities in new ventures throughout Japan. To further strengthen its competitiveness in the VC industry, in April 1998 the company created a new task team concentrating its investments and providing managerial assistance for new ventures in the information technology industry and the life sciences industry. Since its inception in 1973, the company has maintained the most visible presence in the Japanese VC industry and has acted as an industry coordinator, influencing the government to create new, favorable policy for the VC industry.

***Organizational Structure*:**

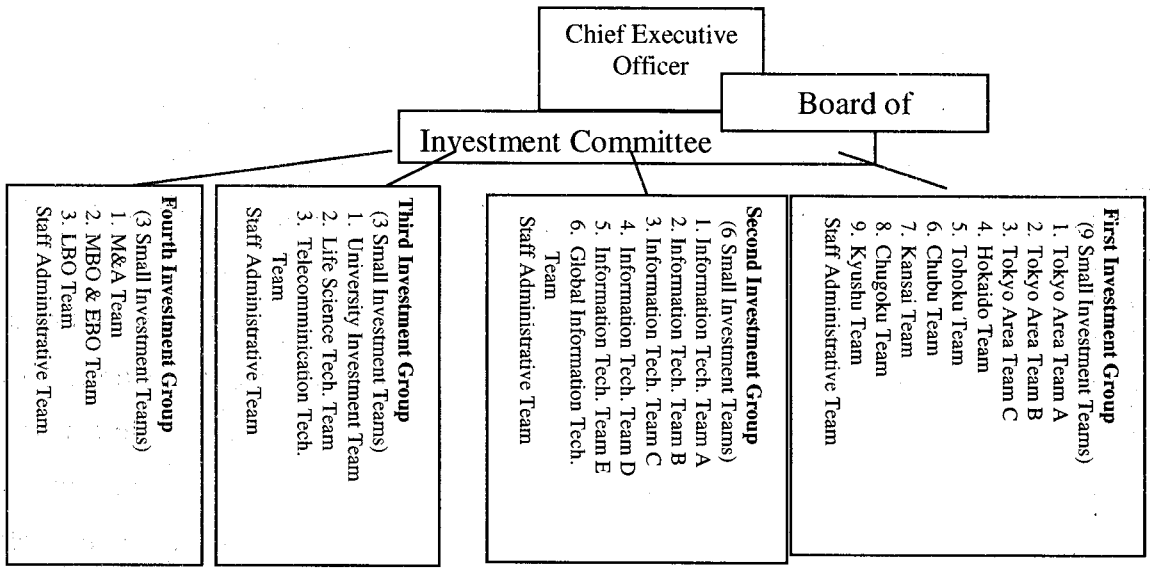
The CEO, two senior managing directors, and nine other executive directors--each in charge of 2 to 3 task-teams--(Masaki take our commas and replace with--)form the investment evaluation committee and the core of the organization. The members of this committee are considered final decision makers. The old organization structure of JAFCO, which lasted until March 1998, had eleven multi-functional departments, such as sales, industry analysis, investment strategy, consultation, and investment planning, to manage operations of the company, (see figure 6.1). In April 1998, the company carried out a new organization restructuring program, which is described on the following page (see figure 6.2).

Figure 6.1 JAFCO's Old Organization Structure



(Source: JAFCO, 1998 and modified by the Author)

Figure 6.2 JAFCO's New Organization Structure



(Created by the Author, based on data of JAFCO)

Now in place of the eleven multi-functional departments, there are a total of 20 task-teams, divided into four investment groups. Under the new organizational structure, each team concentrates its investments and management assistance activities in a targeted geographical area and a key technological field. This new organizational structure allows for the performance and profit of each task-team to be calculated independently and each team competes with the other teams for profit contribution. Each one of 20 task-teams finds, investigates, analyzes, and evaluates investment proposals and estimates the amount of money to be invested. According to the senior managing director, each team supposedly functions as a small VCF. Therefore, the performance of each team is reflected in each employee's income. In addition, as a part of the reorganization process in 1998, the company also created eight additional teams which each target its investments and after investment services in the information technology, life science and biotechnology, and telecommunications industries. The company can make more flexible and better-informed investments in the crucial technology development.

***Decision Making Process*:**

Figures 6.3 and 6.4 show JAFCO's old and new decision-making processes respectively. While the old decision-making process was composed of five stages - findings, due diligence, investment decisions, follow-up & value added, and IPO & liquidation respectively-- the new decision-making process is composed of six stages: the same five stages plus the contacting & screening stage, which was implemented between the findings and due diligence stages.

In the old process, managers and employees at the eleven multiple-function departments, such as sales, industry analysis, investment strategy, consultation, and investment planning department, investigated, analyzed, evaluated investment proposals, and invested in new ventures. The company managed pre-investment activities, investment, and after-investment activities through different steps in each department.

Figure 6.3 JAFCO's Old Investment Process
Adapted from the JAFCO's 1997 fiscal report

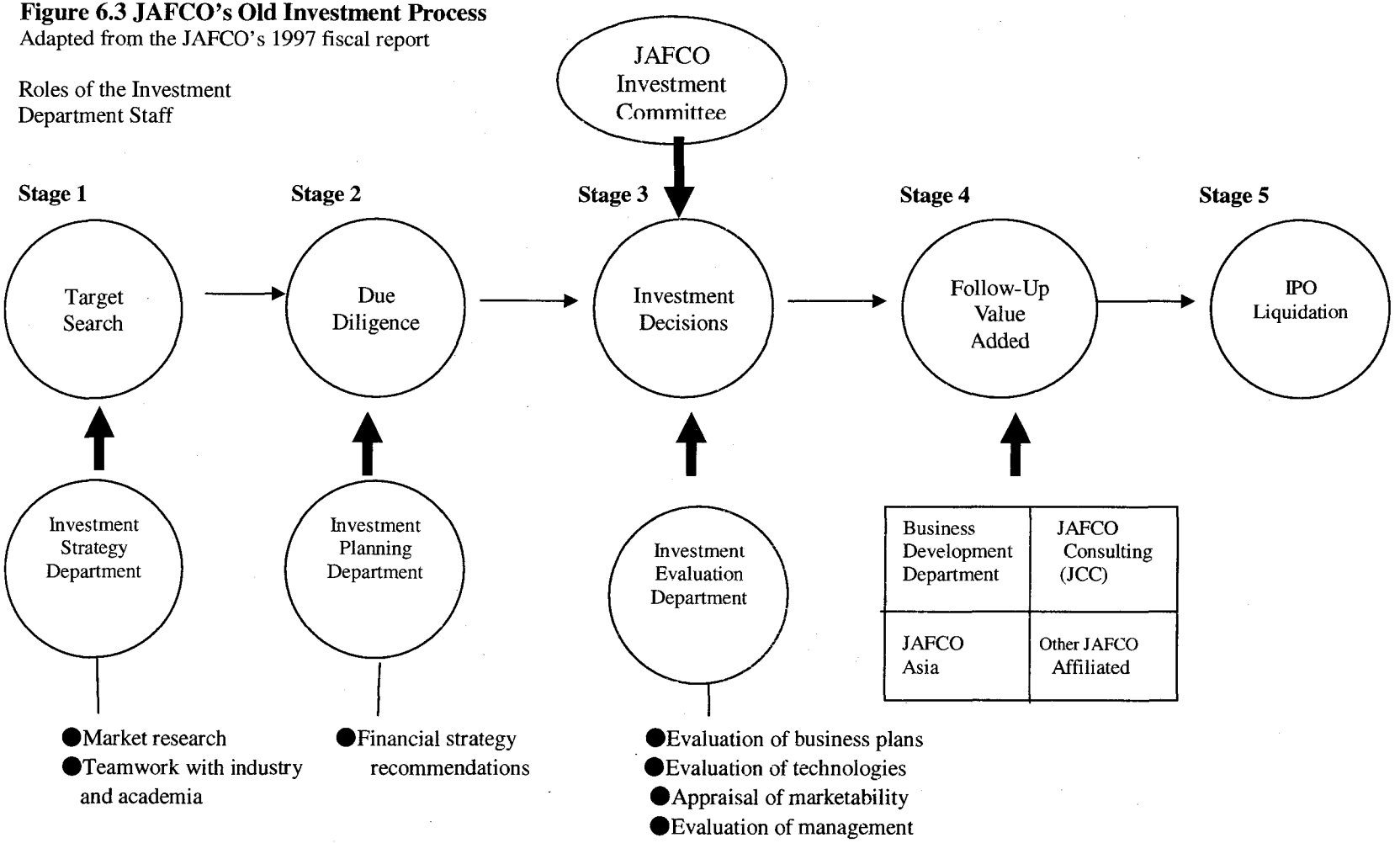
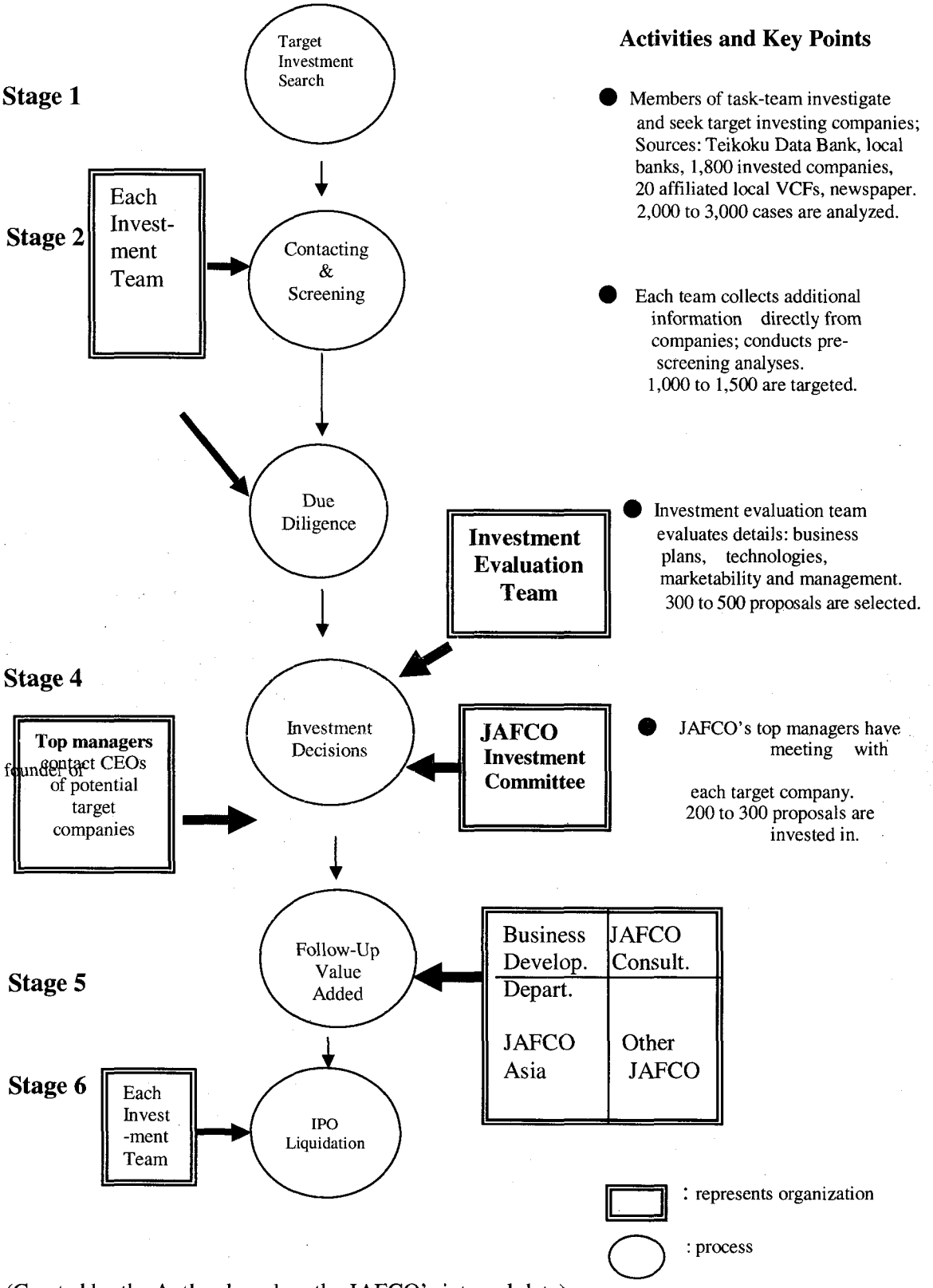


Figure 6.4 JAFCO Investment Process



(Created by the Author based on the JAFCO's internal data)

However, in the new process, each of the 20 task-teams manages the processes in stage 1 to stage 3 exclusively, leading to significant improvements in the way the company now processes investment proposals. First, members of each task-team search for potential investment proposals from Teikoku Data Bank, local banks, 1,800 invested companies, 20 affiliated local VCFs, newspapers, etc. Second, each task-team contacts a total of 2,000 to 3,000 companies per year and selects and establishes initial contacts with 1,000 to 1,500 companies at the task-team level. Third, the task-team makes initial due diligence studies while investment evaluation teams which are independently organized from within each task-team, evaluate and conduct additional due diligence studies, finally selecting 300 to 500 proposals for potential investment. Fourth, the Investment Committee makes a final investment decision and invests in 200 to 300 proposals per year. At the same time JAFCO's top manager contacts the founders or CEOs of the target companies. Fifth, the business development department and other affiliated companies get involved in the follow-up & value-adding processes. Sixth, task-teams, with the help of the IPO department and Nomura Securities, help companies reach IPO or liquidation.

Decision-Making Criteria:

The study found slight differences in the priority of decision-making criteria among three executives on the Investment Committee. For example, Tamura and Itagai, senior managing directors (see figure 6.2), review all information on target investing companies, but they selected as the top five criteria, references of entrepreneurs, company's ability in management, marketing abilities, financial skills, and technical skills, respectively (for a list of the top criteria on the survey, see Appendix B table 2 and Appendix A). Agata, an executive director, also mentioned the importance of the same five criteria; however, he places importance on other criteria as well including analysis of market need for product or services, market size, growth potential of market, rate of return, and opportunities for exit. This slight difference occurred because Agata's position in JAFCO is a slightly lower than that of Tamura and Itagai. Agata makes all

necessary evaluations initially, before final approval for investment is discussed in the Investment Committee involving other executives, such as Tamura and Itagai. This suggests that Agata needs final approval from these two higher ranked executives. Slight differences in the tasks of the three executives are the reason for selecting different decision making criteria. Despite individual differences in the importance of various decision-making criteria, this study found that at the Investment Committee level, where consensus was required, all three men think that the first five criteria are the most important factors in decision making.

***Investment Policies, Preferences and Results of Some IPO*:**

JAFCO's specific investment preferences are the following: 1) investing in companies which can reach IPO within three years, 2) companies in the maturity stage or accelerating growth stage, 3) companies in East Asia, the U.S., and Western Europe, 4) companies in which targeted ROI is 5~15% on average (see Appendix B, table 2).

In addition, JAFCO also targets specific industries for investment for example the information technology, life sciences and biotechnology, and telecommunications industries. In addition to these industries, as the investment preferences have shown, JAFCO has invested in companies in almost any industry that they believe can reach IPO within three years. Although JAFCO has created industry and technology focussed investment teams, as the above paragraphs illustrate, it has not yet shown any interest in investing in the nanotechnology, micro-electro-mechanical systems (MEMS) or some of the other "cutting edge" fields. Table 6.1 shows the names of JAFCO managed companies that have most recently reached IPO as well as some important data of these firms, and their market value. Still JAFCO's investment policy and preferences have created moderately good results. Among the five most recently created IPO companies, Celearten Technology, which develops digital image formatting related technology, had the largest market value of all. In fact, Celearten had the highest market value of all VCF managed companies at the time of this investigation.

Table 6.1 Results of IPO of some Companies managed by JAFCO

Name of Company	Content of Business	Industry Classification	IPO Year	Market Value of Company (If N/A, Sales)
Dawn Corporation	GIS software development	Computer software	Jun, 2002	$122 million
Gigno System Japan	Content provider; system solution services	Computer systems development	March, 2002	$137.5 million
Yamada Service Synthetic Office	Real estate registration and surveying; bad loan-related due diligence	Real Estate	March, 2002	$58 million
Advanced Technology and Systems	Development and manufacturing of storage equipment and devices for IT systems	Manufacturing	December, 2001	$194.0 million
Celartem Technology	Digital image format-related R&D	Computer Systems Development	December, 2001	$775.1 million

(Created by the Author, based on JAFCO data, 2002)

Nihon Investment Firm (NIF)

Company Profile

NIF is the second largest VCF in terms of the number of employees and amount of money invested in 2000. Daiwa Securities Firm established NIF as a strategic subsidiary in 1982.The firm employed 168 people, invested about $270 million in 800 companies in 2000, and managed an accumulation of $1.013 billion with 42 toshijigyo-kumiai. Each year the firm evaluates 1,000 to 2,000 investment proposals and invests in about 90 to 150 investment proposals. During the past 20 years of the firm's history, the company has invested in a total of 1,264 companies in numerous industries. The company has also diversified investments according to industry and technology in 2001. It has also developed one team to invest strategically in information technology fields.

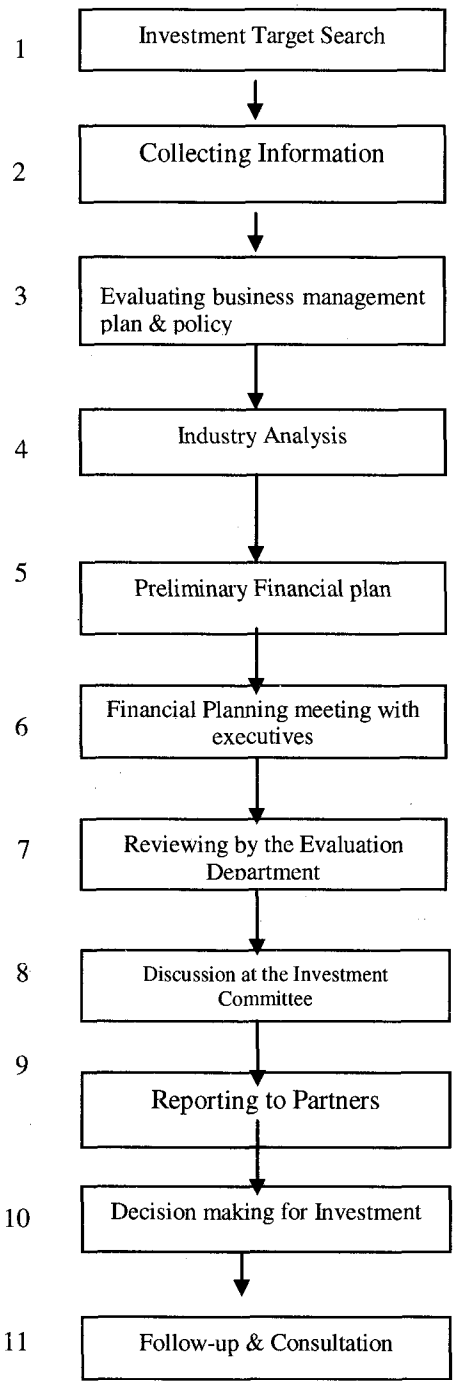
***Organizational Structure*:**

A CEO, a COO, and two senior managing directors plus two executive directors make up the Investment Evaluation Committee. At the company, the six members of this committee are considered the final decision-makers and venture capitalists. In response to the reorganization of JAFCO in 1998, the company also restructured its entire organization and process of managing VC funds. Before the reorganization, it had a total of thirteen multiple-function departments, such as industry analysis, investment strategy, investment planning, human resources, investment evaluation department, etc. Employees and managers at different departments managed VC investment activities and provided after investment services. Within this structure, whenever the company executed a new decision, a new department had to work with the department involved in previous management and operation, meaning that there was never any single person or a team in charge of monitoring the entire process. After the company reorganized the structure of the firm in 1999, it was left with a total of 26 groups resembling the team concept implemented by JAFCO in which each team functions as a small VCF and competes with other teams over profit contribution to the firm. Employees and managers at each group are charged with targeted companies to provide with VC investment and investment services. The organizational structure and operation style of the company is very similar to the new operating style at JAFCO (see figure 6.2).

***Decision Making Process*:**

Figure 6.5 shows the decision-making process at NIF. There are eleven processes: target company search, collecting information, evaluating investing companies' business plans and management policy, industry analysis, investing ompanies' financial planning, meeting with executives, review by the evaluation department, investment committee discussion, reporting to investing partners, decision making for investment, and follow-up and consultation processes. The stages of processing investment proposals have become more efficient and clearly defined as a

Figure 6.5 NIF: Investment Process Stages



1. Members of investigating department find potential investment proposals from major and local banks, 1,000 target companies, newspapers, etc.

2. The investment analysis department collects technology and industry information.

3.The investment analysis department and investment planning department analyze business and management plans and evaluates policies.

4.The market analysis department conducts detailed market and product analysis to measure financial returns of the business.

5. The investment strategy department provides preliminary financial planning for the company.

6.NIF's top managers have direct meetings with CEOs, of targeted companies to evaluate talents and characteristics.

7. The evaluation department conducts final analysis.

8. The Investment Evaluation Committee discusses the proposal.

9. The partnership department holds meetings with other investors.

10. The company invests in companies.

11. The business development department gets involved in follow-up & consultation activities.

(Source: NIF, 1999)

result of the restructuring. Details of each stage are outlined as follows: first, members of each investigating group find potential investment proposals from major and local banks, over 1,200 companies of networks, and newspapers, etc. Second, the same team collects technology and industry information. Third, the investment analysis team and investment-planning team analyze and evaluate the business management plans and management policies of the target firms. Fourth, the market analysis team conducts a detailed market and products analysis to measure the financial return of the business. Fifth, the investment strategy team evaluates and provides financial planning for target companies. Sixth, NIF's top managers have direct meetings with CEOs or founders of target companies to evaluate their talents and characteristics. Seventh, the top managers of NIF, the Investment Evaluation Committee, with the assistance of the investment strategy team, conduct a final analysis. Eighth, the Investment Evaluation Committee discusses proposals. Ninth, the partnership department holds meetings with other investors. Tenth, the company implements its investment policies in the selected companies. Eleventh, the first team of the investigating group gets involved in follow-up & consultation activities for target companies.

***Decision-Making Criteria*:**

This study found slight differences in the priority of decision-making criteria between the CEO and a local section chief. For example, Isoda, the CEO, selected references of entrepreneurs, ability in management, marketing, financial skills and technical skills, as the top five criteria. But Monobe, a local section chief, selected references of entrepreneurs, uniqueness of product service, market need for product or services, growth potential of market, and patent-ability of product (see Appendix B, table 2). The study suggests such differences in criteria selection can be attributed to the differences in position of the CEO and the local representative within NIF. Based on analysis of these interviews, however, the study concludes that because NIF makes the

final investment decision at the Investment Evaluation Committee level that the committee will eliminate differences in individual decision-making priorities and the company will have one standardized set of criteria.

***Investment Policies, Preferences and Results of Some IPO*:**

NIF's specific investment preferences are as follows: investing in companies, 1) that can reach IPO within 2-3 years, 2) that are in the early growth and the accelerating growth stage, and 3) that are located in East Asia and the U.S. Another significant point is that in 2000 the company invested about 20% of total investments in foreign countries and targeted ROI is 5~15% on average (see investment policies and preferences, Appendix B, table 2). In addition, NIF targeted companies in Internet related and information technology fields for investment. In addition to these investment preferences NIF also has invested companies in almost any industry that has the potential to reach IPO within three years. Table 6.2 shows the names of the most recent companies that NIF managed to IPO, some important data of these firms, and their current market value. Among the five most recent IPO companies, Tasco Systems, which supplies Japanese fast food restaurant chains, had created the largest market value of $264 million of all their investments. Also, in analyzing other companies' business contents, it is obvious that none of the companies they had invested in were involved in the high technology sector.

Table 6.2 Results of IPO of Some Companies Managed by NIF

Name of Company	Contents of Business	Industry Classification	IPO Year	Market Value of Company
Japan Long Life	Care service centers for elderly; Visiting bathing management	Aged People Business	March, 2002	$90 million
Star Cable Networks	CATV networks; internet connectivity services	Broadcasting	February, 2002	$120 million
Pacific Century Cyber Works Japan	Sales of Real Estate Investment funds	Real Estate	December, 2002	$130 million
Daina-City	Sales & design of apartment & condominiums	Real Estates	November, 2001	$152 million
Tasco Systems	Japanese Fast Food Chain	Services & Restaurant	September, 2001	$264 million

(Created by the Author, based on the data of NIF, 2002)

Nihon Enterprise Development (NEDO)

***Company Profile*:**

NEDO is the oldest existing VCF and was founded by Japan Long-term Credit Bank in 1972. NEDO employed 106 people, invested about $39 million in 42 companies in 1999, and managed a total of $150 million with three toshijigyo-kumiai. The company evaluates 250 to 400 proposals every year and invests in 80 to 100 proposals. Although the company has three toshijigyo-kumiai, the main investment policy is to help client companies issue corporate bonds. Since, most of its VC funds are invested in new ventures in the expansion or maturity stage (see Appendix B, table 1); the company rarely gets involved in managing new ventures.

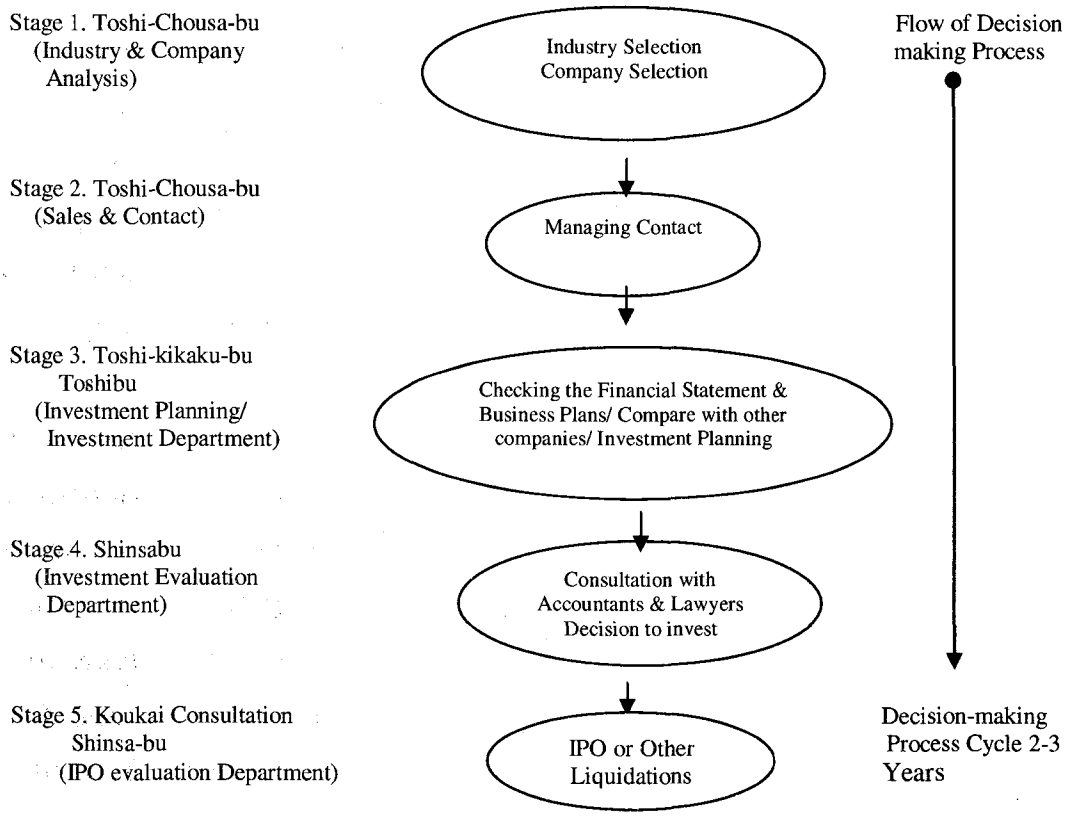
***Organizational Structure*:**

A CEO, a COO, and two senior managing directors plus four executive directors compose the "Jomukai," which is equivalent to the Investment Evaluation Committee at JAFCO or NIF. The company has a total of five multi-functional departments: the industry and market analysis department, the investment strategy, planning, and evaluation department, the management support department, the human resource department, and the finance, accounting and general affairs department. Although the company did not present materials illustrating its organization structure, the above information suggests that the company's organization structure resembles that of JAFCO before 1998. Within this type of the structure, whenever the company executes a new decision, a new department has to work with the department involved in previous management and operations, meaning that there was never any single person or team in charge of monitoring the entire process of managing VC funds and investments.

Decision Making Process

Figure 6.6 shows the decision-making processes at NEDO. The decision-making processes are composed of eight processes – industry and company selection, managing contact, the first investment evaluation by each representative of the firm, the second investment evaluation by the investment evaluation department, the third evaluation by the "Jomukai," investment decisions made by the "Jomukai", follow-ups & consultations, and mergers and acquisitions, or other forms of liquidation. These processes fit into five stages. Details of each stage are outlined as follows: first, an account representative of NEDO manages the first three processes (target search, managing contact, and the first initial investment evaluation). Second, the investment evaluation, industry analysis, investment strategy, investment planning, market analysis and management information departments conduct full analyses, look at items such as sales and industry and investment strategy. Third, the investment evaluation committee reevaluates investment proposals and makes decisions. Fourth, the IPO department prepares IPO or other ways of liquidation. This somewhat inefficient flow of decision making, which resembles the old style of JAFCO and NIF, is marked by overlap between departments.

Figure 6.6 Decision-Making Process of NEDO



(Created by the Author)

***Decision-Making Criteria*:**

Mr. Okazai selected four criteria-- references of entrepreneurs and company's ability in management, marketing, and technical skills - from the first five criteria and uniqueness (attractiveness) of product or service as the top five criteria (see Appendix B, table 2). These selected criteria are very similar to other decision-maker's criteria at the two other large VCFs. Also based on analysis of the company's job processes, this study concludes that because NEDO also makes final decisions at the Jomukai level, as do JAFCO and NIF, (at the Investment Evaluation Committee), Mr. Okazaki's responses reflect the standardized selection criteria of this type of VCF. In a company like NEDO, while there are some individual differences in the importance of various decision-making

criteria, Jomukai, where consensus is required, eliminates these differences in decision-making criteria.

***Investment Policies and Preferences*:**

NEDO's specific investment preferences tilt toward companies with the following characteristics: 1) companies issuing corporate bonds, but not equity investment, 2) companies in the accelerating stage of their growth. (No information is available regarding target ROI. see Appendix B, table 2). In addition, the company does not target specific industries for investment. It also prefers to help client companies to make loans, but not equity investments. In addition, due to the secrecy of its business approaches, this study could not obtain any information regarding companies at all in which it has invested.

Orix Capital Co.

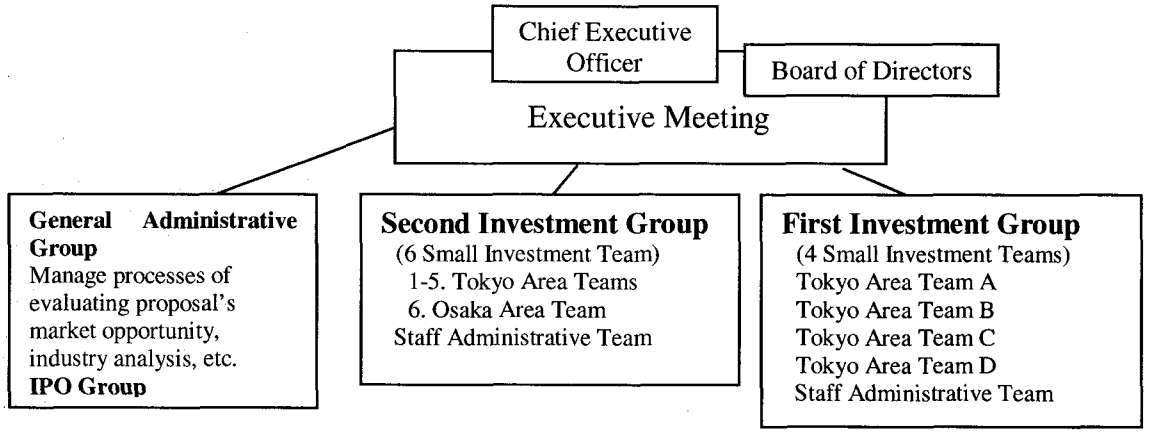
Company Profile

Orix capital was founded in 1983 as a subsidiary firm of Orix Corporation (the largest leasing and loan company in Japan). In 2001, it invested about $79 million in 82 companies, managed a total of $200 million with three toshijigyo-kumiai and had a total of 28 employees. On average the firm invests roughly $950,000 per company, evaluates 250 to 400 proposals annually, and invests in about 80 of these. In the nearly 20 years of the firm's history, it has invested in a total of 349 companies. Since its inception in 1983, the company has maintained a moderate presence in the Japanese VC industry and has a reputation as s second-tier VCF. However, in April 2000 the company adapted a new organizational structure based on JAFCO's task team concept to increase the performance and profit contribution of each employee.

Organizational Structure:

Figures 6.7 shows Orix Capital's organizational structure based on the company's internal documents. The CEO, one senior managing director, and three executive directors compose the Executive Meeting (this is the equivalent of an Investment Evaluation Committee). The members of the Executive Meeting are considered final Masaki- compete paragraph then insert figure decision-makers at Orix Capital. Each of the three executive directors is in charge of monitoring two or three task-teams. Each team monitors investments in several different industries, ranging from information technology to the fast-food industry.

Figure 6.7 Orix Capital's Organization Structure



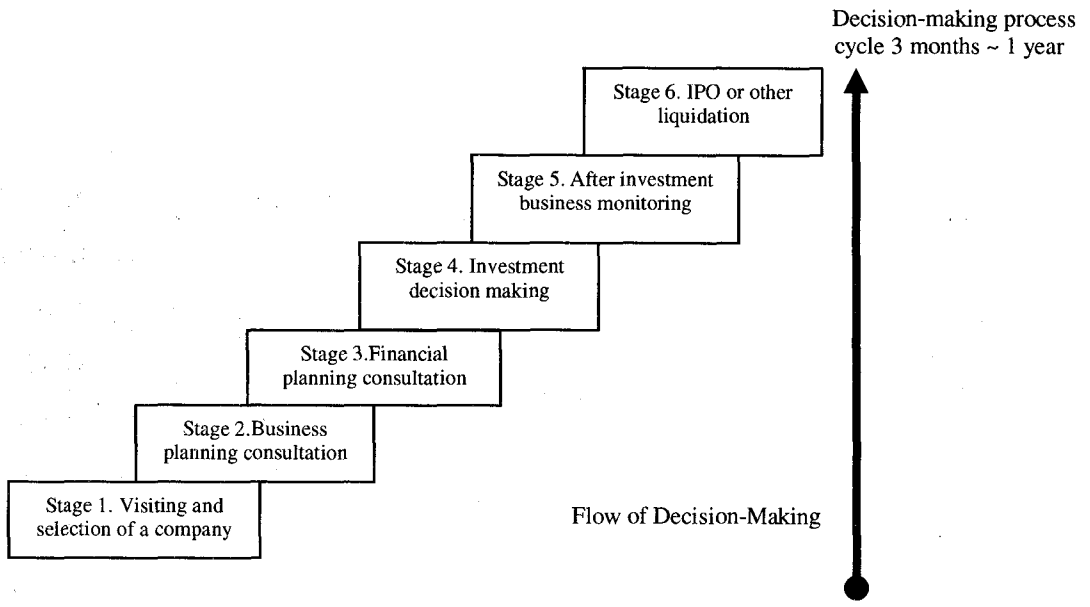
(Created by the Author, based on data of Orix Capital)

***Decision Making Process*:**

Figure 6.8 shows the decision-making processes at Orix Capital. The decision-making processes is composed of six processes – visiting and selecting a target company, business planning consultation, financial planning consultation, investment evaluation and decision making, after investment business monitoring, and IPO & liquidation. Details of each stage are outlined as follows. First, an investment account representative manages the first process of visiting and selecting a target company. An account representative gets investment proposals through introductions from various networks, such as banks, lawyers, etc. Second, an investment group leader and an in-Masaki – put figures after paragraphs not in middle vestment account manager of each team proceed with the business planning consultation process composed of business plan evaluation, industry analysis, investment strategy, investment planning, market analysis. Third, the Executive Meeting conducts the financial planning consultation process. Each proposal at this meeting must have documents of pilot survey and potential investors, lists of shareholders, capital policy, balance sheets of three years, capital plan tables, and corporation audit plans. Fourth, entrepreneurs make presentations in front of the

executive after the executives have examined the documents. Then, the Executive Meeting makes its final investment evaluation and decision. Fifth, the original investment account representatives who found the particular proposal manage the after investment business monitoring process. Fifth, the IPO department prepares for IPO or other ways of liquidation with outside companies, such as JAFCO and NIF.

Figure 6.8 Decision-Making Process of Orix Capital



(Source: Orix Capital 2001)

***Decision-Making Criteria*:**

Mr. Tanaka, an investment account representative, selected the following five criteria - market opportunity of product or service, references of entrepreneurs, company's ability in management, production and technical skills, and uniqueness (attractiveness) of product or service - as the top five decision-making criteria (see Appendix B table 2). In a company like Orix Capital, despite individual differences in the importance of various decision-making criteria, the Executive Meeting, where consensus is required, eliminates individual differences in decision-making criteria. Priority differences in the importance of various decision-making criteria at the account representative level do not really represent the true decision-making criteria of the company at the Executive Meeting, where the final decisions are made.

***Investment Policies, Preferences and Results of Some IPO*:**

Orix Capital's specific investment preferences are for companies with the following characteristics: 1) companies which will be able to have IPO within three years, 2) companies at the break even point that are ready to expand their operations, 3) companies in the Tokyo area. The company has invested in companies located in Osaka, but it is only 5% of total investments (No information regarding target ROI is available; see Appendix B table 2). The firm tends to invest in companies in any industry as a second group of investors, not as lead investors. In addition, due to the secrecy of its business approaches, this study could not obtain any information regarding companies in which it has invested.

Nikko Capital

***Company Profiles*:**

Nikko is a subsidiary of Nikko-Shouken (Nikko Securities Firm), one of the three major securities firms in Japan (Nomura is the No.1 and Daiwa is the second). It was founded in 1983 to respond to the movement of rival firms, such as Nomura Securities, which established JAFCO in 1973 and Daiwa Securities, which established NIF in 1983. Despite being a latecomer to the industry, it expanded its business activities steadily. Currently, Nikko Capital employs 43 people, including 7 venture capitalists or IPO specialists, and manages an accumulation of $435 million in VC funds, with investments in 19 toshijigyo-kumiai. In 2001, it invested a total of $81 million in 77 companies. The firm evaluates approximately 2,000 investment proposals annually and invests in about 70 to 100 of these proposals.

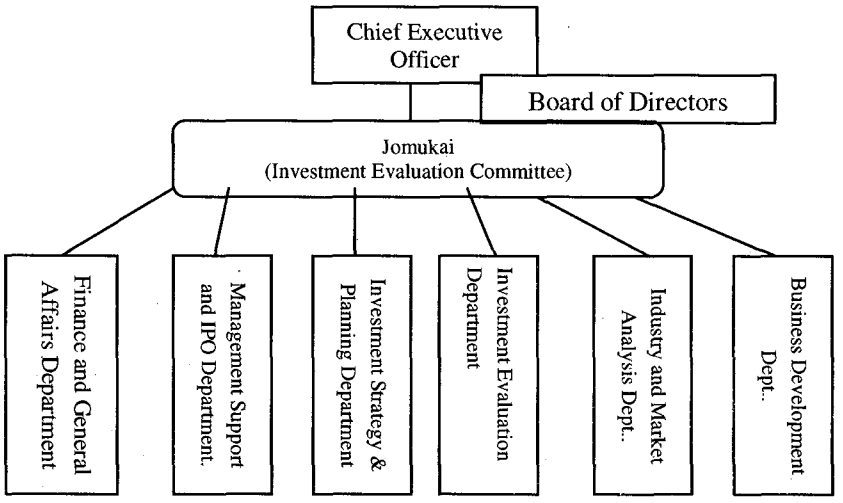
During the past 19 years of the company's history, it has invested in a total of 530 companies, from high tech companies, such as computer software companies, to retail service companies, such as insurance agency franchises. Although the company manages a relatively large volume of VC funds, it maintains a relatively small number of employees in comparison to JAFCO's 350 with a total of $2.1 billion in VC funds.

***Organizational Structure*:**

Figure 6.9 represents the organizational structure of Nikko Capital. The top management structure of Nikko Capital resembles that of NEDO. A CEO, two senior managing directors, plus four executive directors compose the "Jomukai." The company has a total of six multi-functional departments: the business development department, the industry and market analysis department, the investment strategy and planning department, the management support and IPO department, the investment evaluation department, and the finance and general affairs department. Employees and managers at the six departments manage different tasks or activities concerned with completing VC investment and providing after investment services. Because the seven IPO specialists can evaluate, analyze and target firms at a high level, the firm maintains a relatively flat

organizational structure. As the firm's main role is to help its target companies to reach IPO, it does not have the organizational structure capable of nurturing target companies of new ventures.

Figure 6.9 Nikko Capital's Organizational Structure



(Source: Nikko Capital, 2001 and modified by the Author).

***Decision Making Process*:**

Figure 6.10 shows the decision-making processes at Niko Capital. There are four decision-making processes: 1) industry selection, company selection, and making contact; 2) checking financial statements, capital policy and investment plans; 3) consultation with the Jomukai and investments decisions; 4) carrying out the actual investment. Investment proposals are processed in the company in four stages. First, sales account representatives manage the first three processes (targeting, managing contact, and the first investment evaluation). Second, the investment evaluation, indus-

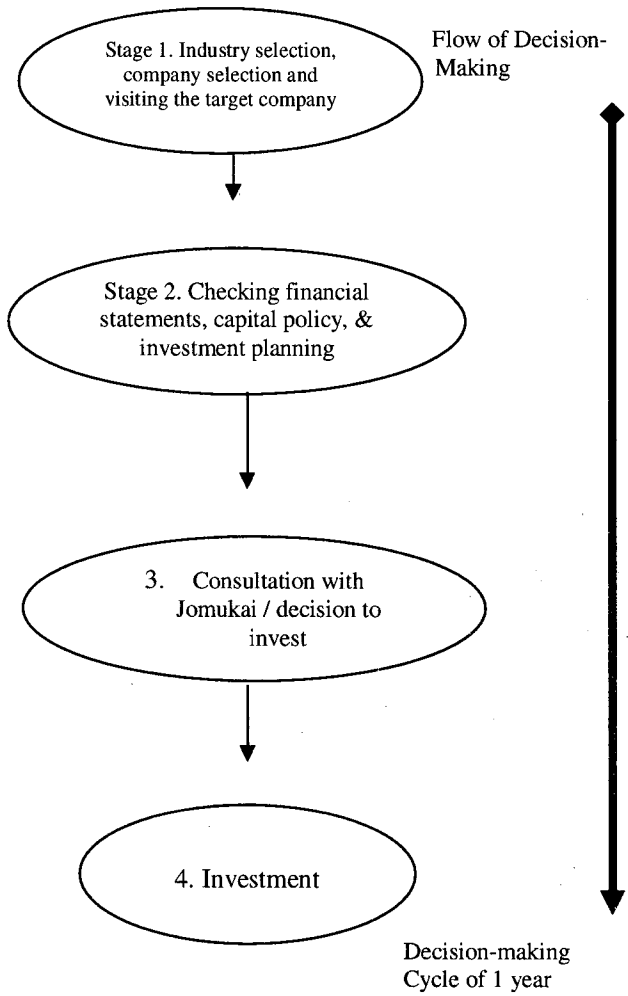
Figure 6.10 Decision-Making Process of Niko Capital

1. Submitting or presenting the business plan to one of twenty-two corporate representatives. (That business plan must include the future position of the target company in the market).

2. Capital policy proposal by entrepreneur to corporate representatives.
(On the basis of the business plan submitted, the time of financing, a method, composition of stockholders, enterprise succession, etc. are considered, and the most suitable capital policy proposal is offered by one of the assigned corporate representatives.)

3. Investment decision by the Jomukai
(Industry trends, enterprise characteristics, and the growth possibility of a company are evaluated extensively and are judged synthetically by the executives and the assigned corporate representatives.)

4. Investment execution
(Move toward an investment and execution of the business plan.)



(Created by the Author)

try analysis, investment strategy, investment planning, market analysis and management information departments conduct full analyses, such as sales and industry and investment strategy analyses. Third, the Jomukai reevaluates investment proposals and makes decisions. Fourth, the IPO department prepares IPO or other ways of liquidation.

***Decision-Making Criteria*:**

Mr. Sato, a field representative, answered the questionnaire and provided the following information regarding decision-making criteria. The ten most important decision-making criteria in order are, references of entrepreneur, management skills, financial skills, growth potential of market, opportunity for exit, hedge against current investments, rate of return, resistance to economic cycles, deal size and protection form competitive entry. Although Mr. Sato, the field representative, selected these criteria, throughout the interviews it seemed clear that the company put the most value on the possibility of having IPO within three years.

***Investment Policies, Preferences and Results of Some IPOs*:**

Nikko Capital's specific investment preferences are for companies with the following characteristics: 1) companies which can have IPO within three years; 2) companies in the accelerating growth stage; 3) companies in computer and internet systems development; 4) target ROI of about 10% (see Appendix B table 2). In addition, Nikko Capital has a much smaller number of employees, 43, compared with JAFCO's 350 and NIF's 168. Therefore, the company does not have industries specifically targeted for investment. Further, because it invests in companies after leading VCFs (JAFCO and NIF) have already invested in them, Nikko Capital can manage investments without extensive knowledge of specific technologies. Thus, currently the company does not have the ability to independently invest in the nanotechnology or micro-electro-mechanical systems (MEMS) fields. In addition, as table 6.3 shows, the performances of its investment are quite modest, indicating that its presence in the VC industry will continue to be a moderate one.

Table 6.3 Results of IPO of Some Companies Managed by Nikko Capital

Name of Company	Contents of Business	Industry Classification	IPO Year	Market Value of Company
Easy Systems Japan Corporation	Developing CD-Rom & DVD-related software/ sales of software	Computer Software	December 2001	$100 million
Corporation web clue, Inc.	Insurance related service searching & estimation	Insurance	November 2001	$15 million
Corporation COM square	Design the communication SI & internet telephone systems	Internet	December 2001	$50 million
Next wear Corporation	Developing original knowledge systems	Computer Software	January 2002	$9.4 million
Run gate Corporation	Developing LAN systems that utilize TV circuits	System Developer	March 2002	$70 million

(Source: Nikko Capital and created by the Author)

Sanwa Venture Capital (Sanwa Capital)

***Company Profile*:**

Sanwa is a medium sized VCF in terms of number of employees and amount of money invested in 2000. Sanwa Bank established Sanwa Capital as a strategic subsidiary in 1984. Sanwa employs 50 people, invested about $50 million in 50 companies in 2000, and manages an accumulation of $198 million with 30 toshijigyo-kumiai. Every year the firm evaluates approximately 1,000 investment proposals and invests in about 50 to 80 investment proposals. During the past 18 years of the firm's history, the company has invested in a total of 700 companies in various industries. It also has diversified investments according to industry in 2001.

***Organizational Structure*:**

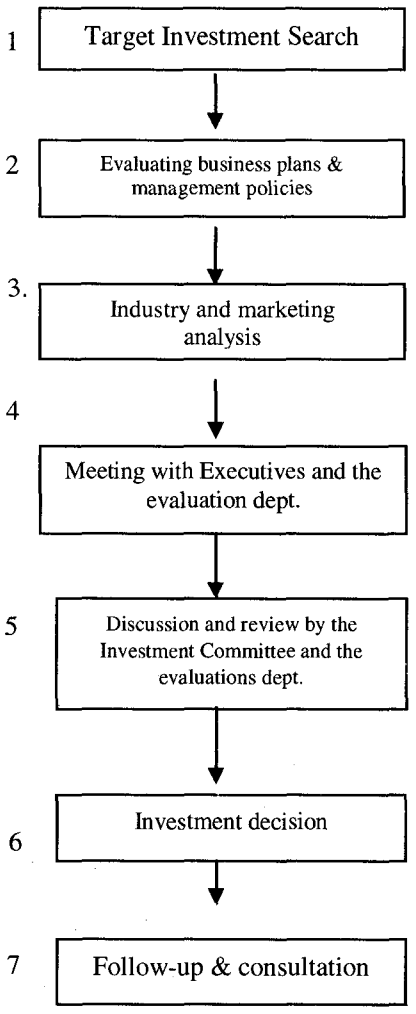
A CEO and two senior managing directors, plus two executive directors compose the Investment Evaluation Committee. The five members of this committee are considered the final decision-makers and venture capitalists. The organization is composed of a total of seven multi-functional departments, in charge of such matter as

industry analysis, investment strategy, investment planning, human resources, investment evaluation department, etc. As with many other AFVCFs that have implemented a traditional Japanese organizational structure, Sanwa Capital employees and managers at different departments manage processes of the company's VC investments and provide after investment services. As a result, whenever the company executes a new process, new people got involved with those from the previous process. So there is no single person or a team in charge of monitoring the whole process. Although the company did not provide me with any figures to illustrate the organizational structure, based on the information of its operational styles and a brief description of the company's departments, I concluded that its organizational structure resembles the classic style of JAFCO (see figure 6.1).

***Decision Making Process*:**

Figure 6.11 shows the decision-making process at Sanwa Capital based on internal company records. There are seven identified processes: search for potential investments, evaluating target companies' business plans and management policies, industry analysis and marketing analysis, meeting with executives, discussion and review by the Investment Committee, investment decisions, and follow-up and consultation processes. The following paragraph briefly illustrates how investment proposals are processed in the company. First, members of the business development department find potential investment proposals from its networks and its parent bank, Sanwa Bank. Second, the investment analysis department and the investment-planning department analyze business and management plans and evaluate management policies. Third, the market analysis and investment analysis department conducts a detailed market and products analysis to measure the potential financial returns of the business. Fourth, Sanwa Capital's top managers have direct meetings with CEOs or founders of targeted companies to evaluate their talents and characteristics. Fifth, the investment committee with the evaluation department has intensive discussion to evaluate of the investment proposals. Sixth, the Investment Evaluation Committee makes six, the final decision. Seventh, the business development department start the after investment follow-up services.

Figure 6.11 Sanwa: Investment Process Stages



1. The business development department finds potential investment proposals from the company's networks.

2. The investment analysis department and investment-planning department analyze business and management plans and evaluate management policies.

3. The market analysis & industry analysis department conduct detailed market and product analysis to measure financial returns of the target business.

4. Sanwa's top managers have direct meetings with CEOs of targeted companies to evaluate talents and characteristics.

5. Intensive discussion and evaluation of the investment proposals by the Investment Evaluation Committee and the evaluation department.

6. Decision making of the Investment Evaluation Committee.

7. The business development department gets involved in follow-up & consultation activities.

(Source: Sanwa, 2001)

***Decision-Making Criteria*:**

The interviewee, Mr. Kashiwagi, provided the company's standardized ten important decision making criteria according to importance in the following order: references of entrepreneurs, management skills, growth potential of market, market need for product or service, production capabilities, uniqueness of product or service, access to market, rate of return, financial skills, and social reputation of the company (see Appendix B table 2). Among these 10 criteria, the first nine of them are listed on my survey sheet; however the interviewee listed one additional criterion, social reputation of the company, as additional important criteria for the company. According to Mr. Kashiwagi, the social reputation of the company is different from the references of entrepreneurs and the company considers this last criteria to be as important as the other criteria, indicating that if the target company satisfies the other nine criteria with good scores, it should also have a good social reputation among the stakeholders in that particular business.

***Investment Policies, Preferences and Results of Some IPO*:**

Sanwa Capital's specific investment preferences are for companies with the following characteristics: 1) companies which can reach IPO within 2-3 years, 2) companies in the early growth and the accelerating growth stage, 3) 70% are the existing businesses in various industries; 30% are start-up Internet related companies, 4) target ROI of more than 5~10% (see Appendix B table 2). In addition, because the company has a much smaller number of employees, 50, compared with JAFCO and NIF, it does not target high technology industries. Further, due to the secrecy of its business approaches, this study could not obtain any specific information regarding the companies in which it has invested.

While the above paragraphs described the important information about AFVCs, the next section will discuss about IDVCFs.

6.1.2 IDVCF

Among the 17 VCFs studied, 9 firms (Global VC, ICT, Future VC, Maria, WorldView, Classic Capital, JAIC, Angel Securities, OGI Capital) are classified in this category, based on their sources of VC funds and non-financial resources (see Appendix B table 1&2). The following paragraphs describe the firm's company profiles, organizational structure, decision-making process and decision-making criteria, investment policies, and preferences and results of selected investments.

Global Venture Capital (Global VC)

***Company Profile*:**

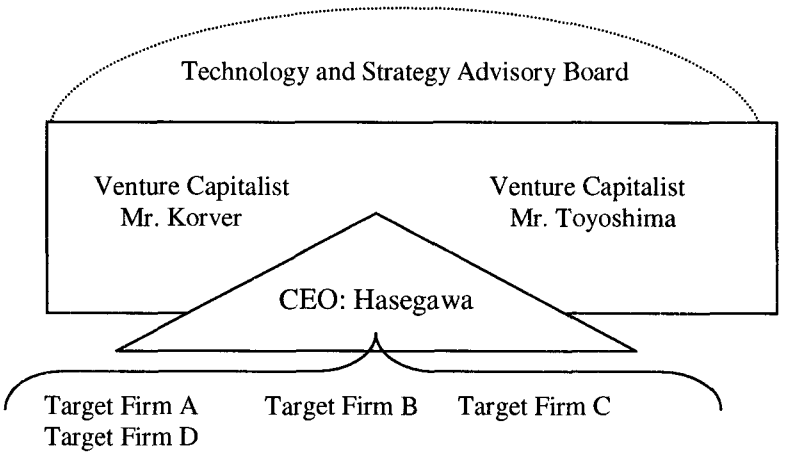
Hirokazu Hasegawa, a CPA and a former consultant at JAFCO, and two partners Michael Korver, a former financial analyst at Nomura Research Institute (a subsidiary of Nomura Securities Firm) and a former international transactions lawyer, and Kazukiyo Toyoshima, a former systems and management consultant of Accenture Corporation (formerly called Arthur Anderson Consulting) founded Global VC in 1996. Global VC employs only three VC managers (venture capitalists) and two staff members for secretarial jobs. The company has invested about $2.0 million in 6 companies over the past year and manages one toshijigyo-kumiai with a total of $7.3 million. Three VC managers spend most of their time managing invested new ventures together with entrepreneurs. The company evaluates 100 to 150 companies annually, invests in only 2 or 3 companies, and relies exclusively on an equity investment strategy. Its main business policy is helping client companies create new industries or technology and achieve extraordinary growth. It invests heavily in the information technology and health care industries.

***Organizational Structure*:**

Figure 6.12 illustrates the organizational structure of Global VC. A CEO and two other partners make up the core of the company. Each of the three VC managers monitor

and manage his or her own target companies and each one of them manages the processes of industry analysis, investment strategy, investment planning, market analysis, management information, and management support. The investment proposals and decision making of these three venture capitalists are supported in consultation with the Technology Strategy Advisory Board, composed of eight experts in the private sector in the field of technology research and development.

Figure 6.12 Organizational Structure of Global VC



(Source: Global VC, 1999 and modified by the Author)

***Decision Making Process*:**

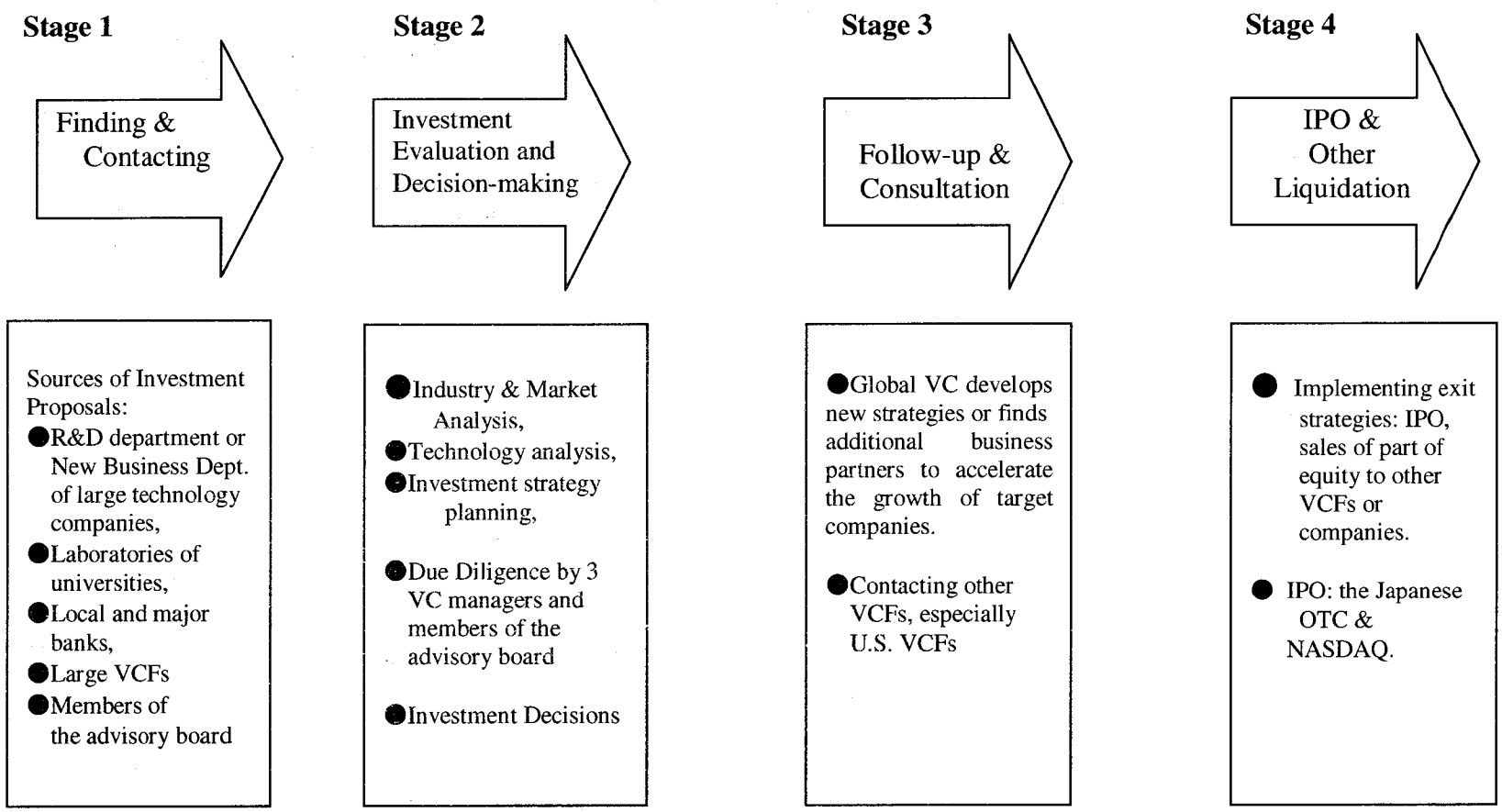
Figure 6.13 shows the decision-making processes at Global VC. The company uses relatively simple processes compared with other VCFs. There are four processes: findings and contact, investment evaluation and investment decisions, follow-up & consultation, and IPO & liquidation. First, each of the three VC managers researches investment proposals from the R&D or new business departments of large technology

companies, laboratories of universities, local and major banks, etc. Second, the management team and the eight advisory board members conduct industry and market analysis, technology analysis and investment strategy planning. Third, the same members make final investment decisions. Fourth, each VC manager provides consultation and other necessary business services. Fifth, each VC manager manages a firm on a course to IPO or other ways of liquidation.

***Decision-Making Criteria*:**

Hasegawa, the CEO, selected as the top five criteria, references of entrepreneurs, company's ability in management, marketing abilities, finance skills and technical skills (see Appendix B table 2). These selected criteria are very similar to the other decision-makers at - JAFCO and NIF. Although there are no big differences among the top five decision-making criteria between venture capitalists of the three AFVCFs and Hasegawa, Hasegawa placed higher priority on the competitiveness of technology than did others. Also this study found out that Global VC emphasizes the existence of a network of new ventures (business network) and the quality of the advisory boards of the new ventures more than the AFVCFs did.

Figure 6.13 Global VC: Decision Making Processes



***Investment Policies and Preferences*:**

Global VC's specific investment preferences are for companies with the following characteristics: 1) companies which are at the seed stage of business development, 2) companies that will enable them to join in the management team, 3) target ROI of more than 40% (see Appendix B table 2). In addition, Global VC's targeted investing business fields are companies in information technology, environmental management, and health care. However, as table 6.4 shows, all companies, Oisix Company (online grocery delivery service), Bitwave Corporation, APAS Corporation, Logwell Company Online, and D3 Publishing, Inc. that Global VC invested in are still minor businesses in their fields. (In addition, the company also did not show any interest in investing in nanotechnology and micro-electro-mechanical systems (MEMS) fields.)

Table 6.4 Results of IPO of Some Companies Managed BY Global VC

Name of Company	**Name of Company**	**Industry Classification**	**IPO Year**	**Market Value of Company** (If N/A, Data of Sales)
Oisix Company	Online grocery delivery service	Internet	N/A	($1.5 million)
Bitwave Corporation	Online ticket sales	Internet	July, 2001	$10.0 million
APAS Corporation	Location-based solution provider for cellular phones	Telecommunication	N/A	($3.5 million)
Logwell Company	Online distributor of quality-controlled domestic lumber	Internet	N/A	($0.2 million)
D3 Publishing, Inc.	Game contents publisher	Publishing & Game Software	N/A	($0.5 million)

(Created by the Author, based on the company's internal reports, 2001)

Inter-Continental Technology (ICT)

***Company Profile*:**

Mikio Nagayama, the former senior vice president of Sankyo Seiki Corporation and the CEO of the Sankyo Seiki U.S.A. Corporation, established the company in 1984. Nagayama learned the VCF business while he worked as the CEO of Sankyo Seiki U.S.A. Corporation in the early 1980s. The company has only one venture capitalist to adapt the U.S. style of VCF with one supporting staffperson. It has invested about $25 million over the past 17 years. On average, it invests about $2.2 million a year, evaluates 100 companies each year, and invests in only 2 or 3 companies. The company alone does not have the capability to evaluate technology. Thus, the company arranges to hear the advice of university professors and affiliated companies, such as computer software companies in the advisory board.

***Organizational Structure*:**

The CEO is the only core of the company. The CEO manages 5~10 companies and manages the processes of industry analysis, investment strategy, investment planning, and investment decisions by alone. ICT also has an advisory board consisting of professors of universities and professional researchers at major corporations to assist it in evaluating technological aspects of companies targeted for investment. Therefore, the organizational structure is very similar to that of Global VC in figure 6.12.

***Decision Making Process*:**

The company did not provide any information regarding its decision-making process. Therefore, this study cannot illustrate the decision-making process of ICT.

***Decision-Making Criteria*:**

Although the company did not provide a clear description of its decision making process, the CEO answered the questionnaire and provided the following information regarding decision-making criteria. The company put emphasis on evaluating the references of entrepreneurs, technology skills, patentability of product, market need for

product or services, and production capability. Although the CEO selected these criteria, throughout the interviews the study found that the company evaluates carefully the extent of the business network of new ventures and the quality of the advisory boards of the new ventures as additional important decision-making criteria.

***Investment Policies and Preferences*:**

ICT's specific investment preferences for companies with the following characteristics: 1) companies in any industry, 2) 60% of available VC funds go to companies at the start-up or early growth stage and 40% goes to companies at the expansion & maturity stage, 3) Target ROI of more than 20% (see Appendix B table 2). The company does not have specific targeted investment technology. Based on the past reputation of the company acting as primary VCF, it prefers to invest as a secondary investor, not as a lead investor. In addition, due to the secrecy of its business approaches, this study could not obtain any information regarding the companies selected for VC investment at all.

Future Venture Capital (Future VC)

***Company Profile*:**

Future Venture Capital (Future VC) is a leading local independent VCF in the Kansai area, which has networks with leading research universities, such as Kyoto University and Ritsumeikan University. Seven people who left their previous jobs at banks or securities firms founded the firm in 1999. Kawake Youji, the CEO of Future VC, has experience managing IPO processes from his time at NIF, a company whose core strength is collecting VC funds and developing its networks in its business area in Kyoto and Osaka. Although only three years have passed since its inception, Future VC employs more than 47 people, invested $11 million in 8 companies in 2001, and manages an accumulation of $60 million in VC investment funds composed of 3 toshijigyo-kumiai. For the past three years, on average, the firm has evaluated approximately 100 to 200 investment proposals and invested in about 8 to 10 investment proposals per year.

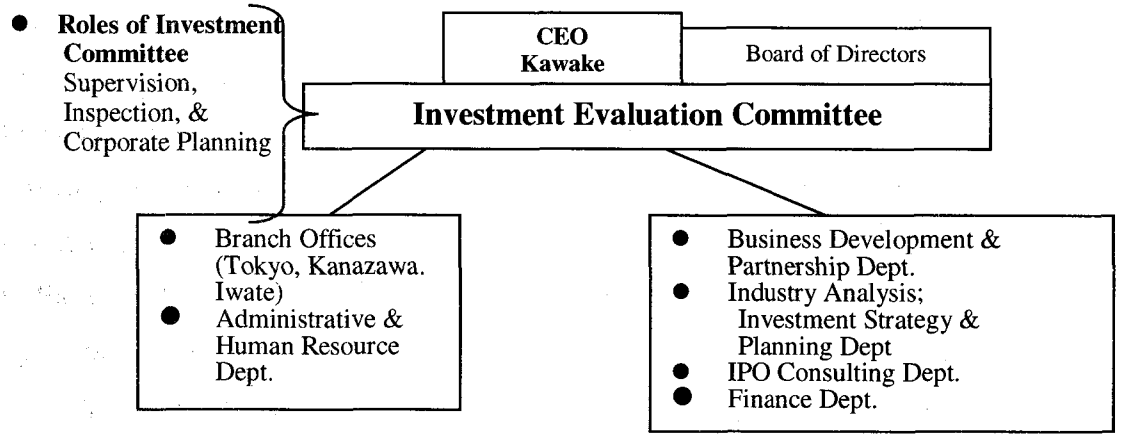
Over three years, the company has invested in a total of 29 companies and about 80% of its VC funds are invested in computer office system development companies and computer game software development companies, while 20% of the funds are invested in companies that develop specific internet programs for cellular phones for large telecommunication companies, such as NTT and Kyocera. When the company was founded by Kawake and others three years ago, they strategically selected the location of the firm's headquarter in Kyoto, a city considered at the center of new venture formation in Japan and, at the time of Future VC's establishment, a city in which there were no IDVCFs. In Kyoto many large companies, such as Kyocera, NTT, Murata Electronic, Horiba Electronic and Nintendo, and leading universities operate their research centers. In fact, in the Kyoto area, which is geographically approximately 30 square miles in size, there are about 50 universities and about 20-university research centers. Obviously the selection of the location for their business provides them with the advantage of being able to establish an extensive network devoted to searching for possible investment opportunities in new ventures from the many research centers of large companies and university research centers in the city. To further increase the name recognition of the company and its reliability in the VC industry, in December 2001 the company was able to reach IPO on the NASDAQ Japan Market with the help of Angel Securities Firm. According to Kawake, although VCFs having IPO in the equity market seems based more on U.S. than Japanese industry standards, it is fast becoming an essential and unavoidable matter because the two leading affiliated VCFs, JAFCO and NIF, have already taken this path, redesigning the Japanese VC industry in the process.

***Organizational Structure*:**

According to Kawake and Tomita (a senior venture capitalist who has been with the company since its inception), in Future VC's first year of operation they had an informal organizational structure with seven original members. The company then introduced a formal organizational structure very similar to JAFCO' old organizational model (see figure 6.1) in the second year. The structure of the company is suitable for the

company's current holding staff, made up of recent college graduates. Although the company wants to recruit employees who have more experience as venture capitalists and greater knowledge of specific technology, the company's weak name recognition in the business community has made it difficult to recruit such qualified people. Therefore, it has become necessary for the company to create and provide an environment for on the job training (OJT) for them. Thus, a traditional organizational structure, such as the JAFCO's old organizational structure is very convenient for such purposes. Because the majority of employees are quite young and inexperienced, all investment proposals are evaluated extensively by seven of the founding members of the company who composed the company's Investment Evaluation Committee, see figure 6.14.

Figure 6.14 Future VC' Organizational Structure & Roles



(Source: FVC' Company Brochures, 2002 and modified by the Author)

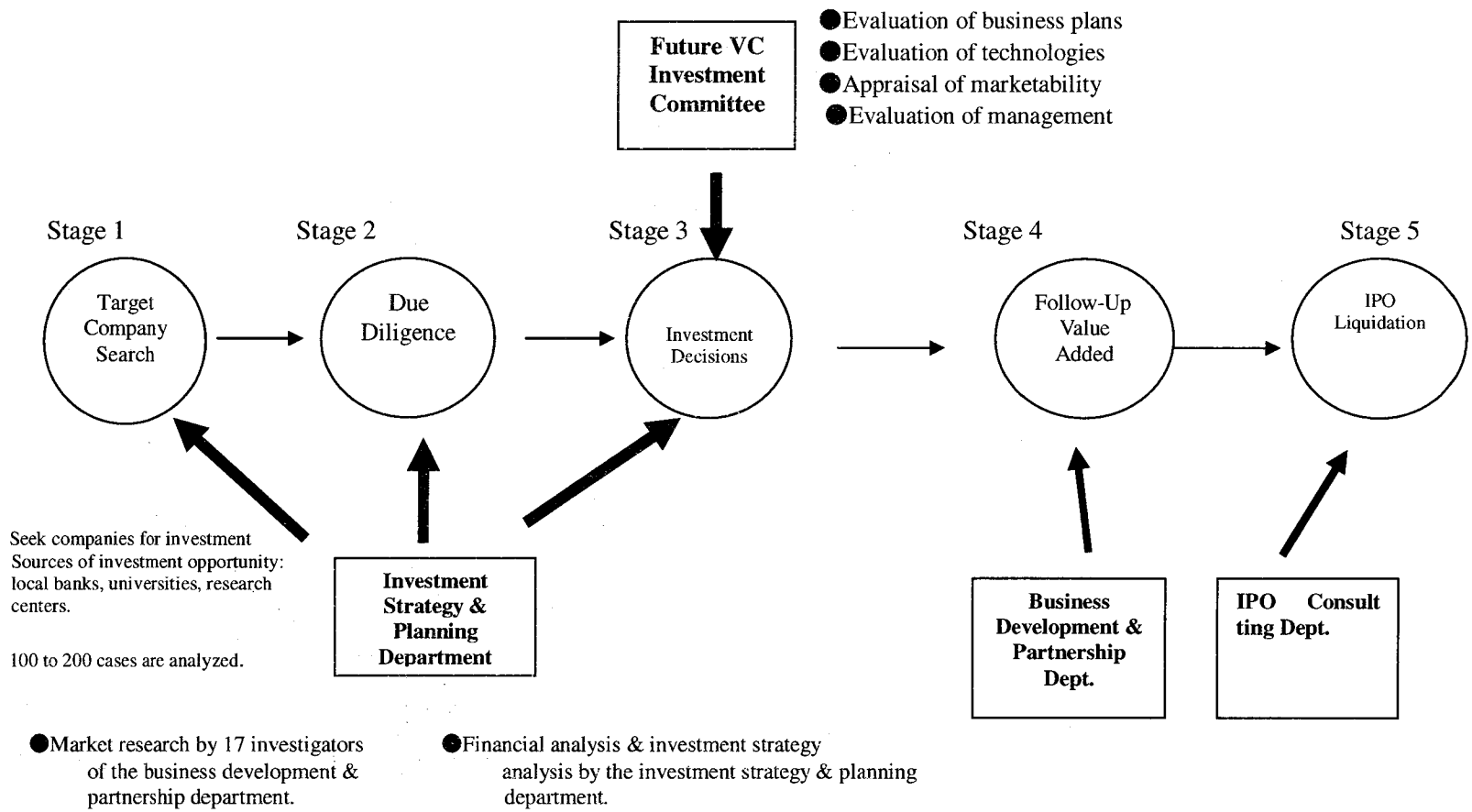
***Decision Making Process*:**

Figure 6.15 shows Future VC's decision-making processes, which is very similar to that of JAFCO's pre-1998 decision making process. It is composed of five stages --findings, due diligence, investment decisions, follow-up & value added, and IPO & liquidation -- all of which are monitored and managed by far few staff because the firm has only seven people capable of managing high-level VC processes. The firm already

has created five multi-functional departments and three branch offices, in Tokyo, Kanazawa and Iwate, with a total of forty-seven people. The five departments are the business development & partnership department; the industry analysis, investment strategy & investment planning department; the IPO consulting department; the finance department; and the administrative & human resource department, as figure 6.8 shows.

While the old organizational structure of JAFCO manages all necessary VC processes with eleven different departments, Future VC manages the same processes with the above five. This suggests that the seventeen less experienced employees of the business development & partnership department conduct target company search and post investment actives of FVC, while JAFCO's old model managed pre-investment activities, investment, and after-investment activities through different departments. The majority of the key processes of industry analysis, investment strategy & planning activities, evaluation (due diligence), and IPO consulting are still managed by the seven founding members. Investment proposals are managed according to a six-stage process. First, investigators in the business development & partnership department try to find potential investment proposals from local banks, local incubator centers, local university research centers, research centers of large companies (Kyocera, NTT, Murata Electronic, Horiba and Nintendo) and local governments (Kyoto city, Otsu city, and Kanazawa city governments). Second, the industry analysis, investment strategy and planning department screen and select about 50 proposals from a total of 100 to 200 incoming investment proposals. Third, an investment evaluation committee, made up of the seven founding venture capitalists and of researchers from local university and companies in each of the technology fields targeted for investment, makes a due diligence study and selects 8-10 proposals a year. Fourth, Kawake contacts the founders or CEOs of target companies. Fifth, the business development and partnership department, with the supervision of one of the seven venture capitalists gets involved in the follow-up and value-adding processes. Sixth, the IPO consulting department with the cooperation of the business development and partnership department, and the help of the IPO department of large security firms, such as Daiwa Securities Firm, assists in managing the target company toward IPO or other liquidation.

Figure 6.15 Future VC's Decision Making Process
Roles of Each Department



(Created by the Author based on the interviews and other data)

***Decision-Making Criteria*:**

The study found out that because the company tries to utilize the existing network with university research centers and company's labs to find possible investment opportunities, they operate according to a somewhat unique decision-making criteria: the chief VC manager, Mr. Tomita, selected as the top five criteria, uniqueness of product or service, technical skills of an entrepreneur or a firm, market need for product or service, references of entrepreneurs, and company's production capability (see Appendix B table 2). These selected criteria are quite different from those of the other decision-makers at JAFCO and NIF and those of Global VC because Future VC specifically targets to invest in new ventures from research labs.

***Investment Policies and Preferences*:**

Future VC's specific investment preferences are for companies with the following characteristics: 1) companies in their early stage of development, 2) companies at or beyond the break-even point that are ready to expand their operations, 3) companies in the Kansai area, including Kyoto, Osaka, Kobe, 4) target ROI of 15~35% (see Appendix B table 2). (In addition, the company did not have any interests or capabilities in investing in nanotechnology and micro-electro-mechanical systems (MEMS) fields.) Besides these preferences, in fact the company has invested in companies that were able to reach IPO within three years, as table 6.5 shows. Four companies that it invested in since its establishment in 1999 have already managed to reach IPO, although their market values are quite small.

Table 6.5 Result of IPO of Some Companies Managed by Future VC

Name of Company	Contents of Business	Industry Classification	IPO Year	Market Value of Company
Sei-Crest Corporation	Sales of residential apartment & design	Real Estate	December, 2001	$9.8 million
J-Home	Management consulting to the franchised stores	Consulting	November, 2001	$5 million
Sodick Plustech	Sales of plastic processed machine, machine tools, & maintenance services	Equipment manufacturing	August, 2000	$26 million
Prime Systems Corporation	Developing data-base management technology/ computer system consulting	Computer Software	December, 2000	$9.3 million

(Created by the Author, based on the company's internal data 2002)

Mary Capital Co. Ltd. (Mary)

***Company Profile*:**

The name of Mary should indicate the meaning of its establishment in 1996. According to the CEO, Hiki Isao, the company was formed to become a firm having the biblical angelic spirit of Mary for new ventures, which need help, and bring hope to those engaged in new ventures that are targeted for investment. Mary, with a total of five employees, is the smallest VCF in terms of managing VC investment funds, merely $1.7 million in 2000. In 1996 the CEO, Hiki, who had been managing a preparatory school for three years and Miyauchi Yuichi, a chief venture capitalist who quit his previous job at Japan Knowledge Industry, Inc., a developing distribution systems and logistic systems firm, cofounded the firm to explore their business opportunities. Since its inception, the firm managed to collect about $1.7 million of VC funds and has invested in eight companies. However, by 2002 the company had not yet been able to form a toshijigyo-kumiai.

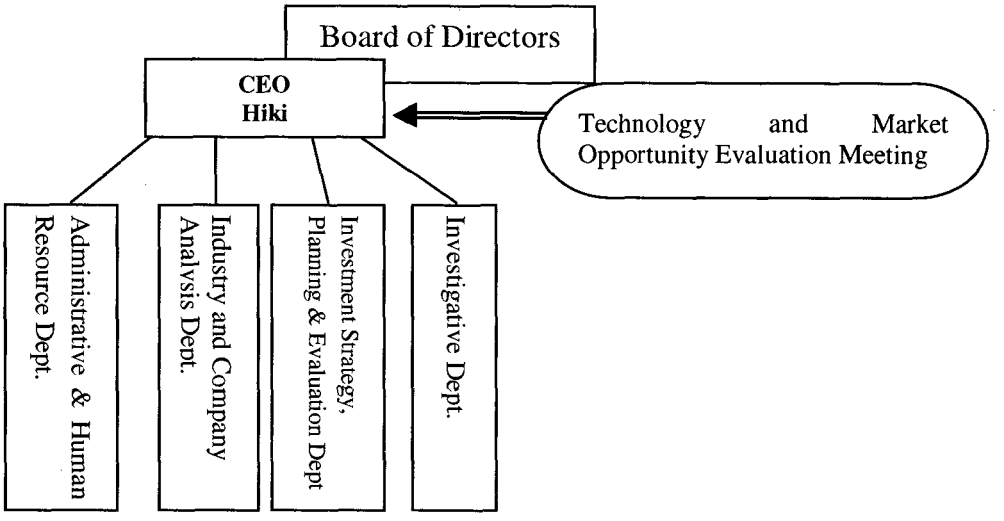
Every year the firm evaluates only 10 to 20 investment proposals and invests in only 2 or 3 of them. A significant point is that none of companies selected for investment had yet gone into bankruptcy, despite the fact that none of them had made IPO yet.

During its six years operations, Mary has expanded its networking ability by having more outside experts, such as researchers from the Tokyo Institute of Technology (one of the top three research universities in Japan), and venture capitalists from the U.S., as consultants instead of recruiting new employees from colleges and universities as Future VC does.

***Organizational Structure*:**

Figure 6.16, which shows Mary's organizational structure, is based on company internal documents. CEO Hiki and chief venture capitalist Miyauchi, and three other senior executive directors compose the board of directors, the firm's highest decision making body. When necessary, the firm will meet with four outside advisers, each of them an expert in technology, marketing and human resource management. At the company, the members of the board of directors are considered final decision-makers and venture capitalists. Also, as figure 6.16 shows, the company maintains a typical Japanese corporate organizational structure with a total of four multi-functional departments (the investigative department, the industry and company analysis department, the investment strategy, planning and evaluation department, and the human resources department) despite its meager number of employees. In the organization Mr. Miyauchi and four senior executive directors individually manage all necessary VC investment activities and provide all after investment services. Each member of the Investment Evaluation Committee is also in charge of searching target investments, evaluating proposals, deal-making, investing and after investment service. The operation style of Mary resembles the operating style at Global VC (see profiles of Global VC), however, the company seems to be trying to develop an organizational structure similar to the old style of JAFCO by developing multi- functional departments.

Figure 6.16 Mary's Organizational Structure

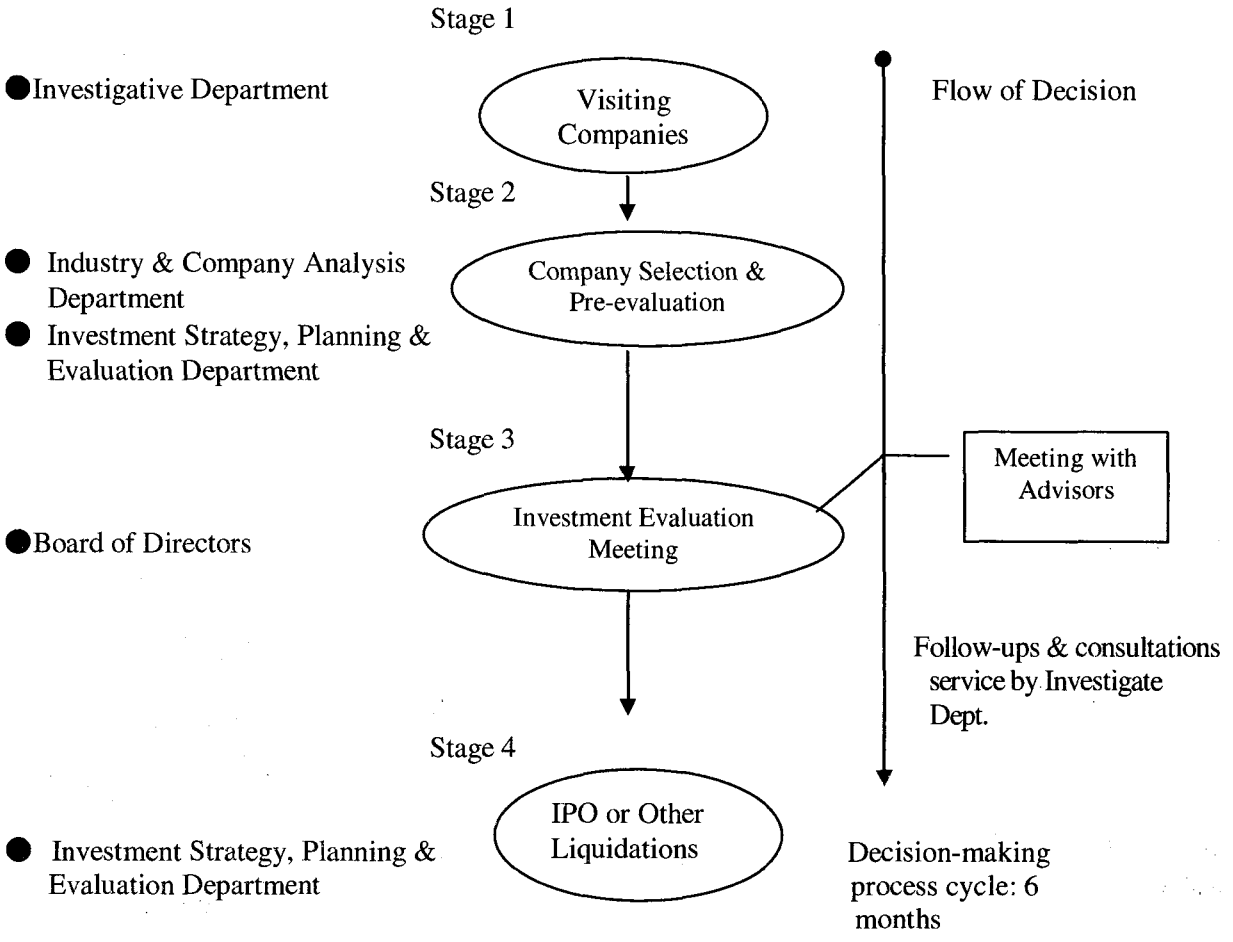


(Source: Mary, 2001 and modified by the Author)

***Decision Making Process*:**

Figure 6.17 shows the decision-making processes at Mary. The company's decision-making processes are composed of four stages – searching target companies and visiting companies, company selection and pre-evaluation, investment evaluation meeting, and IPO & other liquidation. Investment proposals also follow a four-stage process. First, one of the five key members manages the processes of searching, visiting and managing contact. Second, the same member manages processes of the investment evaluation, industry analysis, investment strategy, investment planning, and market analysis. After the individual member has completed these two processes, the Board of Directors, with the help of outside consultants, reevaluates investment proposals and makes final decisions. Fourth, all VC managers together manage the last process of the IPO or other ways of liquidation.

Figure 6.17 Decision-Making Process of Mary by Department



Source: Mary, 2001

***Decision-Making Criteria*:**

Mr. Miyauchi, Mary's chief venture capitalist, selected as the top five criteria, references of entrepreneurs, a company's management ability, uniqueness of product or service, technical skills of an entrepreneur or a firm, and market need for product or service. In addition, because of the business environment of Mary, where many large VCFs, such as JAFCO and NIF are also located, the incoming investment proposals are not highly sought businesses because rivalry firms have already invested in the most desirable firms.

***Investment Policies and Preferences*:**

Mary's specific investment preferences for companies with the following characteristics: 1) companies in their seed or early stage of development, 2) companies with unique technology or product features, 3) companies which have a good prototype of product, 4) target ROI of 30% (see appendix B table 2). It had invested in only three companies, as table 6.6 shows and all three companies have not made IPO yet. (In addition, it does not have any interests or capabilities in investing in nanotechnology and micro-electro-mechanical systems (MEMS) fields.)

Table 6.6 Results of IPO of Some Companies Managed by Mary

Name of Company	Contents of Business	Industry Classification	IPO Year	Market Value of Company (If N/A, Data of Sales)
Starr Direct Corporation	Developing internet contents for business customers	Internet	N/A	($0.6 million)
I.D.E.A. International	Design & sales of memorial goods	Miscellaneous goods	N/A	($3.9 million)
U-se Corporation	Developing automatic surveillance systems	Computer system developer	N/A	($3.3 million)
OP Energy	Developing new sources of energy	Energy	N/A	No Sales

(Created by the Author, based on the data of Mary 2001)

WorldView Technology Venture Capital Co.

***Company Profile*:**

WorldView Technology (WorldView), established in 1997, is one of the most powerful independent VCFs since the Japanese government deregulated the industry's investment constrains by enacting the "Toshi-kumiai Law" in 1998 (see direct impacting legislation, section 4.4.3). Tanaka Tsuyoshi, ex-venture capitalist of JAFCO, founded the company. Since its establishment, the company has been recognized in many publications as a leading new VCF in the industry. In 2001 WorldView managed about $1.75 billion in VC funds and employed roughly 50 people, including 6 venture capitalists. It has a

total of four toshijigyo-kumiai and invests 60% of it funds in companies in the U.S. For example, it invested about $150 million in 28 companies, with 70% of these companies located in Silicon Valley in 2000 (WorldView's, 2001). WorldView's investment proposals come only from each venture capitalist's personal network.

***Organizational Structure*:**

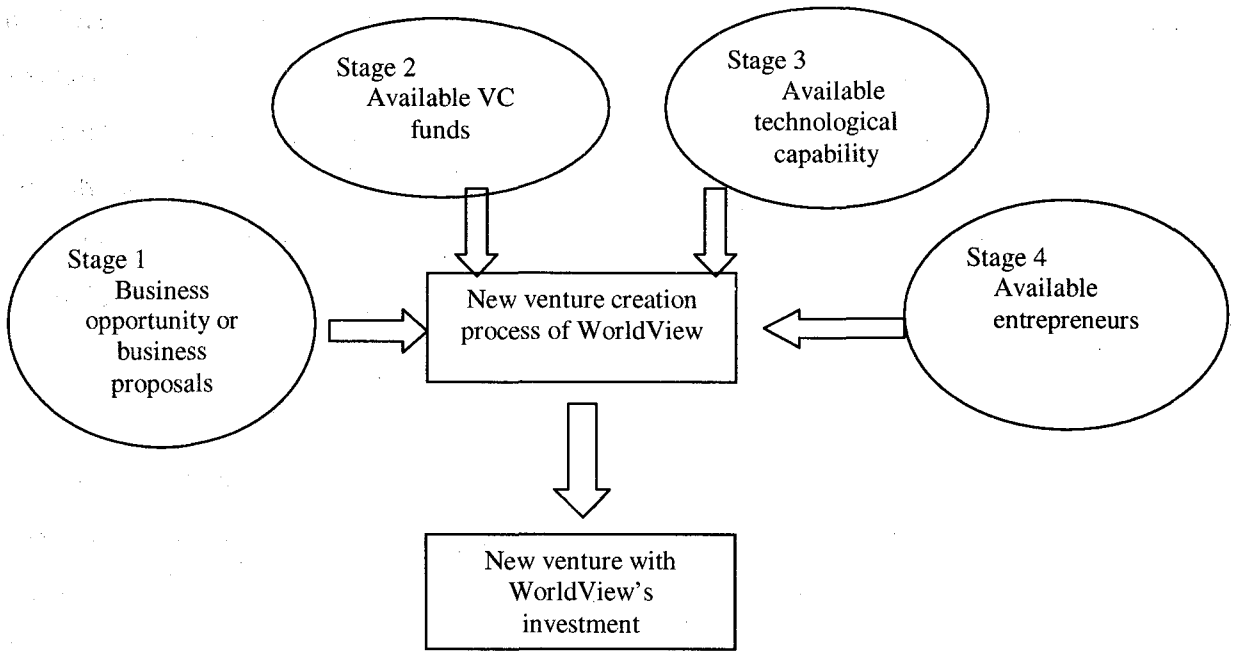
The CEO, Tanaka, did not provide me with detailed information about the organizational structure of the company. However, based on the company's internal documents and interview articles with Nihonkeizai-shinbun (newspaper, Japanese version of the Wall Street Journal), this study concludes that the company has an official representative (Mr. Tanaka) in Tokyo, Japan and a group of venture capitalists whose office are located in Silicon Valley due to the company's large investment holdings there. The CEO and six venture capitalists compose the core of the company's structure, which is legally registered as a joint-stock company based on Japanese commercial law. The company also has two other overseas offices in Singapore and London, to oversee expansion of companies in which it invests. WorldView's main role is to offer information about local markets in Tokyo, London and Singapore. In addition, Mr. Tanaka spent about 10 years of his earlier career at JAFCO working in Silicon Valley. This suggests that the company's organizational characteristics and structure must emulate the classical style of VCFs in the U.S.

***Decision Making Process*:**

Figure 6.18 shows an approximation of the decision-making processes at WorldView. In fact, based on the interview with Mr. Tanaka, there are not the same clear decision-making processes as other firms provide. All of the seven venture capitalists of WorldView find their potential investment proposals from their personal networks involving their friends in the Silicon Valley. In the case of its investments, before they collect VC funds from Japan they already have particular investment proposals in mind. If venture capitalists of the company perceive some business idea or technology as feasible, they can find entrepreneurs who can manage that business and if the established

company does not have the capability to develop the technology, they can find talents from outside the firm to provide assistance. Based on this information, the study developed the decision making process outlined in figure 6.18. First, venture capitalists recognize business opportunities through their personal networks or through meetings with their partners (including researchers at universities and company's labs) or they simply recognize business opportunities from their day to day activities. While they are managing the first process, they are also already managing the next processes evaluating of available VC funds, technology and entrepreneurs. So most of their processes are concurrent and none of the process are carried out in a sequential manner, as the other VCFs all did (see Appendix B table 2).

Figure 6.18 Decision-Making Process of WorldView



(Created by the Author)

***Decision-Making Criteria*:**

The decision-making criteria that I asked Mr. Tanaka to evaluate do not reflect the real decision-making criteria at WorldView. Also, as the previous paragraph described, most of their decision-making processes are much more informal and none are carried out sequentially. So Mr. Tanaka did not prioritize the decision-making criteria in order. However, the study concludes that once the venture capitalists of the firm find a business idea or an opportunity, they can manage the rest of the necessary resources to form or start a new venture based on the company's investment policy and preferences, as described in the next category. Thus, the only important criteria for them are the attractiveness of the idea or the business opportunity.

***Investment Policies and Preferences*:**

WorldView's specific investment preferences for companies with the following characteristics: 1) 100% of investment is in ventures with high technology in optical-communications companies and in the information technology (IT) field, 2) 100% of investment goes to companies at the seed stage, 3) a manager's capability is not thought of as important decision-making criteria, 4) target ROI of more than 25~50% (see Appendix B table 2).

The main investment policy revolves around creating new generations of technology at leading companies in the information technology field and its venture capitalists are heavily involved in managing and monitoring the companies they invested in both in Japan and in the U.S. Furthermore, due to the secrecy of its business approaches, the study could not obtain any information regarding the companies that WorldView invested in at all. (In addition, the company also did not show any interests in investing in nanotechnology and micro-electro-mechanical systems (MEMS) fields.)

Classic Capital Corporation (Classic Capital)

Company Profile:

Classic Capital is an another one of the newly established IDVCFs, following the government's deregulatory "Toshikumiai Law" in 1997. An ex-entrepreneur, who successfully managed a small information and telecommunication company to make IPO in the early 1990s, founded Classic Capital in 1998. Since its inception, it has invested a total of $2 million in VC funds and the company currently manages and monitors two toshijigyo-kumiai. Kazuhiko Yamamoto, Chief Executive Partner, which is the title this firm uses instead of CEO, and two other partners started this firm in 1998 when they perceived the market need for local VCF in Kobe. Before Mr. Yamamoto started the firm, he worked as a strategic planning & corporate finance consultant at Sumitomo Electronic, Inc (a member of Sumitomo Keiretsu) for 10 years before advancing his career as an industry analyst, strategist, and IPO specialist at the Nomura Research Institute from 1992 to 1994. Then, he moved to his third career at a small information and telecommunications company in 1994 that he successfully managed to lead to IPO in 1998 as the company's executive financial manager and business strategist.

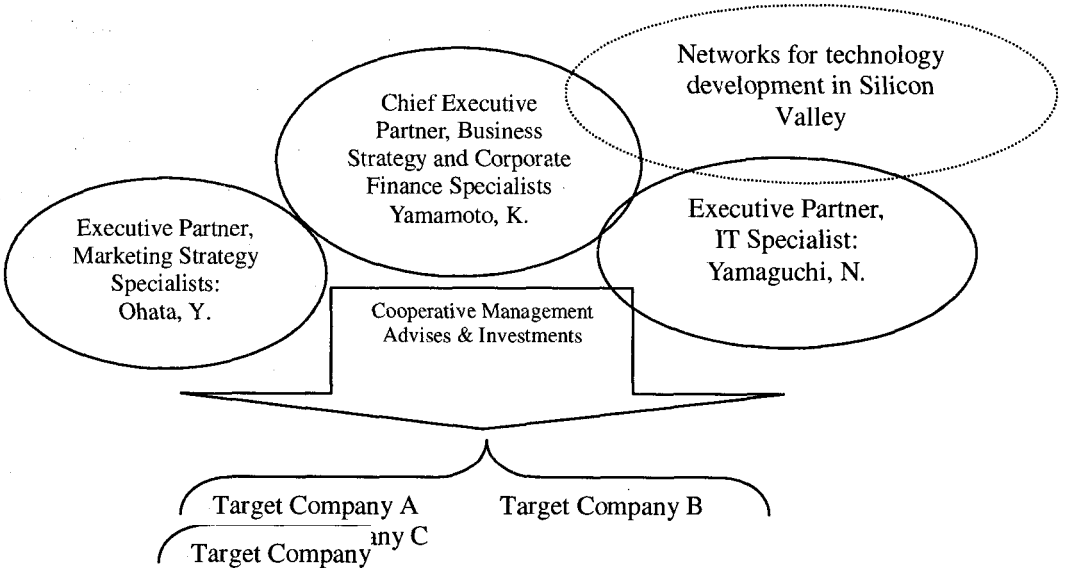
In forming Classic Capital in 1998 to become the first traditional U.S. style VCF in Japan, Mr. Yamamoto named his company "Classic Venture Capital" and chose to locate his company in Kobe where many small and medium sized companies maintain their head offices. He also selected partners who have expertise in marketing and sales in the information technology field in Silicon Valley. Furthermore, since the company invested $2 million in three companies in the information and telecommunication industry, the three partners have spent most of their time managing the new ventures and developing key technology at these companies.

***Organizational Structure*:**

Figure 6.19 illustrates the organizational structure of Classic Capital. A chief executive partner and two other partners make up the core of the company. Two other partners are: Mr.Yasuhiro Ohata, an executive partner and marketing strategy specialist who worked for Procter & Gamble in the marketing department at its Far East branch.

CEO Yamamoto has over ten years' experience in consumer goods marketing in both Japan and North America; and Naoya Yamaguchi, executive partner and information technology specialist, worked as a systems engineer at an American software company and as a product manager and overseas marketing director at an IT venture company. Although Classic Capital is registered as a joint stock corporation according to Japanese commercial law, it uses the titles of chief executive partner and executive partner specifically to describe their positions and roles to reflect the dream of the three founders to become the first Japanese VCF to successfully adapt and develop a classic style of U.S. VCF, circa the 1940s. With this as motivation, the three VC managers monitor and manage the companies they invested in together and each one of them is capable of managing the following processes: industry analysis, investment strategy, investment planning, market analysis and management support. Also, their investment proposals and decision making is supported in consultation with their own informal networks. For example, Mr. Yamamoto has a personal friend who is a lawyer in Silicon Valley with a network of evaluation experts. Although its networks are informal, their function resembles the Technology Strategy Advisory Board in Global Venture Capital.

Figure 6.19 Organizational Structure of Classic Capital

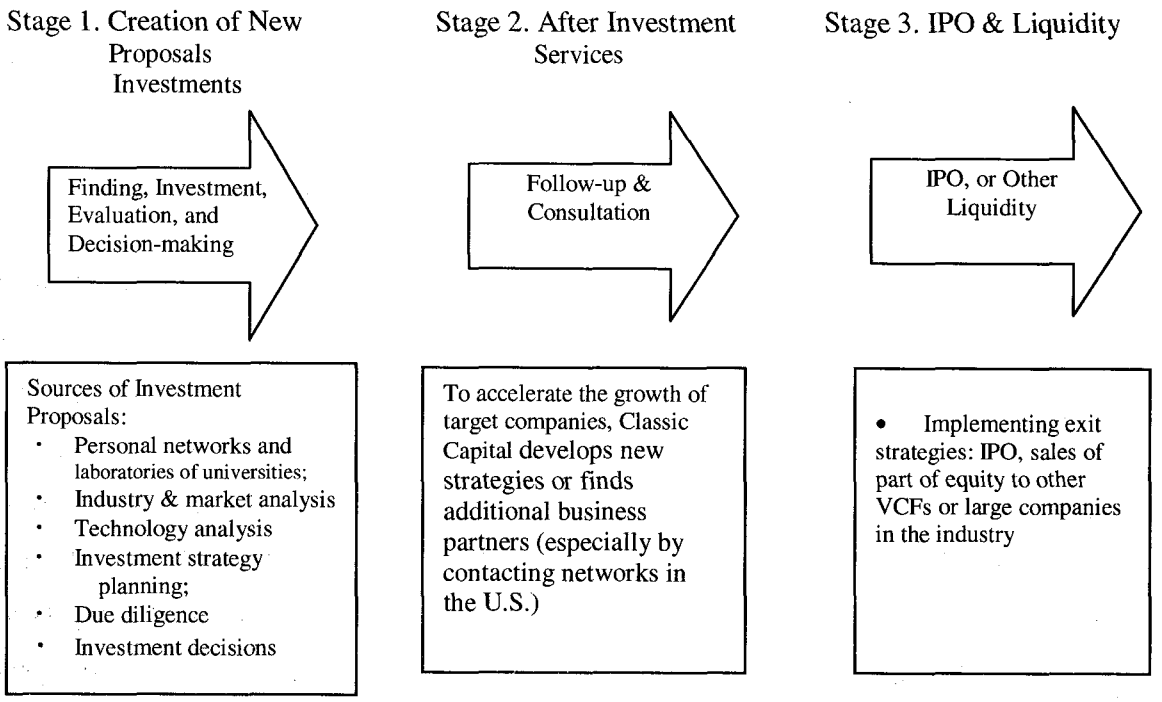


(Created by the Author)

***Decision Making Process*:**

Figure 6.20 shows the decision-making processes at Classic Capital. The company uses relatively simple processes. There are only three processes: creation of new proposals (findings, investment evaluation and decision making), follow-up & consultation, and IPO & liquidation. First, when they decided to form the firm they already had detailed investment proposals from their personal networks. Therefore, by the end of the first process, the partners have already conducted and finished industry and market analysis, technology analysis, and final decision making for investment strategy planning as well as due diligence checks. Second, the three partners provide consultation and other necessary business services. Third, each VC manager manages necessary actions for IPO or other means of liquidation. This suggests that while Classic Capital is managing the first process of creating new proposals, they also have been managing the next processes of industry & market analysis, technology analysis, investment strategy planning, due diligence, investment decisions, in precisely the same manner as WorldView. Although this study illustrated its decision-making processes in figure 6.20, the flow of their processes closely resembles that of WorldView.

Figure 6.20 Classic Capital: Decision Making Processes



(Created by the Author, based on the internal data of Classic Capital, 2001)

***Decision-Making Criteria*:**

Yamamoto, the CEP, selected as the top five criteria, market opportunity of technology, potential growth of the market, the clear targeting of customers, marketing channels, and clear competitive advantage of products (see Appendix B table 2). According to Mr. Yamamoto, because the three partners can provide a high quality of service in each of their professional areas, other decision making points, such as references of entrepreneurs, company's ability in management, marketing abilities, finance skills and technical skills, are not such important issues. These selected criteria are very similar to those of Global VC.

***Investment Policies, Preferences and Results of Some IPO*:**

Classic Capital has specific investment preferences for companies with the following characteristics: 1) companies in the information and telecommunications industry, 2) companies where they can join in the management team, 3) 100% investment goes to companies at the seed stage (see Appendix B table 2). In addition, a target company's management capability is not thought of as important decision-making criteria. Further, the company does not have any interests in investing in nanotechnology and micro-electro-mechanical systems (MEMS) fields or any other fields with which they are not familiar. Also, due to the secrecy, this study could not obtain any information regarding the invested companies at all.

Japan Asia Investments Co., Ltd. (JAIC)

***Company Profile*:**

In July 1985 one hundred and two members of Keizai Doyukai (Japan Association of Corporate Executives) founded Japan Asia Investment Co., Ltd. in Tokyo with capital of $10 million to compete with JAFCO and NIF. Since then, the company has established subsidiary offices in Osaka in 1988, Nagoya and Jakarta in 1989 and Singapore in 1992. Most recently it opened branch offices in Indonesia and Palo Alto, California in 1998. Now it has six branch offices and two affiliated consulting companies

in Japan and three subsidiary offices in overseas. In 2001, the company employed a total of 116 people in the domestic offices and 71 people in the overseas offices (a total of 187).

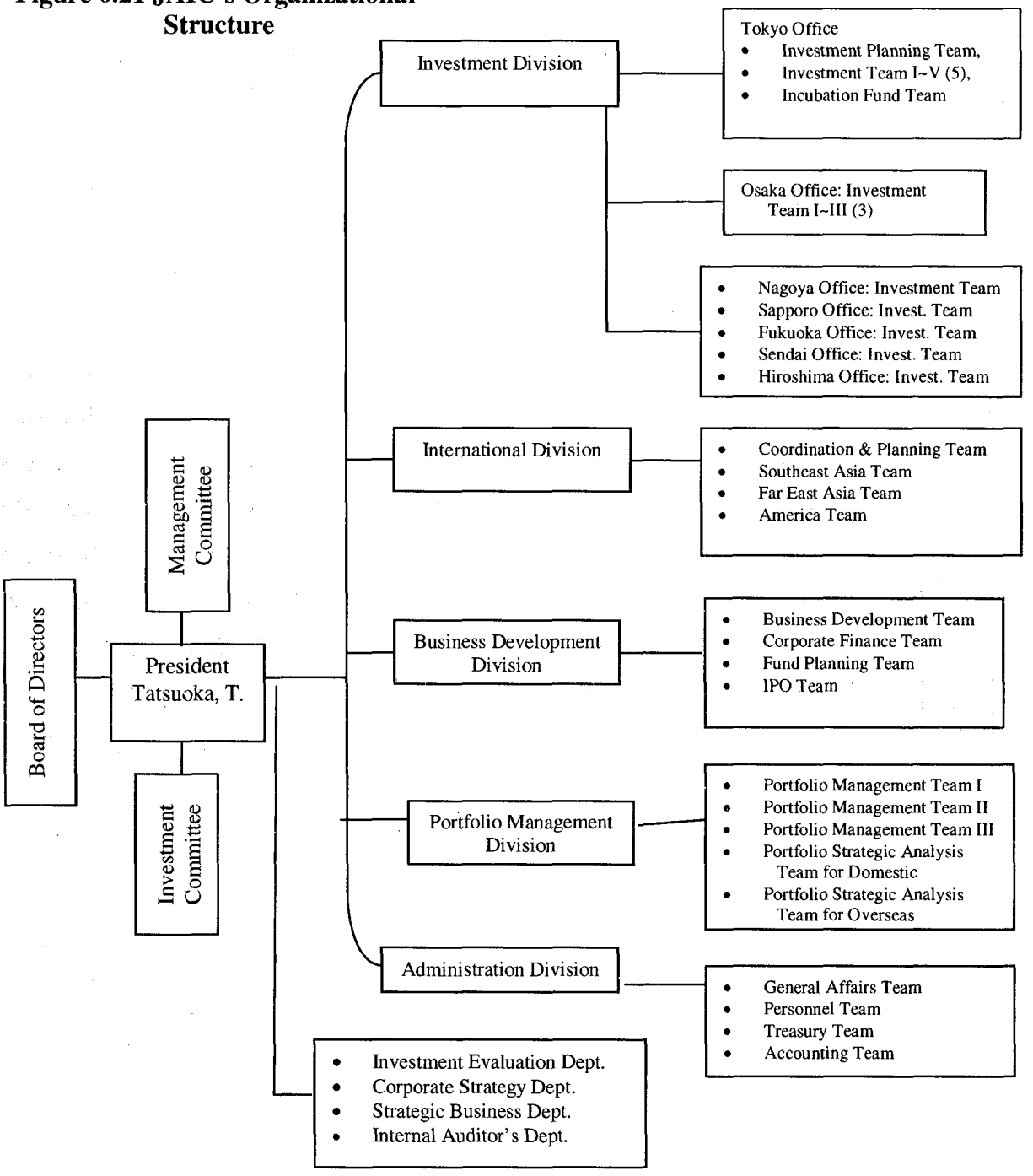
It invested about $151 million in a total of 212 companies in 2001: about 77.5% of the invested money ($117 million) went to domestic companies and 22.5% ($34 million), went to companies in East Asia. It manages an accumulation of over $580 million of VC fund investments with 29 toshijigyo-kumiai for both domestic and overseas companies. Among all Japanese VCFs, JAIC is the firm that invests the most heavily in East Asia. According to Mr. Hayashi, a business development representative of Investment Team I at its Osaka branch, the firm evaluates approximately 2,000 investment proposals annually and invests in about 45 to 80 of them. The total number of companies that JAIC has invested in since 1981 amounts to approximately 700 companies and among these 88 companies have managed to make IPO. These 700 companies are firms from high tech industries, such as computer software, to fast food service industries, such as Daidomon Food Group, a Japanese equivalent of the Outback Steakhouse chain. In addition, to increase its competitiveness in the VC industry both in Japan and East Asia, in April 1999 the company also introduced an investment team unit concept organizing 4-5 selected employees into a team that performs a series of business activities functioning like a small VCF, very similar to the structure of JAFCO (compare figures 6.17 and 6.3).

***Organizational Structure*:**

JAIC adapted investment team units' concept, organizational structure resembles the one of JAFCO, as figure 6.21 shows. The CEO, two senior managing directors, and five other executive directors, are the members of management and investment committees and each are in charge of managing division composed of several different task-teams. Each division composed of 1 to 7 task-teams. For example, one senior managing director manages the investment division consisting of the investment planning team, investment team I~V, incubation fund team, and five additional investment teams

that are spread all over Japan; the other senior managing directors manage the portfolio management division consisting of the portfolio management team I~III, the portfolio strategic analysis team for domestic, investment planning team, investment team I~V, and the portfolio strategic analysis team for overseas. Under this new organization structure JAIC has only geographical concentrated teams to manage its investment activities, while JAFCO and NIF have a targeted technology team, such as information technology team and biotechnology team. Theoretically, the performance and profit contribution of each one of 13-investment team units are calculated independently and each team competes with other teams for the company's profit contribution. Each one of 13- investment team units investigates, analyzes, and evaluates investment proposals and estimates the amount of money to be invested. Based on the company's policy, each team supposedly functions as a small VCF. However, as the following section describes the new organizational structure still does not operate as expected because all key processes, such as evaluating investment proposals and estimating the amount of money to be invested, are still managed by different divisions.

Figure 6.21 JAIC's Organizational Structure



Source JAIC, 2001

***Decision Making Process*:**

Based on the description of the decision-making process at JAIC that was provided by the company, in conjunction with the organizational structure (figure 6.21), this study concludes that their decision-making process is composed of six stages – searching target investments, contacting & screening, due diligence, investment decisions, follow-up & value added, and IPO & liquidation, resembling the restructured decision-making process at JAFCO (see figure 6.3). Theoretically, each one of 13 investment team units manages the process of searching, investigating, analyzing, evaluating investment proposals and estimating the amount of money to be invested, and manages IPO processes for the targeted companies. However, each process, such as investigating, analyzing, evaluating investment proposals and estimating the amount of money to be invested, and managing IPO process, must be monitored by different division. For examples, the entire process of investment team I of the investment division is monitored by the investment planning team of the same division and when the same team estimates the amount of money to be invested it must report to the corporate finance team of the business development division. Then, when the targeted company makes IPO, the IPO team of the business development division must monitor the entire process that investment-team I of the investment division is managing. Therefore, at JAIC the decision-making processes of the new organizational structures still does not yet operate as efficiently as was originally hoped.

***Decision-Making Criteria*:**

The company put emphasis on evaluating the references of entrepreneurs, technology skills, patentability of product, market need for product or services, and production capability (see Appendix B table 2). Throughout the interviews, the study also found that the company also carefully evaluates the importance of the business network of new ventures and the quality of the advisory boards of the new ventures as additional important decision-making criteria.

Investment Policies and Preferences

JAIC's specific investment preferences are for companies with the following characteristics: 1) companies that can reach IPO within three years, 2) companies in the accelerating growth stage of any industry (including also construction, real estate, and retail stores), 3) companies in East Asia and Japan, 4) target ROI of 10~15% (see Appendix B table 2). Besides this, JAIC has invested in companies in almost any industry that can reach IPO within three years. Table 6.7 shows the name of companies that it managed that made IPO most recently and some important data for these firms. JAIC's investment policy and preferences created moderately good results with a total market value of $280 million. (The company did not show any interest in investing in the nanotechnology or micro-electro-mechanical systems (MEMS) fields.)

Table 6.7 Results of IPO of Some Companies Managed by JAIC

Name of Company	Contents of Business	Industry Classification	IPO Year	Market Value of Company
Start Cat Cable Networks	CATV networks; internet connection services	Broadcasting	February, 2002	$60 million
Japan Long Life	Care service centers for elderly; visiting bathing management	Care of the Elderly	January, 2001	$34 million
Dawn Corporation	Developing GIS software development	Computer Software	June, 2001	$70 million
Queen Land	Developing marketing systems	Computer Software	April, 2000	$24 million
S-Lead	Sales and design of condominiums	Real Estate	March, 2000	$92 million

(Created by the Author, based on the company' annual report 2001)

Angel Securities Venture Capital Firm (Angel Securities)

***Company Profile*:**

Angel Securities is another leading local independent VCF that was established following the government's deregulatory "Toshikumiai Law" in 1998. It has the ability to manage VC and issue stocks for client's IPO in the market. In fact the company was the first firm to receive the Japanese government approval to form a securities firm in sixty years. The company was formed by Hosokawa Akira, a CPA and the current executive vice president of the company, and ten other experienced CPAs who noticed that small new ventures were having a hard time raising money and getting market recognition.

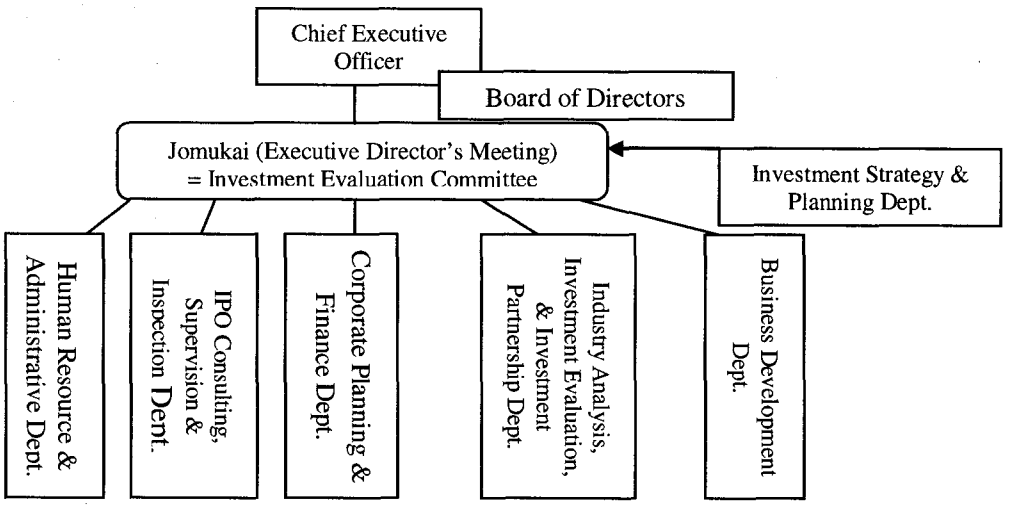
In the Osaka and Kobe area, there are approximately 800,000 small and medium-sized companies and there are also many research centers of large companies, such as Sanyo, Panasonic, Sharp, Sumitomo Electronics and leading university' research labs. In fact, in the Osaka and Kobe area, which is geographically approximately 100 square miles in area, there are about 40 universities and about 20 university research centers. The firm has intensive networks with leading research universities, such as Kobe University, Osaka University and Ritsumeikan University in the Kansai area. However, by 2001 the firm had not invested in new ventures that came from research centers of large companies or university research centers. The firm has invested in relatively small and medium sized ventures in local areas to make steady capital gains as a VCF, as table 6.14. Since its inception, the firm has increased the number of employees to 50 and managed to invest $18 million in 53 companies in the field of computer software development and computer game software, real estate, insurance, and the fast food business. Now it manages an accumulation of $50 million in VC investment funds composed of 3 toshijigyo-kumiai. For the past five years, on average the firm evaluates approximately 200 investment proposals per year and invests in about 10~15 investment proposals. Since formation it has invested in a total of 53 companies

***Organizational Structure*:**

Since the time of its inception, the firm has developed a corporate structure of a typical Japanese firm, one that is very similar to the old style of JAFCO, as figure 6.22 shows. It

was necessary for Angel Securities to form this way because it needed to establish multi-functional operations to manage all the necessary processes of VC funds and develop IPO techniques as a securities firms in the stock market, while at the same time preparing to enter into the VC industry in 1997. In the Osaka and Kobe areas, at the time the firm formed, there were no recognized venture capitalists and the founding members had to learn all of the processes of VC management by themselves, developing the ability to manage IPO processes. Therefore, it was necessary for the firm to adopt the Japanese traditional organizational structures. In the established multi-functional departments, the core members with a newly recruited staff of 50, needed to develop the expertise of each department. For example, the staff at the business development department concentrated on finding potential investment proposals while the members of the IPO consulting, supervision, and inspection department concentrated on developing their expertise in IPO and liquidation processes. The traditional organizational structure was also able to create and provide an environment for on-the-job training (OJT) for the 40 newly recruited employees. All investment proposals are evaluated extensively by the ten founding members who compose the Jomukai, the company's investment evaluation committee, as the figure shows.

Figure 6.22 Angel Security's Organization Structure

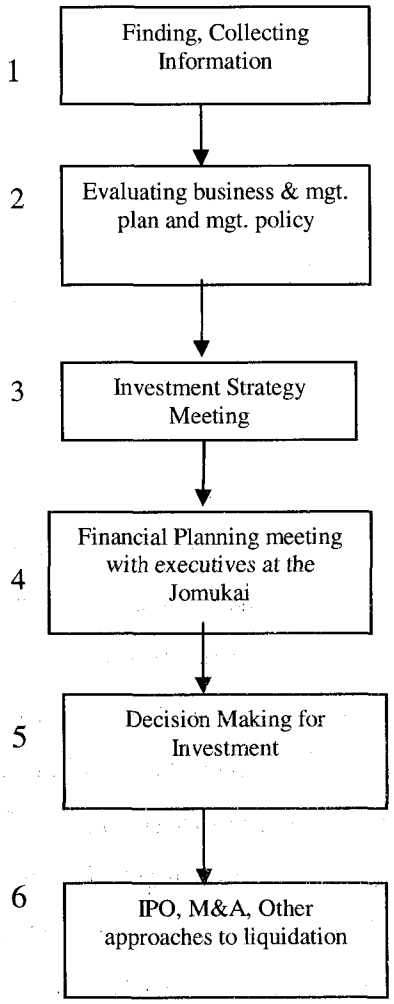


(Source: Angel Security Firms, 2001 and modified by the Author)

***Decision Making Process*:**

Figures 6.23 shows Angel Security's decision-making processes. The decision-making process of Angel Securities is composed of six stages: searching target companies, due diligence, investment decisions, follow-up & value added, and IPO & liquidation. All these processes are monitored and managed by the few employees of the five departments. The five multi-functional departments are the business development department, the industry analysis, investment evaluation & investment partnership department, the corporate planning & finance department, the IPO consulting, supervision & inspection department, and the human resource & administrative department. While the pre-1998 organizational structure of JAFCO managed all necessary activities of a VCF with 11 different departments, Angel Securities manages the same processes with five departments. Investment proposals are processed in the company as follows. First, investigators of the business development department seek and find potential investment proposals from local banks, local incubator centers, local university research centers, research centers of large companies (Panasonic, Sanyo and Sharp) and local governments (Osaka city, Kobe city, etc.). Second, the industry analysis, investment strategy and planning department screen and select about 20 proposals from a total of 200 investment proposals. Third, the corporate planning and finance department provides preliminary financial plans for the targeted company and develops the after investment follow-up scheme. Fourth, the Jomukai (the Investment Evaluation Committee) organized with ten funding members has direct meetings with CEOs or founders of targeted companies to evaluate the management talents. Fifth, the Jomukai makes the final decision for the investment and reports the result to the CEOs or the founders. Six, investigators of the business development department with the supervision of the IPO consulting supervision and inspection department gets involved in the follow-up & value added processes. Sixth, the IPO consulting department, with the cooperation of the business development department and the assistance of the IPO department of JASDAQ or NASADAQ Japan manages all the necessary processes of IPO or other methods of liquidation.

Figure 6.23 Angel Security Firm's Investment Process Stages



Members of Business Development Depart finds potential investment proposals from local networks and selects 200 targeting proposals.

Industry Analysis, Investment Evaluation & Investment-Partnership Department analyzes business and management plans policies, along with evaluating technology & market opportunity.

Corporate Planning & Finance Department provides preliminary financial planning for the company and develops after investment follow-up scheme.

Top managers have direct meetings with CEOs or founders of targeted companies to evaluate the management talents.

Final decision-making at the Jomukai; reporting to partners.

Investment Partnership Dept. gets involved in follow-up & consultation activities.

(Source: Angel Security Firms, 2001)

Decision-Making Criteria:

The firm selected the following as the top five criteria: references of entrepreneurs, company's ability in management, growth potential of market, market need for product or services, and uniqueness of products or services for incoming proposals in general (see Appendix B table 2). Although the company selected these criteria as its top five when they evaluate the potential incoming investment proposals of existing firms, they manage to have additional criteria for new ventures coming from research centers of local university and labs. For such new ventures, the company also places importance on uniqueness of products, market need for product, growth potential of market, access to market, and production capabilities, in that order.

***Investment Policies and Preferences*:**

Angel Securities' specific investment preferences for incoming proposals in general are for companies with the following characteristics: 1) companies which have a prototype products, but no sales yet, 2) companies at the breakeven point and ready to expand their operation, 3) companies in the Kansai area, including Kyoto, Osaka, Kobe, 4) companies which will be able to reach IPO within three years, 5) target ROI of 25~30% (see Appendix B table 2). (It did not have any special interest in investing in cutting edge fields, such as nanotechnology and micro-electro-mechanical systems (MEMS). Besides, as table 6.8 shows, the company has invested mainly in companies that can have IPO within three years. The table shows the names of companies that Angel Securities managed to IPO most recently and some important data of these firms. The firm's performance based on the investment policy and preferences created moderately good results for a newly formed VCF. Among the five most recent IPO companies, Sunko Softrun in the field of sales & design of condominiums had the largest market value ($122 million) and it is neither a high-tech company nor an information technology company.

Table 6.8 Results of IPO of Some Companies Managed by Angel Securities

Name of Company	Contents of Business	Industry Classification	IPO Year	Market Value of Company
ERGO Brains	Developing direct mailing systems on the internet	Internet	February 2002	$22.4 million
Cybozu Company Ltd.	Developing internet operating game software	Game software	January 2002	$77.4 million
Future Venture Capital	Providing risk capital for new ventures	Finance	October 2001	$50 million
Sanko Softrun	Sales & design of condominiums	Real Estate	November 2001	$122 million
Oricon Directory Corporation	Publishing music magazines & developing internet contents regarding music	Music & Publishing	June 2001	$77.4 million

(Created by the Author based on data of Angel Securities, 2002)

OGI Venture Capital Corporation (OGI)

***Company Profile*:**

Miyasato Shigeo, the CEO of the company and also a CPA in Osaka, established the company in 1999. Since then, he has operated the company with the help of one assistant, advisors of local business leaders, and researchers at a local university and at corporate labs. OGI's business approach as a VCF is in taking an organizer's role for local business angels who showed interests in investing in new ventures developing in their business territories. Since its inception, OGI has operated the Osaka Business Angel Forum eight times to educate local investors and entrepreneurs and to make an arrangement for investments between local business angles and local entrepreneurs. So far, the company has established 18 toshijigyo-kumiai, and collected $2.5 million, which it invested in a total of 28 companies. On average, the company evaluates 250 incoming investment proposals annually and invests in about 10 companies a year. According to the CEO, the company alone does not have the capability to evaluate technology. Thus, the company asks for the advice of local business leaders and researchers at a local university and corporate labs.

***Organizational Structure*:**

Miyasato is the only employee and he is the core of the company. He adapted a company form to manage his operation and to achieve his goals while he earns the business community's trust and follows the Japanese commercial law's regulations. However, as the above paragraph described, OGI is an organizer for local business angels who show interest in investing in new ventures in their business territories. OGI has an equity capital of $0.2 million, but no other professional employees except for one assistant for Mr. Miyasato. The board of directors who invested in the OGI's equity capital monitors the company's operation. Local business angels who invested in OGI's toshijigyou-kumiai also monitor the company's operations based on the profit-making performance of their toshijigyou-kumiai. Therefore, there is no observable organizational structure. This study concludes the structure of the OGI is a very flat and there are no professional business operations managed by professional functional departments, like other Japanese VCFs.

***Decision Making Process*:**

OGI's decision making process began with forming the Business Angels Forum to provide an environment where local business angels and entrepreneurs meet. At the forum, entrepreneurs make presentations about their businesses and their business proposals, which are then critiqued by the attending business angels. Next, if a proposed business plan arouses interest among the business angels, Mr. Miyauchi makes a contact with the entrepreneur and improves the original business proposal in coordination with the advice from the local business leaders and researchers at a local university and corporate labs. Then, the entrepreneur makes a final presentation to the business angels who showed interests at the first meeting. After the presentation, the attending business angels will decide whether they invest or not. If the proposal receives the final approval from the business angels, OGI, Mr. Miyashita, closes the deals. Regarding IPO or other liquidation processes, OGI has only one approach, which is to make IPO with the help of Daiwa Securities Firm or Angel Securities, which is headquartered in Osaka. In fact, one

of the companies that OGI invested in, "BtoB Net Company (a firm that sells flour to the Mom and Pop-sized bakeries on the internet)," made its IPO at the end of September 2002.

***Decision-Making Criteria*:**

Mr. Miyasato answered the questionnaire and provided the following information regarding decision-making criteria. The ten most important decision-making criteria are in order, market need for product or services, uniqueness of product or service, management skills, technical skills, financial skills, clear opportunity for exit (IPO), merger & acquisition potential, resistance to economic cycles, potential rate of return, and patent ability of product (see Appendix B table 2). Although the CEO selected these criteria, throughout the interview I found that the company put more value on the evaluation of local business angels' advice regarding investment proposals.

***Investment Policies, Preferences and Some Results of IPO*:**

OGI's specific investment preferences are for companies with the following characteristics: 1) companies in local business 2) companies for which it can join in the management team, 3) 100% of investment goes to companies at the seed stage, 4) target ROI of more than 30% (see Appendix B table 2). Also, as table 6.9 shows, the company had its first managed firm IPO at the end of September 2002.

Table 6.9 Results of IPO of Some Companies Managed by OGI Capital

Name of Company	Contents of Business	Industry Classification	IPO Year	Market Value of Company (If N/A, Data of Sales)
B.B Net Company	Internet sales of flour to small bakery stores	Internet	September 2002	$30
J-Net Auction	Internet Auction-site management for painting & Arts	Internet	N/A	N/A
Elderly Care Net	Food Delivery Services for Elderly	Elderly Business	N/A	N/A

(Created by the Author based on the data of OGI Capital)

While the above paragraphs described the important information about IDVCFs, the next section will discuss about GVCO.

6.1.3 GVCO

Among the 17 VCFs studied, two firms (HVBPC and VEC) are classified in this category, based on their sources of VC funds and non-financial resources (see Appendix B table 1&2). The following paragraphs describe the firm's company profiles, organizational structure, decision-making process and decision-making criteria, investment policies, and preferences and results of selected investments.

Hiroshima Venture Business Promotion Center (HVBPC)

***Organization Profile and Organizational Structure*:**

HVPC is a Hiroshima prefectural government organization for promoting new ventures (Prefecture Venture Business Promotion Office). The HVBPC was established in 1996 and invested $1.98 million in 1997. The center also manages five toshijigyo-kumiai, a total investment of $6.8 million, with seven VCFs.

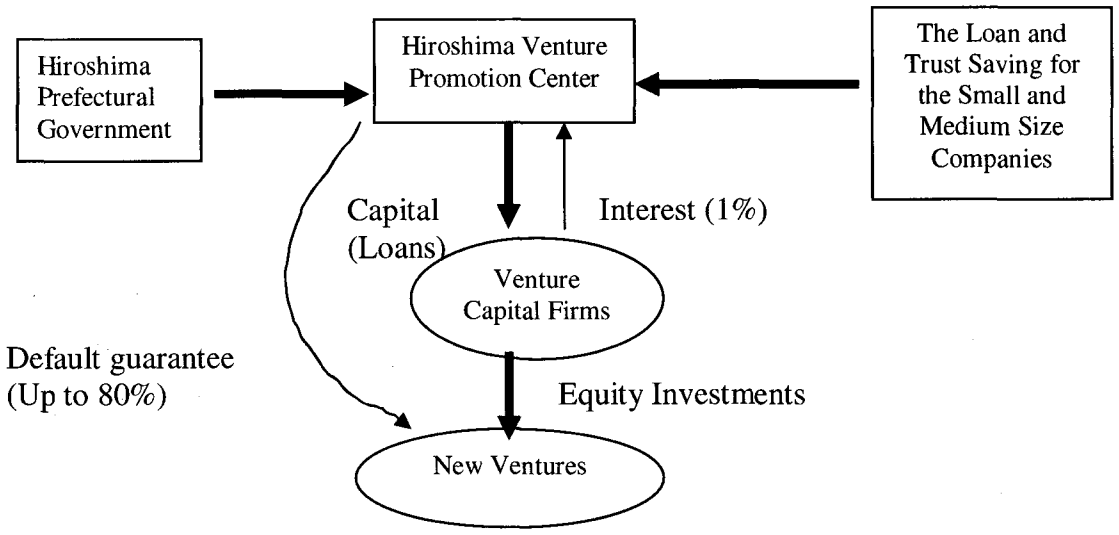
***Decision Making Process and Criteria*:**

The interview with Mr. Nakazawa, the associate manager of the HVBPC could not provide answers for these questions although the office provides funds. Most proposals are evaluated by professors at local universities and representative from AFVCFs, such as JAFCO and NIF, that have local offices in Hiroshima. Figure 6.24 shows the processes and relationship of involved organizations.

***Other Findings*:**

New ventures receiving financial support from HVPC benefited from increased recognition and credibility, thereby enhancing their ability to raise capital or borrow money from other VCFs and banks.

Figure 6.24 Governing Scheme of GVCO



(Created by the Author)

Venture Enterprise Center (VEC)

***Organization Profile and Structure*:**

VEC is a one of MITI's research institutions for promoting development of new ventures and was founded in 1975. It issues the loan payment guarantee notes to banks to make loans to new ventures. From 1975 to 1997 it provided a total of $218 million. Thus it provides an average of $20 - $25 million in guarantee notes every year. VEC has a similar VC fund-governing scheme to that of HVPC. In fact, HVPC has copied the style of VEC

***Decision Making Process and Criteria*:**

Mukoyama Takashi, the general manager of the VEC, was unwilling to answer this particular question due to the proprietary nature of their process. However, this study found that professors of major universities and top managers of large VCFs in Tokyo and Osaka evaluate most proposals and help them to make decisions.

***Other Findings*:**

New ventures receiving financial support from this organization also benefited from increased recognition and credibility, thereby enhancing their ability to raise capital or borrow money from other VCFs and banks. VEC is in charge of coordinating activities of venture capital firms and local governmental venture promotion centers, and is therefore considered to be the Japanese version of the U.S. National Venture Capital Association.

In conclusion, both HVBPC and VEC are organized by the government to provide risk capital for new ventures. However, neither of them have their own venture capitalists to organize and manage VC funds and make final decisions. Leading researchers at major universities and major companies as well as staff of AFVCFs are called upon to evaluate investment proposals. It seems that these organizations do not have practical services or benefits as VCFs. However, new ventures receiving financial support from these organizations benefited from increased recognition and credibility, thereby enhancing their ability to raise capital or borrow money from other VCFs and banks. However, because these organizations do not have their own venture capitalists who can take responsibility for the performance of VC funds coupled with the fact that the Japanese government is currently working to cut the spending of their budgets to provide capital or funds for the private sectors by any means, they will not have significant influence in the future evolution of the Japanese VC industry.

6.1.4 Discussion of the Japanese VC Industry Structure

This section of chapter six will discuss and summarize the results of the full studies of 17 Japanese VCFs classified into three types of VCF: AFVCFs, IDVCFs, and GVCOs.

AFVCF

The six AFVCFs in the study (JAFCO, NIF, NEDO, Nikko Capital, Orix Capital and Sanwa Capital) have developed specific advantages by using the parent firm's networks as a strategic tool to acquire information in the market regarding new investment opportunities or knowledge of newly developing technologies (see specific

advantage of firm, Appendix B table 1). The firms achieved a central position in the Japanese VC industry in 1980s and 1990s and had chances to obtain good profits as VCFs (see each firm's profiles). However, in evaluating carefully the findings, two categories - investment policies and preferences and the organizational structure of each firm – have emerged, which require more detailed analysis.

***Investment Policies and Preferences Analysis*:**

In evaluating the six firms' investment policy and preferences, all AFVCFs seem very similar. Each firm targets investment in new ventures that have the possibility to make IPO within 3 years. Each firm also invests in any industry. Because each AFVCF must achieve moderate returns of investment (ROI) of 5~15%, not huge ROIs of 25%~50% or more (see investment policies and preferences, Appendix B table 1), with a relatively large amount of VC funds (over $200 millions), they must concentrate on managing their target companies to IPO as quickly as possible, rather than nurturing them over the long term. Also, AFVCFs in the study heavily invest in new ventures at the later developmental stage or after new ventures have shown evidence of fast growth (see investing stage of new venture, Appendix B table 1). In such cases, the target ventures often have their own management team. Thus, there is not much opportunity for AFVCFs to be involved in managing new ventures.

However, among the six AFVCFs, JAFCO and NIF recently have managed to develop industry specific investment teams, targeting investment in companies in the information technology fields (see profiles of JAFCO and NIF). Furthermore, JAFCO has created an additional specific investment task-team targeting companies in the field of biotechnology (see Appendix B table 2 or see profiles of JAFCO). This information suggests that if these new investment policies at JAFCO and NIF lead to successful investment result, in the next few years, their influence in the VC industry and the entire Japanese business environment will increase significantly.

***Organizational Structure Analysis*:**

Of the six AFVCFs, NEDO, Niko Capital, and Sanwa Capital (except Orix Capital) had traditional multi-functional departments, such as sales, industry analysis; investment strategy, consultation, and investment planning to manage operations of the company (see each company's profiles). This suggests that these companies treat the management processes of VC funds as similar to the activities of other businesses where employees and managers in different departments managed VC investment activities and provided after investment services. Within this structure, whenever the company executed a new decision, a new department had to work with the department involved in previous management and operation, meaning that there was never any single person or team in charge of monitoring the entire process. Among these companies, VC is raised from excess capital supplied from the parent company (see source of VC funds, Appendix B table 2). Further, the VC funds are not invested strategically to nurture new ventures to become industry-leading firms, but rather to make a modest, relatively low risk profit (see investing strategy of new venture, Appendix B table 1). These firms are considered more as secondary VCFs, than as leading investment firms.

On the other hand, JAFCO and NIF have developed and implemented a more flexible organizational structure to manage VC funds not to mention of their other operations. JAFCO and NIF have maintained their positions as the two AFVCFs with the largest volume of VC funds - over $2 billion and $1 billion respectively - and having networks composed of over 2,000 and 1,000 companies respectively that they managed to IPO (see Appendix B table 2). They invented and applied the investment task-team concept: reorganizing and classifying internal personnel of 6~7 people into small task units that each behave like a small VCF, managing all necessary VC funds processes including investment as well as the after investment service of managing IPO independently (see description of JAFCO and NIF). So these firms can compete specifically against IDVCFs that have flexibility in managing VC funds and invest strategically in new ventures at the seed and start-up stages in the information technology and life science industries. Although there are no observable differences as to how well each VCF has adapted its new style of managing VC funds in relation to the other, in

evaluating the most recent performance of each VCF's IPO records, as showing in table 6.10, the performances of JAFCO and NIF stand out above all of the other AFVCFs and IDVCFs (see table 6.11).

Table 6.10 Size of Annual Investment in Order

Name of Company	Type of Firm	Size of Annual Investment (millions)
1. JAFCO	AFVCF	$480
2. NIF	AFVCF	$270
3. JAIC	IDVCF	$151
4. WorldView	IDVCF	$150
5. Nikko Capital	AFVCF	$81
6. Orix Capital	AFVCF	$79
7. Sanwa Capital	AFVCF	$50
8. NEDO	AFVCF	$39
9. Angel Securities	IDVCF	$18
10. Future VC	IDVCF	$11
11. Global VC	IDVCF	$2.0
12. ICT	IDVCF	$1.0
13. OGI Capital	IDVCF	$1.0
14. Classic Capital	IDVCF	$0.5
15. Mary	IDVCF	$0.5

(Created by the Author based on each VCF's data, showed at the previous sections)

Table 6.11 Size of Managing of VC funds in order

Name of Company	Type of Firm	Size of Managing VC Funds (millions)
1. JAFCO	AFVCF	$2,100
2. WorldView	IDVCF	$2,000
3. NIF	AFVCF	$1,013
4. JAIC	IDVCF	$580
5. Nikko Capital	AFVCF	$450
6. Orix Capital	AFVCF	$200
7. Sanwa Capital	AFVCF	$198
8. NEDO	AFVCF	$150
9. Future VC	IDVCF	$60
10.Angel Securities	IDVCF	$50
11. ICT	IDVCF	$10
12. Global VC	IDVCF	$7.3
13. OGI Capital	IDVCF	$2.5
14. Classic Capital	IDVCF	$2.0
15. Mary	IDVCF	$1.7

(Created by the Author based on each VCF's data, showed at the previous sections)

This study concludes that two patterns of development of AFVCFs have emerged: one is the industry leadership style of JAFCO and NIF and the other is the conservative style of NEDO, Orix Capital, Niko Capital and Sanwa Capital. Because of the magnitude of VC funds under their management, their expertise in IPO processes and accumulated knowledge in managing VC funds effectively for the past 20~30 years, and the extent of their networks, the two leading AFVCFs, JAFCO of Nomura Securities Firm and NIF of Daiwa Securities Firm, both strategic subsidiaries of securities firms, are overwhelming the other AFVCFs and IDVCFs in the industry (see tables 6.12 and 6.13). JAFCO and NIF will continue to exert a huge influence on the competition and the structure of the Japanese VC industry, and the business approaches of other firms. On the other hand, the remaining four AFVCFs, NEDO, Nikko Capital and Sanwa Capital, will continue to struggle for survival as efficient agent the two leading AFVCFs, JAFCO of Nomura Securities Firm and NIF of Daiwa Securities Firm, both strategic subsidiaries of securities firms, are overwhelming the other AFVCFs and IDVCFs in the industry (see tables 6.12, 6.13 and 6.14). JAFCO and NIF will continue to exert a huge influence on the competition and the structure of the Japanese VC industry, and the business approaches of other firms. On the other hand, the remaining four AFVCFs, NEDO, Niko Capital and Sanwa Capital, will continue to struggle for survival as efficient agents of VC management and mediators for transforming industries. They might be too late, however, to develop capabilities similar to those of JAFCO and NIF, especially with the increasing competition from some IDVCFs that are strategically investing in key technologies and managing significant flows of VC funds to increase their industry influence.

Table 6.12 Each AFVCF's IPO Performance

Name of VCF	Total Value of IPOs ($ million: 2001/03-2002/04)
JAFCO	$1,286.60
NIF	$756
ORIX Capital	N/A
Nikko Capital	244.4
Sanwa Capital	N/A
Total	$2,287

(Created by the author based on each VCF's data, showed at the previous sections)

Table 6.13 Each IDVCF's IPO Performance

Name of VCF	Total Value of IPOs ($ million: 2001/03-2002/04)
Global VC	$10
ICT	N/A
FVC	$50.10
Mary	N/A
WorldView	N/A
Classic Capital	N/A
JAIC	$280
Angel Securities	$349.20
OGI Capital	N/A
Total	$689.30

(Created by the author based on each VCF's data, showed at the previous sections)

Table 6.14 Comparison of IPO Value

Type of VCFs	Total Value of IPO Firms
AFVCF	$2,287
IDVCF	$689.3
GVCO	N/A

(Created by the Author with data of table 6.12 & 6.13)

IDVCF

The majority of the IDVCFs studied, Global VC, Future VC, Mary, WorldView, Classic Capital, Angel Securities and OGI Capital, have been founded since the 1998 deregulation of investment conditions by the Japanese government. In this sample, only JAIC and ICT were founded earlier. All IDVCFs have various sources for their VC funds (see sources of VC funds, Appendix B table 2) and do not have nearly the influence of the parent firms in the AFVCF's cases. Each uses their venture capitalists' personal networks as a strategic tool to acquire information in the market regarding new investment opportunities or knowledge of newly developing technologies (see non-financial resources, Appendix B table 2). However, after carefully evaluating the findings, three categories - investment policies and preferences, the organization structure, and the specific advantage of firm (see Appendix B table 2) – have emerged as distinct with regard to the IDVCFs.

***Investment Policies and Preferences Analysis*:**

In evaluating the firms' investment policy and preferences, the study found that ICT, FVC, Mary, OGI Capital, JAIC, Angels Securities each spread its investments over several unrelated industries (see investment industry, Appendix B table 1). For example, Mary, despite having the smallest amount of VC funds, has invested in four companies in four different industries (see table 6.6). On the other hand, Global VC, WorldView, and Classic Capital invest only in companies in the selected areas of information technology and telecommunications industries in which key venture capitalists of each firm are familiar and experienced (see investment policies and preferences, Appendix B table 2).

Organizational Structure Analysis

In analyzing the organizational structure of the IDVCFs the study found that there are two types of companies. One type of company maintains a relatively small number of venture capitalists (only 1~3 venture capitalists) to manage its VC funds (see Appendix B table 1). Global VC, ICT, Mary, Classic Capital and OGI Capital represent this type. These firms also took the advantage of their informally coordinated networks of

consultants known for their technology evaluation abilities, instead of relying on official evaluation committees as the AFVCFs do (see non-financial resources, Appendix B table 2). On the other hand, Future VC, Angels Securities, WorldView and JAIC employ more than 50 people and have developed a more complicated organizational structure (see each firm's organizational structure in section 6.1 or Appendix B Table 2). The newly established firms, Future VC and Angels Securities, in particular, have adapted a traditional Japanese corporate hierarchical organizational structure to manage their employees and VC funds (see each studied firm's profiles). This information suggests that among IDVCFs one type of firm is trying to maintain a relatively small corporate size to survive as an effective and competitive VCF, while the other type of firm is trying to develop a relatively large number of inexperienced employees to be effective and competitive in the VCF industry.

Specific Advantage Analysis

In analyzing the specific advantage of each IDVCF, the study recognized two interesting developments. One is that companies like Future VC, Angles Securities, and JAIC have developed and nurtured IPO specialists and acquired the regional advantage by concentrating their investments in specific geographic areas. For example, Future VC concentrates in the Kyoto and Osaka Area, Angels Securities concentrates in the Osaka, Kobe and Kyoto areas, and JAIC concentrates in Tokyo, Singapore, and Indonesia. The other development is that the key founding members of Future VC, Global VC, Classic Capital, and WorldView had previous careers at the leading AFVCFs, JAFCO or NIF (see specific advantage, Appendix B table 1). The key funding members of Classic Capital and Global VC, for example, used to work at JAFCO, before each of them founded his own VCF.

In analyzing and evaluating these three categories, the study found that three pattern of development have emerged for IDVCFs. One pattern is apparent in Global VC, World View, and Classic Capital. They were founded by venture capitalists who had trained to become effective VC managers both in Japan and the U.S., and they maintain a

small firm size, concentrating on technologically specific knowledge in the investment area as seed investors. The second pattern is evident in Future VC, JAIC and Angel Securities, which have attracted large amounts of VC funds and which have mirrored traditional AFVCFs with large, complex organizational structures and investments spreading to several industries all within the same specific region. The third pattern is evident in ICT, Mary, and OGI Capital, which maintain a limited organizational structure, but with investment spreading inefficiently to several different industries (living-dead companies).

GVCOs

Among the 17 VCFs included in this study, two organizations - VEC and HVPC - are classified in this category based on their sources of VC funds (see Appendix B table 2) and non-financial resources (see Appendix B table 2). HVBPC and VEC are the VC organizations founded by local and national governments. The study found that neither of them has the capability to manage all the necessary processes required of a VC management firm. Furthermore, they do not have their own venture capitalists who organize and manage VC funds and make final investment decisions. Their activities have benefited new ventures because the companies that received financial support from them increased their recognition and credibility, thereby enhancing their ability to raise capital or borrow money from other VCFs or banks. However, because the Japanese government is currently working to cut budget spending for GVCOs, they will not have a significant influence in the evolution of the Japanese VC industry.

Summary

The majority of AFVCFs are heavily investing in new ventures at the later developmental stage or after new ventures have shown evidence of fast growth. In such cases, new ventures often have their own management team. So there is not much chance for AFVCFs to be involved in managing the new ventures. However, leading AFVCFs like JAFCO and NIF have recently reorganized their organizational structures to develop the capability to target investments in key technological developments in the

biotechnology and information industries. New investment teams at JAFCO or NIF not only concentrate their investments in key technological development but also are involved in managing new ventures developing the technologies. Thus, these firms can increase their ability to compete with IDVCFs' target investment policies and services. Thus, these two firms continue to maintain a large influence in the Japanese VC industry, compared with other AFVCFs (see tables 6.12 and 6.13).

On the other hand, IDVCFs invest heavily in new ventures in the seed stage and the early developmental stage. In particular, Global VC, Classic Capital, and WorldView have targeted their investments toward companies in information technology fields. In such cases, new ventures often do not have management teams, and therefore IDVCFs become involved in their management. Among these three IDVCFs, WorldView has not reported the official performances of its investments yet. However, it showed the company's ability by collecting $1.75 billion in only 3 years. The amount of money this firm collected already matches the total size of VC funds that both JAFCO and NIF managed in 2001. This could be only an exceptional case caused by the reputation of the venture capitalists who established the firm. However, the firm's investment policies and strategy will likely lead to a different industry competitive structure in the near future. But there is an additional interesting finding related to these three firms. The key founding members of these firms had all worked previously at JAFCO or at JAFCO's related companies, such as the Nomura Research Institute. This information suggests that JAFCO's capability as an educational institution for nurturing the next generation of venture capitalists and its influence in the VC industry definitely cannot be ignored. However, the results of these VCFs' performances have not yet become apparent, meaning that this study can not make any significant comments about their influences in the Japanese VC industry. On the other hand, IDVCFs like JAIC, Future VC, and Angel Securities will continue to increase their presence in the industry based on their success in targeting investment policies, developing specific strength in IPO knowledge, and responding to strong local needs from new ventures that spin out from leading research labs at universities or large corporations.

6.2 Conclusion: Evolution of Japanese VC Industry

6.2.1 Theory of the Japanese VC Industry Development

Based on findings about the history and structure of the Japanese VC industry (see section 5.1) and the structure of the capital market (see section 5.3.2), in conjunction with the findings in the exploratory study of Japanese VCFs, this study presents the following theories about the development of the Japanese VC industry, including the projections regarding the future of the VC industry.

Since the early developmental stage of the Japanese VC industry, strategic subsidiaries of securities firms, such as JAFCO (Nomura Securities Firm) and NIF (Daiwa Securities Firm) had significantly influenced the structure of the Japanese VC industry and its development. For example, past studies of the Japanese VC industry and VCFs described the business approaches and investments of JAFCO and NIF (see section 5.1.4). In addition, this research found that these two firms together still manage a total of $3 billion of VC funds (see table 6.12). This suggests that the two firms continue to control approximately 36.6% of a total $8.2 billion market. On the other hand, the performance of each of the IDVCFs studied is not impressive so far. For example, WorldView, managing a total of $1.75 billion of VC funds, still can not provide an official report on how much equity value the companies that it has invested have made in the past five years. Global VC, one of the leading IDVCFs in 1999, had managed to have only one new venture investment reach IPO and its equity value was only $10 million. Angel Securities has managed to have five companies make IPO and their total market value is approximately $349 million. Future VC had managed to attract $17 million during the past year. Finally, other IDVCFs - ICT, OGI Capital and Mary - did not report anything about their investment performance. This information suggests that some IDVCFs managed to collect a huge volume of VC funds, however, most of them do not yet function as well as they were expected to in the VC industry. Also, in analyzing the business domains of new ventures in which IDVCFs invested, most of them are in the service industry such as fast food chains and real estate. This information suggests that the target industries of IDVCFs are not in the key high technology sectors, but in the mature low technology industries with very familiar business and service operations. In addition, all of the VCFs studied are located in Tokyo or Kansai area (including Kyoto,

Kobe and Osaka), indicating that even in Japan VCFs can only emerge in business areas with more positive social attitudes to forming new firms and enough resources that potential new entrants into an industry easily can share and obtain what they need.

Therefore, this study concludes that there are three major movements in the Japanese VC Industry. First, the two major AFVCFs, JAFCO and NIF, have implemented new investment strategies and a new organizational structure to survive. It appears certain that they will continue to stay ahead of their competitors in the industry and continue to significantly influence the development and the structure of the Japanese VC industry. Second, some IDVCFs, like WorldView, Future VC, Angel Securities, and JAIC, have started taking on significant roles in the industry. WorldView especially has shown its rising influence by collecting $1.75 billion VC funds and investing over $150 million annually. In addition, some IDVCFs, like Angel Securities, have developed the capability to manage IPO processes, collecting moderate amounts of VC funds (over at least $50 million), and establishing productive networks with research labs at the local level. They will likely continue to increase their presence in the VC industry. Third, other VCFs are taking a reactive position to observe what will happen in the VC industry.

Definitely, JAFCO, NIF and some IDVCFs that have certain advantages in collecting VC funds effectively and developing IPO specialties are currently setting all of the industry trends, while the majority of AFVCFs, IDVCFs and government related VCFs are remaining relatively static. The structure of the Japanese VC industry will likely continue to show a high concentration of investments by JAFCO and NIF, followed by a very few IDVCFs that can collect huge amounts of VC funds, like WorldView. Also, IDVCFs that are capable of managing the whole ranges of processes, including IPO and managing the local needs of their new venture and networks, will increase their influence in the market. At present only Angel Securities fits this profile. In general, VCFs that cannot collect large amounts of VC funds, nor that have the capability to manage IPO and their own exclusive networks, will probably disappear within five years. Furthermore, the study concludes that Japanese VCFs will continue to show their presence only in the very limited areas of Tokyo and the Kansai area, where there are more positive social attitudes to forming new firms and enough resources for potential new ventures to compete and obtain.

6.2.2 Comparison with the Evolution of the U.S. VC Industry

The U.S. VC industry might have developed as a supplemental industry for developing new ventures in high technology industries, such as semiconductors, personal computers, etc. However, the VC industry, as a portion of the equity financing market in the overall capital market, has positioned itself as a strategically important social system for responding to the financial needs of new ventures and small businesses (see section 4.3.2). Also, as section 4.5 summarized, the U.S. VC industry has been at least in the growth stage of the industry. In the evolutionary processes of its VC industry, the surrounding environment of industry in the U.S. has changed significantly over the past fifty years. It has developed and nurtured the social conditions and systems to support the development of the VC industry. For example, since the importance of the VC industry was recognized socially - at both the business community and the government levels - in the late 1970s and the early 1980s, the government has introduced several favorable policies for stimulating the development of the VC industry, such as the Revenue Act in 1978, ERISA's "Prudent Man" Rule in 1978 and Small Business Innovation Development Act in 1982, etc. (see section 4.4.3). Also the conditions for the IPO market and other equity markets have improved. The SEC reduced the requirements for companies to make IPO in the NASDAQ market in 1978 and 1979, for instance (see section 4.4.3). Furthermore, in the early 1980s uncertainty in the management style of VC funds and the business approach of VCFs diminished with the introduction of a partnership structure for managing VC funds and the appearance of new role model VCs, such as Arthur Rock and Eugene Kleiner (see sections 4.1.1 and 4.4.4).

On the other hand, in the evolutionary processes of the Japanese VC industry, the surrounding environments of the industry have not changed significantly over the past thirty years. The external environment of the Japanese VC industry has started to change only in the past four years. For example, when the importance of the VC industry was recognized socially – again at both the business community and the government levels - in the late 1990s, the Japanese government introduced several favorable policies for stimulating the development of the VC industry, such as the Capital Gain Tax Reduction Law in 1998 (similar to the U.S.'s Revenue Act of 1978) and the Removal of Investment

Restrictions on Pension Funds Law in 1998 (equivalent to the U.S.'s ERISA's "Prudent Man" Rule in 1978). Also, the Japanese SEC introduced a new deregulation of IPO market, reducing the requirements for companies to have IPO in 1998 (see indirect impacting legislation, section 5.4.3) and the Japanese government also restructured the equity markets. As a result, there are three equity markets; JASDAQ, Mother, and NASDAQ Japan, specifically for new ventures and small businesses (see the public equity market, section 5.3.2). However, the Japanese government and the business community are still reluctant to shift or change from the social system of using the debt financing system of the capital market to the new social systems utilizing the equity financial market more effectively and efficiently. For example, while equity financing sources, including the $8.2 billion from the VC industry, controlled a total of approximately $27.7 billion, debt financing sources controlled about $6.96 trillion in the capital market for new ventures and small businesses in 2000 (see table 5.6, section 5.3.2). In comparison, in the U.S. the total size of the equity market was about $1.06 trillion, and the total market size of debt financing was about $692 billion (see table 4.9, section 4.3.2). This information illustrates that in Japan the role of the VC industry in the capital market is far smaller than that of the U.S.

In conclusion, the situation described above suggests that in Japan how the VC industry evolved has not been determined yet, at least when this study evaluates the VC industry as a part of the capital market, including debt financing sources such as banks and credit guaranty associations. Also, this comparison illustrates how the capital market system for new ventures and small businesses in different societies is perceived differently and thus, has a very different role in determining the evolutionary path of the VC industry.

6.2.3 Factors Contributing to Differences between the U.S. and Japanese VC Industries

Several factors contributed to creating differences between the Japanese VC industry and the U.S VC industry. First of all, the most influential factor was the difference in social perception or recognition of VC in the U.S. and Japan. For example, as section 4.3 illustrated, the importance of VC and venture capitalists has been

recognized in the U.S. at a quite early date and venture capitalists have been recognized as crucial personnel for the development of new ventures and new industries. On the other hand, VC in Japan is not considered an essential factor in economic growth, or even in the process of creating new companies, and it has not had the role of either catalyst to transform industries or a system for determining the economic survival of a nation (see section 5.3). In general, the business sectors in Japan still treat VC as though it were simply excess capital that belongs in company reserves.

Secondly, in Japan the equity market for new ventures or small businesses has never been positioned as a strategically important social system, in comparison with the U.S. For example, in Japan the total market size of the equity market was approximately $27.6 billion, including $8.2 billion in the VC industry and $17.6 billion in the IPO market, while the total market size of debt financing was about $6.95 trillion (see table 5.6). The market size of debt financing is about 252 times the market size of the equity market. On the other hand, in the U.S. the ratio of debt financing to equity is just over three to one. This information suggests that economic systems in Japan place more value on maintaining the debt financing system than on expanding the equity financing system, while the U.S. has placed more value on developing the equity financing system and on reducing reliance on the debt financing system.

Third, technological knowledge spillover and entrepreneurial challenge in the business sectors in the U.S. and Japan are very different. For example, in the U.S. there were far more entrepreneurs trying to develop their own firms based on technological knowledge in 1980s and 1990s (see section 4.2.2) than in Japan, especially in terms of cutting edge technological development (see creation of specific companies and industries, section 5.2.2). In fact in Japan most crucial technological innovations were developed by large traditional corporations, such as NEC or Sumitomo Pharmaceutical Company, while in the U.S., companies creating technological innovations were new ventures and entrepreneurs, who have become current industry leaders, such as Intel, Apple Computer and Genentech (see creation of specific companies and industries, section 4.2.2).

Fourth, government involvement was different. For example, by 1978 the U.S. government had already introduced new legislation, such as the Revenue Act to lower the

capital gains tax to stimulate VC investments, and in 1979 the government removed the constraint prohibiting pension funds from being invested in VC funds. Furthermore, the SEC reduced the requirements for IPO in the equity market in 1978 and 1979 (see 4.4.3). On the other hand, the Japanese government did not manage to introduce similar legislation to the Revenue Act until 1998 and the Japanese SEC finally introduced new conditions for IPO in 1998 (see 5.4.3). These significant differences in the approaches of the government and the SEC in Japan inhibited the development of the VC industry.

Fifth, the general economic conditions of each country have been additional factors influencing the development of the VC industry both in the U.S. and Japan. For example, as section 4.4.2 suggests, when the business system or the social system in the U.S. shifted to develop the VC industry more effectively in the late 1970s and early 1980s, the country had been under pressures of economic threat from other nations, especially Japan, or stagnation in traditional established industries. On the other hand, during the same period the Japanese economy maintained a high economic growth rate, as section 5.4.2 described. After the early 1990s, however, once the Japanese economy had begun to face economic threats from China and Korea, the business system shifted to nurture the VC industry, as section 4.4.2 describes.

6.3 Summary

While Japanese business and government leaders once interpreted and understood the role of VCFs differently from that of the U.S., some key-founding members of IDVCFs seemed to have acquired the knowledge to create their own style of managing VC funds efficiently and become key industry transformers. Hence, some Japanese VCFs may be better positioned to influence the restructuring process by developing a sophisticated understanding of the U.S. VC process rather than JAFCO and NIF. However, it is too early to judge the impact of the adoption of new approaches on the performance of IDVCFs in Japan. The US experience suggests the importance of talented and proactive general partners. Thus I believe that the development of a system for recruiting and training venture capitalists that understand and can be effective in implementing the most advanced VC investment and management practices in the Japanese context will be important for the long term success of IDVCFs.

Chapter Seven
Implications and Future Research

This chapter concludes the study evaluating the Japanese VC industry's evolution, status, and prospects by discussing possible alternatives for the evolution of the industry as well as the implications, limitations and contributions of this study and future research possibilities to further investigate the structure and state of the Japanese VC industry. The chapter is composed of five sections. Section one describes possible alternatives for the evolution of the Japanese VC industry. Section two describes implications of the present study for entrepreneurs, corporations and institutions, financial institutions, public policy and equity market policy. Section three presents some of the limitations and contributions of the study. Section four posits some ideas and outlines for future research possibilities. Finally, section five concludes the chapter by mentioning concerns regarding the Japanese VC industry and society.

7.1 Possible Alternatives for the Evolution of the Japanese Venture Capital Industry

When we consider possible alternative for the evolution of the Japanese VC industry, we need to consider two additional facts - the distorted IPO markets and standard and traditional business practices – in conjunction with the findings in chapter six.

1) The Distorted IPO Markets

In Japan there are three IPO markets for new ventures and small firms looking for opportunities to make IPOs: NASDAQ Japan (The name was changed to Hercules Market in February 2003), JASDAQ and MOTHERS.

According to the report of NASDAQ Japan (2001), all three markets together managed 157 companies to go IPO in 2000 and in total more than $17.6 billion was raised for the financial needs of small firms (discussed in section 5.3). In the Japanese securities market about 91% of all IPO activities are controlled and managed by the top seven securities firms - Nomura Securities (the parent company of JAFCO), Daiwa Securities (the parent company of NIF), Nikko Securities (the parent company of Nikko

Capital), Shinko Securities, Kokusai Securities, UFJ Securities, and Mizuho Securities (Nissay Research Institute, 2002). Furthermore, the top three securities firms (Nomura, Daiwa and Nikko) together managed about 63% of all processes in IPO deals in the IPO market (Nissay, 2002). Each securities firm in Japan has its own subsidiary VC firm. As section 5.1 reported, 72% of the 123 VC firms operating in 1998 were all subsidiaries of securities firms or banks. These institutions concentrated operations to create profits from equity investments in the short term rather than nurturing new ventures' values over the long term (Hamada, 1998). This information suggests that in Japan IPO markets are distorted by a few powerful securities firms and banks and their affiliated VCFs, further, that these institutions eschew long term profitability in favor of short term gains and the rapid ascension to IPO of the new ventures they manage.

2) Standard and Traditional Business Practices

Standard and traditional business practices in Japan are such that even though entrepreneurs try to establish their own companies, Keiretsu groups take their business opportunities and customers from them by exercising their power and influence. Once a large company belonging to a Keiretsu group recognizes that a small company or a new venture is worth anything at all, it will work to get the company when it is young and growing, and make it one of their permanent suppliers by influencing their powers on banks and loan companies to get the company's financial secrets. For example, companies of Keiretsu groups will give a new venture a huge order, making the company profitable immediately. But when a new venture can not meet that order because the company doesn't have enough capital and equipment, the company will offer the new venture VC investment or introduce the company to other affiliated financial institutions, such as Keiretsu banks (Business Tokyo, 1990). Immediately after a new venture accept loans or VC investment from large companies belonging to a Keiretsu group, they cancel the contract or reduce their order. Because a new venture has the obligation to satisfy the investment agreement and the loan agreement, it has no choice but to accept these new much less desirable conditions with the Keiretsu affiliated company. Companies in Keiretsu groups also often install their own people in a new venture's board of directors to help solidify their control over the company.

Even if entrepreneurs of new ventures want to go independent and make arrangement for IPO, Keiretsu groups often make it almost impossible. For example, Keiretsu groups try to discourage new ventures from becoming independent by squeezing companies' profit margins (Business Tokyo, 1990). Keiretsu groups control new ventures' incomes and get their financial performance statements through the new venture's main banks or VC firms that are affiliated with one of the Keiretsu groups. Furthermore, for example, when a new venture happened to be in business with one of the small subsidiaries of NEC (formerly called Sumitomo Communications Industrial), the company wanted to build a new plant. But being new and not having any collateral to procure a loan from local banks meant that without any collateral, only Sumitomo Bank or Sumitomo related financial institutions would lend the new venture money or provide VC investments. Then, in return the new venture was obligated to use Sumitomo-approved contractors that use steels, cement, wires and other materials from other companies in the Sumitomo group to build its new plant (Business Tokyo, 1990). Those companies provided the new venture with all the necessities and materials at very good rates/prices. After having comfortable experiences, the entrepreneur of the new venture felt confident enough to buy other things, such as fire insurance and life insurance from the same Sumitomo affiliated companies, such as Sumitomo Marine and Fire and Sumitomo Life Insurance. Furthermore, Sumitomo Souji (Sogo-Shosha) took care of selling and distributing the company's products. The new venture did not need to develop its distribution channel and other networks. Over time, the company developed a deep relationship throughout the vast Sumitomo group.

Whatever a new venture needs, the group supplies it immediately at a good price. Entrepreneurs of new ventures never imagine of doing business outside the group. Once a new venture develops a close relationship with an industrial group or becomes a part of it, the company cannot keep secrets from the group's affiliated companies, especially its banks and securities firms. New venture's banks are the group's banks, and the company's financial details are available on request to senior group members.

By considering the above two facts with the findings in section 6.1.4 (pp.239-248), two possible alternative scenarios in the evolution of the Japanese VC industry might emerge, 1) IDVCFs might increase their presence and become more

competitive or even leading VCFs, 2) Corporate VC department or units may get more heavily involved in developing key technologies, or in other words, become leading VC firms by explicitly developing and expanding the industry.

1) IDVCFs might increase their presence and become more competitive or even leading VCFs

The majority of the IDVCFs studied, Global VC, Future VC, Mary, WorldView, Classic Capital, Angel Securities and OGI Capital, have been founded since the 1998 deregulation of investment conditions by the Japanese government. Among these IDVCFs carefully evaluating the findings in three categories - investment policies and preferences, organizational structure, and specific firm advantage (discussed in section 6.1.4 and see Appendix B table 2) - the study suggests that IDVCFs like JAIC, Future VC, and Angel Securities may increase their presence in the Japanese VC industry based on their success in targeting investment policies, developing specific strength in IPO knowledge, and responding to strong local needs from new ventures that spin out from leading research labs at universities or large corporations. These types of VCF are late comers into the Japanese VC industry in comparison with AFVCFs. However, being late comers to the industry also gave them many opportunities to learn from AFVCFs' business approaches and policies. In particular, the majority of AFVCFs, except for JAFCO and NIF, are currently struggling to develop their own organizational structures to manage VC funds effectively and select and target investments efficiently. However, Angel Securities and Future VC have developed more flexible organizational structures, specifically targeting the new ventures that they wanted to help.

Also, JAIC, Future VC, and Angel Securities could adapt some of the approaches of AFVCFs, targeting investment policies and developing specific strength in IPO knowledge, because many of them had experience as venture capitalists in leading AFVCFs. Also, because they were late comers to the industry, they had to select different new ventures to target from outside the leading research labs at universities or large corporations. Historically, the majority of AFVCFs focused on developing business opportunities with existing small and medium sized firms that were not in the IPO markets. It was difficult to reach new ventures that spin out from leading research labs at

universities or large corporations. In fact, there were no records of university spinout new ventures before 1998. These areas of investment opportunity (investing in new ventures that spin out from leading research labs at universities or large corporations) have not been developed enough by AFVCFs. However, JAIC, Future VC, and Angel Securities selected and focused on finding potential new ventures to invest in from leading research labs at universities or large corporations. This seems to be the right choice for the strategic development of VC that we currently observe in the Japanese VC industry (the Ministry of Economics, Trade and Industry [METI] introduced a new policy in 2000 that encourages a minimum of 1,000 spinout new ventures from university and large corporations by 2005. In 2003, there are approximately 350 new ventures from university and large corporation labs since the introduction of the new policy in 2000.).

The basic business approach of JAIC, Future VC and Angel Securities may look similar to those of JAFCO and NIF. For example, IDVCFs and AFVCFs both get involved with managing new ventures' businesses and have their venture capitalists become active members in board meetings. However, the strategy of responding to strong local needs from new ventures that spin out from leading research labs at universities or large corporations have given IDVCFs certain advantages over traditional AFVCFs such as NEDO, Orix Capital, Nikko Capital and Sanwa Capital that are struggling to develop their own systems to compete with IDVCFs. Also, the volume of VC investments of traditional AFVCFs, excluding JAFCO and NIF, is not large in comparison with those of Future VC, Angel Securities, JAIC. For example, Future VC manages $50 million of VC funds, Angel Securities manages $50 million, and JAIC manages over $500 million. On the other hand, Orix Capital manages $200 millions and NEDO manage $150 million (see more details in Appendix B, table 1). Thus, the approach IDVCFs have taken to develop close relationships with leading research labs at universities or large corporations might better position them over traditional AFVCFs to become significant players in the Japanese VC industry.

Furthermore, many IDVCFs have networks with VCFs in the U.S. (WorldView has an office in Silicon Valley, Global VC and Classic Capital have personal networks in the Silicon Valley, and JAIC has operations in Singapore, See Appendix B, table 1). There are no geographic limitations or restrictions when these IDVCFs need to make IPOs

arrangements for their targeted new ventures while traditional AFVCFs' IPO operations must follow the guidelines of their parent firms (JAFCO of Nomura Securities Firm, NIF of Daiwa Securities Firm, NEDO of Mizuho Banks, Orix Capital of Orix Financial Group, Nikko Capital of Nikko Cordial Securities Firm, and Sanwa Capital of UF Bank). Among these IDVCFs their options for making IPOs of the new ventures they have invested in are not limited to Japan, but extend to the U.S. and Singapore. Therefore, if IDVCFs precede carefully with their current investment policies and consider making IPOs outside Japan, they might create a further competitive advantage against AFVCFs.

Pros: *the emerging competitiveness of IDVCFs means that finally Japanese VC development is on the right track.* Because key venture capitalists of IDVCFs claim to operate classic-style U.S. VCFs, these IDVCFs might become very important factors for the development of the Japanese VC industry and the transformation of Japanese industry structures. Increasing numbers of IDVCFs also indicates that there are more opportunities for entrepreneurs and new ventures needing more VC investment and direct and accurate management assistance, which AFVCFs did not provide.

Cons: *There could be more money available for each new venture and unnecessary investments might be made.* IDVCFs that could have taken competitive position in the VC industry will trigger severe competition among AFVCFs in the short term and there will be floods of cash into the VC industry. That will blind the eyes of many venture capitalists and entrepreneurs who need balanced investments for their business developments. In fact, there is still a trend in VC investments that a lucky few new ventures attract the majority of VC investment and attention.

2) *Corporate VC departments or units may get more heavily involved in developing key technologies*

The subjects excluded from this study, such corporate VC departments or units, are clearly involved in key technological development of new ventures. According to recent business articles in Nikkei Business Week (2002), the subsidiaries of Sanyo, Matsushita, Mitsubishi Trading Company, etc. started to invest heavily in nanotechnology development research. For example, Mitsubishi trading Corp. announced that the

company invested $15 million in VC investment in 2001 in a small company that is developing the electroluminescent display technology and it is also in the process of raising $120 million in VC funds exclusively for nano-carbon tube technology development in 2003. This suggests that in Japan corporate VC departments or firms might take the leadership position in the development of the VC industry and development of cutting-edge technologies. Thus, a possible alternative for the evolution of the Japanese VC industry may be developed through the leadership of in-house venture capital departments or divisions within corporations, but not by AFVCFs or IDVCFs.

Further, based on existing Japanese business conditions, in-house venture capital departments or divisions within large corporations, especially members of Keiretsu groups, seem to be in a better competitive position than other VCFs because of Japanese business practices and conditions, described and discussed earlier in this section. This information suggests that influence of in-house venture capital departments or divisions within large corporations on the development of new technologies and the Japanese VC industry will be significant because most VCFs are not involved in crucial technological development yet. Also, the past pattern of the development of the Japanese VC industry suggests that only after technological development of key industries has become established, venture capitalists, especially spinouts from large AFVCFs, will start to establish their own independent VCFs and get involved in managing VC funds in these new industries. Therefore, under this model, recently established IDVCFs will also not be as likely to take on significant roles in crucial technological development.

Pros: *involvement of corporate VC departments or firms accelerates the development of key technology and raises the ratio of successes to failures.* They not only possess enough VC funds for technology development, but also have market channels and production facilities, which often can not be provided by either AFVCFs or IDVCFs. Thus, the business success ratio of new ventures with new technologies will likely increase as more corporate VC departments or firms get involved because they can greatly help new ventures in areas such as technological development, financing, sales and distribution.

Cons: *there will be no Japanese VC industry that functions as an independent social system, similar to the ones in the U.S.* As a result, entrepreneurial activities, spinouts from large firms or university labs will diminish further from the current situation. Indeed, involvement of corporate VC departments or firms will accelerate the development of key technologies and raise the ratio of successes to failures. However, the expectation of entrepreneurs, who decide to exploit their potentials in technology development and want to establish their new ventures, have their motives diminished by the thought of their firms' being eventually acquired by large corporations or corporate VC departments of large firms. Because corporate VC departments or firms put priority on parent firms' objectives, the efficiency of VC or the efficient flow of VC in the VC industry will be reduced by the overwhelming influences of large firms. This means that the Japanese VC industry as a social system, like the one in the U.S., will lose the purpose of its existence.

7.2 Implications of the Present Study

7.2.1 Entrepreneurs

There are several implications for entrepreneurs that derive from changes in Japanese governmental policies in the late 1990s (discussed in section 5.4.3) and the from the results of this study's investigation in chapter six.

1) *Implications from changes in governmental policies in the late 1990s*:

Through the detailed analysis of this research, it became obvious that since the 1998 deregulation of the toshijigyo-kumiai and other deregulation, increased numbers of IDVCFs brought more VC funds into the VC industry and helped more companies to make IPO in the past three years. For example, *Toushi Rieiki Keigen Hou* (Capital Gain Act) (1998) lowered the capital gains tax rate from over 50% in 1996 to 20% and this change provided capital gains incentives for VC investors and VC fund providers (see section 4.3.2). As a result, committed capital investments have increased dramatically from $ 1.5 billion in 1995 to $2.3 billion in 2000. Subsequently, the Japanese government deregulated IPO market rules in 1999. As a result, two new equity markets formed, Mothers and NASDAQ Japan (established in 1999 and 2000 respectively, see section

4.3.2). All three markets for new ventures and small businesses reduced the requirements for IPO, resulting in the number of firms reaching IPO in 2000 to increase to 157 from just 62 in 1998 (discussed about it in section 5.4.3, pp.157-160). Through the analysis of Japanese governmental policy changes toward the IPO markets, it is obvious that there are more VC funds available for new ventures and entrepreneurs and that conditions for new ventures reaching IPO are more attractive and convenient for both VC firms and entrepreneurs than before the legislate changes.

However, there are many other important factors that this research could not discuss or develop concerning entrepreneurs, in particular, antimonopoly and anti-trust laws and their application, which section 7.1 describes briefly. It is true that there are more VC funds available for new ventures and entrepreneurs and conditions for entrepreneurs' new ventures reaching IPO are much better than before. However, the way that current antimonopoly and anti-trust laws are regulated generally do not provide for punishment or even censure of corporate violators, thus encouraging the continuation of large corporation dominating new ventures and the IPO markets through the power and influence outlined in section 7.1. In fact, while many new ventures and small firms went bankrupt in 2001, JAFCO showed operating profits of $200 million. Until antimonopoly and anti-trust laws are properly enforced, the IPO markets in Japan will continue to be inefficient markets for entrepreneurs and new ventures.

2) *Implication from the results of this study's investigation in chapter six*:

Intensive analysis and evaluation of this study of 17 Japanese VCFs showed that many key persons, who were the main driving force in establishing new IDVCFs, had previous careers as bankers or IPO specialists at securities firms. For example, the key founding members of Future VC, Global VC, Classic Capital, and WorldView had previous careers at the leading AFVCFs, JAFCO or NIF (see specific advantage, Appendix B table 1). Also the key funding members of Classic Capital and Global VC, for example, used to work at JAFCO, before each of them founded his own VCF (see each firm's profiles). Among the nine IDVCFs studied, only the founder of Classic Capital had experience of being an entrepreneur of an IPO firm. Furthermore, of all the key persons at all the VCFs interviewed, not one had any technological background and

only JAFCO and NIF employed groups of people with technological knowledge in life-science, biotechnology or information technology. This finding suggests that although the venture capitalists of the IDVCFs claim that they are trying to emulate the U.S. style of classic venture capitalists, who supposedly have expertise in technological developments and nurturing new ventures, most of their career backgrounds and special skills define them better as business consultants with special knowledge in IPO areas or as investment analysts who can also give advice in managing new ventures.

In addition, most of the key persons at the IDVCFs studied claimed to operate classic-style U.S. VCFs. However, analysis of the IDVCFs' investment preferences, policies, and the information regarding their IPO managed firms suggests that it will be quite difficult for them to become what they want to be. For example, Global VC, WorldView, and Classic Capital invest only in companies in the select areas of information technology and telecommunications industries in which key venture capitalists of each firm are familiar and experienced (see investment policies and preferences, Appendix B table 2). However, their performances in IPOs have not been impressive over the past three years. This information suggets that their expertise and experience in technological developments in the field of information technology and telecommunications industries are not functioning as effectively as they expected and may not be good enough for long term survival.

Thus, all the above information suggests that an entrepreneur or a potential entrepreneur who is looking for help in management and financial capital formation must evaluate carefully the true characteristics, intentions, and business capabilities, such as the accuracy of management advice and technological knowledge, of each VCF that raised its hand to offer help. Further, if new ventures are in the business of low-tech or are looking for a quick return on investment and don't want others to get involved in the companies' management, but need a certain volume of VC investments, they might be able to get more benefits by developing relationships with traditional and conservative VCFs such as NEDO, Orix Capital, Nikko Capital and Sanwa Capital. On the other hand, if new ventures are in the business of biotechnology or information technology and long-term investment returns and need some strong assistance in developing their management teams and business policies, they should develop relationships with the two

leading AFVCFs, JAFCO and NIF, or IDVCFs, such as Classic Capital, WorldView and Angel Securities because these firms have managed moderately large VC funds and maintain expertise in some technological developments. For examples, JAFCO and NIF can adjust and customize their services more easily after 1998's reorganization of its management structure. In the new organizational structure, both companies developed special investment teams that specialize their services and assistance as VCFs in the area of information technology, life-science and biotechnology and have managed to employ technology experts in each field. New investment teams of JAFCO and NIF can get involved in developing a new venture's management team and business policies.

On the other hand, IDVCFs, like Classic Capital and Angel Securities, might have limited VC funds and firm networks, but their approach to new ventures is very selective and they invest their funds in only a few new ventures and provide direct management assistance (read each firm's profiles or see Appendix B table 2). They adapted the classical VC approaches in the U.S. Also their close relationship with leading research labs at universities or large corporations in their business territory where traditional AFVCFs of NEDO, Orix Capital, Nikko Capital and Sanwa Capital did not pay enough attention provide them with advantages and new opportunities.

7.2.2 Corporations and Institutions

There are three main actions that corporations and institutions can take. One is that because most Japanese VCFs are not capable of managing real risk-taking investments in crucial technological development sectors or new ventures developing crucial technology, existing corporations and institutions must establish more firms and organizations that can manage risk-taking investments and take a leading role in developing crucial technologies for their companies and the Japanese economy. The second is to develop close relationships with IDVCFs. Third is that existing companies and institutions need to change their business practices or approaches to new ventures and VCFs.

1) *Corporations and institutions must establish more firms and organizations that can manage risk-taking investments and take a leading role in developing crucial technologies for their companies and the Japanese economy.*

Corporate VC departments or units were the subjects that this research could not cover as their activities are secretive because they are a strategic part of large corporations. Under such circumstances, in 2001 Sogo-shoshya (translated as General Trading Companies) like Mitsubishi Corporation and Sumitomo Corporation (both of them are also strategic member companies of Keiretsu groups) announced that they had set up VC departments in their existing organization structure (Mitsubishi Corporate Report, 2001). For example, Mitsubishi Corporation's VC department share the office spaces with the Center for Advanced Science and Technology Incubation, Ltd. (one of Tokyo University's business units, founded in 1999), IBM Business Consulting Services, and NTT-ME CORPORATION (one of the strategic information technology developing subsidiaries of Nippon Telephone and Telegram), etc. in the Tokyo Marunouchi business district (recognized as the center of Japanese business since the 1930s.). By sharing office space with other institutions that are interested in developing new technologies and new ventures, Mitsubishi's VC department can increase its business efficiency and rate of success. Mitsubishi Corporation's VC department is designed to function not only as a VC firm but also as venture incubator laboratory and has also created marketing channels for new ventures through Mitsubishi Corporation's networks. Mitsubishi Corporation's VC department may provide a model case for other corporations and institutions. However, how successful and how effective Mitsubishi's VC Department can be as a VC firm remains to be seen.

2) *Corporations and institutions need to develop close relationships with IDVCFs.*

As section 6.1.4 discussed, IDVCFs Future VC, JAIC, and Angel Securities Firm, are the leading independent VCFs in the current Japanese VC industry and their ability to compete as VC firms has already been proven to some degree (see each firm's analysis in section 6.1.2 or Appendix A&B). Their flexible business approach and their established networks with leading university research labs should provide certain benefits to corporations and institutions which are struggling to open opportunities in key technology developments and do not have efficient in-house venture capital departments

or divisions within large corporations.

3) *Corporations and institutions need to change their business practices or approaches to new ventures and VCFs.*

As section 7.1 described briefly, the business culture in Japan dictates that if large companies recognize that a small company is worth anything at all, they will capture the company when the company is young and growing, and make it one of their permanent suppliers exerting their influence on banks and loan companies to get access to the small company's financial secrets. On such occasions they usually do not follow the regulations of anti-trust laws, indicating that the Anti-Trust Department of the Japanese government is not functioning as effectively as it should be. Because existing corporations must also survive the competition, they must be ruthless in their business practices. However, the current stagnated economic conditions in Japan were created largely by the business practices of exiting companies and institutions, and the legal conditions that were developed based on their power (Arai, 2001). It is widely known that since 1990 the Japanese economy and certain business sector have lost their competitiveness in the global economy. Traditional business practices in Japan are the largest obstacles for stimulating entrepreneurial activities and VC investments.

To sustain continuing economic growth, the government and business sectors need to plan and build a new infrastructure for technological entrepreneurship. But the core capabilities of Japanese society, as created by large companies, drawing on reliability, history, and tradition to create a stable society with secure economic growth, have now become their current liability. The existing corporations and institutions need to work with the Japanese government to develop a new plan for building the infrastructure to create legitimate opportunities for new ventures and the VC industry.

7.2.3 Financial Institutions

The Japanese government and financial institutions have worked together to maintain unique financial markets that put priority on developing the debt financing market systems (described in section 5.3.2 Structure of Capital Market). The total size of the capital market was about $6.1 trillion and VC only provided about 0.13 % of the

capital, whereas in the U.S. VCFs provide about 10% of the capital market and 35% of the equity market. This suggests the VC industry in Japan is a very small factor in influencing the structure of the equity capital market.

After World War II, the Japanese government and the traditional financial institutions interested in managing industry development continue to operate together to implement a bank-oriented system that allocated funds to targeted industry and infrastructure development. Because of these heavily bank-oriented policies, the equity capital markets of Japan have remained an underdeveloped industry and have maintained the distorted ratio of equity market to debt financing for small companies and new ventures. As section 5.3.2 showed, Japanese debt financing systems provided at least a total of $6.1 trillion in loans in 2001. In comparison, U.S. debt financing systems provided approximately $1.6 trillion in loans in 2000 (see table 4.9). On the other hand, the Japanese equity market provided a total of $25.9 billion in 2001 in comparison $1.1 trillion provided by the U.S. equity market in 2001. This information shows clearly the equity capital markets of Japan have remained an underdeveloped industry.

In the past, due to overprotection by the Japanese government, financial institutions could not differentiate their services from others and, further, they had to maintain their group-ism. Also, since the end of World War II, the Japanese government had maintained a policy of not allowing any financial institutions to go bankrupt until 1997. Even after 1997 the government has been helping insolvent banks to find companies willing to merge with them. Further, under the current economic recession continuing since 1990, it is clear that Japanese financial institutions are no longer capable of managing their business and taking a responsible role in restructuring Japanese business and Japan's economy. For example, almost every year since 1991 the Japanese banking system claims collective new debt loans of approximately $1-2 trillion (General Index of Imidas, 2003). Therefore, it is likely that about half of Japanese banks (there are about over 700 financial institutions, Asahi-Shinbun, 2002) will face bankruptcy after the Japanese government removes further protection of banks from bankruptcy in April of 2003. This suggests that the Japanese government and the business sectors need to create a new investment environment where business angels and VCFs can take on significant roles as competitive financial institutions. Further, the Japanese government and the

business sectors need to work together to develop new, efficient financial systems to replace the existing system in which approximately $14 trillion of personal savings are reserved as deposits in Keiretsu Banks (where they are given interest of 0.02% annually) and the Postal Saving Systems (about $4 trillion of personal savings are deposited in accounts of the Postal Saving Systems, with interest of 0.04%). This information illustrates that the distribution of capital in Japanese society is unbalanced and largely inadequate. Thus, the Japanese government and the business sector needs a major reorganization in their financial systems while they pursue ways to efficiently develop the Japanese VC industry.

Also, the securities market must be reorganized on the initiative of the government and the Japanese SEC because about 91% of IPO activities are controlled and managed by the top seven securities firms - Nomura Securities (the parent company of JAFCO), Daiwa Securities (the parent company of NIF), Nikko Securities (the parent company of Nikko Capital), Shinko Securities, Kokusai Securities, UFJ Securities, and Mizuho Securities. The current climate also encourages the creation and maintenance of a distorted equity market environment. In Japan it is said that the equity market exists for the securities firms, but not for investors or entrepreneurs. Therefore, even when investors and entrepreneurs are losing market value on their investments, the leading AFVCFs and securities firms continue to make profits.

Although the current movement in the Japanese VC industry might not have an immediate impact on financial institutions, it is obvious that the current equity market structure and the securities market conditions are huge drawbacks for entrepreneurs, individual investors, and VCFs that do not have close relationships with the securities firms. Therefore, the business community, including financial institutions, and the government, must work hard to reorganize Japanese financial systems and Japan's economic structure in general to become competitive again.

7.2.4 Public Policy and Equity Market Policy

The deregulation of the toshijigyo-kumiai in 1998 was one of the outstanding pieces of legislation introduced by the Japanese government, recently. Since the deregulation, approximately 40~50 VCFs have been established and 90% of these firms

are operated as independent VCFs (see chapter one). Also the Japanese government's coordinated efforts with the business community to change the structure and regulations of the equities markets for small businesses and new ventures helped the top managers of the Tokyo Stock Exchange to establish the Mothers market in 2000, invited NASDAQ from the U.S. to open a market in Japan, NASDAQ Japan in 2000, and restructured the Japan OTC market to JASDAQ in 1999 (discussed and illustrated in section 5.3.2). Since 1998's deregulation of the public equities markets, it became relatively easy for new companies and small businesses to have IPO even when a company is not making operational profits, but shows high growth potential. Therefore, as the information about the public equities markets (see section 5.3.2) is increasingly reported, more than 150 companies per year have had IPO, whereas before 1999 it was approximately 50~60. The positive benefits of deregulating investment laws and establishing the JASDAQ and opening the two additional markets, Mothers and NASDAQ Japan, helped to accelerate the growth of new ventures and helped VCFs to earn the benefits of investing in new ventures.

However, for the past year, there are new problems emerging and getting public attention. For example, after new ventures had IPO almost all of them lost market value within six months (Nikkei Business Week, 2002). But VCFs like JAFCO and NIF have reported steady profit growth for the last few years. Such a situation triggered concern among entrepreneurs and regular individual investors and venture capitalists of IDVCFs who might be at a slight disadvantage in getting accurate information about the true growth potential and profitability of new ventures. After such incidents became public, the main concerns among the Japanese business community have been to which group of interests - new ventures having IPO, VCFs helping companies to growth, or securities firms managing IPO processes - the equity market should represent. The new policies the Japanese government implemented in 1998 and 1999 were necessary to encourage entrepreneurs to form new ventures and also to encourage VCFs to invest in risky businesses, but they have not been enough to create and sustain the continuous flow of new venture formations and their risk taking money flows into the equity market. The Japanese government and the Japanese SEC did not take any legal action when they perceived the unequal treatment among the parties involved in the IPO market nor when

they suspected that regular individual investors were getting unfair treatment in accessing information in the IPO market and investing in new ventures.

In April of 2002, more than $14 trillion of personal savings was still reserved in banks, about one third of which is managed by the Japanese government's postal saving systems (General Index of Imidas, 2003). Only, 0.13 percent of capital is in financial markets pooled in VC funds. At the same time, the Japanese government and NPO organizations organized by ex-bureaucrats after they retired from MEIT, the Ministry of Finance, and other government financial agencies continue spending billions of dollars to build unnecessary bridges, roads, health centers, museums, hot-springs, shopping centers, etc (Nikkei Business Week, 2002). Japan has over $10 trillion in accumulated public debts and the government has not been seriously trying to change the financial market structure even after such facts became public in 1990. This suggests that the government, policy makers, and other publicly responsible offices must realize who they were trying to benefit when they deregulated existing policies or introduced new organizations to stimulate and nurture the equities market. If they do not consider these areas carefully, entrepreneurs and individual investors will continue to avoid using the public equities markets. As proof, NASDAQ Japan announced publicly that they were closing their Japanese market by the end of 2002 and individual investors continued to stay with banks with annual interests of 0.02%.

7.3 Limitations and Contributions of the Present Study

There are a number of limitations associated with this study that must be acknowledged when evaluating the results. They are: 1) the relatively small size of the survey sample; 2) the changing nature of the Japanese VC industry; and 3) the accuracy and depth of interviewee responses.

1) *The relatively small size of the sample*:

The relatively small sample size of 17 VCFs is the result of a collective case study approach that this research applied. The cases were limited to Japanese VCFs that can be accessed and can provide the minimum information regarding each firm that this study needed. Since these VCFs only represent a portion of the Japanese VCFs, it might

create difficulty when generalizing the findings to the industry as a whole. However, it should not eliminate the implications that this research presented. For example, the study illustrated that competition between leading AFVCFs and newly organized IDVCFs influenced the other VCF's business approaches. The study also showed the specific strategies of some IDVCFs to establish their competitiveness in the VC industry in a short period.

2) *The changing nature of the Japanese VC industry*:

The nature and characteristics of the Japanese VC industry are not stable and static. This case study is a cross sectional study focussing on the current state of leading VCFs in Japan. Future research could benefit a similar study of Japanese VCFs that takes a longitudinal approach. There might have been more IDVCFs that are not listed in the Directory of Japanese VCFs provided by VEC. In particular, the study could not identify any VCF on the list investing in crucial technological developments in nanotechnology or MEMS. However, there are scientists and engineers in Japan who have established new ventures relating to these technologies recently. But this study could not find whether a particular VCF is involved in investing in such new venture or not because such firms hide their actions in the VC industry due to increasing competition.

In this research I applied the industry evolution model for characterizing the evolutionary stage of the Japanese VC industry and found the industry is still generally in the emerging stage. However, the field research revealed the differences among individual VC firm levels, and even between competing models within a subset of the firms in the sample. In particular AFVCFs are very different from the U.S. standard VC model in terms of organizational structure and business approaches to new ventures. Some AFVCFs follow the traditional Japanese VC model exclusively. An argument could be made that this model is mature, even if relatively ineffective, or alternatively potentially in the declining stage given the competition with the emerging model. Other AFVCFs in the sample have two models running in parallel – the traditional Japanese model and the newly adopted U.S. — style model. The operating style adopted by all IDVCFs resembles the U.S. VC model. Thus, part of the Japanese industry may be

viewed as mature or declining, and part as emerging. This non-uniformity across the Japanese venture capital industry and the difficulty of specifying evolutionary stage reveals the limitations of the industry evolution model.

3) *The accuracy and depth of interviewee responses*:

In addition, the VCFs studied might develop new functions to be a competitive, immediately after the investigation of this study. Thus, key characteristics of each VCF might add new elements suddenly. Also, unfortunately, many AFVCFs that are complete subsidiaries of the parent firms hid several key answers that this research needed. This indicates that the influence of AFVCFs to the existing Japanese VC industry might have been more than this research could have illustrated.

Contributions

Regardless of its limitations, this research has shown the potential to make a significant contribution to our knowledge of the evolution of the Japanese VC industry in the context of the global market.

First, the study successfully describes characteristics of leading Japanese AFVCFs and IDVCFs. This result surely enhances the fundamental understandings of Japanese VCFs at the micro-level as well as the nature of competition in the Japanese VC industry at the macro-level. As section 5.1 showed, the evolutionary paths that Japanese VCFs followed must have definitely reflected stages of society as it tried to balance social development and business development in the 1970s. In fact, the classic model of U.S. VCFs was not possible in the Japanese commercial laws in the 1970s when the first Japanese VCFs were established. Even now there are significant structural barriers, both formal and informal. Such findings illustrate that social change has had a huge impact on the development of the VC industry at the global level.

Second, the research is the one a handful of studies of the Japanese VC industry and VCFs. As the study showed, there are Japanese venture capitalists actively doing business in the U.S. and learning the management processes of VC funds and other critical factors to become competitive venture capitalists. For example, WorldView Technology has invested roughly 60% of its total VC funds of $1.75 billion, $1.05 billion,

in new ventures in the optical-telecommunications industry and an additional 5~6 key founding members of different Japanese VCFs have experience managing VC funds in Silicon Valley. As a result, I suspect that there are more Japanese venture capitalists involved in managing VC funds in the U.S. and there are more Japanese VCFs providing VC funds to new ventures and to U.S. Some of them might have invested in key technology and may have an impact on future competitiveness.

Furthermore, at a more practical level, part of my research results are having asome impact on both practitioners and scholars. They have already been presented at three conferences: the Babson Conference in 1997, the Japanese Business Study Conference in 1997, and the Babson Conference in 1999. Two of these studies were later published in a conference proceeding and journal. "A Comparative Study of United States Venture Capital and Japanese Venture Capital," appeared in the conference proceedings of the Japanese Business Study Conference and "Emerging Trends in the Japanese Venture Capital Industry," in the *Journal of Private Equity* (winter, 2000). There are indications that part of my research already has contributed to the expansion of knowledge of the Japanese VC industry and Japanese VCFs.

7.4 Future Research

The subject is very rich and there are a number of areas that are worthy of further exploration. There are at least four new research projects suggested by the findings of this research: 1) studies investigating the characteristics of all IDVCFs founded after 1998; 2) studies of the evolution path of other countries' VC industries, such as Germany and Korea; 3) studies that focus on what type of organizations in Japan are involved in developing cutting edge technologies, such as nanotechnology and MEMS; 4) studies that focus on the individual firm receiving VC investments; and 5) studies of affect of anti-monopoly laws and anti-trust laws on IPO market and securities firms' activities.

There is much more to be learned about IDVCFs. For example, in analyzing the background of IDVCFs, this research found out that quite a few key-founding members of IDVCFs had previous careers at large AFVCFs, such as JAFCO and NIF. This information leads to questions, such as why these people chose to establish their own

VCFs instead of staying at established AFVCFs; what their VCF's specific strength is over AFVCFs and what kind of policies they are implementing to compete and survive in the VC industry. By finding answers to these questions, new research should further contribute to describing changes in the Japanese VC industry, especially among IDVCFs.

Second, this study illustrated the reasons the Japanese VC industry took a different evolutionary path from the one in the U.S., leading to the question of whether or not the evolutionary path identified and described in this study was specific to the Japanese context. It would be interesting to study how effectively we could compare the evolutionary paths of the VC industry in countries such as Germany and Korea, with Japan and the U.S. Such a study may tell us which industry development factors influence the evolutionary path of the VC industry and how.

Third, this investigative research of the Japanese leading VCFs found out that none of these firms are involved in investing in cutting edge technologies, such as nanotechnology and MEMS. If they are not involved with the development of these technologies, who or which kinds of companies are involved in developing the next generation of technological developments. Finding out the answer to this question will reveal what kind of approaches are best suited to Japanese society and industry, to nurture and develop the capabilities of managing strategically important technological developments to survive in increasing global competition.

Fourth, a future research could focus on the individual firm receiving VC investments as the unit of analysis. Although I did not gather a comprehensive data set at this level I did collect qualitative data at the level of individual cases. As chapter six illustrated, new ventures, invested by the Japanese VC firms, are mostly not in high technology industries, but service industries. Is it because Japanese VC firms do not have capabilities of evaluating key technological development or because new ventures in service industries have much higher success ratio over high technological new ventures in Japan? Throughout this research I could not find financial performance differences between companies in service industries and high technology industries. Thus, new research should focus on finding such differences in the financial performance of individual firms receiving VC investments in service industries and high technology

industries in Japan and also assess financial success relative to investing in these two areas.

Fifth, there is a need to conducting new research to examine the effect of anti-monopoly and anti-trust laws on the IPO market and securities firms' activities. Throughout the discussions in section 7.1-7.2, it is obvious that large securities firms and a few VCFs have overwhelming power in the development of the Japanese VC industry. Until some research is conducted to make clear the issues and problems regarding anti-monopoly and anti-trust laws in relation to the IPO markets, the healthy and effective development of the VC industry for new ventures and IDVCFs seems impossible. Therefore, my new research should address the areas of the effect of anti-monopoly and anti-trust laws on the IPO market and securities firm activities. The new findings should make clear some of the issues that many researchers of the Japanese VC industry had avoided.

Finally, other important questions center on business practices and conditions impeding the efficient development of the VC industry and discouraging entrepreneurial activities. Throughout this research it became obvious that in Japan entrepreneurial activities are discouraged and it seems that there is less spinout from research labs of large companies or universities than in the U.S. However, the reasons of such behavioral patterns are not clear. In the past Japanese researchers concluded that such behavioral was due to Japanese society and culture. However, based on my experiences and knowledge, Japanese society and culture do not provide full explanations for why so many fewer people try to become entrepreneurs than in the U.S. Thus, examining reasons for this should help us to find out what factors in Japanese society discourage entrepreneurial development and VC development. In addition, other societies may be able to avoid the mistakes of Japanese society and might be able to construct a more dynamic economic systems than has Japan.

7.5 Concluding Comments

The dynamic changes currently occurring in Japanese society are a key to economic growth and may provide new opportunities to Japanese VCFs. The firms in this study might be able to play important roles in the restructuring of Japanese industry

structure and improving its competitiveness. Hence businesses and government leaders may do well to support the development of different approaches to managing VC funds. However, the VC industry in Japan faces challenges from social values and from the Japanese economic system placing a high value on reliability, history, and tradition. These deeply ingrained values within socio-economic system have influenced the development of the VC industry. These influences are observed in the roles and approaches of VCFs, their sources of funds, and their organizational structures.

In consideration of the above, the Japanese VC industry has started to change. In particular, two leading AFVCFs, JAFCO and NIF, and some of the newly formed IDVCFs that have adopted roles similar to those of classical VCFs in the U.S. VC industry seem to have become key players in the future evolution of the Japanese VC industry. Knowledge of managing VC funds and developing the VC industry has been diffusing steadily through networks of business communities. As the knowledge of manufacturing automobiles were transferred from the U.S. to Japan, the Japanese automobile industry became a strong rival of the U.S. automobile industry. It is extremely difficult to project whether a similar pattern will occur in the VC industry or whether something else will happen. However, it is obvious that at the individual level, Japanese venture capitalists have been learning from the U.S. Though it seems impossible to stop this trend of knowledge spillover, it is not clear how well it affects the Japanese VC industry and the Japanese economy. We can expect two possible future scenarios: 1) the Japanese VC industry will catch up within 5-10 years with the U.S. VC industry and will make a significant contribution to the renaissance of the Japanese economy. 2) The Japanese VC industry will stagnate and decline and therefore will not be able to contribute to the revitalization of the Japanese economy.

For the past 50 years the Japanese people have demonstrated their ability to rebuild the country's economy and achieve world leadership in many industries. It is hoped that the new generation of business leaders, including venture capitalists, will emulate their predecessors and restore Japan's world competitiveness to the rank it deserves among industrialized countries.

APPENDICES

Appendix A

Name of the Company:
Date: / /

Interviewer: Masaki Kuroki
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Rensselaer Polytechnic Institute
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Thank you very much for participating in my preliminary study for my dissertation project. My dissertation project will study Japanese venture capital firms' description, investment decision-making criteria and changes in those areas during the past ten years. Findings through this primary study will be used to develop my final dissertation and I intend to present the findings at conferences in the U.S. Therefore, your honest response and participation will be greatly appreciated by many people.

The questionnaire consists of three sections: section one asks questions about the company's background; section two asks questions about the interviewee's background; and section three asks questions related to decision making issues.

Section One: Company Background

The following statements are questions about your company. If you prefer, someone in charge of the company's data can answer these questions.

1. What is the approximate size of your company's total VC fund?

2. What are the sources of your company's venture capital (VC) funds and what is the approximate ratio of each source in a total of VC funds?

Example Answers:	Banks	30%
	Manufacturing company	40%
	Security firms	20%
	Others	10%

Your Answers: _____ %

_____ %

_____ %

3. Of that total (Question 1), how much is invested or loaned now?

Example Answers: $10 million invested
$20 million loaned

Your Answers:

4. On average, how many different companies has your company invested or made a loan with during the past five years?

5. How many Toshijigyou-kumiai (a cooperative investment program) does your company have?

6. What is the size of each Toshijigou-kumiai?

Example Answers: Project A: $10 million
Project B: $50 million

Your Answers:

7. On average, how many different companies does each Toshijigyou-kumiai invest?

8. What is the overall composition of your company's financial instrument? Show the ratio of each of the following categories.

Equity investment _____%

Bonds _____%

Convertible bonds _____%

Loans _____%

Other _____%

9. Does your company diversify investment activity and if so, how?
   Check the appropriate box of your company's diversified activity and describe briefly on the line.

   [ ] Across industry _____.

   [ ] Across geographic area _____.

   [ ] By the type of technology _____.

   [ ] Only by the development stage of new venture _____.

   [ ] Other _____.

   [ ] No criteria

10. Portfolio: if your company diversifies investments according to the development stage of new ventures, how does your company's portfolio investment look? Approximately, how much of your company's investments are distributed in each of the following type of investment? Show the approximate ratio of each of the following investment type.

    a. Very High Risk _____%
       (Investing in firms with only prototypes or business ideas)

    b. High Risk _____%
       (Investing in firms with products, but yet showing profits)

    c. Moderate Risk _____%
       (Investing in firms at breakeven)

    d. Low Risk _____%

    (Investing in firms with satisfactory profit history)

    Example Answer:
    a. Very high risk 10%
    b. High risk 15%
    c. Moderate risk 30%
    d. Low risk 45%

11. If your company diversifies investments according to geographic area, show the ratios of VC funds according to the following lists. Then, please note reasons that such areas were selected. (Example: technology, return of investment, no reasons, etc.)

Tokyo	_____ %	_____.
Osaka	_____ %	_____.
Other area in Japan	_____ %	_____.
East Asia	_____ %	_____.
U.S.	_____ %	_____.
Europe	_____ %	_____.
Other Area	_____ %	_____.

12. Show the approximate average of the company's VC investment return in the past five years.

Rate of Return
< 5%
5 - 15%
16 - 25%
26 - 35%
36 - 45%
46 - 100%
> 100%
Don't know

[Note: the financial result of VC investments for the past 5 years (Total ROI to date).]

13. How many of the investment programs of your company show a financial loss? Show the number of program on the right side.

Percent of Investment showing losses
0 - 5%
6 - 15%
16 - 25%
26 - 35%
36 - 45%
46 -100%
> 100% Loss
Don't know

Section Two: The Interviewee's Background

The following statements are questions for the interviewee, who is in charge of the final decision making. Some of the questions are of a personal matter. The conductor of this study will guarantee the secrecy of your responses to those questions.

14. What is your title in the company?

15. Please describe your duties and responsibilities.

16. How many investment decision-makers does your company employ?

17. How many years have you worked in the company and how long have you been in the current position?

    Example Answers: 10 years in the company and 4 years in the current position

    Your Answers:

18. What was your work experience before you got your current position?

19. What is the approximate total amount of VC funds under your responsibility?

20. On average, how long is your company investment process, from a new venture company's first contact through to actual funding?

21. What process does your company have in completing one investment?
    For example: an American VC firm has the following process: search, screening, evaluation, deal making, after deal activities, and harvesting.

    Based on the above examples, describe your company's process.

22. How many proposals does your company evaluate per month and per year and how many of them actually are invested in by your company?

Answers: Per week: ___; Per year: _____; Invest in: ___.

23. How many companies do you personally evaluate per week and per year? Of these, how many of them do you actually invest in?

Answers: Per week: ___; Per year: _____; Invest in: ___.

24. Who brings an investment or loan proposal for new ventures to your company?

Section Three: Decision Making Issues

The following questions are developed from Tyejee and Bruno's study in 1981 and Macmillan and others in 1985 and this study added some modification on them. 25 criteria have been identified as being relevant to the decision for funding new ventures. Please weight the importance you attach to each criterion by circling the appropriate number.

1. Not important: don't consider as a factor to make investment decision.
2. Desirable: A factor that improves the performance of investment, but currently not in use.
3. Important: A factor that must be present in order for making investment, unless other factors specifically compensate for this factor's absence.
4. Essential: A factor that must be present under any circumstances in order to make actual investment.

25. How important are each of the following criteria in making decisions?

	Not Important			Essential
[ ] Management skills	1	2	3	4
[ ] Marketing skills	1	2	3	4
[ ] Financial skills	1	2	3	4
[ ] Technical skills	1	2	3	4
[ ]References of entrepreneurs	1	2	3	4
[ ] Uniqueness of product or service	1	2	3	4
[ ] Patent-ability of product	1	2	3	4

[ ] Raw material availability	1	2	3	4
[ ] Production capabilities	1	2	3	4
[ ] Access to market	1	2	3	4
[ ] Market need for product or service	1	2	3	4
[ ] Size of market	1	2	3	4
[ ] Growth potential of market	1	2	3	4
[ ] Type of customers	1	2	3	4
[ ] Freedom from regulation	1	2	3	4
[ ] Resistance to economic cycles	1	2	3	4
[ ] Protection from competitive entry	1	2	3	4
[ ] Hedge against current investments	1	2	3	4
[ ] Merger/acquisition potential	1	2	3	4
[ ] Opportunities for exit	1	2	3	4
[ ] Tax benefit of venture	1	2	3	4
[ ] Rate of return	1	2	3	4
[ ] Protection against down-side risk	1	2	3	4
[ ] Deal size	1	2	3	4
[ ] Commercial/market risk of venture	1	2	3	4
[ ] Technical risk of venture	1	2	3	4

[ ] Others (please specify) _____.

26. Which of the following criteria do you use to assess the potential return on investment?

[ ] Pro-forma projections
[ ] Estimated growth rate
[ ] Market evaluation
[ ] Venture history
[ ] Competitive evaluation
[ ] Other
[ ] No assessment of return

27. Which of the following criteria do you use to assess investment risks?

[ ] Market evaluation
[ ] Competitive evaluation
[ ] Company & management history
[ ] Stage of venture
[ ] Likelihood and management of loss
[ ] Status of technology
[ ] Other criteria:
[ ] No assessment of risk

Section Four: Investment Environment

28. Constraints on investment activity
Do you recognize any of the following as constraints or enablers on your VC investment activity? Briefly describe the situation during the past ten years.

Available capital

Available market opportunity

Quality of proposal

VC investment knowledge
IPO market

Public policy barriers to investment activity

Tax policy

Capital gain tax

Investment tax credit

Taxation of exercising of stock option

Foreign taxes

Income tax

Others

29. Are there other structural or social factors influencing VC investment?
For example: barriers for transferring funds from other countries to Japan.

30. What additional questions does this study need to include in order to understanding the description of venture capital firms in Japan?

□ Thank you very much for your participation in this study.

Appendix B

Table 1 Basic Profiles of the 17 Japanese VCFs Studied (M: millions; B: billions)

	JAFCO	NIF	NEDO	Orix Capital	Nikko Capital	Sanwa Capital	VEC	HVPC
Type of Organization	AFVCF	AFVCF	AFVCF	AFVCF	AFVCF	AFVCF	GVCO National Level	GVCO Local Level
Location	Tokyo, Osaka, Silicon Valley, etc.	Tokyo, Osaka, Silic Valley, etc.	Tokyo	Tokyo and Osaka	Tokyo and Osaka	Tokyo and Osaka	Tokyo and Osaka	Hiroshima
# of Decision Makers	4	4	8	5	7	5	N/A	N/A
Numbers of Employees 2001	350	168	106	28	43	50	N/A	N/A
Amount Invested in 2000/ 2001	$480 M	$270 M	$39 M	$79 M	$81 M	$50	$20 M	$1.9 M
# of Toshijigyo -kumiai in 2001	49	42	3	3	19	15	none	1
VC Funds Managing (Total)	$2.1 B	$1.013 B	$150 M	$200 M	$450 M	$198 M	$218 M	$2.6 M
Geographic Locations of Investments	Tokyo, Osaka, Hong Kong, Singapore, Silicon Valley, England	Tokyo, Osaka, Singapore, Taiwan, Silicon Valley	Tokyo, Osaka and Silicon Valley	Tokyo and Osaka	Tokyo and Osaka	Tokyo and Osaka	Tokyo and Osaka	Hiroshima
Investing Stage of New Ventures	start-up: 15% early grow.: 50% expansion: 30% maturity: 5%	start-up: 10% early grow.: 30% expansion: 40% maturity: 20%	start-up: 0% early grow.: 30% expansion: 50% maturity: 20%	start-up: 10% early grow.: 40% expansion: 50% maturity: 0%	start-up: 10% early grow.: 30% expansion: 40% maturity: 20%	start-up: 10% early grow.: 30% expansion: 40% maturity: 20%	N/A	early grow.: 100%
Investment Industries	every industry, esp. information tech., biotechnology	every industry esp. Internet and information technology	electronics, services industry	every industry Internet: 60%	every industry Internet: 60%	every industry Internet: 30%	High-tech companies, services industry,	no specific industry local companies
Specific Advantage of Firm	IPO of over 2000 Companies, networks Cover all Japan, Nomura Securities, many IPO specialists	IPO of over 1,200 companies, networks cover all Japan, Daiwa Securities, many IPO specialists	networks of parent firm	networks of parent firm (the largest lease & loan company)	networks of parent firm, No3 securities firm (Nikko Securities) IPO specialist	networks of parent firm (Mizuho No3 bank) IPO specialist	technology evaluation ability government support	N/A

(Created by the Author)

Appendix B

Table 1 continued. Basic Profiles of the 17 Japanese VCFs Studied (M: millions; B: billions)

	Global VC	ICT	Future VC	Maria	WorldView	Classic Capital	JAIC	Angel Securities	OGI Capital
Type of Organization	IDVCF	IDVCF	IDVCF	IDVCF	IDVCF	IDVCF	IDVCF	IDVCF	IDVCF
Location	Tokyo (networks in Silicon Valley)	Tokyo	Kyoto and Tokyo (Kanazawa)	Tokyo	Tokyo, Silicon Valle Singapore, London	Kobe (network in Silicon Valley	Tokyo, Osaka, Singapore, etc.	Osaka	Osaka
# of Decision Makers	3	1	7	5	7	5	5	10	1
Numbers of Emp-Loyees 2001	5	3	47	5	50	50	187	50	1
Amount Invested in 2000/ 2001	$2.0M	$1.0 M	$11.0 M	$0.5M	$150 M	$0.5	$151 M	$18M	1.0
# of Toshijigyo -kumiai in 2000	1	0	3	0	4	1	29	4	0
VC Funds Managing (Total)	$7.3 M	$10 M	$60 M	$1.7 M	$2,000 M	$2.0M	$580 M	$50 M	$2.5 M
Geographic Locations of Investment	Tokyo,	Tokyo	Kyoto, Tokyo & Osaka and	Tokyo	Silicon Valley & Tokyo	Kobe	Tokyo and Osaka Singapore, etc.	Osaka	Osaka
Investing Stage of New Ventures	start-up: 100% early grow.: 0% expansion: 0% maturity: 0%	start-up: 30% early grow.: 30% expansion: 20% maturity: 20%	start-up: 50% early grow.: 40% expansion: 10% maturity: 0%	start-up: 100% early grow.: 0% expansion: 0% maturity: 0%	start-up: 100% early grow.: 0% expansion: 0% maturity: 0%	start-up: 100% early grow.: 0% expansion: 0% maturity: 0%	start-up: 10% early grow.:30% expansion: 50% maturity: 10%	start-up: 50% early grow.: 20% expansion: 30% maturity: 0%	Start-up: 100% early Grow.: 0% expansion: 0% maturity: 0%
Investment Industries	information tech.	every industry	services industry computer software game contents	every industry Internet: 60%	optical communi-cation tech.	information tech., telecom-munication tech.	high-tech companies, services industry,	no specific indus-try, local compa-nies computer software in business	Internet
Specific Advantage of Firm	3 IPO specialists with information tech knowledge Nomura Securities, Experiences at JAFCO	N/A	local networks with leading research centers experiences at NIF	networks with leading university's research center	IPO specialist from JAFCO & Nomura Securities	IPO specialist from Nomura and JAFCO, Information technology specialist	networks in most of Asia	10 CPA with IPO knowledge, Net-works with local research labs	Network with local business angels

(Created by the Author)

Appendix B

Table 2 Comparison of the 17 Japanese VCF Studied

Name of VCF	Sources of VC Funds	Non-Financial Resources	Organizational Structure	Decision-making Processes	Top Five Decision-Making Criteria	Investment Policies and Preferences; Target ROI
JAFCO	Nomura Securities group + Many others (No single company has large influences.)	350 employees, CPA, Government Certified small business consultants, Network: 2,300 companies, Affiliated with 20 local VCFs, Reputation of Nomura	Industry and Technology specific team based organization, Role model of VCFs, Modified hierarchical Structure	Moderately long process, Due diligence is checked by task team, investment evaluation team, and investment committee, Task team takes every process, except final investment decision, Creation of task team increased motivation and flexibility of staff.	references of entrepreneur, company's ability in management, marketing, financial, and technical skills. (two senior managing director' s responses)	IPO within 3 years, early growth accelerating & maturity stage; information technology; biotechnology; Target ROI: 5~15%
NIF	Daiwa Securities group, less than 50%; Many other sources (Daiwa has significant influences)	160 employees, CPA, Government certified small business consultants, Network of Daiwa Group, Reputation of Daiwa Network: 1,200 companies,	Industry and technology specific team based organization, Modified hierarchical Structure, Rival of JAFCO	Long process, Individual staff has only limited responsibility; every decision making process is done by different people.	references of entrepreneur, company's ability in management, marketing, financial, and technical skills. (Response from CEO)	IPO within 3 years, early grow-&, accelerating; internet & information technology; Target ROI: 5~15%
NEDO	Banks, such as Tokyo Mitsubishi Bank, Japan Long Term Credit Bank group (JLTCB)	106 employees, government certified small business consultants, Access to group network	Traditional Japanese organizational structures Hierarchical Structure	Process is simple. Initial company representative takes every responsibility, except final investment decision; The investment evaluation Depart; but not individual representative, makes final investment decision.	References of entrepreneur, company's ability in management, marketing, technical skill, and uniqueness of product or service. (Response from the Manager of PR)	issuing corporate bonds, not equity; investment; no other information; Target ROI: N/A
Orix Capital	Orix Corporation: more than 70%, 30%: banks, other leasing companies	28 employees: most of them are employed right after college graduation and trained internally	Traditional Japanese organizational structures Hierarchical Structure	Time consuming long processes	market opportunity of product or service, references of entrepreneurs, company's ability in management, production & technical skills, and uniqueness of product or services	IPO within 3 years; companies at breakeven point and ready to expand their operation; 95% of the investment goes into Tokyo area. Target ROI: N/A
Niko Capital	Niko Securities Firm & others (no data about contributions)	43employees: most of them are employed right after college graduation and trained internally, there are 5~7 IPO specialists from Niko Securities	Traditional Japanese organizational structures Hierarchical Structure	Time consuming long processes	references of entrepreneurs, management skill, financial skills, growth potential of market, IPO within 3 years (opportunity for exist)	IPO within 3 years; companies in accelerating growth stage; Target ROI: 10%
Sanwa Capital	Mizuho Bank (Parent Firm)	50 employees: most of them are employed right after college graduate and trained internally, there are 4 IPO specialists from Mizuho Financial Group	Traditional Japanese organizational structures Hierarchical Structure	Time consuming long processes	references of entrepreneurs, management skill, growth potential of market, market need of product services, IPO within 3 years (opportunity for exist)	IPO within 3 years; early growth and accelerating growth stages 70% for expansion of existing business, 30% for Internet related companies. Target ROI: 5~10%

(Source: Created by the Author)

Appendix B

Table 2 continued. Comparison of the 17 Japanese VCF Studied

Name of VCF	Sources of VC Funds	Non-Financial Resources	Organization Structure	Decision-making Processes	Top Five Key Decision-Making Criteria	Investment Policies and Preferences; Target ROI
GVC	many resources no single firm has strong influence with GVC	GVC's advisory board's members are familiar with key technology; Simple decision-making Process, Network w/ industry and Universities	Role model of independent VCFs, Flat Structure (Title of The partner)	Short and simple processes, Involvement of three VC managers with the advisory board.	References of entrepreneurs; company's ability in management; marketing, finance; technical skills and competi--tiveness of technology	Technology specific investment; Seed & Start-up stage company, investment Information Technology, Investment in Tokyo and Silicon Va.; (no biotechnology, nanotechnology & MEMS); Target ROI: more than 40%
ICT	unknown	Network w/ industry and Universities	Flat Structure with outside technology advisers	Simple process	Ability of management; Technology skills, patent abilit Of product; market need for Products; production capability	Company in any industry Companies at start-up and early growth stage (60%) (no biotechnology, nanotechnology & MEMS); Target ROI: more than 25%
FVC	many resources	45 employees, most of them are employed right after college graduation and trained internally, Access to local network of over 20 Research centers	Traditional Japanese organizational structures, Hierarchical Structure	Moderately long process The investment evaluation; Committee makes final investment decision, but not individual representative,	Uniqueness of product or services; technical skills of entrepreneur or a firm, market need for products; references of entrepreneur; production capability	IPO within 3 years; companies at breakeven point and ready to expand their operation; companies in Osaka & Kyoto (local area) (no biotechnology, nanotechnology & MEMS); Target ROI: more than 15~35%
Maria	profits from preparatory schools & others	5 key members: most have various experience, but are not IPO specialists	Flat Structure, no technology specific knowledge	Process is simple; Initial company representative are also the members of the investment evaluation committee.	References of entrepreneur; ability in management; uniqueness of product; technical skills of a firm; market need for product or services.	Seeds stage or early stage of the development, unique product or service features, (no biotechnology, nanotechnology & MEMS); Target ROI: more than 30%
World View	large manufacturing companies; pension funds	50 employees, 7 IPO specialists: most of them had ex-career at JAFCO or Nomura Securities, Networks in Silicon Valley	Flat Structure, IT specific knowledge	Concurrent decision-making process	idea or business opportunity	High-tech companies in optical-communication technology & other IT companies 60%: U.S.; 40% Japan, 100% at the seeds stage company, (no biotechnology, nanotechnology & MEMS); entrepreneur's ability is not important; Target ROI: more than 25~50%
Classic Capital	personal savings & business angels	3 professionals in each field of IPO & finance, marketing, Information Technology, Networks in Silicon Valley	Flat Structure, IT specific knowledge	Simple and concurrent decision-making process	market opportunity of technology; potential growth of the market; clear targeting customers; marketing channels clear competitive advantage of products	Company in the Information Technology & telecommunication industry, to join in the management of the invested firm 100% at the seeds stage company, entrepreneur's ability is not important, (no biotechnology, nanotechnology & MEMS); Target ROI: more than 25~50%

(Source: Created by the Author)

Appendix B

Table 2 continued. Comparison of the 17 Japanese VCF Studied

Name of VCF	Sources of VC Funds	Non-Financial Resources	Organizational Structure	Decision-making Processes	Top Five Key Decision-Making Criteria	Investment Policies and Preferences; Target ROI
JAIC	many resources; No single firm has strong influence	187 with 15 IPO specialists; networks in most of cities in Asia	Hierarchical structure Adapted the JAFCO's pre-1998 style	Moderately long process Investment Evaluation Committee makes final investment decision	References of entrepreneurs; company's ability in manage--ment; marketing; finance; technical skills and competitiveness of technology	Technology specific investment; seed & start-up stage compa-ny; investment information technology; investment in Tokyo and Silicon Valley; Target ROI: more than 10~15%
Angel Securities	Unknown; local business angels and companies	Network w/ industry and universities; 10 CPAs	Traditional Japanese organizational struct-ures; Hierarchical Structure	Moderately long process Jomukai makes final Investment decision	Ability of management, technology skills, patent ability of product, market need for products, production capability	Company in any industry Investment: companies at start-up and early growth stage (60%) Target ROI: more than 25~30%
OGI Capital	Unknown; local business angels and companies	7 key members: most of them have various experience,but are not IPO specialists	Flat Structure; no technology speci-fic knowledge	Process is simple; Initial company representatives are also the members of the Investment Evaluat-ion Committee.	References of entrepreneur; ability in management; uniqueness of product; techn--ical skills of a firm; market need for product or services.	Seeds stage or early stage of the deve-lopment, unique product or service features,(no biotechnology, nanotech-nology & MEMS); Target ROI: more than 30%
HVPC	Local government	network with local businesses, leading AFVCFs, and local university's researcher	Flat Structure, but not Leadership	No formal process is available	Proposal are evaluated by local university professors and AFVCFs	No clear investment policy, except for companies with potential contribution to local economy; Target ROI: N/A
VEC	National government	network with leading researchers and leading AFVCFs: JAFCO & NIF	Flat Structure Leadership of the top	No formal process is available	Proposal are evaluated by university professors and AFVCFs	Companies in high technology; Companies at expansion stage or Breakeven point. Target ROI: N/A

(Source: Created by the Author)

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