

Lessons from the Korean Venture Industry Development

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I. The Background for the Venture Sector Development in Korea

The development of Korean venture sector started in mid 1990'. Korean government had established the new stock market, KOSDAQ in 1996, legislated the special act on fostering the venture firms in 1997, and various deregulation acts, had all taken in place in the mid 90'. The development of Korean venture sector was not just an outcome of the government's policy to bring up venture business. Rather it was the result of the restructuring efforts from the whole Korean economy sector that tried to survive throughout the 90'.

On the other hand, the increasing importance of the venture firms in Korean economy is the output of the continuous accumulation of technology and restructuring throughout the whole economy development. Highly concentrated investment in fostering the venture industry in the 1990's by the government was one of the key factors. But the continuous investment of Korean society in education and technology development during the past 30 years was another key factor that accelerated the growth of startup firms and their development. Also going through the restructuring after Asian foreign currency crisis, risk capital market that can invest funds in high risk/high return projects was established and the market practice now calls for the transparency and the efficiency. These can explain the overall background for the development of the venture sector in Korea. We'll now look more deeply into the background of the venture boom in Korean market.

1. Industry Restructuring

The birth and the development of Korean venture sector should be understood in the terms of industry restructuring. In another word, the rising of venture firms was the natural outcome from the Korean economy restructuring that started from 1980's.

In the 70's and 80's, Korean economy had accumulated its technology throughout the manufacturing industry. Accumulated technologies during that period started being transferred from the big enterprises to the small ones. In other cases, small enterprises developed their own technology, participating in manufacturing parts. This slowly enhanced the role of the small and medium sized firms in the economy and a few successful technology-focused small-medium sized firms began to emerge.

Entering the mid 1990's, the outcome of the continuous restructuring from the 1980's began to show. The most important characteristic of this era was that the restructuring was led by the

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field of information technology. Venture capitals were activated by investing in the firms¹ of that IT field. Big enterprises were interested in the success of the venture firms, thereby increasing the competition in the venture capital market owing to their participation. Thus, the venture firms were funded by venture capitals and the government's technology development loans, growing through the KOSDAQ capital market, and the restructuring was led by the high tech industry.

2. Continuous Investment in Human Resource Training and Technology Development

Another important factor in the development of the Korean venture sector can be traced to the continuous investment in the R&D and training the talents. Most of the managers and the members of venture firms have high academic degrees, majoring in engineering or sciences. Not like ordinary small-medium sized firm CEOs, the founders of the venture firms are university graduates or above as seen in <Exhibit 1>. Especially, there are a remarkable number of founders with master/doctorate degrees in startup companies in Biotechnology (73.6%) and Optics (60.6%) field

<Exhibit 1> Education Status of Venture Founders

Education Status	2001	2002
Ph.D.	1,038 (13.6)	832 (13.9)
Master	1,543 (20.2)	1,324 (22.1)
Bachelor	3,815 (50.0)	2,911 (48.7)
Others	1,238 (16.2)	910 (15.2)
Total	7,634 (100%)	5,977 (100%)

Source: Small and Medium Business Administration

Also, as seen in <Exhibit 2> below, comparing the number of researchers by each country, Korea has less number of researchers compared to US and Japan, but has similar number compared to Germany and France. This is the result of steady and continuous investment in education and R&D. This kind of investment became the foundation for the rise of Korean venture firms.

¹ Trigem computers, Qnix, SungMi Electronics, Medison, Taeil Electronics, Sungmoon electronics, Daeryung Industry are representative companies in this field.

<Exhibit 2> Number of Researchers by Country

	Korea (’01)	U.S. (’97)	Japan (’00)	U.K. (’98)	Germany (’00)	France (’99)
Number of Researchers	136,337	1,114,100	647,572	157,662	259,214	160,424
Number of Researchers per 1,000 laborers	6.1	8.1	9.6	5.5	6.4	6.1

Source: OECD, Main Science and Technology Indicators 2002/1

3. Capital Market Restructuring after IMF Foreign Currency Crisis

Another reason for the venture boom in Korea in late 1990’s could be found from the change in the capital market caused by the IMF foreign currency crisis. The structural changes in the financial market enabled KOSDAQ to grow rapidly and this extensive growth in the KOSDAQ market also led Korean venture sector to grow tremendously in 1999. Before IMF foreign currency crisis, the Korean financial market structure was similar to those of Germany and Japan, and this structure had barriers to the growth of venture businesses. The capital market was centering around the banks which mainly operated with impersonal security and guarantees such as real estates, so there was a clear limit in the development of venture firms which develop their businesses based on the new technologies and ideas. Because making loans to the venture firm, which, in nature does not have tangible assets, have high uncertainty and asymmetric information is considered to accompany high risk.

After the IMF foreign currency crisis restructuring, investing in high risk/high profit projects still did not qualify for the bank operations. This called for the fostering of a new stock market, especially KOSDAQ, to supply capitals for the venture firms.

In this event, IMF foreign currency crisis restructured the financing industry in Korea, especially the banks that had high interest rates. IMF foreign currency crisis brought about exit and merger of banks and reduced the secondary finance market’s portion.

As IMF foreign currency crisis restructuring continued, the interest rates were set at a one-digit number and from 1998, the funds moved from low interest rate toward the high profitable stock market.

Especially, as the performance of the IT venture firms had been recognized, IT venture firms stock price soared up, thereby venture capitals started investing in those IT firms massively.

4. New Opportunities in Technology and Market

One of the reasons the venture industry had emerged after the mid 1990's, was due to the new business opportunities that were created by the revolution of information technology. In the new market formed by Internet and computer related technology, many of the business fields are in the development stage. This situation has created abundant opportunities for both various venture firms and advanced companies in Korea. Since element technology is more important than system technology especially in case of information technology, late-comers did not act as a significant barrier for a country to develop the new business opportunities. Also, internet has played an important role in reducing entry barrier and transition cost, thus contributing in reducing the demerits of the firm size. Thereby the roles of the computer, software, communication, and Internet based IT venture companies have become increased. The recent development of information technology has provided Korean venture firms with new business opportunities.

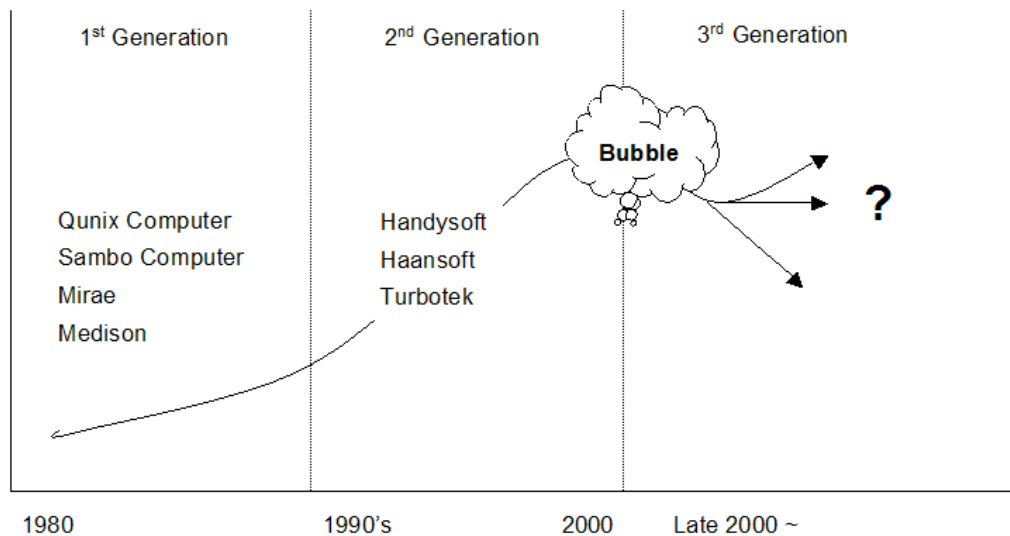
II. Venture Boom & Bubble in Korea

The venture company was not a totally new type of firms which appeared suddenly in the Korean economy. Since early 1980's, some companies which had the characteristics of a venture firm emerged and started their businesses. This period could be considered to be the 1st generation of Korean venture firms and some representative companies are Qnix, Trigem Computer, Mirae Industry, Medison that started out in the 80's.

Later, the 2nd venture generation firms were established, based on the new opportunities in the venture booming era and most of the opportunities were created by the Korean government's venture fostering policy and the development of information technology. This booming of the venture firms has brought up various aspects of confrontation. Venture firm vs. large companies, online vs. offline, traditional business model vs. venture business model and etc. However, the booming led to the bubble phenomenon in the year 2000.

The 3rd generation period can be referred to the restructuring of the Korean venture firms. The restructuring efforts continue up to date. The <Exhibit 3> shows the growth of Korean venture firms in stages.

<Exhibit 3> The Growth of the Korean venture firms



The 1st generation venture firms focused on localizing the technologies and products which mostly relied on developed countries in the past. Technology intensive venture companies such as Qnix, Taeil, Trigem, Mirae and Medison started out their businesses in this period.

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We will start to understand the Korean venture sector in detail by looking over the 2nd generation growth of venture companies who thrived over the venture boom period. Then, we'll review the current situation that the Korean venture sector has faced after the boom by looking into the 3rd generation period. This will enable us to understand the development of the Korean venture sector and to forecast how this sector will evolve in the future.

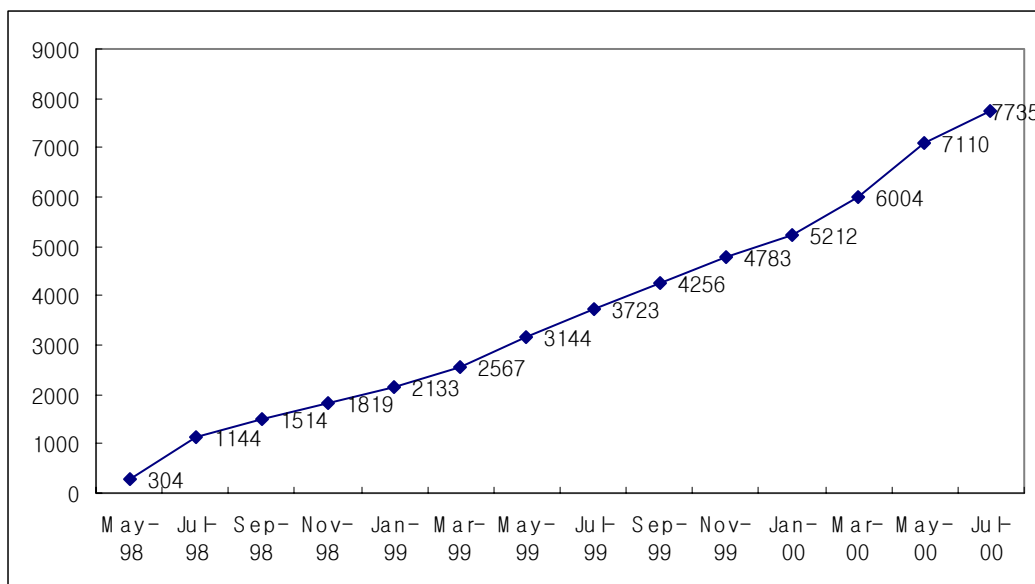
1. The growth of the Korean venture firms (Booming period)

The key players in the growth of the Korean venture sector can be categorized into venture firms, venture capital market, KOSDAQ, and the government².

1) The growth of the venture firm

The Korean government select 3 out venture firms which qualify the requirement and designated them as venture firm. Then, the firm can not only receive the benefits in terms of finance, tax, manpower, office and factories, but also get the privilege of being relieved from the IPO requirement for KOSDAQ. As a result, the number of designated firms by the government as a venture firm increased dramatically, after introducing venture firm designation policy(May 1998).

<Exhibit 4> Number of venture firms designated by the government



Source: Small and Medium Business Administration

² The role of the Korean government is so significant that it will be dealt in detail at a separate chapter.

³ Small and Medium Business Administration is the department which is mainly in charge of venture sector.

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While venture firms rapidly grew in terms of total firm number, they have also shown higher growth. As seen in <Exhibit 5>, sales growth rate and return on sales of the venture firms also were higher than those of conglomerates and other small-medium sized firms.

<Exhibit 5> Comparison of growth and profitability among conglomerates, small-medium sized firms and venture firms

	Conglomerates	Small-medium sized firm	Venture firm
Sales growth rate	16.7%	12.5%	35.2%
Return on Sales	0.3	3.3	6.6

Source: Bank of Korea, Company Performance Analysis (Manufacturing companies), 2001

Also, the number of venture companies increased in the high tech manufacturing industry while the ratio of those companies became from 27.9% in 2000 to 36.4% in 2002.

(<Exhibit 6>)

<Exhibit 6> Number of venture firms by the industry

	2000(ratio, %)	2001(ratio, %)	2002(ratio, %)
High-tech manufacturing industry	1,647(27.9)	3,193(40.6)	2,192(36.4)
General manufacturing industry	2,166(36.6)	2,002(25.5)	1,487(24.7)
Software/IT service industry	1,791(30.3)	2,074(26.4)	1,715(28.5)
Others	307(5.2)	596(7.5)	626(10.4)
Total	5,911(100)	7,865(100)	6,020(100)

Source: Small and Medium Business Administration

2) Venture Capital Market

In 1995, there were 46 venture capital firms. When the government started fostering venture companies in 1997, 5 new companies entered and in 1998, 13 new companies entered again. This was a remarkable phenomenon of resource reallocation toward the venture sector,

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considering the economic situation with minus 6.7% of economic growth, severe restructuring and 1,500,000 unemployed. The resource concentration in the venture sector was due to the rapid growth of KOSDAQ, internet boom and the government's continuous supportive policy. 26 and 65 venture capital firms were newly established each in 1999 and 2000 and <Exhibit 7> shows the status of registered venture capital firms in Korea.

<Exhibit 7> Number of venture capital firms by year

Year	1986~1998	1999	2000	2001	2002	2003.4	Total
Newly Registered	82	26	65	4	3		180
Canceled Registration	10	11	5	6	20	3	55
Total	72	87	147	145	128	125	125

Source: Small and Medium Business Administration

While showing a rapid growth in terms of company number, the venture capital industry also made a qualitative growth. <Exhibit 8> shows the increasing number of venture investment funds and this implies that the capital flowed into the venture capital area.

<Exhibit 8> Number of venture capital funds raised each year

	1986~1997	1998	1999	2000	Total
No. of VC funds raised each year	102	15	82	194	393
Cumulative amount of funds raised (Billion KRW)	863	931	1,110	2,359	2,359

Source: Small and Medium Business Administration

The profitability of venture capital firms shows 37.6% and 10.8% each for Return on Equity(ROE) and Return on Asset(ROA). The firms which were financially backed by these venture capitals were actively listed on KOSDAQ, too. <Exhibit 10> shows the number of the firms listed on KOSDAQ, which is certified as venture firms and being invested of more than 10% by the venture investment firms. Of the 66 firms 50 of them are listed after 1999.

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<Exhibit 9> ROE and ROA of the venture capital firms (1999)

Net Profit (A)	Sales Profit (B)	Equity (C)	Asset (D)	ROE (A/C)	ROA (A/D)
445,461	517,223	1,184,727	4,136,766	37.6	10.8

Source: Korean Venture Capital Association

<Exhibit 10> Number of venture backed companies listed in KOSDAQ each year

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Listed on KOSDAQ							1	4	1	17	33
OTC	1		3	1	4		1				

Source : KOSDAQ Stock Market, Inc.

3) KOSDAQ

KOSDAQ started its trading on July 1 in 1996, however, it did not attract the attention of investors enough due to institutional inertia, lack of blue-chip stocks, and so on. KOSDAQ made a rapid growth as recognized highly profitable investment market with the stock market boom in the second half of 1998 and downward bank interest rates in 1999. Being listed in KOSDAQ was recognized as a main fund raising source for venture companies and as exit market for venture investment. Since the government policy encouraged the growth of KOSDAQ at the same time, it was possible to watch the phenomenal growth in KOSDAQ(<Exhibit 11>). As the number of listed companies in KOSDAQ continued to grow until 2000, despite strengthened administration of KOSDAQ, 250 companies were newly listed in 2000, and the number of venture firms were 116 among of them.

< Exhibit 11> Number of listed companies in KOSDAQ and Change of KOSDAQ market capitalization (1996~2000)

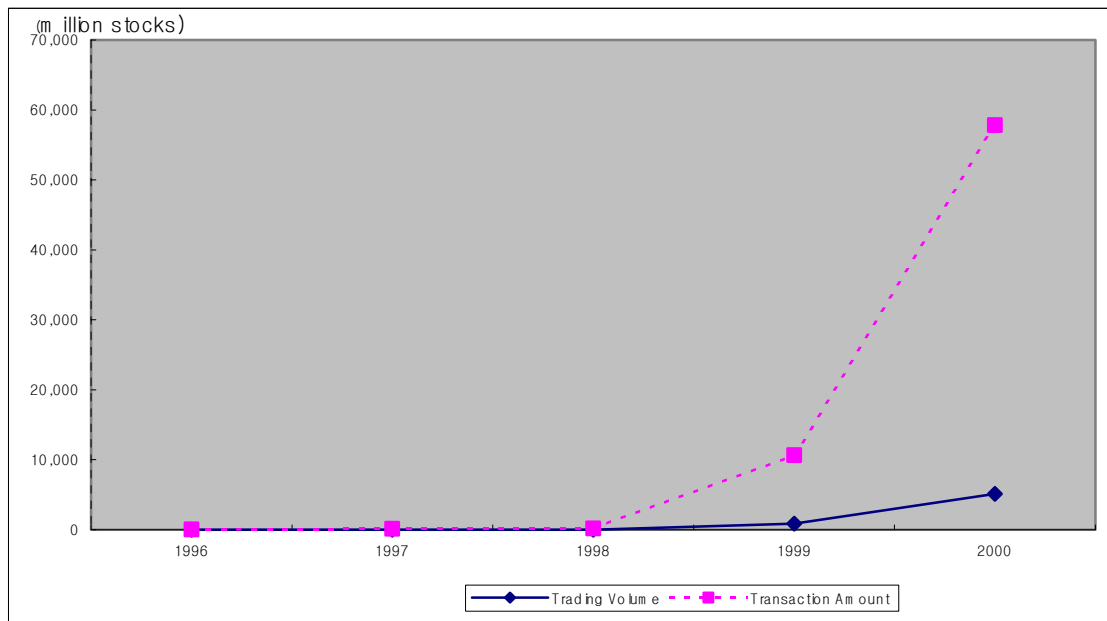
		1996	1997	1998	1999	2000
No. of listed companies (No. of venture companies)	Yearend	331(52)	359(86)	331(114)	453(173)	604(244)
	New listing	31(14)	83(42)	8(4)	160(58)	250(116)
	Withdrawal from listing	39(9)	55(8)	36(2)	38(7)	99(2)
Total capital (Million KRW)		3,101,801	3,494,747	5,407,811	13,061,528	15,128,325
Total market capitalization (Million KRW)		7,606,110	7,068,549	7,892,244	98,704,382	29,015,847

Source : KOSDAQ Stock Market, Inc.

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The growth of stock trading in KOSDAQ is shown in < Exhibit 12>. This chart representing cumulative trading in KOSDAQ from 1996 to 2000 shows that trading volume of KOSDAQ increased 42.2 times in 1999 and 5.9 times in 2000 from the previous year. Trading value also increased 66.5 times in 1999 and 5.4 times in 2000 from the previous year.

< Exhibit 12> The growth of stock trading in KOSDAQ(1996-2000)

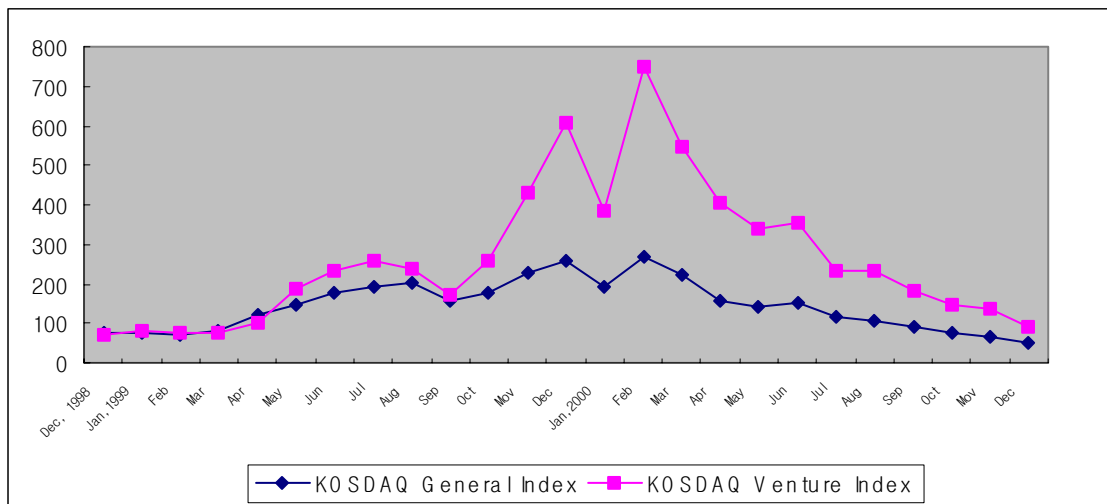


Source : KOSDAQ Stock Market, Inc.

The trading value in KOSDAQ rose sharply until the beginning of March in 2000. As <Exhibit 13> shows, though KOSDAQ index was only 75.18 points at the end of December in 1998, it increased 3.4 times(256.14 points) at the same time next year, and it reached the highest point(283.44points) in March 2000. With this value changing, total market capitalization of KOSDAQ increased 12.5 times from KRW 7,892 billion in 1998 to 98,704 billion in 1999, but it fell to 29,015 billion in the yearend of 2000, showing 71 % decrease from previous year.

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<Exhibit 13> Monthly KOSDAQ index in market booming period



Source : KOSDAQ Stock Market, Inc.

2. The crisis of Korean venture industry

After recording the highest point(283) in March 10, 2000, KOSDAQ General Index declined tremendously to 53 points on December 26, 2000, and KOSDAQ Venture Index fell from 787 points to 92 points during that period. Although there was a favorable upturn(46.84%) by recording the highest growth rate of KOSDAQ Index in 2001 compared with the yearend index of 2000, it did not last long, and finally venture firms faced liquidity crisis.(Reference <Exhibit 13>)

The stock value of venture firms declined heavily as compared with other corporations, and IPO and fund raising through issuing of new shares decreased after the pick period.

<Exhibit 14> Stock price comparison between venture firms and other corporations

(Unit : KRW)

Type		99. 01. 04	00.03.09 (A) ¹⁾	01.11. 09 (B)	B/A (%)
Venture firm	Haansoft	421	40,200	3,380	8
	Daum	11,200 ²⁾	179,000	30,250	17
Other corporations	SK Telecom	69,900	440,000	267,000	61
	POSCO	67,000	105,000	96,500	92

¹⁾ the day which Venture Index recorded the highest

²⁾ This is the price of the company's trading start day(November 11, 1999).

Source : KOSDAQ Stock Market, Inc.

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The venture capital investment reached the highest point with KRW 2 trillion in 2000 and after that it sharply decreased to KRW 890 in 2001 and to KRW 565 in 2002. The new investment from the venture capital is very much limited these days.

<Exhibit 15> The investment of venture capitals(Unit : billion KRW)

Type of Investors	1999	2000	2001	2002	2003(forecast)
Amount	9,502	20,075	8,893	5,652	9,253
# of Investment	1,457	1,901	1,117	1,460	1,632

Source : Small and Medium Business Administration, Korean Venture Capital Association

KOSDAQ, once used as main fund raising market for the corporations, sunk to be considered to be the objects of 'Money Game' after the bubble which was caused by excessively inflowed venture investment from 1999 to 2000.

We divide the root cause sector for those venture bubble by some category such as venture firms, venture capital, and KOSDAQ and would like to review the details.

1) Venture firms

The main reason for venture bubble derived from the weakness in business model of venture firms. Owing to the rapid internet penetration in Korea, dot-com companies explained significant number among the venture firms, and most of those companies didn't have profitable business model from the first. Profitability of those companies became worse due to unreasonable advertising expenses and severe competition, and there were limited number of venture firms with competitive technology. Technological level of Korean venture firms was inferior to the international level and those evidence could be found with the number of NASDAQ listed companies. There were only 3 Korean venture firms listed on NASDAQ as compared with 140 Israeli companies listed.

Another reason for the crisis lied in the weakness of financial structure with the Korean venture firms. ROE of venture firms which were listed on KOSDAQ in 2000 was the half level of 1999's. Fund raising through attracting investment started from only a few years ago, and most of venture firms were still depending on personal credit and secured loan. Therefore, imprudent business expansion without considering cash flow led to deterioration of financial situation.

<Exhibit 16> Comparison of ROE between KOSDAQ venture firms and other corporations

	1998	1999	2000
Other corporations	-134.1	6.7	6.4
Venture firms	7.1	17.3	9.1

Source : KOSDAQ Stock Market, Inc.

2) Venture capitals

By the end of the 2000, the stock index fell and the venture capitals came to make a very cautious investment. <Exhibit 17> shows the result of investment fund raised in the first half of 2000. Until June, the number of venture capitals was increasing, but the actual number of venture investment raised was decreasing. Especially in May and June, most of the investment funds raised were government-private joint funds, so actual private investment funds decreased sharply.

<Exhibit 17> Number of venture investment funds raised in the first half of 2000

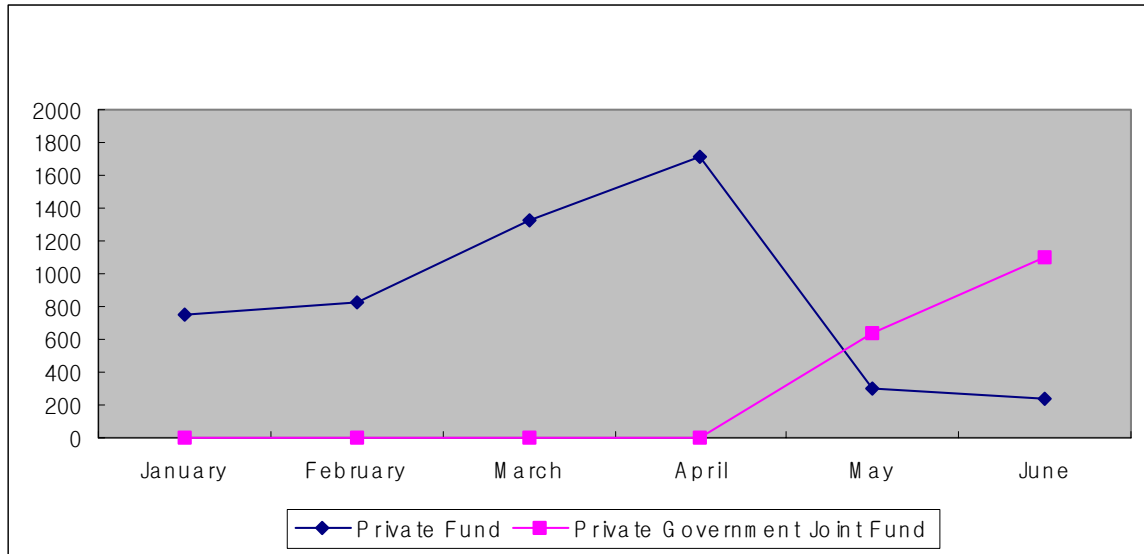
	Jan.	Feb.	Mar.	Apr.	May	June	Total
Private funds raised	15	16	17	23	8	5	84
Government-Private joint funds raised	-	-	-	-	4	13	17
Total	15	16	17	23	12	18	101

Source : KOSDAQ Stock Market, Inc.

Not only the number of the investment funds but also the size of the fund itself started to decrease after April, 2000. (<Exhibit 18>)

As seen <Exhibit 18>, venture capitals restrained new investments, and focused on investing in companies that made profits. This called for the bipolarizing phenomena in the venture firms, and the preferential investment in manufacturing based venture firms became attractive among the investors. This resulted in the concentration of funds in the profitable venture firms, for that reason, internet firms and early stage firms had more hard time in securing the funds needed.

<Exhibit 18> The size of venture investment funds raised each month in the 1st half of 2000



Source : KOSDAQ Stock Market, Inc.

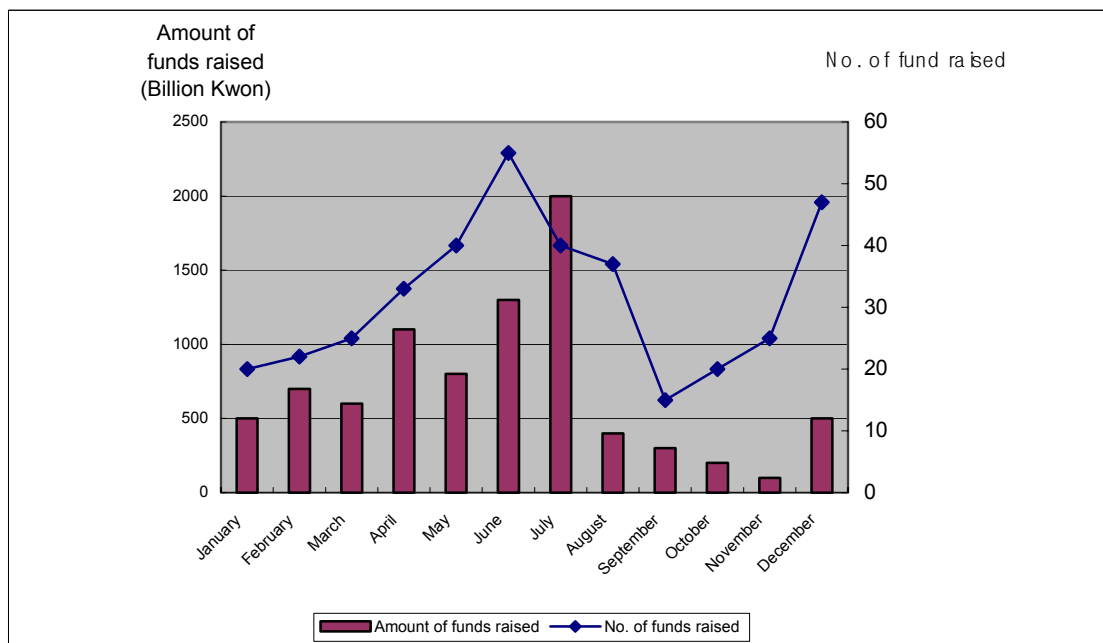
3) KOSDAQ

One of the reasons that put Korean venture firms in a crisis is the deficiency in KOSDAQ's role. After the 3rd quarter of 2000, KOSDAQ market which was the main platform for raising funds didn't play its original role sufficiently, that it rather harmed the growth of venture firms. That is, after April, 2000, venture firms started to postpone issuing of new shares due to the decrease in KOSDAQ index, which resulted in an outcome of the difficult cashflow issues in venture firms many months later. Additionally, since the value of companies was not appreciated enough, public offerings and transactions weren't able to be formed. Companies lost the credit from investors because of insufficient company information release and lack of accounting transparency.

<Exhibit 19> shows the number and amount of fundraising through KOSDAQ in 2000. A sharp decrease after July can be observed from the chart.

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< Exhibit 19> Fundraising through KOSDAQ in 2000



Source : KOSDAQ Stock Market, Inc.

In addition, since exit from the KOSDAQ market was not relevantly managed by the government, this blocked the bankruptcy of bad performing companies, and this as a result, brought about unbalance in supply and demand of companies. Due to mitigation of IPO requirement to encourage the KOSDAQ growth, the number of new registrants made a huge increase. However, the number of cancellation was so low compared to NASDAQ. We can see how KOSDAQ differed from the strict administration of NASDAQ. In 2001, 18.7% of registered firms in NASDAQ were cancelled compared to only 1.3% in KOSDAQ.

< Exhibit 20> Comparison of cancellations between KOSDAQ and NASDAQ

	1999		2000		2001	
	KOSDAQ	NASDAQ	KOSDAQ	NASDAQ	KOSDAQ	NASDAQ
Total Registered(TR)	395	4,829	544	4,734	702	4,109
Newly Registered(NR)	104	634	178	605	171	145
Cancelled Firms(CF)	36	873	33	700	9	770
CF/TR	9.1%	18.1%	6.1%	14.8%	1.3%	18.7%
CF/NR	34.6%	137.7%	18.5%	115.7%	5.3%	531.0%

Source : KOSDAQ Stock Market, Inc.

3. Structural change in the Korean venture industry

Venture boom in Korea after the foreign exchange crisis rapidly cooled down with the collapse of bubble in the 2nd half of 2000. In late 1990s, resources shifted rapidly to high-tech industries and venture firms in the process of structural reformation in traditional industries and conglomerates. Inflated expectations on IT industry, and government's support and investment in venture firms fostered a boom in venture sector in Korea. However, venture industry began to shrink starting from the IT industry due to sluggish productivity increase than expected from investment in information technology, overinvestment in the field and unprofitability in dotcom companies. In the process of reformation, outer influences such as 9.11 terror, the Iraq War, nuclear issue on North Korea, expansion of SARS, and local problems such as economic depression, SK Global's accounting disguise, credit card debt issues have put the venture industry also in difficulties. Therefore, Korean venture firms are facing a reformation stage after removing the venture bubble between 1999 and 2000, and seems that the structural reformation stage period will continue till 2005.

However, those firms with certain profit models or competitive technologies have met an opportunity for progress and through synergy effects coming from strategic alliances or M&As, they are growing their businesses. Additionally, the number of firms that have succeeded through development of profitable technologies is marking a steady increase, and also through competing in foreign markets, some firms are growing to be global corporations. We can say that these phenomena are happening through the filtering role of market economy that select out the good performing firms from the rest.

1) Venture Firms

We generally expect that KOSDAQ listed firms are good performing ones since they are once proven through public offering process. On the contrary to this expectation, the reality is that 36% of KOSDAQ listed firms recorded a deficit in 2002. It's getting worse because 42% recorded deficit in the case of venture type firms in KOSDAQ.

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< Exhibit 21> Business performance of KOSDAQ firms(2002)

	Continuous deficit	Black to deficit	Caution in Investment	Under special administration	Bankrupt
No. of each category from the KOSDAQ listed firms	131	143	43	39	9
No. of each category from KOSDAQ listed venture firms	64	90	-	-	-

Source : KOSDAQ Stock Market, Inc.

This reflects the overall regression in the economy and the KOSDAQ market. Some areas(i.e. internet) have picked up in 2002 business.

The venture backed companies can also be referred as representative promising firms that the market has chosen. Korean venture capitals have invested in more 1000 firms every year for the past several years, and as of 2002 yearend, approximately 3000 venture backed companies exist. However, almost 70% of these firms have also difficulty in successful exit (i.e. KOSDAQ IPO or M&A) and by any form require a structural reformation or settlement.

These conditions made Korean venture industry unable to avoid the stage of structural reformation. Insecurity of external economic effects have increased the number of structural reformation through M&As. Huge dotcom firms such as Lycos Korea, Paxnet (by SK Telecom), Freechal (by Serom Technology), Cyworld (by IMM Venture Capital), and Netian (by Jaeil Venture Capital) have become acquired or sold out. However structural reformation is not yet in full progress.

2) Venture Capital

Not only for venture firms, but structural reformation in venture capitals is also in progress. Venture capitals registered in 2003 has decreased to 120 from 147 in the end of 2000 and it is expected to decrease to 100 within this year (See<Exhibit 7>).

Lately, liquidity problems from maturity of CLO(KRW 50 billion for 14 firms,) and the funds formed in 1998(close to KRW 100 billion.) have become big issues in the venture capital market. Decrease in IPO opportunities from the KOSDAQ market depression is limiting venture capital's successful exit from the investment, and although IPO is approved, it is hard to expect high profits as before. Most of the latest IPO cases were invested at high prices, but due to

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slackness in the IPO market, they sometimes couldn't make investment profits. Exit through M&As that takes place once in a while, are being utilized as secondary methods with sacrificing high return.

Venture capitals that were able to form investment funds for the past several years or made successful exits are able to maintain their operation with fund management fees. Others seem to have no choice but to exit.

3) KOSDAQ

KOSDAQ stock index continues to stay low after the bubble burst in 2000. In 2002 it showed a slight recovery but still quoted low.

<Exhibit 22> Current trend of KOSDAQ index

	2002.12	2003.1	2003.2	2003.3
Overall Index	44.36	43.39	41.78	36.69
Venture Index	67.66	68.62	67.99	57.95
IT Venture Index	65.86	67.68	67.06	56.81

The amount of equity financing through KOSDAQ has sharply decreased as KOSDAQ remains inactive (See <Exhibit 23> in the below).

<Exhibit 23> Amount of equity financing through KOSDAQ

(Unit : 10 billion KRW)

	전체	유상증자	공모(IPO)
2001	2,880.2	1,566.9	1,313.3
2002	1,799.6	678.9	1,120.7
2003.1	170.4	39.5	130.9
2003.2	53.5	35.0	18.3

4) Positive aspect of structural reformation in the Korean venture sector

(1) Seeking a new profit model through restructuring

Companies that are making the organization slim using layoffs, reducing business areas; outsourcing and focusing on core business areas are increasing. One of the major portal company, Intizen, layoffed 70% of the employees and realigned its business now focusing on the contents business. In order to achieve profitability, Daum acquired 50% of the stocks of

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J&Yep Entertainment to enter the music contents market. Naver changed its name to NHN and is focusing on providing game contents to increase the revenue.

(2) Strategic alliance and M&A activities

Some companies are trying to reduce cost and acquire new high technology by making strategic alliances and M&A. With this method they are creating synergy and diversifying into new business areas. Ahn Lab acquired a security consulting firm, Hansecure and some of the major Dotcoms has made strategic alliance such as between 027/Bebetown and between Semicon networks/Powercom.

(3) Focusing on technology development

The number of venture firms developing profitable technologies is steadily increasing. Companies such as Idis, Ahn Lab, Will Tech IT, and Alpha Vision Tech have all created unique technology there by increasing the sales and profit.

Some companies have superior technologies and get the license fee from the foreign market through technology transfer. Genitech, a semiconductor manufacturing equipment company, licensed out its own technology to ASM, a multinational semiconductor company.

(4) Securing global market through export and overseas operation

In order to overcome domestic market limits, the number of venture firms focusing toward the global market from the start is increasing. Total amount of exports after 2Q of 2001 decreased, but venture firms are maintaining 10% increase in their exports. Electronics and wireless communication tools explain 51.5% of the total overseas sales of Korean venture firms.

Strategic alliance with the foreign companies and globalization to penetrate the overseas market is increasing, too. According to Small and Medium Business Administration in 2001, 26% of the venture firms have global businesses.

(5) Restructuring efforts of venture capitals

Venture capitals are also restructuring, attracting funds and trying to improve itself. Big venture capitals are improving work process, adopting incentive measures, and rescuing people and business areas. Through these efforts, they are enhancing core competences, and small and medium sized venture capitals are trying to survive by selling invested stocks and management control. Also, they are focusing more toward building up the invested firms, and enhancing the evaluation by allying with professional research institutes.

Foreign investments seeking for excellent Korean venture firms are increasing. The range of the foreign investments is diversifying into venture capitals, firms, local governments.

III. The Korean Government Policy To Grow Venture Sector

Supports to venture firms from Korean government are not performed from one specific department as a whole⁴. Therefore, difficulties are found in organizing and evaluating the Korean government's policy towards venture firms. Supporting policies vary slightly among departments, and contents are more or less differentiated. Korean government's support policy is diverse in a sense that it contains supports from all fields, and is better equipped than policies toward other sectors. Therefore, it is more efficient to look into the policy in a categorized manner, than by departments. The Korean government's major policies to foster venture firms are categorized in 5 aspects.

1. Investment Funds

Korean Government legalized investment of public funds in venture firms, public venture investment fund-raising, and lowered the minimum amount of capital from KRW 50 million, which is needed for regular company establishment, to KRW 20 million. It has authorized venture capitals to issue a corporate bond at the maximum of 10 times the total amount of capital and savings. It has also started to give incentives such as tax reduction and exemption to venture firms, angles, and venture capitals. In addition, credit security supports are provided through technology evaluation and mortgage system towards pre-start-ups that has no sales record.

The government's direct support towards venture firms includes huge financial support in 1998, and in 1999, loan added up to KRW 750 billion including KRW 485 billion from 'Fund for start-up and encouragement of small and medium sized firms.'

In 2000, through increasing the investment in venture investment funds, KRW 315 billion was used as budget for support towards venture investments while the amount of loan was lowered to KRW 201.5 billion.

SMBA increased the amount of investment in venture investment to KRW 200 billion in 2000, from KRW 50 billion in 1999 and financed KRW 50 billion to found Dasan Venture Capital, which is a VC directly owned by the Administration. In addition, Ministry of Information and Communication financed KRW 50 billion towards special investment funds for information and communication businesses and Ministry of Science and Technology allocated from its budget,

⁴ There are Ministry of Commerce, Industry and Energy(MOCIE), Ministry of Science and Technology(MST), Ministry of Information and Communication(MIC), Ministry of Culture and Tourism, as well as the competent ministry, Small and Medium Business Administration(SMBA), which manages the policies toward venture firms. SMBA administers the main laws and policies but, MIC, MST, and MOCIE administers the field of informational technology, basic science, and industrial technology respectively in venture industrial policies.

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KRW 15 billion towards investment funds for new technologies.

2. Technology Development

In order to support the technology development of venture firms, central government and government investment institutions are supposed to establish and implement the plans for supporting technology development. Where professors and researchers are employed as temporary staffs for venture firms, leave of absence and concurrent positions are permitted in order for venture firms to induce competent manpower. In addition, laboratories are allowed to be registered as factories, and urban private buildings are designated as the complex for venture firms so that owners of venture buildings are exempt from burden of various tax, development fees and overcrowding fees.

3. Venture Capital Policy

Government loosened the regulation toward venture capitals through sustaining propulsion of law improvements for promoting venture capital businesses. In 1996, limitation in operational period of venture firms for investment was loosened to 14 years from 7. Investment obligation of keeping manufacturing industry ratio, investment obligation for local venture capitals to invest in the firms located in their region, limitation of non-invested asset management in the purchasing of real estate and stocks, limitation of issuing shares of subsidiary of the 10 largest corporations are removed, and relocating of venture capital headquarter offices and acquisition of issued stock are permitted. Tax reduction for venture capitals to secure more financial resources was allowed. Separate taxation for incomes from the founder's investment, tax redemption of security transaction for stocks or shares acquired from investment to the founder, and exemption of corporate tax for the profit from stock transfer of institutional investor's investment. There were additional law mitigations in 1998. Abolition of investment limitation on foreigner's investment funds, abolition of obligation on the submission of foreigners' investment for the investment funds, abolition of obligation on closing accounts report for investment companies, mitigation of conditions for the formation of general meetings of venture capitals' funds, and mitigation of limitation on investment targets of venture capitals are included.

4. Policies for KOSDAQ

The Korean Government has mitigated the IPO conditions for venture firms in the KOSDAQ. In May 1995, the Korean Government announced its 'Policies to Activate the KOSDAQ Market'

and mitigated the conditions of capital encroachment and debt ratio for firms whose owned capital is over KRW 100 billion. Especially in the case of venture firms, they only need to meet the stock dispersion ratio⁵. Paid-in-capital, own capital, total asset, capital encroachment, management performance, debt ratio, and so on are not limited as KOSDAQ IPO requirements. Additionally, tax support for KOSDAQ listed companies, reinforcement of IPO encouragement activities for 750 promising companies such as high-tech venture firms, and mitigation of restraint on supervisory bodies and security companies in registering at KOSDAQ market, and etc. have been introduced.

5. Support for Start-up companies

The Korean government supports the cost of facilities and operation of incubating centers for start-up companies. Small and Medium Businesses Administration has contributed the initial cost of facilities after each incubating center is designated. In the first half of 1999, 109 universities and research institutes were designated and KRW 51.6 billion were supported to those designated centers.

The number of incubating centers increased from 30 in 1998, to 142 in 1999, and to near 300 at the end of 2002. However, even though the number of incubating centers made a sharp increase, what most of them do is just providing a location at cheap cost, and don't have sufficient incubating capabilities.

⁵ Stock dispersion conditions became more or less strict than before. From April 1, 2000, over 30% of total stocks issued that have over 500 small shareholders, and over 10% that have over 5 million shares.

IV. The Assessment of Korean Venture Sector Growth

1. Contribution

1) Contribution to the KOSDAQ development by venture companies

If we look at the entry into the KOSDAQ market, the entry of general enterprises is decreasing since the establishment of KOSDAQ whereas the entry of venture firms is continuously increasing. The market value of venture firms explains 30% of the aggregate value of listed stocks in KOSDAQ and if we take a look at the trade volume of venture companies, the relative portion of transaction, and the increase in stock prices, we can conclude that venture companies are actively leading the KOSDAQ market.

The information industry has especially contributed to the growth of the KOSDAQ market, the top 10 companies in terms of transaction amount mostly being businesses related with high-tech industry such as internet. Also, if we look at the composition and the transaction volume of the aggregate value of listed stocks of the top tier enterprises in KOSDAQ, we can see that the information industry is leading, the top 5 of the aggregate value of listed stocks all belong to the information industry.

2) Enhancing entrepreneurship

Venture businesses brought up a venture boom where excellent entrepreneurs with a good business mind are encouraged to establish enterprises.

<Exhibit 24> shows the increase in venture businesses until the year 2001 and the number of venture businesses established by professors or researchers.

<Exhibit 24> Number of venture businesses and number of professors/researchers who founded venture businesses

	1998	1999	2000	2001
No. of venture businesses	2,042	4,934	8,798	11,392
No. of professors/ researchers who founded venture business	582	973	1,667	1,794

Source: Small and Medium Business Administration

3) Contribution to real economy growth

After the venture business boom and the crisis of these businesses, excellent enterprises worked on their technology competitiveness and showed the potential to grow as a new export driving force. <Exhibit 25> shows the ratio of the venture businesses among the Korea's total export volume and their growth rate.

<Exhibit 25> The portion of venture businesses in the export market.

(unit: \$ billion, %)

	1999	2000	2001
Total export (growth rate)	144(7.9)	172(19.9)	150(-12.7)
Large companies	94(4.6)	108(15.1)	86(-21.1)
Middle/small sized companies	49(16.9)	64(29.5)	65(1.7)
Venture companies	3(35.2)	5(41.8)	6(14.5)

Source: Small and Medium Business Administration

4) KOSDAQ market development through effective government policy

The support policy of the government to develop KOSDAQ contributed to the KOSDAQ market to become active. In April 1999, the government revised the Securities Exchange Law permitting the businesses to purchase their own stocks, which removed the discrimination from the Exchange listed stocks. In May 1999 they announced the counter plan of activating the KOSDAQ market such as loosening the public offering system, supporting tax system and establishing KOSDAQ funds which resulted in the activeness of the stock market as a whole. In other words, the measures of the Korean government to activate the KOSDAQ market played as a catalyst and actually brought in activation in the KOSDAQ market.

5) Development in science and technology areas

The venture businesses in the technology intensive industry contributed to the growth of Korea's scientific and technological skill development, by investing in the development of technology , applying for patents and establishing many research institutes. As seen in the next table, the foreign patents are continuously increasing and from the top 20 CII(Current Impact Index) Korea remains as the 5th⁶.

⁶ CII stands for: Current Impact Index. – Out of the top 20 countries in number of US patents, Korea remains as the 5th with 0.89 index.

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<Exhibit 26> Foreign patents(No. of US patents approved)

Year	1990	1993	1995	1998	1999	2000	2001
No. of patents	224	756	1,166	3,267	3,568	3,331	3,546
Ranking	17	11	8	6	7	8	8

Source : Science and Technology Policy Institute

If we look at the number of research institutes of companies, it increased from 48 at the end of 1978 to approximately 10,000 in the year 2003. Out of these 10,000 institutes, small-medium sized companies including venture businesses occupy 91%, which implies that research and development mostly comes from the technology intensive small-medium sized companies which are the venture businesses.

<Exhibit 27> Number of research institutes affiliated to companies

	1978	1988	1991	2000	2003
#	48	500	1,000	5,000	10,000

Source : Science and Technology Policy Institute

2. The weakness of venture businesses (Limitations and problems)

First of all, if designated as a venture business in Korea, all the benefits including financial, tax, human resources and location support are provided by the government not to mention the privilege of preferential IPO requirements for KOSDAQ. <Exhibit 4> showed how sharply the numbers of venture businesses with government designation increased. However, we cannot easily conclude that the number increase in venture businesses does not mean the actual growth of venture businesses in Korea. Because the venture business statistics announced by the government is based on the designation according to the 'Act on Special Measures for the Promotion of Venture Business', therefore it can bring some confusion and misunderstanding. The government announcement of increase in venture businesses and the fact that the government links this increase directly to the contribution to national economy, show that there is a social tendency of overestimating the real situation and capabilities of venture businesses. <Exhibit 28> shows the type of venture businesses by the government designation criteria. If we hire the US practice of defining venture business as a enterprise which venture capital has invested in, the number of venture businesses would become only 14.5% of the current

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numbers. However, on contrary to the US where the investment practice starts from the angel investors, and leads to venture capitals, acquirers, the practice in Korea has not been established well enough. Moreover, the professional capability of the venture capitalists is still questionable. Therefore it is hard to agree that it is always a promising venture business although it attracted venture capital investment.

<Exhibit 28> Venture businesses designated by the government

Type of Designation	1999	2000	2001	2002
Venture Capital	839(17.0%)	1,616(14.5%)	1,545(14.0%)	1,260(13%)
R&D	893(18.1%)	1,297(13.2%)	1,292(11%)	1,312(14%)
New Technology Commercialization	1,712(34.7%)	2,184(22.2%)	2,402(21%)	2,336(25%)
Others	1,490(30.2%)	4,725(48.1%)	6,153(54%)	4,518(48%)
Total	4,934(100.0%)	9,825(100.0%)	11,392(100.0%)	9,426(100.0%)

Source: Small and Medium Business Administration

According to the current law of venture business, any enterprise including small-medium sized companies can register as venture business as long as it meets all the requirement. For that reason, it is hard to say that the quantitative increase in venture businesses in Korea has brought up the real development of venture businesses.

Second, the fact that the Korean government has supported the growth of venture business with the promotional policy as they supported the growth of chaebols in the past, goes against the new technology economy paradigm and market conditions. Especially, the policy of the government appointing venture business while providing some benefits in terms of tax, finance, human resources, location, and so on, is similar to the strategy they used in the past when they personally picked the winners in the beginning of the economy development stage when the market was not completely established. Ultimately, whether the venture business wins or loses depends on the competition in the Korean or global market. The market that can predict the venture business success and estimate its value has already been established and the Korean enterprises are making inroads into the global market as well as allying with foreign enterprises and also foreign investors have started investing in the Korean market. Therefore, there is no need for the Korean government to choose the winner from the market.

Third, the criticism that the government law could be abused since venture businesses would automatically be established as long as they meet the requirement, is just a small issue. The

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bigger problem is that the government designates venture businesses and giving them some privileges that will lead to limiting competition in the market. Due to the unique designating system of venture businesses, it is hard to confirm that the number increase in venture businesses based on the government statistics is the actual growth of venture business in Korea.

Fourth, after the foreign exchange crisis, the Korean government emphasized the importance of venture business as a new growth engine to substitute the chaebol concentrated industry structure. However, although venture businesses and large enterprises are competitors in terms of human resource and factor market, we shall also remember that they function as a complementary from the perspective of industry value chains. For example, venture businesses cannot sustain advantages when researching in specific fields of internet industry. Venture businesses can secure the advantage with creative ideas in specific niche market, but large enterprises essentially get the advantage in commercialization and marketing. Venture businesses or newly established enterprises should not be the only ones to actively seek for new technology development and market opportunities. There are new industry areas and new markets where the large companies should cultivate. Nevertheless, the Korean government has encouraged the spin-offs and diversification of the venture businesses while strictly restricting corporate venturing activities of the large companies and their entering into a new field as a venture company. This kind of restriction on large companies and protection of venture businesses is not desirable. If we think of the essence of venture business which is to compete with creativity, restricting other sectors to protect the venture business is not the desirable role of the government.

Fifth, <Exhibit 29> shows the added value and employment of venture business in 1999. Though we assume that designated venture businesses are all high-tech adventurous enterprises under the current Korean government policy, the portion of added value and employment that venture business takes is still low. According to a survey done by the association of middle-small sized enterprises, average number of employees of each venture business is 38 people and the added value is approximately KRW 1.48 billion. Though we assume all the authenticated venture businesses as actual venture businesses, the employment rate is only 3.3% and the added value rate is only 3.0%. Compared to this large companies' employment rate is 22.7% and their added value is 43.6%.

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< Exhibit 29> Added value and employment of venture business (1999)

Company		# of companies	# of employees	Sales (KRW Mil.)	Added value (KRW Mil.)	Fixed assets (KRW Mil.)
All enterprises	Total(A)	354,608	4,708,977	642,387,363	201,129,053	381,820,140
	Per company.	-	13	1,812	567	1,077
Venture Company	Total(B)	4,117	156,377	21,463,472	6,105,198	6,884,566
	Per company	-	38	5,213	1,483	1,672
Portion of venture company (B/A)		1.2%	3.3%	3.3%	3.0%	1.8%

Source : The Bureau of Statistics [1999 Enterprise Statistics], 2000.12.

Lastly, the excessive support of the government raised moral hazard problems and fraud through venture business. The positive view towards venture business helped the venture companies secure funds relatively easily, but was abused and raised moral hazard problems. As securing funds got easier, some people took advantage of financial support of the government and some disguised venture companies were established to utilize for the money game. We can say that the cause of this phenomenon lied partly in the excessive support from the government.

V. Lessons from Korea's Venture Industry Growth

1. Balance of the market function and government role

An important fact that we can learn from the policy of venture business promotion is that the government should plan when to reduce its role in the market, as the market grows. Sometimes it is helpful for the government to intervene when the market is not functioning effectively by itself but it also has to know to back out when it has done its role. This will lead to the respect for market function and for the enterprises to manage its business with predicting the future.

2. The financial market practice of venture business and improvement in infrastructure

A desirable venture capitalist has to provide not only investment but also has to support human resources, business consulting and marketing using his professional knowledge and human network. To do this, he should invest in the areas with high potential to grow, and the areas that will allow him to utilize his knowledge, experience and know-how's most. However, in Korea the venture capitals only estimate the business and invest but don't actually have the capacity to support the business or have enough experience in it. As the development of the Korean economy did in the past, the development and growth of venture business were also achieved through compressed growth. Due to the compressed growth, the KOSDAQ market rapidly grew in 1999, resulting in lack of ability to manage the market. Considering the nature of the KOSDAQ market, though the entry and exit are very active, however a safety installation for the investors should be ensured. Since there are a lot of cases where the market stabilization is damaged such as unfair transactions, the unreliable enterprises should be forced to leave the market sooner and company information should be transparent and spread out so that asymmetric information problems do not occur.

3. Government investment in technology innovation for the long term development.

Korea's R&D index and patent acquirement has been improved similar to those of advanced countries, however investment in basic research or fundamental technology is still weak. As we can see in the next table, compared to the other developed countries, the Korean government does not support in the R&D area.

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<Exhibit 30> R & D investment over GDP by country

Country	1993	1994	1995	1996	1997	1998	1999
Korea	2.22	2.44	2.50	2.60	2.69	2.55	2.46
Japan	2.88	2.84	2.98	2.83	2.92	3.06	-
US	2.62	2.52	2.61	2.67	2.71	2.74	2.84
France	2.45	2.38	2.34	2.32	2.23	2.18	-
Germany	2.42	2.32	2.31	2.30	2.31	2.29	-
England	2.15	2.11	2.02	1.95	1.87	1.83	-
Italy	1.26	1.19	1.13	1.03	1.06	1.02	1.05
Canada	1.59	1.57	1.53	1.66	1.62	1.64	1.61
Taiwan	1.76	1.80	1.81	1.84	1.92	-	-

Source : OECD, Main Science and Technology Indicators

<Exhibit 31> The government involvement in R& D investment

	Korea (1999)	US (1999)	Japan (1998)	Germany (1998)	France (1997)	England (1998)	Taiwan (1998)
Ratio(%)	26.9	31.5	27.2	35.9	41.8	35.8	40.5

Source : Ministry of Science and Technology

Successful companies such as Samsung now have the ability to compete in the global market with new items, and some small and medium sized enterprises have the ability to develop a unique technology item by themselves. However, the universities who should take over basic research and development have still not taken the initiative in R&D activities. The government should support the R&D of the areas which require the long term investment and has the publicity and the basic technology field.

VI. The Prospect of Korean Venture Industry

Since the boom and restructuring period makes the Korean venture business transit from the government driven development to the market driven development, the venture business in Korea seems to develop based on the market in the future. The role of the Korean government will exceed acting as a complementary and lead the venture business to develop based on the market.

Korean venture industry will enhance its competitiveness by restructuring insolvent venture firms. As seeing the venture industry in the restructuring phase in the previous part, the government withdrew insolvent venture companies, restructuring investment firms, trying to regain reliability in the KOSDAQ market, focusing on fostering venture firms rather than encouraging start ups. For this purpose, the Korean government is recently taking the standing point of market observer.

Through the restructuring efforts, some venture companies take different approach of selling business in the mass production stage and diversifying into new business areas after developing new product and technology, and of allying with foreign companies or conglomerates that have marketing capability or other substitutive management resources. Since venture firms internalize only the core competence and procure other functions externally, their business is closely related with the other big or small-medium sized companies. And in IT network, to create synergy between venture firms, alliances with each other will increase to enhance the profitability.

Recently, between manufacturers and IT firms, between conglomerates and ventures, the unbalance of the resources has been a keen, but they are recognized as supplementary rather than being competitors. On the other hand, venture firms' challenging culture will influence positively on the conglomerates and the society. Conglomerates competing against the ventures as well will learn to enhance market efficiency, giving up the monopolistic position in human resources and capital market.

The oversupply of venture businesses will necessitate integrating efforts for gaining competitiveness and the Korean government already announced the policy to facilitate the M&As by lowering the regulation. Venture company will not only aim at IPOs but will also try for M&As. In this process, the M&A market is not only a method for exit, but also a useful tool to estimate the companies' management capability as a "Market for Corporate Control". In the case of Korea, since the enterprise control market is not fully established yet as a market, though there is a channel, which estimates the stock price, it still lacks the ability to assess the management and to force them if they are not performing well. In the future of Korean venture business industry, the active M&A activities will lead to the development in enterprise control

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market and in turn it will lead to the enhance the market allocation function for executive which will ultimately lead to solve problems such as enterprise control structure.

In the long run, the Korean venture industry will evolve into the ecosystem to develop itself through the interaction among core players such as venture firms, venture capitals, KOSDAQ and M&A and some others like universities, research institutes.