V. SPECIAL CONTRIBUTION

Venture Capital Business and Its Emergence in China

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Abstract

Venture capital is a high-risk, portfolio, long-term, equity and professional investment. It plays a critical role in promoting the industrialization and commercialization of research fruits, stimulating the development of high-tech industries and providing us with an effective investment tool. Realizing technological innovations and high-tech industrialization through venture capital will faci1itate China's strive to become a 'brain country' in the age of knowledge economy which is able to 'produce' knowledge and own intellectual rights, rather than a 'body country' which can only use knowledge and import technology.

The United States is not only the first country to develop venture capital, but also the largest nation in terms of size. Its major experience can be summarized as:

(1) Limited partnership is the basic organizational form of venture capital companies;
(2) An effective incentive system is the key to the success of venture capital;
(3) Venture capital should support start-ups and development of high-tech venture enterprises;
(4) IPO and sell-out are the major exits of venture capital;
(5) The government should create a favorable policy and legal environment for venture capital development.

After more than a decade of exploration and preparation, venture capital industry in China began to move forward rapidly since 1998, and has gradually shown its importance in the transformation of scientific fruits and industrialization of high-technologies. Up to now the aggregated venture capital investments in China have amounted to US$600million. However, the size of venture capital investments is yet to be expanded, and relevant laws and regulations are yet to be stipulated or revised. In addition, further understanding is necessary over venture capital characteristics, its focal areas and difficulties; venture capital investments need to be standardized; cases of great success are few; and private participation is inadequate.

V. SPECIAL CONTRIBUTION

The author has studied the venture capital investments in China from three aspects: macro system (systems and mechanisms), micro system (including organizational form of venture capital companies and operating mechanism), and practices.

The target of venture capital development in China is to establish a comprehensive venture capital system within l0 years, with the annual venture capital investments up to RMB 10 billion. To this end, we suggest a three-step development strategy. The first step is to establish venture capital consulting and management companies which evaluate and recommend venture capital projects for investors at home and abroad, manage the projects for the investors and if conditions permit, establish venture capital investments according to the Company Law. The second step is to establish venture capital funds and formulate relevant regulations and management rules to attract capital both in and outside China. The third step is to establish a comprehensive venture capital system which will support venture capital industry and provide it with an exit. The government must develop measures to support venture capital industry through legislation, including investments, grants, guarantees, interest rate subsidies, tax reductions and regulations over M&As and IPOs of venture enterprises. Furthermore, rules and regulations shall be promulgated upon venture capital intermediaries and the second board shall be constructed.

To realize the above strategic target and tasks, consistent efforts must be exerted to create several fundamental conditions: a group of entrepreneurs with innovative products, a number of outstanding venture capitalists, sufficient capital support, exits and favorable policy and regulatory environment.

System innovation in venture capital in China shall facilitate the creation of venture capital professionals, support innovators to become entrepreneurs and attract investors to make venture capital investments. Limited liability company could be the major organizational form for venture capital companies at the present stage, but shall gradually be transformed to limited partnership. Project managers must have bigger power and a flat and semi-autonomy learning organization must be created. Investments on venture enterprises shall be made in a 'soft commitment' method by which the investment shall be in line with the percentage of equity shares and can be transferred among shareholders who directly invest in the venture enterprises. An incentive system, including salaries, welfare, bonus, equity shares and stock options, must be established in venture capital companies.

The basic responsibility of the venture capitalists is to select good projects, characterized by distinct business models, mature technical bases, promising market prospects, solid economic benefits, feasible satisfaction of capital requirements and

reasonable pricing of technologies.

To develop venture capital in China, we must draw on international experiences and come up with a way with Chinese characteristics. We believe that venture capital will certainly become the big engine propelling the wheel of innovations toward prosperity as long as we observe the spirits of 'try audaciously, observe carefully, and avoid pointless debates' advocated by DENG Xiaoping.

1. Characteristics of Venture Capital and Its Roles in the Economic Development of China

Venture capital is a commercial investment in high-tech and innovative areas with potential high returns. The essence is to invest in high-risk and high-return portfolio of projects, in which owners, equity rights of successful projects through IPOs or sell-outs to compensate for the loss of unsuccessful and provide high returns for the investors.

There are 5 characteristics of venture capital investments:

(1) It is a highly risky investment. Venture capital investments are made to support innovative technologies and products with high risks in technologies, economic returns and market prospects and the success rate is as low as 30 per cent. According to the experience of the venture capitalists in the U.S., only one third of the venture capital projects are quite successful with another one-third in even and still another one-third ending up in total loss. However, as the investment returns for successful projects are extremely high, some investors cannot resist the temptation.

(2) It is a portfolio investment. To diversify risks, venture capital investments usually consist of a group of investment projects. This is to use high investment returns after divestments of successful projects through IPOs or sell-outs to compensate for losses of unsuccessful projects and achieve certain returns.

(3) It is a long-term investment. Returns are usually achieved through divestments from 3 to 7 years after the initial investments are made. And, additional investment to those promising projects is likely inevitable in this period.

(4) It is an equity investment. Venture capital is an equity investment rather than a loan and emphasizes the future development prospects and value-added assets rather than present profits or losses of its investment targets. It achieves high returns through future divestments. Venture enterprises supported by venture capital tend to have negative cash flows in their growth stages when they expand in size and develop the market. The general investors usually ignore such enterprises with operating losses, but venture capitalists take consideration of the owners' equity, believing that investing is worthwhile so long as the enterprises

keep growing in value.

(5) It is a professional investment. In addition to providing capital for entrepreneurs, managers also bring with them expertise, experiences and an extensive social network. They participate actively in the management of the venture firms founded by the entrepreneurs, such as to help them reform organizational structures, direct development, strengthen financial management, and headhunt key leaders.

Venture capital mainly plays three roles in China's economic development. The first is to promote the industrialization and commercialization of research fruits. A scientific fruit usually passes 4 stages from the initial design to the final industrialization: research, development, demonstration and demonstration and diffusion. Venture capital usually supports the development (industrialization) and demonstration (commercialization) stages. Capital needed for research is one tenth of the development stage, so is the percentage between development and demonstration. High risks, slow returns and huge demands characterize the development and demonstration stages, during which the government is unable to provide sufficient capital, banks are reluctant to give loans and general investors are unwilling to invest. It is roughly estimated that each year there are about 30, 000 scientific fruits in China, among which only 20 per cent are transformed into products and less than 5 percent are commercialized. The low percentage of transformation can be largely attributed to a serious shortage of investments during development and demonstration Stages. An investigation reveals that within the transformed high-tech fruits, 56 per cent of the transformation capital is self-financed, 26.8 per cent is financed by the national scientific plans and only 23 per cent by venture capital. Therefore, venture capital industry in China must be developed to effectively promote the transformation of scientific fruits.

The second is to promote the development of high-tech industries. In the increasing globalization of economy, high-tech industrial development is the main solution to enhance national competitiveness. Whoever masters high technology occupies the high peak of technology and manipulates the competition. As it takes 3 to 7 years from a technological innovation to final success, banks are reluctant to provide long-term loans for entrepreneurs with high-risk projects. Start-ups have a large demand for capital and venture capital is an effective financing tool. It can not provide capital for entrepreneurs and help them develop the market, but also strengthen management and supervision of enterprises through selection of leadership and financial management.

The third is to provide an effective investment tool. Venture capital is a very professional and sophisticated investment tool. By meticulous selection, risk diversification, strengthening of management and timely divestment, it not only supports

entrepreneurs to start their firms, but also help investors to speculate on high turns. This is a win-win situation for both parties. It is reported that the average rate of return on venture capital investments in the U.S. between 1965 and 1985 was 19 per cent, twice that of stock investments and 5 times that of long-term bond investments. In China, the capital market is not well developed, and the bank savings exceed RMB 10 trillion, of which two thirds are personal savings and one third is institutional savings. As banks operate on liabilities, they bear heavy interest payment burdens when the consumer market is dim. As a long-tem investment tool, venture capital can effectively diffuse some deposits, thus alleviating the burdens of banks.

In the 21st century, China will be facing great challenges of the knowledge economy. In the new economy, knowledge-based industries will play a dominant role in the economic structure, the comprehensive factors relevant to knowledge will contribute significantly to the economic growth, knowledge elements will have key impact on productivity, and knowledge cost will be an important item in the cost structure. Whoever owns the knowledge can develop a competitive edge and win the fierce competition. Utilizing venture capital to realize technological innovations and industrialization of high technologies will help China become a 'brain nation' to 'produce' knowledge and own intellectual rights instead of degrading to a 'body nation' that can only apply knowledge and import technologies.

2. Major Experience from the US in Venture Capital Development

The United States is not only the first country to develop venture capital, but also the largest nation in terms of size. Comprehensive analysis and study of its experience will contribute to the venture capital development in China.

As a special form of investment, the source of venture capital can be traced back to 1920s and 1930s when some rich families and individual investors in the US provided some startup capital for enterprises such as Eastern Airlines, Xerox and other projects which turned out to be very successful. It is generally held, however, that modem venture capital industry began in 1946 when the first venture capital investment company-American Research and Development Corporation-was founded. Venture capital has gone through huge ups and downs in the 20th century: formation in the 50s, growth in the 60s, recession in the 70s, revitalization in the 80s, and temporary setbacks in the early 90s. Beginning from the mid-1990s, venture capital began to be felt strongly and became a propeller for the US high-tech industrial development. In the 1980s, the United States managed to improve its economic efficiency and benefits through economic structural adjustments, organizational streamlines and deregulation. However, this was completed at the cost of 44 million jobs. Under this context, venture capital was used as

a means to support technological developments, and to create new market and new ventures. In the end, 77 million new jobs were created and the US economy witnessed sustainable growth in the 1990s.

An investigation by OECD revealed that from 1984 to 1991, the number of new companies founded in the US was 4 times that of France and 8 times that of Denmark. From 1982 to 1996, 85 per cent of the new jobs in the US were created by small enterprises. The developed venture capital market not only provides the Americans with more job opportunities, but also provides thousands of young people with chances to exploit their own capabilities. Through venture capital, the dreams of many innovators have come true, huge social benefits have been created, sustainable economic development has been maintained, investors have realized huge returns, and venture capitalists have made great fortunes.

In recent years, a number of high-tech enterprises sprung noticeably out from Silicon Valley into the world arena. These 'babies' nurtured by venture capital rapidly grew to become a strong force enhancing the economic competitiveness. It is estimated that 1,000 new ventures are created each year in Silicon Valley and several years later these firms will either succeed, or merely survive or fail and the percentage is roughly one third for each type. It is also reported that in early 2000 when venture capital was most rigorous, there were 7,000 venture firms in Silicon Valley where every day 30 people became millionaires, 500 new venture firms opened their doors and the same number closed down.

Since 1992, venture capital investments in the US have been growing rapidly with increasing returns. During the two decades from 1975 to 1994, the average rate of return on venture capital was only 13.1 per cent, but it hit 48 per cent, 40 per cent and 36 per cent in 1995, 1996 and 1997 respectively.

There are two statistical parameters to estimate the size of venture capital investments in the US: commitments to venture capital funds and amount raised by venture backed companies (i.e. actual input made in backed enterprise from Venture capital funds). Table 1 sums up the data from 1996-2000 in the US.

As is shown in Table 1, venture capital investments in the US grew rapidly between 1996 and 2000. The actual investments, the number of projects financed and the average size of investment in 2000 were 7.6, 2.5 and 3.1 times that of 1996, especially during the three years from 1998 to 2000 when the actual venture capital investments in the US nearly doubled each year. On the quarterly basis, however, venture capital investments in the US have been going down. There are US$ 5.081 billion in the first quarter in 1999,

8.323 billion in the second, 8.969 billion in the third, 15.813 billion in the fourth quarter. In 2000, these numbers become 19.354 billion, 18.927 billion, 16.764 billion and 13.71 billion, respectively. There are 10.11 billion and 6.3 billion in the first and fourth quarters of 2001, respectively. Therefore, on yearly basis, 2000 was the peak while on quarterly basis, venture capital investments reached highest in the first quarter of 2000 and began to slip thereafter. This coincides with the American economic development trend. Until recently some are still optimistic, holding that venture capital investments will maintain great momentum in the US as they are shifting from IT and Internet technology to biotechnology industry. The author believes, however, the size in 200l may well be below that in 2000. Facts have proven and will continue to prove that ' progress in waves and up rise in spirals' is the general rule governing all fictitious economy including venture capital.

Table 1 Statistical Data of the Size of Venture Capital Investments in the US

	1996	1997	1998	1999	2000
Number of VC funds				202	249
Committed investments (US$ billion)				34.538	69.082
Actual investments (US$ billion)	9.046	11.416	15.039	38.186	68.756
Number of projects financed	1676	1841	2046	3317	4107
Average size of investment (US$ million)	3.50	4.00	5.00	7.00	11.00

Note: The data are taken with slight changes from the Pricewaterhouse Coopers Money Tree Survey in Partnership with Venture One.

The geographic distribution of venture capital investments in the US is also expanding. In the total venture capital investments in 2000, California (mainly around Silicon Valley) accounts for 45.6 per cent, New England (clustered around Highway 128) 10 per cent, New York 8.8 per cent, Southeast area (mainly in Carolina) 6.7 per cent, and areas neighboring Washington 5 per cent.

The experience of the US venture capital investments can be summed up as follows:

(1) Limited partnership is the basic organizational form of venture capital companies. There are approximately 4 types of venture capital institutions in the US: investment companies affiliated to banks, investment companies affiliated to large businesses, medium and small-sized investment companies supported by the government, and independent venture capital companies. As independent venture capital companies generally perform better, investment companies affiliated to banks and large businesses are tempted to turn into venture capital companies with relative independence. According to the Taxation Law in the US, investment return from partnerships are exempt from corporate taxes (only personal income taxes are imposed). This has encouraged most of the venture companies to adopt limited partnerships. In general, the general partners and limited partners both invest in the venture capital fund, and the general partners only contribute 1 per cent of the total. The general partners are

responsible for daily operation and management of the funds and hold unlimited liabilities over the fund, while limited partners do not participate in daily operations and management and hold limited liabilities. The partnership of a venture capital fund usually lasts for 10 years, with an average of 3 to 9 general partners who are responsible for several independent funds at the same time.

(2) An effective incentive mechanism is the key to the success of venture capital investments. Fund managers and venture entrepreneurs are two important types of professional. The formers (usually general partners) are often called venture capitalists who are professionals or experts in certain fields. They must not only select prospective projects from thousands of project proposals with their expertise and experiences, but also participate in the board meetings of the invested companies to monitor their financial status. They have to standardize the financial management and make decisions on key issues such as capital expansion, closedown, public listing, sell-out, etc. Besides, they must also help the invested company establish a strong and powerful management nucleus, including CEO, CTO, CFO, vice-president of sales and vice-president of marketing. Apart from a fixed salary from the annual management fee (25 per cent of the total volume of the fund), general partners can also draw 20 per cent of the investment returns of the fund. This pushes them to choose good projects, strengthen management of venture enterprises and improve the investment returns of the funds. Founders of venture firms (i.e. entrepreneurs) usually get medium cash salary, but compensated with common stocks or stock options. When a venture firm goes public, the usual employees get 25 per cent of the total shares, among which 5 nucleus managers get one third and CEO gets half among the five. Table 2 illustrates typical shareholding percentage and annual salaries of employees of US venture firms when they get listed.

Table 2 Shareholding Percentage and Annual Salaries of Employees when VC Firms Get Listed (with a total number of 150 employees and 25 per cent of shares)

Position	Shareholding percentage (%)	Annual salary (US$ thousand)
CEO	4.0	175~200
CTO	1.5	About 150
CFO	1.0	About 150
VP Sales	1.0	About 150
VP Marketing	1.0	About 150
Other employees in total	16.5	50~125

(3) Venture capital should support the growth of high-tech firms. The US venture capital industry invests heavily in IT industry (communications, electronics, information service, semi-conductor, software, etc) and health care industry (biochemical, health care, medical instruments, medical information system, etc). The distribution of US venture

capital investments from 1996 to 2000 by invested areas is as follows.

Table 3 Distribution of US Venture Capital Investments from 1996 to 2000 by Invested Areas (per cent)

	1996	1997	1998	1999	2000
IT: Telecommunications	20.7	21.6	22.7	21.3	26.4
Electronics	5.2	4.4	3.4	2.0	1.6
Information service	6.3	6.4	10.2	12.4	10.6
Semi-conductor	3.5	4.4	3.7	2.7	3.3
Software	19.7	21.6	20.3	16.3	18.2
Sub-total	55.4	58.4	60.3	54.7	60.1
Health Care: Biochemical	9.1	6.9	6.8	3.5	3.9
Health care service	7.2	6.7	4.3	1.0	0.5
Medical instruments	6.0	6.6	5.4	3.1	2.0
Medical information system	4.2	3.8	2.6	1.7	2.5
Sub-total	26.5	24.0	19.1	9.3	8.9
Product & Service: Products	3.1	2.7	1.6	1.0	0.6
Services	7.1	8.1	13.5	24.6	26.8
Retails	5.4	4.9	4.0	9.8	3.0
Sub-total	15.6	15.7	19.1	35.4	30.4
Other	2.5	1.9	1.5	0.6	0.6
Total	100.0	100.0	100.0	100.0	100.0

Note: The data are taken with slight changes from the Pricewaterhouse Coopers Money Tree Survey in Partnership with Venture One.

As is shown in Table 3, the focus of venture capital in recent years is on IT industry (mainly telecommunications, software, and information service), taking up 55-60 per cent of the total. The investments in the service industry increases rapidly while investments in the health care industry drops drastically.

It usually takes a venture capital firm 3-7 years from start-up to IPO or sell-out, during which it goes through four stages: start-up, development, growth and maturity, with increasing demand for capital. The number of employees, the amount of investment, the value of the enterprise and the time needed are illustrated in Table 4.

In 1997, 30 per cent of the total US venture capital is invested in the start-up stage, and 59 per cent in the growth stage (i.e. development and demonstration of scientific fruits to realize industrialization and commercialization).

Table 4 Four Stages of US Venture Capital Firms

Stages	Number of employees	Investment amount (US$10,000)	Value (US$ 10,000)	Time (year)
Start-up	15	300~500	1,000	1.5~2
Development	40	700	3,500	1.5~2
Growth (expansion)	75	1,000	6,500	1~2
Maturity (IPO preparation)	120	2,000	12,000	0.5~1

(4) IPO and Sell-out are the major divestment methods of venture capital investments. When a venture enterprise grows, the investment company will cash in its owner's equity through divestment. IPO and sell-out are the two major forms (i.e. to sell the venture capital company to big enterprises through M&A, and in some cases to employees or founders). Although venture firms grow fast, they remain quite small in size and require continuous fresh capital. As a result, their performance indices can hardly meet the standards of traditional securities market and a new securities market must be established especially to serve medium and small-sized enterprises (especially high-tech firms). In the US, for example, NASDAQ Small Caps houses 1500 individually listed stocks. As listing requirements are low, it is especially suitable for the financing of medium and small-sized high-tech firms and provides a divestment exit for venture capital at the same time. Such a market is usually called the second-board market. After the listed companies get increasingly mature, they can upgrade to NASDAQ National (the main board where 4000 stocks are listed). The second board also facilitates a second IPO after LBO. By 1998 NASDAQ has set up 400 thousand terminals in 60 nations around the world, where 530 market makers can provide 60,000 competitive bids instantaneously and the computer system of NASDAQ will choose and show the best bid to the global investors.

As the performance of the US venture capital investments is widely recognized among the investors, venture capital firms can usually generate significant profit when they are listed on the second board. In 1997, 134 venture capital firms were listed, with the financed capital up to US$5.39 billion. Their average rate of return since the listing day to the end of the year is 23 per cent. For instance, Excite is a search engine company funded by six Stanford graduates. It attracted venture capital and went public. Although the company still incurs losses when listed, the company stocks are preferred because investors are confident about its future. The major difficulty facing venture capital firms when they try to go public is its small size, which makes it hard to find a reputable underwriter.

(5) The Government should create a favorable policy and regulatory environment for venture capital. The venture capital industry in the United States also experiences ups and downs. Venture capital investments grew rapidly in the l960s, but shrank drastically

from 1970 to 1978, due to the economic recession, the dim stock market, strict regulation over pension funds and oil crisis. After many lobbying activities of the venture capitalists and entrepreneurs, some congressmen and the Carter Administration worked strenuously to create a favorable policy environment for venture capital. The Congress passed 5 bills from 1978 to 1981, to promote the development of venture capital. The Revenue Bill in 1978, for example, reduced the capital value-added tax from 49.5 per cent to 28 per cent, which provided stimuli for long-term equity investments. As a result, the venture capital commitments in 1979 grew 10 times than the previous year. The Economic Revival Tax Law in 198l further reduced the capital value-added tax from 28 per cent to 20 per cent, thus doubling the venture capital commitments in the same year.

The biggest lesson of the US venture capital development is the failure of small business investment companies (SBIC) supported by the government. In 1958, the US Congress passed the SBIC bill, authorizing SBC to stipulate and implement SBIC plans. The purpose is to establish a government venture fund, guide and lead private capital into the venture capital market to support the establishment and growth of venture firms and promote high-tech industry. Managed by the government, Venture funds provide low interest loans to support SBICs in their venture activities.

SBIC is a private company authorized by the government. It makes independent decisions over project selection and investment. It can get 4 dollars of low-interest loan from the government for each dollar of its investment and also enjoys special tax treatment. In return for this, however, it is restricted in the investment size and other interests by the government.

Stimulated by the SBIC plan, the number of SBICs registered in SBA reached 582 by 1962, which managed over US$ 400 million private capital. In addition, 47 SBICs went public. All these have contributed to fast growth of venture capital in the 1960s.

However, the preferential loan supported by the government conflicts with the characteristics and development laws of venture capital. On the one hand, venture capital involves high risks and long period of investment, and on the other hand, SBICs were under pressure of debts when they were provided low-interest loans. Many investors and managers of SBICs were more interested in short-term returns. All this put together made many SBICs loan to industrial and commercial enterprises to earn interest rate premiums rather than to invest in innovative ventures. To make things worse, as they were largely supported by the government, SBICs lacked an effective incentive system to create or attract high-quality investment managers and often ran into debt. By 1967, as many as 232 SBICs had serious problems. But the government still insisted that the lack of supervision, rather than any structural problem, led to these problems. Therefore, the

Congress passed a bill empowering the SBA with wider juridical and supervisory rights to strengthen auditing and supervision over SBICs. These measures, however, could not stop the decline of SBICs. By 1977, the number of SBICs shrank sharply to 276. The venture capital managed by SBICs in 1978 accounted for 21 per cent of the total in the US, and was further reduced to 1 per cent in 1989. Such government-led venture capital companies incurred total loss.

3. Origin of Venture Capital in China and its History

Since the reform and opening up in China, many scholars were sent to the U.S. for further study. Some of them, including the author, began to notice the US venture capital development and its role in promoting the U.S. high-tech industrialization and tried to introduce the concept into China. In March 1985, Decision on the Structural Reform of Science and Technology was promulgated by the CCPC, stating that 'venture capital can be established to support high-tech projects with radical changes and high risks.' In September 1985, China New-tech Venture Capital Company was ratified by the State Council and became the first national financial institution in venture capital investment. In 1986, the State Commission of Science and Technology put forward for the first time the strategic guideline to develop venture capital industry in China in the Science and Technology White Paper. Later, some small companies were set up by local governments and government departments to finance science and technology related businesses. However, the venture capital industry developed very slowly in China due to the following reasons: conceptual and structural obstacles, non-synchronization between scientific and technological reform and economic reform, blocked channels of financing, immature capital market, incomplete contractual relationship, irrational distribution system, and obscure intellectual rights. Some venture capital companies even went astray and made speculations in usury, stock trading, future trading and real estate operations and were eventually closed by the government for serious violation of law.

At the end of 1980s, Shanghai Science and Technology Investment Company was established and headed by a former vice-mayor governing science and technology in Shanghai. With a registered capital of RMB 200 million, the company aimed to promote the industrialization of high-tech products and the development of high-tech enterprises. Nonetheless, as it adopted an investment method similar to government appropriation for technological projects, it invested in quite a number of projects with only a few million yuan in each project and had problems to provide successive funding. Other science and technology investment companies in other cities were trapped in similar difficulties with a huge amount of capital sunk in a number of small enterprises and no capital for sustained development. Although they had successfully incubated a group of chicken crying piteously for food, they did not have enough money to purchase any food to feed

them, or sell the chicken to purchase eggs to incubate a new group of chicken.

With the deepening of the reforn1, overseas investors were increasingly interested in investing in China. Since the early 1990, they began to set up many China investment funds. These funds were usually registered overseas and run by professionals to invest primarily in mainland China. By 1998, the total amount of capital of such funds reached US$ 4 billion, including IDG Technology Venture Capital Fund and Walden China Fund. However, only 8 per cent of their investments were made in high-tech industries, while 65 per cent were in the reproduction expansion of mature enterprises. Rich in venture capital investment experiences, many fund managers believed that the market environment in China was not mature for venture capital and did not provide much capital support to start-ups and entrepreneurs.

The author personally began to study the venture capital development in China when he returned from his American studies in 1984. In 1987, he was invited to a research program on venture capital in the United States. Since then, he has been advocating venture capital in many places such as the National Committee of the People's Political Consultative Conference and the Ministry of Chemical Industry. In 1995, with support of the State Planning Commission, Beijing Feng Sen Technology Branch was set up under New Industrial Investment Co-Ltd. A group of senior scientists, including SHI Changxu, WANG Daheng and the author of this paper, showed great interest in the new venture company. In 1996, while attending the Senior Seminar on Scientific and Technological Transformation organized by the National Institute of Administration, the author wrote an article entitled 'Scientific and Technological Transformation Calls for Venture Capital' pointing out that venture capital is a very important means to support scientific and technological transformation. In the article, the author also discussed the major characteristics of venture capital investments and put forward some suggestions on the development of venture capital industry in China. In the same year, the author solicited papers in *Science and Technology Daily*, and encouraged the related parties to study the theory and practice of venture capital. In September 1997, the author organized and presided an international symposium on venture capital operations. All the participants, home and abroad, agreed that the conditions to develop venture capital in China were mature.

First, the socialist market economy under construction in China provided a solid ground for venture capital development in China. Secondly, there were a huge number of valuable research hits that could be transformed into innovative products. Thirdly, a team of high-quality entrepreneurs was gradually formed. Fourthly, the private bank savings reached a gigantic number (over RMB 5 trillion yuan by then), which can immediately turn into direct investments. Fifth, the consulting services surrounding technology,

finance and law were developing. Sixth, the securities market in China was getting mature. All these created a favorable environment for the development of venture capital in China.

Based on all the above endeavors, the Central Committee of China Democracy Construction Party raised a ‘proposal to speed up the development of venture investment in China’ in 1998 at the Ninth National Congress of China’s National Political Consultative Conference.

The proposal was listed as ‘No. 1 Proposal’ at the conference and received wide attention from the participants, and echoed actively throughout the country. At that time, the scientific and technological community was looking for ways to turn their innovations into commercial products, the business community was trying hard to develop new products and new market, the financial community was seeking to develop effective investment tools, and the nation was adjusting its economic structure to develop high-tech industry and nature new economic growth points. Venture capital simple meets all their different needs.

After the ‘No. 1 Proposal’ was raised, a surge of venture capital investments was started all over the country. First, many departments under the State Council responded actively. The State Planning Commission, for example, expressed its appreciation of the proposal in the reply. Second, some local governments took immediate actions. Beijing, Shanghai and Shenzhen took the lead in formulating policies and measures to propel venture capital. Third, venture capitalists at home and broad were optimistic about the prospects of venture capital in China. For example, the Ministry of Science and Technology, IDG and other related parties were seeking opportunities of cooperation. Some competitive Investment companies, both at home and abroad, were excited about the emerging opportunity. Fourth, many domestic high-tech enterprises began to seek support of venture capital for further development. Fifth, studies and discussions about venture capital nourished: many seminars were held, the National Natural Science Foundation of China and the Ministry of Science and Technology developed important research programs on venture capital and put forward suggestions on the study of legislation, management and financial support in regard to venture capital. Sixth, the wide coverage in the media created a very valuable environment for the development of venture capital.

After a decade of exploration and preparation, the venture capital industry in China began to leap forward since 1998 and has played an increasing role in the transformation of research fruits and development of high-tech industry.

4. Status quo and Existing Problems of Venture Capital in China

If venture capital industry in China was still in the beginning stage in 1998, it has new entered its primary stage after more than 3 years of development. Under vigorous support and promotion of all parties, the venture capital industry in China has stepped on a smooth track.

It is roughly estimated that there are about 160 domestic venture capital companies in China with a capital of RMB 18 billion yuan. In addition, there are about 150 venture capital management companies and most are based in Beijing, Shanghai and Shenzhen. Beijing houses 40 venture capital companies and 40 management companies with a capital of RMB 4 billion yuan. Shanghai houses 40 venture capital companies and 50 management companies, with a capital of RMB 5 billion yuan. Shenzhen has 43 venture Capital companies and 36 management companies, with a capital of RMB 6.6 billion yuan. However, the actual input of domestic venture capital companies is very limited, with about RMB 3 billion yuan in total, about one sixth of the total volume.

The number of foreign venture capital companies in China is also increasing noticeably. It is roughly estimated that up to now there are 30 international venture capital funds operating in China. Apart from such early birds as IDG, Walden, and China Economic Cooperation Company, some new venture capital funds are very active, including Cyber Investment Fund, Softbank, Barings Investment, Intel, DowJones, Suez Asia in Hong Kong and Shanghai Industrial Company-Solomon Smith Barney, Goldman Sachs, and Singapore Economic Development Bureau. All of them have announced their ambitious plans, but their actual input is limited, with a total of US$ 300 million. Recently with the decline of Internet investment wave, the inflow of foreign venture capital begins to slow.

There are six problems in china's venture capital development.

(1) The size of venture capital needs expanding. Presently the aggregated amount of capital managed by venture capital funds in China is US$ 2.5 billion, with actual input of US$ 600 million. Both the total volume and actual input are quite small in size.

(2) Relevant laws need to be stipulated or revised. The Standing Committee of the National People's Congress is making active efforts to promote the legislation of venture capital. At the end of 1999, the Company Law was revised, allowing high-tech firms to be listed on the science and technology board under Shenzhen and Shanghai Stock Exchanges. The original requirements in size (registered capital should not be less than RMB 50 million) and 3 consecutive years of profit ability were two major barriers to the listing of high and new technology firms. The growth of high-tech firms is characterized

by small size and negative cash flow resulting from constant need for input. The revised Company Law not only creates an environment for high-tech firms to be listed, but also provides venture capital with an exit for divestment. The Standing Committee of the National People's Congress has passed the Trust Law in April 2001, and is now drafting the Investment Fund Law, which covers the venture capital fund. The Investment Fund Law is expected to be submitted to the Standing Committee for the first review in August 2001 and the second and third review in 2002. Venture Capital Law is also on the agenda of the Congress. Nevertheless, due to its sophisticated nature and difficulties of coordination among different interest groups, the legislation will not be completed until 2005. Other relevant laws and regulations need to be revised. For instance, as venture capital funds need to be organized in limited partnership form, contents of limited partnership shall be added into the existing Cooperative Enterprise Law. The Tax Law shall also be revised such that only personal income tax (no corporate income tax) will be imposed in limited partnership businesses.

(3) Discrepancies exist in understanding of venture capital. This is reflected in three aspects: the features, focus and difficulties of venture capital. Not a few government officials and practitioners fail to recognize that venture capital is a high-risk, portfolio, long-term, equity and professional investment. Short-term behaviors are pervasive. The focus of venture capital investments should be placed on the start-up, development and growth stages, and used to support projects with reliable technology. Listing is merely a means of divestment for venture capital, rather than the focus of venture capital investment. Without the innovation in the upstream stages, the listing in the downstream stage is like a building without foundation. We believe that the key to the success of venture capital operations in China is hard work and innovation. Any attempt to deceive the investors with the prospect of listing is detrimental. What is the largest obstacle in developing China's venture capital business? In the author's opinion, it is lack of neither capital nor exits but human resources, especially qualified venture capitalists.

(4) Operations are yet to be standardized. The organizational forms, financing methods and operational mechanisms of venture capital companies in China are still at the preliminary stage, and a set of effective systems are not in place. What makes things worse is the lack of commercial credit in China, which leads to breach of faith, default of debt, violation of contracts and even defrauds. Some technology owners used to rely on the government without any conscious effort to be responsible for the investors and went as far as refusing supervision from the investors. This in turn prevented venture capital companies from developing new businesses. They preferred to invest in securities or real estates, which weakened the role of venture capital in supporting innovations.

(5) Performances are indistinct. Cases of successful projects are very few. For one

reason, most of the innovative projects are still in their incubation period and have no distinct future. For the other reason, influenced by the climate of international capital markets, some companies listed on NASDAQ and Hong Kong's growth enterprise market have relatively poor performance.

(6) Private participation is still lacking. It is estimated that 80 per cent of venture capital is from government government-controlled SOEs, and private participation is rather limited. If the private source of capital can not be mobilized, venture capital will eventually turn into a government-guarantee type of investment and won't exert its due influence.

The problems facing venture capital in China can be analyzed from three levels. The first level is macro system, or structural problems. As China is undergoing a transition from a planned economy to a market economy, the legal system, the management mentality of the government and the procedures and methods of administration can hardly meet the requirements of the new investment tool like venture capital. These problems have cultural and ideological origins and are formed in a long history. It is unlikely for us to find a solution in the short-run. It was reported that five enterprises in Beijing had attempted to practice stock options. In the end, however, only two of them tested the practice. Some venture capital companies wish to try stock options, but the managers prefer cash at the present rather than the invisible and untouchable stock options in the future. The stock option is a kind of 'golden cuff', and due to ideological disparity, it is difficult to be applied.

The reform shall be progressive, and path-dependent. The reform in China has gone through 20 years, and after such a long time, there is no turning back to the typical American way of venture capital operations. Reform in venture capital in industry must be a long and progressive task in China. It is not realistic to expect the solution of problems through legal and administrative means overnight. We must on the one hand promote the reform at the level of macro system, and on the other hand, make a bold experiment in venture capital operations.

The second level is the micro-system, including the problems in organizational form and operational mechanisms of venture capital companies. In this regard, we can integrate international experience with China's realities. The practices need to be standardized as soon as possible. Some problems must be solved through legislation. In most cases, however, the board of directors has the right to decide matters such as incentive system, and organizational form. Nevertheless, some reforms need to be approved by the related authorities, especially when the government is involved in the investment.

The third level is practical operations. We can draw on international experiences and come up with ways that cater to China's realities. At present, we should not expect to develop a standard on practices. Instead we should encourage people to make a bold experiment, and reach a consensus through practices and communication. The final paradigm shall be a framework agreed upon by all, but it is never compulsory.

In the following text, the author will try to analyze the problems at the three levels.

5. Venture Capital Development Strategy with China's Unique Characteristics

Venture capital is new in China, and despite some foreign experiences, we need to come up with a development strategy for venture capital that takes into account China's unique characteristics in social system, historical traditions and cultural background.

The target of venture capital development in China is to establish a comprehensive system in the next ten years and increase the actual input to RMB 10 billion yuan each year. To reach this target, three problems must be solved: selecting good projects, collecting necessary capital and achieving good returns. The author suggests a three-step development strategy:

Step 1. Establishing venture capital consulting and management companies to evaluate and recommend venture capital projects for investors at home and abroad and manage these projects when entrusted by investors. This is possible in the existing legal framework with the Company Law at the center. There are two sources of projects: first we can select some good projects out of 27,000 scientific research fruits that are not transformed among 30,000 each year; second, we can make use of the inventions and patens of overseas Chinese or scholars. Before relevant laws on venture capital are promulgated, these projects can be recommended to individual investors and joint-venture firms can be established. Evaluation of venture capital projects must be combined with their management to ensure the objectivity and accuracy of evaluation.

When investors have sufficient capital, they can contribute capital to establish venture capital investment companies according to the Company Law on a voluntary basis, invite professionals to manage the companies and make venture capital investments. Such companies are mostly dominated by the government and established by investment companies affiliated to the government. The primary purpose is to boom the local venture capital and high-tech development. Weak companies usually need to seek co-investors or strategic partners from the outside.

Step 2. Establishing venture capital funds and formulating relevant regulations and

management rules to attract capital both in and outside China. In venture capital investments, a group of projects are selected and follow-up investments are required for promising projects. As the demand for capital is quite big, funds must be established to attract enough social capital to meet the demand. There are three types of venture capital funds in foreign countries: independent funds seeking capital from the public, funds affiliated with big corporations and funds affiliated with financial institutions. As venture capital fund is a special fund, special management rules must be developed to provide detailed regulations on financing, management, supervision, and end of the funds, and the qualification, rights and responsibilities of the fund raisers. With these rules and regulations in place, we can publicly raise funds among domestic and international investor, and turn consulting and management companies or investment companies into fund management companies.

Step 3. Establishing a comprehensive venture capital system to encourage venture capital investments and provide an exit. The government must develop its supportive measures through legislation, including investment, subsidies, guarantees, interest subsidies, and tax reductions. Furthermore, it must promulgate relevant regulation over M&A and IPO of venture firms as well as rules governing various venture capital intermediaries.

The second board can provide a divestment exit for venture capital firms and facilitate their further development. In the start-up and growth periods, risks are extremely high and financing can only be made through venture capital funds. We should not set up the second board until venture capital funds are established, or it will only increase the risk for investors and create a chance for speculators. In addition, the main board is yet to be improved, and it is difficult to set up a rational relationship between the second board and the main board. The urgent task is to launch venture capital funds as soon as possible and create favorable conditions for the upcoming second board.

To realize the above strategic goals and tasks, continuous efforts shall be made to create the following basic prerequisites.

(1) A Group of Entrepreneurs with Innovative Products. Good investment projects should have huge market opportunities, state-of-the-art technology with proprietary intellectual rights, convincing business plans, and powerful management nucleus. The international experiences show that many entrepreneurs come from schools of higher learning. The Silicon Valley is a good example, and its development is mainly pushed by the innovations of professors and students from Stanford University. The Computer Science Department in Stanford alone created a number of distinguished entrepreneurs, including Andy Bechtolsheim (founder of Sun Microsystems), John Hennessey (founder of MIPS), Jim Clark (founder of Silicon Graphics and Netscape), Jerry Kaplan (founder

of Techknowledge, Go and Onsale), Scip Stritter (founder of MIPS), Len Bosack (founder of Cisco System) and David Cheriton (founder of Granite). The total market value of these companies is up to US$ 90 billion.

Venture capitalists evaluate entrepreneurs on the basis of the following traits:

a. Upright and reliable. If necessary, an investigation must be made upon their past performance and credibility.
b. Motivation. If the overriding motive of an entrepreneur is to make money, he is not trustworthy. The entrepreneur must have a sense of achievement, and be crazy about his projects. He must impress others that he wants to do something rather than merely to make money.
c. Perseverance and vigor. A man who easily bends down should not be supported.
d. A clear mind and a keen insight. Venture capitalists believe that a clear and keen mind can explain his business model even in the elevator. If a man could not express himself, he is not worth supporting. Furthermore, he must be able to understand things quickly, and to integrate comments from all parties to improve his business plan.
e. Expertise. An entrepreneur should be knowledgeable and practical. He will not be qualified if he can only talk big and know nothing about practice.
f. Leadership. An entrepreneur needs to manage a business, and deal with interpersonal relations. He will not succeed if he has no leadership.

To create entrepreneurs, we must first construct a social and cultural environment favorable for innovative spirits. The schools of higher learning shall be the major source of innovations and are the exact places for venture capital to find its target. The schools of higher learning shall also improve its postgraduate programs to cultivate innovative spirits and entrepreneur-ship with rigor and passion.

At present, Beijing, Shanghai and Shenzhen are most likely to become the first bases of high and new technology enterprises. With Zhong Guancun as the center, Beijing has increased its support for entrepreneurs in the past decade. In Shanghai, Zhangjang High Tech Park symbolizes the local government's efforts to exploit the human and policy advantages and speed up the creation of an environment favorable for high and new technology industries. Shenzhen is also taking advantage of its annual High and New Technology Trading Fair and the upcoming second board to attract venture capitalists and entrepreneurs.

(2) A Group of Outstanding Venture Capitalists. The pressing task is to create a group of outstanding venture capitalists equivalent to general partners of venture capital funds in foreign countries. Although they contribute only 1-2 per cent of the total

investment in the fund, they take unlimited responsibilities over management of the fund. They are professionals in one specific field and experts of management and finance as well. They are crucial to the success or failure of venture capital operations. Their major task is to use their expertise and experiences to raise funds and make investment decisions. They participate in the board meeting of the venture enterprise they supported and are responsible for important financial and personnel decisions. At the same time, they need to win the trust of their investors and get their remuneration with good performance.

The main role of venture capitalists is to support entrepreneurs to start up and investors to speculate. To this end, venture capital investments must be run by professionals. The urgency of the problem has three reasons. First, there is a huge amount of research output that needs to be transformed. Their assessment needs a great number of professionals in technology, management and finance. Secondly, scientists and technicians have entrepreneur-ship, but lack knowledge and experiences in financing and management. A scientist may be very innovative, but still unable to develop an enterprise or commercialize his innovations without the support of a venture capitalist. Thirdly, both foreign and private investors are willing to make venture investment, but can not find trustworthy agents. They always run into a dilemma where 'the trustworthy is not capable, while the capable is not trustworthy.' Before they can find a capable and trustworthy agent, they won't contribute any capital with ease.

A venture capitalist fulfills the following five tasks in supporting an innovator: to evaluate the commercial prospect of innovations with his business experience and instinct; to help the innovator develop a business plan; to help the innovator to present his innovations to investors in a convincing way; to help the innovator to sign an agreement with investors to establish a venture firm; and to sit in the board of the venture firm on behalf of investors, to make decisions on important financial and personnel issues, and to take responsibility for restructuring and divestment of the venture firm.

Venture capitalists should sit in the board of directors of the venture firm, and have the final say on such issues as when to increase investments, when to divest, and when to close the firm. This should be written into the agreement. In addition, they should also decide on the appointment of CEO, CFO, CTO and vice-presidents. This is very important in China. The innovators in China always take it granted that a man with good technological capabilities can be a good president. It is just opposite in reality. According to statistics from the U.S., only half of the innovators can still qualify as the presidents of their firms, and the other half are not suitable for the position. For example, Jerry Yang of Yahoo is not the CEO. The U.S. venture capitalist Randy Komisar holds that an Internet technology development firm needs the president to have different

qualities in different development stages. In the start-up stage, the president shall have innovative ideas and persistent spirits; in the growth stage, the president shall have strong leadership and keen sense of market; and in the maturity stage, the president shall have strategic management capability. He can not only maintain the set strategic orientation, but also adapt to the changing environment. As it is rare for an entrepreneur to possess three qualities at the same time, the enterprise must choose the right president in different stages. Bill Gates is technological expert, but also gives away the CEO position of Microsoft. The innovators in China should know their own limitations, and give up the position of CEO if they have no management competence, or they will ruin their firms.

Venture capitalist can help the speculation of investors from four aspects: to select out of thousands of proposals the projects with good commercial prospects; to assess the quality, personality and capability of an innovator through interviews and preliminary cooperation; to join the board of directors on behalf of investors, and provide supervision and guidance for the enterprise; and to choose a right time to divest through IPO or by sell-out to achieve high returns for investors.

A good venture capitalist should possess five qualities. First, he must have commitment, responsibility, and business acuteness. By intuition, he can immediately identify promising projects. Second, he has strong interpersonal skills and is good at identifying the quality, ability and credibility of a person. Third, he knows corporate management, financial operations and relevant laws and regulations. As a rule, innovators are very capable in technology, but lack knowledge in management, finance and law, and venture capitalist can fill this gap. Fourth, he must have expertise and practical experiences in more than one professional field. If a venture capitalist knows nothing about the professional field, he can not communicate effectively with innovators. While being abroad, the author came across many venture capitalists who used to be technicians, but studied finance and management obtained an MBA degree later. They then went into venture capital industry. Fifth, he can maintain good relations with people in the financial, technological, legal and political fields. This is particularly important in China. Some highly-paid general managers of venture companies in China hold a doctorate and MBA degree, know technology and management, and even have international experiences in venture capital investments. However, as they know little about the practical situations in China, nor can they maintain good relationship with others, they can hardly make good achievements. Some are even discharged of their positions.

The creation of venture capitalists in China can rely on four factors. First, we must identify people with great potentials in our practice, and provide them with necessary training. Second, we must develop a plan to send people with some experience in

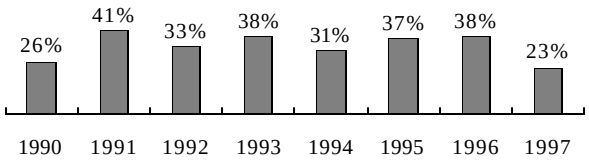
venture capital investment abroad for further training. Third, we must attract the overseas Chinese who are experts in venture capital operations. Last, we must set up an effective incentive system for venture capitalists.

(3) Sufficient Follow-up Capital. In the U.S., a venture firm usually requires US$ 3 to 5 million in the start-up, and the amount is nearly doubled in each following stage. For this reason, adequate initial and follow-up capital is needed. As high risks (high returns also) are involved in the start-up and development stages, only venture capital funds can satisfy their financing requirements. In the growth stage, then firm can win the support of some insurance funds, pension funds and other institutional investors. They can even win the support of the securities investment funds and even banks in their maturity stage.

The later the stage, the smaller the risk and the smaller the return. Venture capital can be invested throughout the four stages, but real venture capital only focuses on the first and second stages. When we are developing our venture capital industry in China, we must establish venture capital funds investing particularly in the start-up and development stages and seek new channels of financing for firms in the growth and maturity stages. Institutional investors such as the insurance funds, pension funds and securities investment funds should be allowed to invest 1-2 per cent of their capital in venture operations. When conditions permit, banks and listed companies should be allowed to set up independent venture capital funds.

(4) Exits for Divestment. There are two exits for divestment: sell-out and IPO. Some argue that no venture capital will exist in China without the second board market. This argument may not be plausible. In the U.S., venture capital came into being as early as in 1946, but the second board market was not established until after 1971. Sell-out of venture firms to big corporations, employees or entrepreneurs is now increasingly popular (in 1997 sell-out accounts for 70 per cent, and IPO accounts for 30 per cent; while in 1998, sell-out accounts for 75 per cent and IPO accounts for 25 per cent). IPO is a very important exit of divestment, but not the only, or most important one. In this sense, the saying - no second board, no venture capital - does not hold water. From 1990-1997, the percentage of venture firms that were listed in NASDAQ was around 23-41 per cent as is shown in the following graph:

V. SPECIAL CONTRIBUTION



From the above graph, we can clearly see that 59-77 per cent of venture firms took other divestment exits rather than IPO. Unlike stock investors who usually go by the trend, acquirers know business and can correctly assess the value of the target venture firms. In 1998 the top 5 venture firms in terms of the sell-out volume were sold between US$ 260-650 million, while the top 5 venture firms in terms of market capitalization had their market caps around US$ 128-222 million only. Therefore, we should seek various exits of divestment rather than relying on the future of venture capital solely on the opening of second board market.

In the meanwhile, we must be aware that the establishment of the second board market will increase the confidence of investors. Preparation of the second board market must be made with enthusiasm and caution. Before it is formally opened, the following work must be done.

First, the relevant laws must be revised. The Standing Committee of the National People's Congress has revised the Company Law by the end of 1999, allowing high-tech firms to be listed on the high-tech boards in Shanghai and Shenzhen Stock Exchanges. But the second board is an independent market, and it supports not only high-tech firms, but also firms all other 'high growth' firms to finance through IPO. This conflicts with the revised Company Law. Besides, some articles in the Company Law are not consistent with rules of the second board market and must be revised accordingly.

Second, the market structure must be designed with caution. The author believes that it is not suitable to set up an independent second board in Shenzhen. We should establish a market structure similar to NASDAQ, under which the second board coexists with the main board and OTCBB (Over the Counter Bulletin Board). Such a structure can help the market growth in scale, and attract more investors. In addition, it will facilitate the upgrade (entering the main board through buy-back) and downgrade (transfer to OTCBB) of the listed companies.

Third, the market risks must be prevented. The listing requirements for the second board market are comparatively low, with no strict requirements over the company size

and performance, which gives rise to frauds and malicious speculation. For example, speculators can disclose false information to deceive investors, and the consequence could be very serious. To eliminate the risks of the second board market, serious and comprehensive study must be carried out on legal, technical and supervisory issues to maintain high standards. In particular, measures must be taken to ensure the faithfulness, accuracy and completeness of the disclosed information in the prospectuses. Heavy punishment must be imposed upon those issuing companies, sponsors and relevant intermediaries violating the disclosure regulation. To prevent malicious speculations and reduce market volatility, the market maker system can be introduced according to our own situations.

Fourth, the timing is important. We need to take into account the international climate and China's realities in regard to development of capital market. The best time should be when the overseas second board markets level up and the venture capital funds in China begin to be established.

(5) A Favorable Policy and Regulatory Environment. The government support is also very important to venture capital. It can take various forms according to international and Taiwan's practices.

a. Legal protection. Examples are Small Business Act in the U.S., High-tech Promotion Act in Japan, Small and Medium Start-ups Support Act in South Korea, and Venture Capital Regulations in Taiwan.
b. Grants and interest subsidies. For instance, The Ontario State in Canada prescribes that individuals investing in high-tech venture firm can get grants as much as 30 per cent of the total investment volume. The Singapore government prescribes that if companies investing in high-tech enterprises incur loss for three successive years, they can obtain subsidies as much as 50 per cent of their investment volume.
c. Provision of guarantee. The U.S. stipulates that bank loan to venture firms can account for 90 per cent of the aggregated investment volume of the project. If the enterprises go bankrupt, the government will put its asset on auction and pay off 90 per cent of the debt. The Ministry of Industry in Japan established 'Incubation Center for R&D firms' in 1975, whose major task was to provide guarantees to venture firms for 80 per cent of their loans from financial institutions. The Trade and Industry Department of England began to provide guarantees for independent small and medium enterprises with medium and long-tem bank loans since 1981. The maximum volume of such loans is 100,000 pounds, with 2-7 years of repayment. If tile debtor defaults at maturity period, the Trade and Industry Department will repay 70 per cent of the debt at an annual interest of 25 per cent.

d. Tax incentives. The U.S. prescribed in 1981 that 60 per cent of returns on venture capital investment should be tax-free and the rest 40 per cent should enjoy a 50 per cent tax reduction. France prescribed in 1985 that earnings or net capital earnings from equities of unlisted companies held by venture capital companies should be exempted from income tax and the total tax reductions could be as high as one third of the taxable assets. Singapore prescribes that the first 5-10 years of venture capital investments are totally tax-free. Taiwan promulgated Venture Capital Regulations in 1983 which prescribes that companies that invest in high-tech areas can have 20 per cent tax reductions.
e. Establishment of a second-board stock market. Examples are NASDAQ Small Cap in the U.S., the Unlisted Enterprise Board in Britain, the Second Board Market in Japan, and the New Stock Market in Germany.

6. System Innovation of Venture Capital in China

System innovation of venture capital in China should be favorable to the creation of venture capitalists, start-up of entrepreneurs, and investment of investors. As venture capital is a business activity rather than a charity event, it is meaningless when no investors are motivated to invest. At present stage, the venture capital companies in China need to experiment and standardize, the venture capitalists need to develop and self-discipline, and the venture entrepreneurs need to innovate and grow. Any system innovation must follow the above line.

(1) The Organizational Form of the Venture Capital Investment Company in China. First of all, the organizational form should be primarily limited liability company at the beginning and gradually transferred to limited partnership. After the Investment Fund Law is issued, study must be made on limited partnership. The most important feature of limited partnership is that venture capitalists as the general partners will contribute 1-2 per cent of the total capital and take unlimited responsibility of the funds as the managers. Second, under the framework of the corporate governance as is stipulated in the Company Law, the authority of the project manager should be increased. At present, the venture capital institutions are organized as companies and major decisions must be passed by the board of directors. Such a corporate governance can solve the conflicts of interests between the owners and the managers. However, if the project manager does not have enough power, no venture capitalist will be created. Major decisions must be passed by the board of directors in line with the Company Law, but meanwhile the project manager must have more power and more autonomy, which will help create venture capitalists in China, and a group of qualified general partners when limited partnership is adopted. Third, the Advisory Committee must be set up to reduce blind decision-making. Some venture investment companies are blind in the decision-making

process. They tend to select projects with 'good appearance' without any serious investigation or evaluation, and decline projects with good prospects for fear of risks. Fourth, a flat, semi-autonomy learning organization must be established. The investment companies must not imitate those companies in vertical pyramid-shape structure with lots of management layers such as departments, bureaus, offices, etc, but must be stream-lined into a horizontal structure with only two levels of management: the general manager and the project manager. The organization must also be semi-autonomy, allowing the project manager to have bigger say. It must be a learning organization and can innovate continuously.

(2) The Financing Method of Venture Capital Companies in China. Venture capital investment companies in China, and the private companies in particular, can adopt a 'soft commitment' financing method. First, the shareholders contribute the legal capital, which is usually between RMB 30 million to 100 million yuan. Second, 10-20 per cent of the registered capital is drawn as seed capital to support the start-up and prepare for the long-tern development of the company. Third, contribution by the investors adopts the 'soft commitment' method. The investments are distributed according to the shareholding percentage and are transferable among the shareholders. Shareholders of the venture capital investment companies must promise that after the project recommended by the management is passed through the board of directors, the shareholders shall invest according to their shareholding percentage in the venture company and the right to invest can be transferred to other shareholders. The capital injected to a venture firm can be done through the investment company or by the shareholders themselves. The biggest advantage of the 'soft commitment' is that capital is contributed to the investment company only when it decides to invest in a project. This avoids tile situation that the investment company has big money at hand, but cannot find a project to invest. In case this happens, the management is under a lot of pressure and eventually may take the risk in investing in real estate, futures and stocks instead of making venture capital investments. The 'soft commitment' can also prevent the moral hazard when millions of capital is at the hand of the management. Furthermore, the shareholders have preemptive rights to invest in the next round of financing and outside investors are invited when needed.

(3) The Operating Mechanisms of Venture Capital Investment Firms in China. The operating mechanisms of venture capital investment firms in China should include the following phases. (a) The project manager scans the project proposals. (b) The project manager helps the sponsor develop a business plan and submit it to the Advisory Committee for review. (c) The board of directors decides whether to invest and how much to invest, and requires the shareholders to contribute according to shareholding percentage. (d) If the outside investors are needed, the project manager accompanies the

sponsor to make road shows and introduce the project to the investors. (f) The investors inject capital directly into the venture firm and the project manager participates in the board of directors. The direct injection of capital without the intermediary of the investment company can abbreviate formalities and put the investors at ease.

The key to venture capital lies in the human power. The entrepreneurs, managers and employees should be motivated by an effective personnel and compensation system. The incentive system should include salary, welfare, bonus, stock rights and stock option. In the ' Decision on Implementing the Reform of Personnel System in Scientific Research Institutions' issued jointly by the Department of Organization of the CPC, State Personnel Ministry, and Ministry of Science and Technology, it is stated that a flexible and effective compensation and incentive system must be established in line with the realities of scientific research institutions. Such a system should be linked to position, task and performance. The methods of distribution of scientific and technological production factors must be enriched and improved to link compensation of the scientific and technological stair with their contribution and performance. The power of distribution in scientific research institutions must be increased to establish a flexible distribution and incentive system emphasizing performance and contribution. Preferential policies should be worked out for key positions and good performers. With the approval of the related authorities, research institutions should be allowed to recruit talents with competitive package. The scientific and technological staff should be encouraged to start up high-technology firms or take part-time jobs. The measures must be formulated to provide preferential policies for the transformation of research fruits, and to ensure that people involved will be rewarded. Professionals should be encouraged to get rich first through transformation of scientific products and promotion of technological progress. At present, some local cities are practicing the employee stock-holding and stock option plans in some high-tech enterprises on a trial basis, which will surely promote innovations. The incentive system must be established within the venture capital investment company. The annual management fee (including the employee salary and benefits) should generally account for 2-3 per cent of the registered capital rewards of the employees shall be linked with their performances instead of equal distribution and account for 15-20 per cent of the returns in the same year. The project manager must be required to contribute 1 per cent of the capital into the project he is responsible. The employees should also be encouraged to hold shares in the investment company. In some companies, stock option plan can be a choice.

7. Venture Capital Operations in China

The basic responsibility of a venture capitalist is to select good projects. The venture capitalist has to ' serve two masters' at the same time. On the one hand, he must

negotiate with the innovators in the interest of the investors. On the other hand, he must support the innovators and help them convince the investors and the board of directors to make investment decisions. The venture capitalist has ' two faces' : he has to make profit for the investors and support the innovators in their entrepreneurial endeavor at the same time.

The venture capitalist evaluates a project against six criteria. First, it must have a unique business model. Venture capital supports innovative ideas and creative business models, which should be unique. In a book ' The Monk and the Riddle' by Komisar, the author quotes a case. In the Internet fever, someone raised a proposal to sell funeral goods on the Internet. He hit upon the idea when he was arranging the funeral of his late father, as he felt the fee charged by the funeral parlor and the coffin was too expensive. This proposal is indeed a fresh idea as most sales on the Internet are electrical devices and books. However, the author of the book thinks the business model is dim in the long run because it can be easily copied by others. Finally they change the business model into a free Internet website. When a person passes, his relatives all over the world can express their sorrows over the deceased in the website. The website puts on some banner ads for funeral companies and suppliers of funeral goods, and maintains its daily operations with the advertisement fees. This idea is totally different from the original one. The entrepreneur must have a unique business model, instead of one that is slightly different.

Second, the technical base must be relatively mature. The technological innovations supported by venture capital, though not totally mature, must be relatively mature. The venture capital industry in the U.S. is very developed and many strange proposals are made every year there. The Confessions of a Venture Capitalist written by Ruthann Quindlen describes one person who suggests a home-use nuclear station, which is a micro and portable nuclear station used in households. This might be a good idea but its technical base is rather weak.

Third, the market prospects must be wide. Evaluation of the market prospects is very important when a venture capitalist makes an investment decision. Sometimes his evaluation is right, and sometimes his evaluation is wrong. If his evaluation is wrong, it could be that the venture capitalist fails to look at the problem from the perspective of innovation. For instance, Kenneth Olsen, founder of DEC, decided not to manufacture personal computers in 1977 because he believed that no one would use a computer at home. His conclusion is now proved to be totally wrong. DEC has missed a very good business opportunity.

Take another example. When Xerox invented the copier machine, it was shot of

capital and asked IBM to invest. Experts at IBM thought that the copier machine was only a replacement of carbon paper, while the market for the carbon paper was very limited. They decided not to invest. The fact turned out that the copier machine can do much more than carbon paper and IBM again missed the business opportunity.

In 1903, Ford wished to make cars and sought loans from the bank. One banker said that the horse can never be replaced and the 'car' thing was just a perishable fashion. Then he refused to invest in Ford Company. Today, cars have replaced horses in most situations. The saying goes among the venture capitalists that it is more pitiful to miss a business opportunity than a project failure.

Fourth, the economic benefits must be projected correctly. The business plans in China has a very big problem, that is, the projection of economic benefits is not objective. DCF (Discounted Cash Flow), NPV (Net Present Value), IRR (Internal Rate of Return) and other methods are used by many people to project the returns of their projects. However, we must be careful when we try to use them in venture capital projects. The future cash now, sales prospects and market competitiveness are based on assumptions, and very often they are not at all objective. Therefore, venture capitalist will discount the economic benefits of the business plans in two ways. The first is called risk premium method, with which about 3-5 per cent of the risk premium is added to the original discount rate to lower the IRR. The second is the risk discount, with which 60-70 per cent of the estimated revenues are discounted to make a more realistic projection.

Fifth, the financing needs may be satisfied. Some projects have a huge demand for capital. A venture capitalist tends to turn down when they think impossible. Sometimes, a project is extremely promising, but it would require hundreds of millions of investments. The venture capitalist must be very cautious. For instance, the Internet TV is a very good idea, and the person with the idea is very innovative. However, the business model underlying the idea may not be practical. An enhanced TV is a TV with enhanced functions, which can provide people with many services. But the investment needed by the enhanced TV is extremely big and the general venture capitalists can not satisfy its demand. Finally the innovator has to sell the company to Microsoft, because Microsoft has the capability. When Bill Gates went to Shenzhen of China to promote its on-top box, he has already bought the company.

Six, the pricing of technology must be reasonable. The innovators always price their products too high. It is reported that one enterprise in China wished to buy a technology from an university. And the university wanted to have 96 per cent of the shares for its technology. Only the idiot will make such an investment! In the overheat of investment, some innovators tended to ask for a very high price for their innovations. We must pay

due attention on this problem. The pricing of technology must be reasonable and changes in different periods. In the beginning stage when the technology is not proved to be mature and the market is not proved to be promising, overpricing is not acceptable. High price is only rational when the technology is proved to be successful. The percentage of technology shares should not exceed 50 per cent in the total in the beginning stage, because they are virtual while the capital contributed by venture capitalists is real. If the project fails, the innovator will not have a big loss. The venture capitalist is different, and his money will go forever. Therefore, the pricing of technology in the start-up stage must be reasonable and sometimes the entrepreneur must also contribute capital. The two parties can sit down and negotiate on the price. Neither of them should be allowed to decide the price alone.

To develop the venture capital industry in China, we must draw on the international experiences, and at the same time take into account the realities of China. We should not copy others blindly, and instead we must come up with a way with Chinese characteristics. Second, we must make a bold experiment and standardize our behaviors through practices. Thirdly, we can think about setting up a venture capital association on a voluntary basis, and play an active role in training, publications, exchange of experiences and self-discipline of the industry. At present, we are preparing a bilingual journal-China Venture Capital, and compiling training materials-Series of Venture Capital Practices (10 titles in total). We also organize China Venture Capital Forum each year, and plan to establish a venture capital research center. Fourth, the venture capital market in china must be opened steadily. Opening up is the irreversible trend, and in today's world, venture capital will not develop if we close our door to the outside world. However, the opening up should be gradual, and consistent with our supervisory capabilities. The degree of opening up is based on our capabilities of supervision. Opening up without good supervision will lead to chaos, while too much supervision will kill tile economic vitality. The government should exercise proper supervision over venture capital.

Experience of the past two years has showed that venture capital is very promising in China. However, we must be aware that we will have to go a long way before we can see the important role of venture capital, the creation of a highly developed market economy. We must try audaciously and make unremitting efforts. Venture capital will invariably become the engine driving the wheel of innovations to the promise land of prosperity.

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VI. APPENDIX

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