HONG KONG'S VENTURE CAPITAL SYSTEM AND THE COMMERCIALIZATION OF NEW TECHNOLOGY[1]

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The objective of this chapter is to describe the features of Hong Kong's venture capital system and make policy recommendations to improve its effectiveness as an institutional support for the establishment of new firms and the commercialization of new technologies as part of a larger objective of diversifying Hong Kong's industrial base and creating a base for future economic growth. To do this effectively, we must address venture capital (VC) as a "system" rather than the more limited sense of a category of investment capital or a segment of the finance industry. With this broader scope, we will show how the characteristics of specific types of actors and the formal and informal rules and norms by which they make decisions. As our analysis reveals, the current system has emerged from Hong Kong's particular historical, social, political and economic environment. While logical in this sense, it has not proven to be very supportive of new technology-based ventures.

Hong Kong has the largest pool of venture capital and has been home to one of the largest number of funds in Asia since the mid-1990's (Figure 1). In spite of this apparent huge pool of investment funds, however, its performance in terms of financing new technology-based firms in Hong Kong has been low. In their World Bank study, Martin, Han, and Tanaka (2007) described the VC industries in Taiwan and Israel as successful, but not Hong Kong. Indeed, we found that the conclusion of the MIT researchers in their 1997 government funded study *Made by Hong Kong* (1997) is just as apt today, more than ten years later. "While there is plenty of capital available in Hong Kong, it is striking how little of it is directed into start-up firms or into funding technological upgrades. In addition, surprisingly few institutional investors have such investments as a focus of their strategy" (p.293). While Hong Kong's finance industry as a whole has grown phenomenally since that time, much of this success is attributable to initial public offerings (IPOs) and investments at the expansion, mezzanine and buy-out stages, mostly in firms without a central technology focus.

The reasons for this situation can be traced to several features of the Hong Kong business environment; namely, a historically-rooted trading and arbitrage business mentality, the legacy of British banking practices, manufacturers' reliance on short-term loans, and the particular backgrounds of locally active VC investors. These have combined to create a short-term orientation towards investment. In stark contrast to the so-called "classic" model that emerged

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around Silicon Valley in the USA, venture capitalists in Hong Kong avoid early-stage investments and seldom nurture early-stage ventures that are commercializing new technologies. Instead, they embrace a relatively short investment horizon and much lower risk threshold. Although such proclivity is common among VCs in Asian countries (Kenny et al., 2007), Hong Kong's being a financial centre creates a subtle but powerful tendency for local VCs to see investments as financial "pure plays". In this regard, they are more like the VCs found in New York who also take a more purely financial approach to VC investing compared to the classic model. The recent technology and internet ("dot-com") bust in 2001 and the resulting losses of many VC funds who had invested in early-stage firms at that time has only exacerbated the situation. These factors together help explain why much fewer investments by Hong Kong funds are in early stage ventures, especially when compared to mainland China (Figure 2).

The irony is that in recent years, the local supply of potentially commercializable technology has been increasing. Hong Kong has begun to see the fruits of years of significant government support of university-based research and support in the form incubation programs such as that in the Hong Kong Science Park. However, missing links and mismatched features of the institutional structure, investor cynicism towards technology investment, and a lack of mutual collaboration among key stakeholders (for example, between angel investors and the VC community) have obstructed the emergence of a new paradigm of technology-focused investing. The state of early-stage investment on technology startups, by so-called angel investors or informal venture capital (Mason, 2006), is a particularly weak link. The aftermath of these missing linkages may be summarized by the executive director of one international VC firm specializing in investments in technologies developed in universities, which opened its Hong Kong office in 2005, as follows:

> *The society is innovative and entrepreneurial. The Science Park is great in innovation…But there is not a cohesive financial arrangement, and entrepreneurs, academics, politicians and civil servants lack the appropriate skills to differentiate good ventures from bad. They have to mature in their decision-making to accept risk and how return is generated.*

In the rest of this chapter, we first place venture capital more formally within a broader institutional framework and use an evolutionary approach (e.g., Murmann, 2003; North, 1990; Whitley, 1992) to trace its emergence and key contextual features that had an impact on its character. We can then understand the current status of investment in early-stage technology ventures, and will highlight the impact of the financial and industrial environment in general and the nature of angel investing in particular. This leads to a discussion of key factors that inhibit the function and performance of Hong Kong's VC system and our proposals for addressing these. In brief, they include policy recommendations to increase the funds available for smaller but higher-risk investments (i.e., to cover the "equity gap" of new ventures); professionalize and diversify the skills of VC and private equity professionals; professionalize and formalize angel investors and associations; and provide more direct support for nurturing new ventures.

ANALYTIC FRAMEWORK

At the center of the venture capital system is the business of venture capital. That is typically defined as private capital that is pooled from investors and managed by professionals ("venture capitalists") who invest in seed- or early-stage new firms that have a potential for annualized gains of 30-40% or more to compensate for the high failure rate of others in the investment portfolio of the funds. VCs usually realize the return on their investments ("exit") by selling the firm to another company ("trade sale") or after the firm is listed on the stock market (IPO).[2] Venture capital firms in the Silicon Valley made their names in nurturing what came to be prominent leading technology firms. In his book *Done Deals* (2000), based on interviews with founders of the venture capital industry, Larry Sonsini describes the scope of activities of these venture capitalists (p. 212):

The providing of capital was one function of the venture capitalist. Being actively involved in developing the business model, managing the enterprise, and recruiting management…They thought of more than investing money. They thought about mentoring, training, and providing business solutions. The goal was not only to make a successful investment but also to be a part of building a successful venture.

As this business model became successful it attracted massive funds, and has since evolved to include opportunities for pure financial plays, such as financing leveraged buyouts and technology joint ventures. Because of this increasingly purely financial approach to venture capital, some would consider it to be a specific type of private equity (PE), which invests in private but not publicly traded companies (Metrick, 2006). Indeed, the use of private equity today resembles the traditional role that Wall Street financiers or English merchant banks played, using capital to organize and reorganize firms and industrial sectors. In Asia and Europe, the distinction between venture capital and private equity is less well defined than in the USA (Kenny, Han, & Tanaka, 2007). The name of the local industrial association, Hong Kong Venture Capital/ Private Equity Association, reflects this situation.

Because of sometimes important differences in terminology and practices, it is necessary to clarify what exactly is a "venture capital system" generically and then examine how it emerged and operates in a particular context. The approach of comparative business systems (Whitley, 1992; Murmann, 2003) and as applied to the specific case of studying venture capital and private equity in different national contexts (e.g., Bartzokas & Muni, 2004; Kenny et al., 2007; White et al, 2005) provides a useful means of structuring such an analysis. Here we adapt the system-level framework of White et al (2005) to the task of identifying key features and opportunities for improving the effectiveness and efficiency of Hong Kong's venture capital system (Figure 3). This framework has three features. First, the venture capital system entails a fundamental set of activities that together support the commercialization of new technology. Research across diverse contexts (e.g., Amit et al, 1998; Black & Gilson, 1998; Jeng & Wells, 2000; White, Gao & Zhang, 2005) suggest the following to be fundamental activities:

1. pooling funds
2. identifying investments
3. channeling funds
4. monitoring invested funds ("funds in-use"), and
5. appropriating returns to invested funds

Formal venture capital firms have institutionalized these into discrete steps (Figure 3), and these have become relatively standardized across national and regional contexts. As

[2] Trade sales usually have much lower returns than an IPO, and so are considered a second-best exit by the VCs.

comparative research has found, however, there are important differences at a more micro-level of decision-making and investment management, which we will discuss further in the next sections focusing on Hong Kong's particular characteristics.

Second, the venture capital "system" is the configuration of institutionalized structures—actors and rules and processes—by which these fundamental activities are organized and integrated. The venture capital system, therefore, includes both the actors who undertake the focal activities of the system, as well as the regulations, practices and norms that have become established (or "institutionalized"). Relevant actors include angel investors, venture capital firms (both private as well as government-supported), and other types of investors. These actors have particular capabilities and preferences related to each of the focal activities. They also operate under formal regulations and informal industry norms.

Third, the system has emerged and evolved in response to Hong Kong's particular environment. Following White et al (2005), we include in our analysis the relationship between Hong Kong's venture capital system and other institutionalized systems (education, legal, industry, etc.), as well as the material and ideational logics that have an impact on the system's structure and dynamics (Figure 4). Material logics are the economic or technological imperatives that also structure the choices of actors. These include the degree of competition, level of human capital, interest rates, and so forth. Ideational logics are the beliefs, assumptions and values that define the preferences and influence the choices of actors.

EVOLUTION OF HONG KONG'S VENTURE CAPITAL SYSTEM

In order to understand why Hong Kong's venture capital system has performed relatively poorly in terms of supporting the establishment of new technology-based firms, it is necessary to explore the historical context from which it emerged. To do this systematically, we apply the analytic framework introduced in the preceding section. We link the nature of the key actors, rules, practices and other features of the institutional environment to the impact on the establishment and support of new firms in Hong Kong.

Prior to the 1970s

Its geographic location, colonial development and control, and several historical events have combined to solidify Hong Kong's identity as a regional entrepot with an economy heavily reliant on trading and related services. From the 1800s the British trading companies used the colony to extract resources from the mainland. The Korean War and civil wars in China in the mid-1900s made trading a lucrative business when Hong Kong was a free port. Banks and trading houses flourished. Light industries also developed rapidly since refugees provided cheap labor for manufacturing, and even more as world trade expanded rapidly after the WWII. This was further supported as western countries began to outsource components and then completely transfer original equipment manufacturing (OEM) to Hong Kong.

The colonial administration did not implement sophisticated governance in this natural resource-poor territory; essentially, it relied on a system in which co-opted local compradors dealt with the locals. Bankers and more sophisticated industrialists who had fled from Shanghai, rather than local industrialists from Southern China, were preferred for this role. This approach was in line with Britain's fundamentally non-interventionist doctrine vis-à-vis the territory, along with its mandate to maintain a balanced budget. This structure was fairly consistent over more than 100 years of colonial control, and it has left a major imprint on Hong Kong's society in general and administrative culture in particular. As basic policy, the government did not take any explicit developmental role towards industrial development or any specific industry. Requests for direct subsidy for a company, an industry or a sector were routinely dismissed. In reality, public spending on infrastructure that supported Hong Kong's trading role—such as the construction of ports and airport—did indirectly support the development of specific sectors, including trading, logistics and construction. As a result, the Hong Kong environment was seen as being more supportive of these sectors, along with the finance and real estate development, than manufacturing.[3]

1970's to mid-1990's

Up to the 1970's, diversified trading houses (*hongs*), such as Swire and Jardine Matheson, and banks from the UK and a few other European countries dominated the Hong Kong financial scene. Even when the stock market soared, riding on the industrial and economic boom of the 1960's, large American financial houses, such as Merrill Lynch, served primarily US companies and individuals trading stocks on the US markets.

At that time, some Hong Kong-based companies with new products were able to take advantage of the frenzy and launched successful IPOs. Quite a few of these, however, had questionable products, failing after their stocks crashed along with the overall market with the onset of the 1972-73 oil crisis.[4]

The local economy and the market, however, recovered quickly after the oil crisis. The British conglomerates and the emerging local tycoons continued to expand, executing huge deals such as Cheung Kong's purchase of Hutchison Whampoa from Hong Kong Bank. Hong Kong began to give rise to attractive investment opportunities in new businesses.

By 1972, Inter-Asia Venture Management was already founded as the first formally organized VC firm in Southeast Asia. The three founders were classmates and studied venture investment at Harvard Business School. R, one of the founders, recalled, "I saw my classmates and professors setting up funds, and I was determined to bring the venture investment model back when I returned to Hong Kong." As there was not much technology in Asia, they invented a "transfer" strategy, in which they would focus on bringing proven advanced technologies (for example, photovoltaic solar cells) and service models (McDonald's & IKEA) from overseas. The first investors in their Inter-Asia Fund I were Sir Kenneth Fung, his family, in addition to other friends and families of the founders including Victor Fung.[5] Over 30 years since then, a similar group of investors has supported four of their funds.

The lucrative stock returns of the 1970's (averaging 25% p.a.) compared with the low return (several percentage points) that much of the public would accept for bonds, bank loans or savings accounts, created a huge profit gap and triggered more money going into what came to be called "direct equity investment". To take advantage of this gap, Arral & Partners was set up in October, 1981 and would later rise to prominence.[6] Three of the five founders originally

[3] See Goodstadt (2005) and Au et al. (2005).
[4] Hong Kong Antenna is one highly publicized example.
[5] Victor Fung is a prominent figure behind the development of the VC industry, and was the founding chairman of HKVCA in 1987.
[6] Although Transpac was started in the late 70's , it was originated from Singapore. Pica was also around in Japan in early 70's according to R.

worked for US commercial banks in Hong Kong. They saw many opportunities, built up their networks through their work for the banks, and invested primarily their own personal funds. One of them, W, recalled still with excitement about their pioneering approach:

> *Both the local and international banking communities were skeptical. Most of the companies were not transparent, and building good relationships was the only way to get to know a company, so it's difficult to do due diligence or sit on the board to work with the management…Nonetheless, we proved them wrong, as other companies followed suit.*

Arral was launched not particularly at the best time when interest rates were rising to historical heights. Yet they were able to invest their capital on a short-term basis at high rates (17% Treasury Bill rates) while waiting to find longer term investments. It was also at this time that they made their first direct investment in a company called Hong Kong Teakwood, in 1982. This company later changed its name to Universal Furniture, and W cited it as the first Asia firm to do an IPO on NASDAQ (in 1984). This investment realized an IRR of about 45%. Following other positive investment outcomes, Arral raised US$30M for its Arral Pacific Equity Trust I from pension funds, endowments and other investors in 1988, and became well-known to international investors seeking higher returns in Asia at that time.[7]

The year 1988 also marked the launch of the largest fund in Asia at that time, the US$150M APAC Fund, by a French bank called Suez (Asia). Its investor base was very globalized.[8] The person in charge, L, was a Hong Kong Chinese who had worked for a large accounting firm after his studies in the US. Seeing so many investment opportunities, L switched to a British investment bank which sent him in 1981 to New York and Sand Hill Road to learn the business of venture capital. When he returned from his sojourn in the US, he moved to a French bank to head up what was called the Direct Investment Department because French banks had the practice of holding shares in companies that they helped list. He recalled:

> *The financial atmosphere and practices were affected and shaped by the British at that time. There were only UK firms and brokers; those from the US did not have a real presence. British didn't like long-term investment. There was no medium-term money like bonds and debt instruments; short-term money was from bank loans and long-term money from equity.*[9]

L claims to be the first banker to support Hong Kong factories, such as Johnson Electric and Playmate, which prospered with China's Open-Door policy in the 1980's. He realized returns of several times the US$10 invested in his fund.

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[7] Arral & Partners raised $150M on their APT II in 1991 ($25M from IBM's pension funds). Yet the partners split later in 1993 (Sender, 1993).

[8] Including Princeton University Endowment, Loyola University Endowment, Insurance companies from Japan and Western Europe, Ronny Chan's Family fund, one Taiwanese family fund, and the government investment funds of Saudi Arabia and Singapore.

[9] According to L, three British merchant banks at that time dominated the scene: Schroders, Jardine Fleming, and Wardley, which subsequently merged with Hong Kong Bank. Their main business was to give advice on IPOs or M&A. Quite a large number of British and local commercial banks were also around. Following the British banking tradition, their business was to service clients on loans. They rarely held equities and were usually short-term oriented; meaning their duration of loans was shorter than an economic cycle. Among them, Hong Kong Bank might be an exception because its large saving deposits enabled it to sit through an economic cycle for some high-prospect clients without calling back their loans.

Except for one early-stage wine venture in China, however, his investments were in late stage investments (expansion and mezzanine). He noted, "One can make money from late stage investments in one or two years and not have to run a company, which takes a lot of effort." He used his superb understanding of the economic cycle and regional development to find opportunities in Hong Kong (Tetronics, Instant-Dick), Taiwan (President Enterprise, D-Link), India (Zee TV) and ASEAN (Britainia Food, Q-Tel, Henley) during the business downturn of the late 1980's. He started selling in the early 1990's and returned all initial investments to APAC investors by 1997, realizing a return of 33% p.a.

By that time, many more funds had entered Hong Kong. AIG's Asia Infra-Structure Fund, for example, raised a staggering US$1.7B in 1994. APAC's success, the founding of Arral & Partners, and the establishment in 1987 of an industrial association, called the Hong Kong Venture Capital Association then, marked the emergence of VC as an investment form distinct from Hong Kong's traditional direct investments.[10]

Mid-1990's to 2001

Stimulated by the technology and economic boom of the 1990's, new VC firms popped up in quick succession. Some of them took a long-term view of investing in early-stage technology ventures. These included those set up by bankers and investors living in the region, e.g., Tech Pacific in 1998 (later renamed as Crosby), and those newly arrived from the Silicon Valley, e.g., Asia Tech.

The Asian Financial Crisis of 1997 was a setback to many investors who did not exit before the crash. The distress, however, attracted many large private equity firms to Hong Kong and Asia for the first time. Peter Brooke (founder of Advent International) said, "US institutions would not move into Asia [as venture capital]. After the Asian Crisis, many banks suffered, and the US capital that moved in was "reorganization capital" (rather than expansion capital) from strategic investors, corporate investors, and multi-nationals." Newbridge, Carlyle Group, CVC Asia Pacific, and other large private equity firms set up their operations in Hong Kong as a base to look for distressed assets and buyout opportunities in the region.[11]

In 1998, with the effects of the Asian Financial Crisis cleared and following the 1997 return of Hong Kong to China, the government set up the Innovative Technology Fund as a means of supporting the transition of local industries from labor-intensive and OEM manufacturing to higher value-added activities. Complementing this was the Applied Research Fund (ARF). It was a government-sponsored venture fund with $750M in 1998 and about half invested by 2005. Its management was outsourced to three VC firms: HSBC Private Equity Asia, Walden International, and Asia Tech, with Tech Pacific later taking over Asia Tech's share. The Innovation Technology Fund also set up the Small Enterprise Research Assistance Program (SERAP) in 2004 to finance R&D in start-ups, initially offering forgiving loans of up to HK$2M or US$250,000 and recently raised to HK$4M. Recipients are required to repay the loan only if their projects become profitable or they are bought out.

With the rise of the internet and dot-com bubble, many corporations in the "old economy" (infrastructure, real estate development, and logistics, in particular) tried to jump on the investment bandwagon. They set up corporate investment funds or entire subsidiaries to

[10] AIG Investment Corporation (Asia) Ltd. and Prudential Asset Management Asia (PAMA) were especially active in direct investments between mid-1980's to the end of 1990's.
[11] See Gutpa (2000) and Cheng (2004).

invest in technology and internet-related ventures. TOM.com and SunEvision, for example, were backed by large property companies and prominent business families. During this time, raising funds in the IPO market was very easy. While some of these established firms used the funds to develop new businesses that had synergies with their existing businesses, such as internet services for apartment dwellers, many of them also made eye-catching investments in unrelated start-ups. Similar and if not more so than other local venture capital funds, they had a short investment horizon and did not aim at making money through nurturing new firms.

2001 to present

After the dot-com bust, many new VC firms established in the late 1990's suffered huge losses and became dormant or were closed. The corporate VC funds withdrew from investing in the "new" economy and returned to projects in the familiar "old" economy. The internet subsidiaries, such as SunEvision and China.com, were quickly consolidated. Apart from the rapid economic downturn, there were several reasons behind their dismal investment records:

1. Many new ventures rode on the internet frenzy and actually had little new technology, lacked creativity, and produced only "me-too" products. Most VCs interviewed suggested that there were not many high-quality investment opportunities for them. To them, Hong Kong people seemed not unable to think out-of-the-box.
2. The newcomers who joined the VC industry during the hype were accountants and bankers. They lacked operational experience. K was a VC retired from Walden International. He said, "My firm recruited people, like myself, with operational and start-up experience. Local VC firms, however, preferred bankers, accountants or corporate financiers due to their common background." R of Inter-Asia traced this characteristic to a historical reason. "There was still a glass ceiling of some sort for Chinese who worked for [foreign] banks. Spinning off and raising funds for themselves was a way to gain autonomy. Investors would be less willing to trust their money to a Chinese entrepreneur who operates a factory than a banker who was seen as reliable and with good connections… Back then, raising a fund was just a way to get ahead. Everyone started talking about raising funds only in the past ten or fifteen years."
3. VC firms found that Hong Kong might have some good technology in its universities, but there was a lack of qualified managers and entrepreneurs who could commercialize technology. There were (and still are) many senior managers who were outstanding in their own work, but they avoided risk and did not understand technology.

   An experienced VC with a technology background commented, "VCs invest not in technology, but whether the team is able to build a business around the technology. Ideal teams must be intelligent in the sense that they can see complex [start-up] issues as a whole. They must also possess a high EQ because if they pursue a really large opportunity, they will need to overcome setbacks and frustration. Strong salesmanship is a character they also need in order to persuade people and get what they want."

   "Availability of high power experienced international management with P&L experiences, sales background and strategic marketing background are much needed to scale companies," said C, "I also see the OEM mentality still persist, and good tech sold cheaply…not trying to maximize the value. SME is also not interested to go up the value chain for fear of losing control. Many of the tech products are me too with little differentiation nor innovation."

The Applied Research Fund of the government also suffered, and its loss of more than HK$240M drew public criticism. Apart from the above reasons that affected most funds, the outsourced funds under this scheme and the managing VC firms performed poorly because:

1. Governmental guidelines that might not make the best business sense tied the hands of the venture firms, including restrictions on investment targets and incentive structure.
2. The Fund's objectives and operating principles as a public policy tool (requiring transparency, accountability, and constant annual return) did not sit easily with the operating principles of VCs investing that emphasize risk-taking.
3. Government officials with little experience in venture investment scrutinized the investment process and requested multiple levels of approvals.

The firms returned the investment, and the fund was dissolved in 2004. It also left a grudge between the industry and the government.[12] Public criticism of the losses reinforced the general belief that investing in new technology and start-ups was not suitable or attractive in Hong Kong. That perception remains strong even though several of the firms that received investments from the fund—including Wise News, InfoTalk and ecVision—are still operating.

Indeed not all investments during this period were lost. The boom saw the founding of technology start-ups in internet services (such as Outblaze), mobile services (e.g., Cherrypicks), video streaming (e.g., Vcast), internet applications (e.g., China.com), IC design (e.g., Solomon Systech), and other areas. They received funding from investors, survived the bust, and have since thrived. Solomon can be considered an outstanding investment success, with its 2004 IPO returning over HK$1B to investors and management. It has also drawn a host of foreign companies to the Hong Kong Science Park and has formed an IC design cluster there.[13]

SERAP should also be regarded as a success, despite its shortcomings that were similar to the Applied Research Fund. Its formal mandate is to finance R&D, but in practice a number of technology start-ups in internet software (e.g., Editgrid and Radica), engineering solutions (e.g., Sengital), medical equipment (e.g., Colisa), and others initially survived on the fund's seed money. A few early recipients, such as Dragonchip and Kanhan, and more recent recipients, such as Kenzoo, have received further funding from venture capital firms.

Other start-ups also survived the bust and obtained funding from other sources, and the technology cluster seems to be attracting foreign industry investors in addition to pure venture capital. For example, E-Crusade, an internet market service firm, was acquired by Razorfish (a subsidiary of Microsoft) in 2006 to extend that company's reach in China. The two founders were Hong Kong natives. One of them explained, "We came from multinationals, and our clients in Hong Kong were multinationals… Razorfish found us more trustworthy and easier to communicate with than a mainland counterpart." A senior manager of the Science Park also

[12] Yet, it does not mean that government-sponsored programs all failed. Israel's program called Yozma did away government bureaucracies and brought about the right incentives, compared to a previously failed program called Inbal. The Yozma program created a highly successful VC industry outside the US (Avnimelech & Teubal, 2004).
[13] InfoTalk has been sold but continues to exist as an independent company. Solomon Systech was a spin-off from Motorola with customers and revenue with support from Taiwanese capital. So its success may not be considered on the same par as other Hong Kong startups.

claimed that Taiwanese firms have acquired several of their incubatees. The technology cluster seems to be attracting this type of foreign investment, in addition to pure venture capital.

The stock market rebound that began in 2003 opened the door for investors to exit some of the new ventures. Because of China's listing requirements and capital and currency restrictions, it was not attractive for venture funds to exit their China-based investments in China's domestic stock market. Many of them found Hong Kong more attractive and easier to execute than NASDAQ, except for a few notable cases. IDG, for example, listed Kingdee on Hong Kong's Growth Enterprise Market (GEM) and TenCent on Hong Kong's main board. In this way, although Hong Kong had few local technology ventures to list, VC and private equity funds used Hong Kong as a base to realize returns from their investments in companies based in China and other Asian countries. Top global funds, such as KKR, Oaktree Capital and Bain Capital, began to set up their local Hong Kong offices starting in 2005. Recent successful listings of large Chinese corporations, such as Alibaba.com, and other smaller technology ventures have further strengthened Hong Kong's place as a financial centre.

Many new private equity funds, such as Skyspring and FountainVest, were also formed during this recent boom. Their founders tend to be experienced professionals who left large firms. As in the past, however, the new funds are mostly expansion funds and target non-local ventures, and most of them are focused on China. *Asian Private Equity 300* (2007, p.45) noted, "Market observers are waiting to see how quickly dealmakers will invest their record-size funds… In greater Asia's still-underdeveloped marketplace, private equity is an unfamiliar form of financing, and the pace of transactions is slow."

As China continues to develop and expand, it presents both new opportunities and new threats to Hong Kong as a hub of venture financing. The banking systems, infra-structure, and stock markets all benefit as Hong Kong functions as a platform for activities in China. However, as technology, talents (especially Chinese returned from overseas), and opportunities all gather in China, it may be just a matter of time when the regulators, stock market, financiers, and small investors in China become mature enough to allow venture funds to do IPOs and exit their investment without Hong Kong's involvement. An insider of HKVC/PEA warned, "Many of the venture funds have already skipped Hong Kong and set up their offices in China…By the time its stock markets become mature and the RMB circulates more widely, Hong Kong as a base for venture funds will be lost forever." When that happens, Hong Kong may find even less financial support on technology startups and innovation.

Angel investors and early-stage investment

Both entrepreneurs and the general public in Hong Kong have heard stories about VC investing in technology ventures. Yet many early-stage entrepreneurs mistakenly regard VC as the source that would bridge their capital needs between the seed and the start-up stages, usually a level around US$1M. VCs, however, are very unlikely to invest such a small amount, and US$3M is a commonly cited lower-threshold size for them to consider. Since most Hong Kong VC firms focus primarily on expansion stage projects, their investments are even larger.

As a result, many early-stage entrepreneurs cannot find funding to bridge the "equity gap" between what they can gather from personal sources initially and what they could solicit from venture capital funds. Not being able to find investors is even more ironic in Hong Kong because of the huge volume of capital that is based there. One Australian entrepreneur, who located his state-of-the-art internet application start-up in Hong Kong, lamented, "Hong Kong has the technology and the infrastructure, and is underrated as a place for start-ups… but I did not know where to find investors.” His first round of funding came from an Estonia-based venture capital firm with whom he connected by chance over the internet. Several authors of this book have also identified lack of early-stage investment, which usually constituted by angel investors, as an obstacle for technology firms in, such as semi-conductor and bio-tech.

Hong Kong has a significant number of informal investors, but they are not easily accessed by “strangers” and therefore are not sufficient to fill this gap. According to the Global Entrepreneurship Monitor, close to 8% of adults in 2007 invested in other people’s businesses. This puts Hong Kong second among high-income nations. The problem, however, is that most of the businesses in which they invested were not technology-based ventures. They were very small in investments (averaging $100,000), and belonged to friends or relatives. Thus, although the numbers suggest capital is available and some are willingness to invest, only a very small fraction of these informal investors (less than 1% of adult population) are “angels” who would invest in a “stranger’s” venture.[14]

We interviewed self-described angel investors, and found that they fall into five categories:

1. ***Sophisticated***: They have entrepreneurial experience or professional backgrounds and manage a portfolio of ventures using the formal US model of angel investing. Some work with other angels informally, and some even form themselves into syndicates.
2. ***Businessmen***: They are either working or retired businessmen or professionals who invest in start-ups as an alternative investment form. Their daily business allows them to find investment opportunities. They generally follow the angel investment approach, but are less professional and operate more informally.
3. ***Corporate***: They are manufacturers or other types of firms who look for technology start-ups to extend their existing product-lines or services. They may invest in kind (such as providing lab and engineering time) instead of cash.
4. ***Incidental***: They are well-to-do individuals who invest out of interest, as a challenge to prove themselves (for gaining face among peers), or with the desire to kill time. They invest conservatively.
5. ***Traditional entrepreneurs***: They are businessmen who carry the traditional Chinese entrepreneurial mindset of distrusting outsiders and requesting control. They prefer a majority shareholding and like control. Their approach is simply an extension of their business approach. They are either unaware of or purposefully disregard modern angel investment practices in other developed countries.

Among them, the last two types of angels are unattractive to technology start-ups, unless they are exposed to more sophisticated angel investment techniques. Cooperation between them and entrepreneurs is usually difficult, as such angels leave insufficient incentives and autonomy to entrepreneurs.

Whilst the first three types do exist in Hong Kong, they are not very visible. Unlike their counterparts in the US and the UK, few organize themselves into angel syndicates. The government has yet to recognize this feature as a weakness in the local venture capital system. Several organizations exist but there is a lot of room for improvement. Monte Jade and Hong

[14] Even in the recession years of 2001-03, the angel investment rate is around 3%. See *Global Entrepreneurship Monitor 2007 Hong Kong Report* (www.cuhk.edu.hk/centre/entrepreneurship).

Kong Angel Capital Network claim to have many members, but have yet to install collaborative procedures regarding deal flows, due diligence, shared investment or exit for their members. Others, such as Opportune, Angel Connections and Asia Angel Association, involve only a small number of angels. Asia Angel Association, for example, is composed of only six members with start-up, VC, operation, and management experiences. They see the recent economic downturn as presenting them with particularly good opportunities. Two members noted, "Calls have dramatically increased in the past few months… Valuations have gone down and are closer to our own numbers."

Despite the sheer number of informal investors, Hong Kong still has an "equity gap" in providing initial funds to technology ventures for several reasons. First, angels fail to organize, probably because they simply do not see it as the best investment of their own time. In comparison, the Singaporean government has established the Business Angel Fund Co-Investment Scheme and Startup Enterprise Development Scheme to promote angel investments.[15] Second, it is difficult for entrepreneurs to locate and then pitch to angels. Just like angels in other places, Hong Kong angels do not solicit proposals from strangers, remain low-key, and limit themselves to their own network of familiar faces. They act on referrals from reliable sources who help reduce risk, since the management team is the primary criterion for an early-stage investment. Finally, often angels may not be around Hong Kong or may not prefer to invest locally. Unlike angel investors in the USA who typically confine their investments to a geographic radius of 3-hours drive, Hong Kong angels, like Hong Kong VCs, prefer ventures in the mainland over Hong Kong-based ventures, even if visiting and monitoring them should take much more time. As a chain is as strong as its weakest link, lacking early-stage, angel investors is something Hong Kong must address in order to boost more VC investment in technology startups.

CURRENT STRUCTURE: ANALYSIS OF KEY ACTORS

This section describes each of the key actors that currently play an important role in the financing of the commercialization of new technology in Hong Kong. Their interrelationships and flows of resources amongst them are depicted in Figure 5.

Government funds and agencies

The Innovative Technology Fund (ITF) was established in 1998 to provide funding to support technology start-ups and innovations in established corporations. We have already described the different degrees of success of the ARF and SERAP, two of its initiatives. In addition, governmental incubators, such as the Cyberport and Hong Kong Science Park, also subsidized their incubatees on rent, training and marketing.[16]

The other major funding that has relevant for new technology ventures is the Small and Medium Enterprise Fund. It was set up in 2001 to improve the financing and competitiveness of SMEs. The funding schemes are not specifically targeted at new technology firms or the commercialization of technology. The Fund is administered by the Trade and Industry Department rather than the ITC, and in practice caters to the needs of existing SMEs for the

[15] See Koh (2006).
[16] They subsidized internships, promotion costs, professional fess, and rental of equipment in the range of $600,000 in 3 years during the incubation.

purchase of equipment (by guaranteed loans) and providing working capital, marketing and training. Most SMEs have drawn on the fund's allowance of up to HK$8M to purchase advanced equipment in order to improve their operational capabilities and performance. Technology start-ups, however, would rarely be qualified to use the Fund.

Banks

Hong Kong's banking system continues to be among the most efficient in the world and is quite effective at supporting the expansion of established corporations. The recent arrival of large institutional investors has certainly broadened the business scope of Hong Kong's banks and opened up new opportunities. Most of them have diversified from their core business of mortgages and syndicated loans into wealth management and private banking. In addition, the establishment of individual credit ratings has also allowed many of them to step up their consumer financing services business. Geographically, most of the larger local banks have entered China to tap the growing market. At the same time, more banks from China and overseas have set up branches in Hong Kong, and acquiring smaller family-owned banks has been one way that foreign banks have secured a beachhead in Hong Kong's vibrant although increasingly competitive financial market.

These industry developments, however, have not changed anything about the "brick" culture of local bankers. They remain quite traditional in their business practices. They almost always demand collateral (usually properties, letters of credit, or company shares) to support a loan for business investments. To lend working capital to a company, they will require the company to be profitable, and they will expect to examine two to three years of company records. On top of this, they almost always request a personal guarantee, usually by shareholders. Even if the loan is guaranteed by the SME Fund of the government, the approval procedures and requirements are similar. Lending based on just a sound business plan is almost unheard of.

Institutional investors: Pension funds and university endowments

Pension funds in Hong Kong have grown to a significant size. According to the Mandatory Provident Fund Schemes Authority, the government-mandated MPF had grown to over HK$220B in 2008 since being established in 2000. Other registered retirement schemes (OROS) totaled more than HK$250B during the same time. Their permissible investments are publicly traded equities, debts, warrants, and futures. Figure 6 shows the investment sources of VC funds in Hong Kong, China and Singapore. In the USA financial institutions provide only 18% of capital while endowments and foundations provide 17% (Metrick, 2007, p. 27). In Asia, most funding is from corporations and insurance companies, then followed by banks. Endowments and foundations do not play a significant role.

The US case suggests that university endowments could and should have more leeway in their choice of assets.[17] However, because Hong Kong universities are publicly funded, the government has guidelines that restrict such funds to be invested highly-rated asset classes

[17] Morton Collins in the book *Done Deals* commented, "The investment objective of pension funds is not compatible with the high-risk, high-reward, early-stage, long-term, high-technology investing of the VCs. Pension funds have a target annual IRR, and are anxious to receive distributions of cash and securities." University endowment funds may have more compatible investment goals. "They are truly long-term investors and their goals are completely aligned with the old-style or "value" form of venture capital investing (p. 310)."

(although warrants and options are inherently risky), and not in hedge funds and private equity funds.[18] Although funds that originally came to the endowment from private donations and programs for foreign students are not public money, these began to trickle in only after educational policies changed several years ago. The total amount is still small. Furthermore, although recent investments have diversified, the general public is not yet willing to accept the possibility of losses in the case of endowments, according to a senior financial manager of a local university. He said, "The executives from large corporations who sit on the board [overseeing the investments] do not want to be held accountable for losses...Changes may only be possible with the entry of more private universities, as new practices may then be introduced."

Stock markets (Main Board and Growth Enterprise Market)

Stock markets in Asia-Pacific are considered to have higher systemic risk due to the nature of their national financial systems. Still, they have enjoyed a significant growth in IPOs and above-normal returns because new issues are often under-priced. Although new issues would be overpriced during stock frenzies, that actually gives an even greater incentive for VCs to push their investees to go IPO.

Also, compared to IPOs in other markets, the original owners and founders of newly-listed firms in Hong Kong and other Asian markets retain a relatively high level of ownership and continue as management. In many cases, the objective of the IPO is not to sell out, nor to raise funds for growth, but for the firm to gain reputation. It also helps them bring in outsiders to improve management and governance.[19]

Riding on the growth in China in particularly and the region in general, the Hong Kong Stock Exchange (HKSE) has grown into the sixth largest stock market in 2006 (total market capitalization over HK$22 trillion, or US$2.84 trillion) when it raised more funds than any other markets except London. A 2007 a study commissioned by the City of London rated Hong Kong third, behind only London and New York, as a financial centre. It also picked Hong Kong as the most likely Asian candidate to develop into a global financial centre.

This spectacular transformation is largely attributable to the listing of Chinese corporations registered in China (H-shares) and the Hong Kong-incorporated subsidiaries of Chinese firms (including the so-called *red chip* firms with heavy influence from their Chinese parent companies). The listing of the first two *red chips*, Chinese enterprises CITIC Pacific and Guangdong Investment in the beginning of the 1990's, was followed by a slew of red chip IPOs. Their success, in turn, stimulated the H-share IPOs, starting with Tsingdao Beer in 1993. An increasing number of regional governments restructured their industrial holdings and packaged their assets into "window companies" for listing. Excitement and speculation surrounding these listings reached its height in 1997 and crashed with the Asian Financial Crisis.

In spite of that crash, the listing of China Mobile in the same year signaled the arrival of gigantic state-owned enterprises under the central government's control, and with it a new stage of the market's development. One by one, China's central ministries would restructure its

[18] The Hong Kong Chinese University of Hong Kong, for example, has total net assets of HK$8.95B in 2007, about $6.1B of which is investment and $2.7B in cash and deposits. According to its 2007 Annual Report, "Taking a longer term view and in order to maximize capital appreciation, the University has formalized its investment strategy by redistributing about HK$851M into unit trusts, and invested HK$410M in the equity of a limited partnership" (p.10). This limited partnership investment (about 7% of total funds) should represent an alternative investment fund.

[19] See Bruton & Ahlstrom, 2003; Chau, 2007.

industrial assets spread across multiple provinces and package them together to be listed as a whole new company. This was linked to China's broader economic and industrial structural reform. Following the telecommunication companies, those in petroleum, insurance, coal, chemicals, and other industries followed. By 2007, with the listing of two gigantic banks and the railway corporations, the IPOs of these central state-owned enterprises were coming to an end. As of February 2008, the 106 H-shares listed in HKSE had a total market capitalization of HK$4.4 trillion (US$568B) and accounted for close to 50% of daily transaction volume. Future listings of such firms, however, will only be co-listings in Hong Kong and China (so-called "A+H shares") since China's stock markets have matured.

As Chinese enterprises increased the size, variety, and depth of financial activity in Hong Kong, this in turn has drawn more institutional investors, hedge funds, private equity funds and private banks to Hong Kong. Their presence has stimulated the need for new services, financial innovations and sophisticated financial products. One result it that Hong Kong is now the most sophisticated derivatives market in Asia.

Another positive feedback from the large and sophisticated cluster of financial institutions has been to entice other types of companies to tap the Hong Kong market. Taiwanese corporations, for example, have begun to list their China assets in Hong Kong. Even more important has been the inflow of private Chinese enterprise listings, many of which were invested and nurtured by venture capital and private equity firms based in Hong Kong. Many of these are technology-intensive companies, such as BYD, Alibaba and TenCent. For these listings, however, HKSE is competing with several other markets, such as NASDAQ, the London Stock Exchange's Alternative Investment Market, and the Singapore Stock Exchange. Working against HKSE is the fact that new technology firms are not the favorite type of firm of most Hong Kong investors.

The Growth Enterprise Market (GEM) was opened in November 1999 with the intention of addressing this situation. Its stated objective was "to provide capital formation for emerging companies to facilitate their business development and expansion," and was designed for firms with high growth potential but unable to meet the track record requirements of the main board. GEM was established with the clear principles of "buyers beware" and "let the market decide." Although GEM had moderate success before the dot.com bust (raising HK$45B in the first seven years), it now fails to attract technology firms, has lost much of its capitalization, and suffers from low liquidity. As shown in Figure 7, most VC/PE backed IPOs (between 2000-07) listed on the main board are non-technology firms. The GEM board has more technology firms, but most of them are actually based in the mainland.

In 2008, HKSE decided to reposition GEM as a second board, and this has made it even less relevant for start-ups commercializing new technology. New GEM applicants are required to have a positive cash flow of not less than HK$20 million in aggregate for the two preceding financial years. Other procedures concerning the approval of applications and the transfer to the main board have been streamlined.[20] HKSE stated that its ability to list sound companies is what attracts investors, especially those from China, and regarded insufficient institutional investors, lack of tax breaks, and immaturity of investors as hurdles against a local AIM-like market (i.e., one that favors professionals as investors, higher-risk, earlier stage firms and listings).

Accordingly, this transformation has attracted criticism, especially from the venture capital and private equity industry. An insider in the HKVC/PEA sees that the new GEM as

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[20] For academic review of GEM, see Au et al. (2005); and for recent changes in the Growth Enterprise Market, see http://www.hkex.com.hk/rule/gemrule/gem_rupdate10_cover.htm.

reflecting a critical difference in interests. “Less regulation will encourage people to take risk… HKSE has their eyes on attracting large international corporations and funds [which are the mainstay of HKSE], but that is probably not good for start-ups and VC firms.”

SYSTEM FEATURES INHIBITING THE COMMERCIALIZATION OF NEW TECHNOLOGY IN HONG KONG

Our review of the historical roots and evolution of Hong Kong’s venture capital system and related developments in the financial and industrial sectors has uncovered a number of factors that inhibit the effectiveness of VC in supporting the commercialization of new technology in Hong Kong. This section summarizes those inhibitors which, as illustrated in Figure 5, should be conceived as an institutional system that works against commercialization of technology startups in Hong Kong.

1. Governmental and Cultural Context

Hong Kong’s business culture is strongly tilted towards a short-term trading mentality and a focus on light, low-tech industries. Government policies have been made with banks and traders in mind, and over the years this has helped Hong Kong grow into an international financial centre. Further effective lobbying by the banking and financial sector has led the government to continue to channel more resources to these sectors and further embed the short-term, quick-return attitude across society. Longer-term investments in R&D and risky innovation are selected against by a doubtful, cynical attitude towards start-ups attempting to develop and commercialize significantly new technology.

On the other hand, politics and ideology must also be considered. Changes progress fitfully as the society and the government continue to struggle on whether Hong Kong can deviate from the positive non-interventionism doctrine. So when the government steps in, though intended to maintain fairness and accountability, micro-management and monitoring practices derived from a trader’s mentality, cause actually more trouble. Any governmental attempts to take Hong Kong in a different tack are doomed to fail (Goodstadt, 2005).

2. Venture Capital and Private Equity Firms

Most venture capitalists have accounting or finance backgrounds and adopt the attitude that “they are out to make money” rather than to nurture technology and new ventures that could have a major impact on an industry or even the world. For them, the easiest way is the best way to make money, and this leads VC and PE firms to favor late-stage, mezzanine and buyout deals. These deals are more widely available in Hong Kong (rarely are there good technology startups) and less risky while larger in size, and do not use up as much of their time compared to early-stage deals. Indeed, not many VCs have the skills to build a company from scratch because they do not have relevant experience themselves. Furthermore, their finance background biases them to hire others like themselves rather than former entrepreneurs and operational professionals.

3. New Ventures

Many of Hong Kong’s new firms are family businesses. These first-generation entrepreneurs are happy with the local market and business practices. They don’t like transparency, guard their ownership very carefully, and tend to use insiders rather than professional managers (who were not available in the past). These characteristics are found broadly in society, and make it difficult for VCs to invest in and work with these firms.

Some second generation leaders of family businesses and the new generation of entrepreneurs are different. They have a world view and want to expand beyond the local environment. They are more receptive to being transparency and are more likely able to introduce outside professionals and capital. However, a small local market, high costs, lack of advanced technology, scarce start-up capital (see below for a deeper discussion on angel funding and SBIC-like companies[21]), and a shortage of capable entrepreneurial teams make technology ventures more difficult to establish than non-tech ventures. In sum, although Hong Kong is famous for its entrepreneurial spirit, high-quality technology startups are rare. There is even a more general concern that Hong Kong's legendary entrepreneurial spirit is weakening and has been fading away.

4. Stock Markets

The Hong Kong Stock Exchange welcomes the listing of large corporations (especially those from the mainland) and has introduced more advanced financial products. These are the basis of its profits and attract large institutional investors, like pension funds, and investment banks. The technology level of potential listees is not an important criterion for them.

5.Banks and Institutional Funds (Pensions, Endowments)

Banks have a strong bias towards lending based on collateral rather than on the soundness of a business idea or the competency of a management team. They do not have the ability to assess and are quite reluctant to provide finance for start-ups and early-stage firms.

Retirement and endowment funds may invest as limited partners in VC or PE funds. Although their investment horizon and objectives would seem to be in line with the classic VC model that nurtures early-stage ventures over a medium- to long-term horizon, their impact in Hong Kong has been minimal due to Hong Kong's version of the "prudent man" rule.[22] As a result, money goes into and breeds ever larger and more expansion and buyout funds. To nurture more technology start-up, the abundant capital "parked" in Hong Kong needs redirection.

6.Angels and Angel Groups

The traditional way to finance new ventures is savings and family capital, in addition to partnerships with friends and coworkers. Those in Hong Kong, however, tend not to organize themselves into syndicates, and there is a lack of institutional support and understanding of angel investing. For the small group of cashed-out or retired local technology entrepreneurs, they find few companions to co-invest in Hong Kong and instead focus their efforts on the mainland. As a result, they do not fill the 'equity gap' faced by technology entrepreneurs in Hong Kong.

[21] Small Business Investment Corporations (SBICs) were private investment companies that received leveraged capital from the Small Business Administration (SBA) of the US Government. SBA set up SBICs to match the neck-breaking growth of the Soviet Union. SBICs proliferated in the 60's, and some managers subsequently created the early generation of venture capital firms. Other countries have tried to transplant such programs to kick-start technology startups, such as the Enterprise Investment Scheme (EIS) in the UK and Venture Investment Support for Startups (VISS) in Singapore (Mason, 2006; Koh, 2006).

[22] The rapid growth of the VC industry in recent decades was attributed to several related events (Gompers & Lerner, 2000, p. 8-10), one being which the removal of the "prudent man" rule in 1979. It unleashed pension funds to invest in VCs; investment advisors (gatekeepers) also arose to advise and facilitate pension funds to invest.

OPTIONS FOR IMPROVING THE PERFORMANCE OF HONG KONG'S VENTURE CAPITAL SYSTEM

Bearing in mind limitations in overhauling fundamental institutional structures and beliefs, such as willingness and legitimacy of the government to make major ideological changes, high costs, cynicism towards investment in new technology, and a short-term orientation among the society, we propose the following policy options as feasible for implementing in the medium term. Due to the inter-relatedness of these elements, they shall be more effective if implemented in a concerted effort.

1. Stimulate more VC funds with a longer time horizon and greater focus on new technology commercialization. One way is to encourage long-term investors to become limited partners of VC funds.

- The government should channel university endowment funds and other government funds to VC funds since their longer time horizons are compatible. This should also attract more foreign funds and at the same time reinforce Hong Kong's position as a financial hub. One option is to invest a small amount of governmental reserves (say 0.05%) as a legitimizing gesture and thereby encourage the endowment funds (estimated to be over $50B) to follow suit (say 0.5%).
- The implicit "prudent man" rule could be lifted for MPF and other retirement funds, allowing them to invest a portion of such funds in non-publicly traded investment funds. PE funds may be more suitable given the investment objectives of retirement funds. A mere 1-2% of these funds (total HK$600B) would amount to over $10B and bolster the outlook of many local VC/PE funds, at the same time keeping investment talent in Hong Kong.
- ARF was reviewed and many lessons learnt after its closure five years ago. Israel's Inbal program was a failure but lessons learned led to the hugely successful Yozma program. Politics aside, the government may learning from these experiences and sponsor investors to form new VC funds that focus on technology startups. Such a new program shall incorporate new features as informed by the Yozma program (for details, see Avnimelech & Teubal, 2004),
  - employing technology experts to administer the funds;
  - giving full autonomy to the VC companies on investment decisions; and
  - providing strong incentive on the 'Upside' for the funded companies (i.e., the possibility of within a median period, of purchasing government's share at about cost), but no downside "guarantee" of losses.

2. Develop professional training and qualifications for investment advisors in the VC and PE industry, angel funds, and private companies.

- In the US, investment advisors appeared in mid-1980's to advise institutional investors about venture investments after the US "prudent-man" rule was lifted (Gompers & Lerner, 2000, p. 8-10). They pooled resources from their clients, monitored existing investments, and evaluate new funds. They helped stimulate the growth of the VC and technology industries in the USA . Hong Kong can establish qualifications similar to CFA and CFP in order to facilitate the investments of endowment and pension funds (complementing our recommendations in Point 1 above).

3. Stimulate angel investments.

- Expand and professionalize angel investment by developing guidelines, successful/ failure case studies, and templates for documents such as term sheets.[23] Commission HKVC/PEA and universities to develop related training courses and networking events.
- The Enterprise Investment Scheme (EIS) of the UK can provide several policy options for Hong Kong. The UK experience has been reviewed more and seems to work well (Mason, 2006).
  - To establish the status of "Accredited Investors" to define "high net-worth" individuals.[24] They form the basis of angel groups because the status gives credibility to other angels and entrepreneurs. Also, it ensures that only informed investors are involved in risky angel investment. The proven system in UK shall be implemented in Hong Kong. Basically individuals can self-certify to the government if (1) they have high earnings (say HK$1.5 M) or own valuable net assets (say HK$5M), and (2) possess experience as a sophisticated investor in private companies, such as being an experienced member of an angel network, sat on the board of or serve as professionals for private companies, and having experiences in running or investing in these companies. Presenting false statement is against the law.
  - Some of the tax incentives EIS used to encourage angels to invest in private companies can be adopted even though Hong Kong has no capital gain tax. These include a tax relief at the basic rate and income tax relief on losses. The relief rate can be defined after careful study. Investors can invest up to HK$2M per annum and must hold on the investments for at least two years. Perhaps higher tax breaks shall be given to accredited investors who risk their money to invest in new, technology firms. Besides, such breaks should apply not just to investments in Hong Kong, but also in Shenzhen which has another significant presence of technology and people. The cities are sister cities and in light of more integration initiated by the central government,[25] more angel investments across the border shall benefit Hong Kong in the long run.

4. Establish Small Business Investment Companies (SBIC)-like program to stimulate investments in small technology businesses and help to fill the equity gap.

- The Enterprise Capital Funds of the UK was modeled on the US experience and has been viewed as successful since 2002 (Mason, 2006). A similar program shall be implemented in Hong Kong. In essence the government will solicit competitive bids from qualified individuals (or companies) for plans to invest in small private companies (range HK$1M to $15M). The government will match up to twice the amount raised by the bidder to form a fund, but will take a smaller share of the profits and an equal share of the losses. The investment period must be longer than 2 years. More careful study can define the maximum size of the government's match fund, the business nature, and technology content of the invested companies.

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[23] See Harrison and Mason (1996) and the templates provided by the British Venture Capital Association (www.bvca.co.uk). Another useful reference is Business Angel Network (South East Asia) established by Prof. Po Kam Wong in Singapore (www.bansea.org).

[24] In the US, referring to Preston (2004, p.6), the amended Security Act of 1933, & section 501 (c) (3) of the Internal Revenue Code. Under the Securities and Futures Ordinance in Hong Kong, "professional investors" are individuals and associates having a portfolio of not less than $8M and have to be certified by an auditor or accountant.

[25] http://www.straitstimes.com/Breaking%2BNews/Asia/Story/STIStory_323859.html

- The Startup enterprise Development Scheme (SEEDS) and Venture Investment Support for Start-ups (VISS) programs in Singapore require direct government involvement in making and monitoring decisions (Wang, 2004). They may not be as feasible in Hong Kong due to different administrative tradition and lack of qualified people in the government.

5. Diversify the backgrounds of the general partners of VC firms.

- Encourage the VC/PE firms to recruit special partners who are retired or cashed-out entrepreneurs to complement the jobs of general partners who tend to have an accounting or financial background. If advisors are more widely available, governmental and endowment funds may be stipulated to be invested only in firms with partners fitting this profile.
- With more active and organized angel groups, the inter-flow of talents between VC firms and other actors in the venture capital system should also be improved, and that should help diversify the backgrounds of the general partners.

6. Create new IPO exit routes for VC and PE invested in technology firms.

- It's almost a lost cause to change the HKSE which monopolizes company listings and stock trading.[26] One possible future exit lies in setting up a new board with perhaps the main board or the SME board of the Shenzhen Stock Exchange. Otherwise, IPO's in other markets like NASDAQ and other exit routes will continue to be the preferred choices. An efficient exit route would encourage VC investment in the long-run and help Hong Kong to maintain itself as a financial centre.

[26] In a recent interview, the CEO of HKSE mentioned opening a commodity futures market, recruiting companies from other countries to list, and a few others as ways to respond to future challenges. He refers little specifically to recruit technology firms to Hong Kong (Chan, 2008, p.242-243). HKSE has also stalled the study of opening an AIM-like "professional board" (HKEJ, June 3, 2009).

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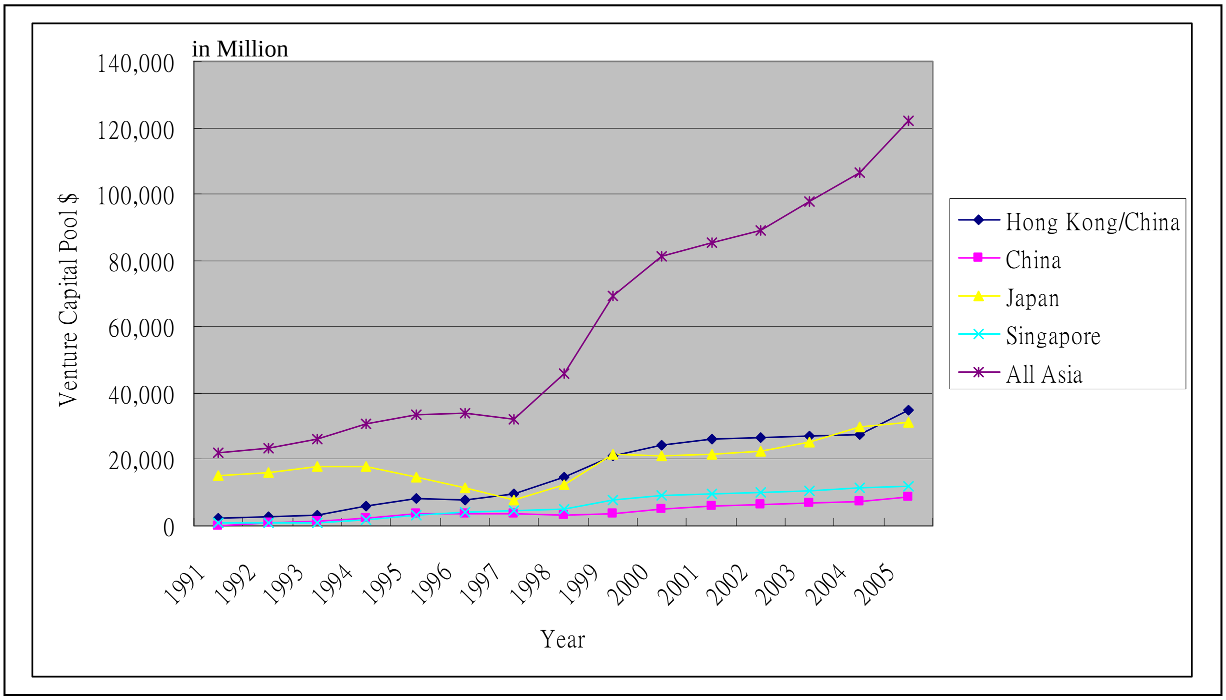
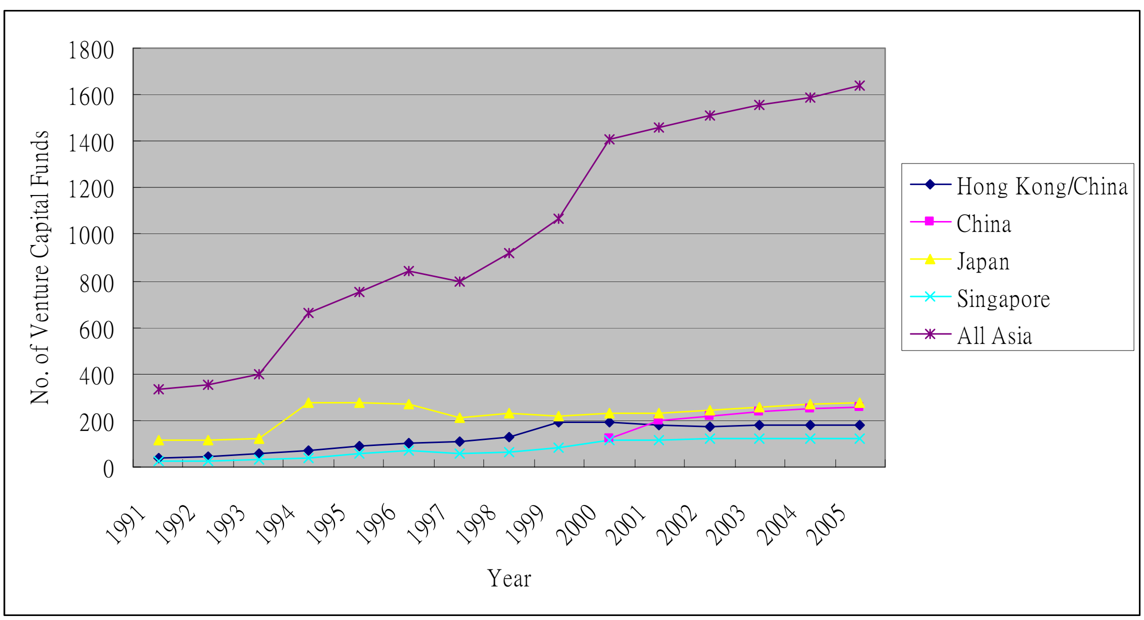
Figure 1

Venture Capital Pool and Number of VC Firms in Hong Kong in Comparison with Other Countries





Source: *Asian Venture Capital Journal*.

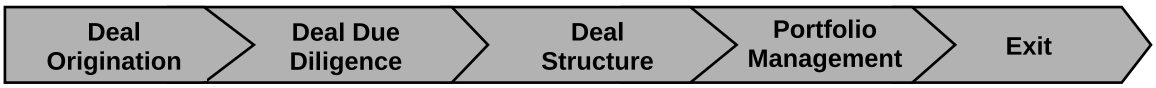
Figure 2

INVESTMENT STAGE OF VENTURE CAPITAL FUNDS, HONG KONG COMPARED TO OTHER COUNTRIES

Source: *Asian Venture Capital Journal*, Year 2000.

Figure 3

VENTURE CAPITAL PROCESS



- Source deals from submitted business plans, referrals

- Analysis of management team and business plan
- LOI/MOU signed for due diligence
- Company valuation
- Key risks and drivers evaluated

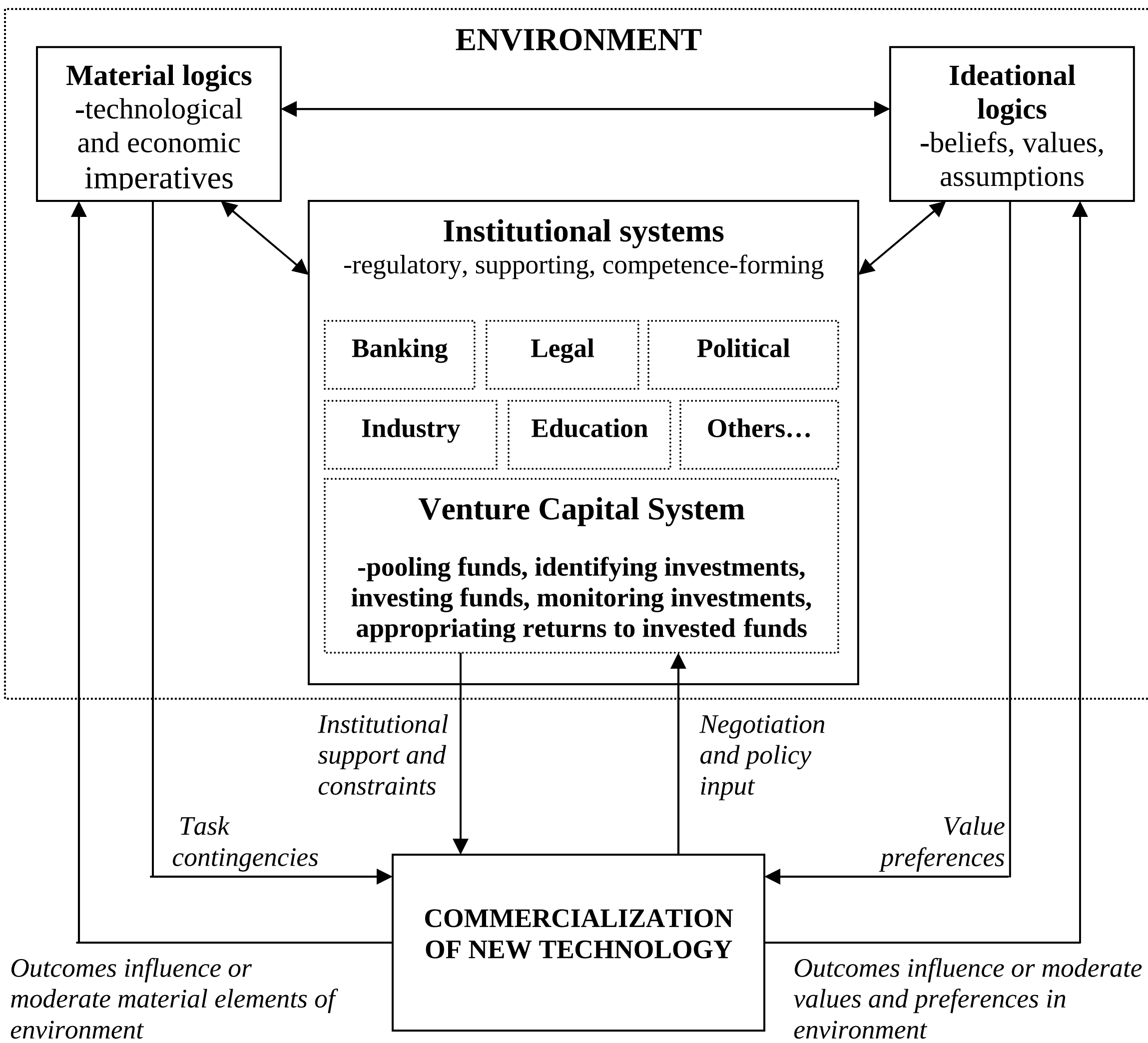
- VC provides initial structure
- Negotiations
- Finalize structure
- Source co-investors where necessary
- Money is funded

- VC participates on the board
- Operationally active on “as needed” basis
- Management contribution could include:
- arrange financing
- HRM
- networking
- later round investment
- outside expertise

- Exit via IPO, trade sale, merger

Figure 4

VENTURE CAPITAL SYSTEM



Source: Adapted from White, Gao & Zhang (2005).

FIGURE 5
KEY ACTORS AND RESOURCE FLOWS IN HONG KONG'S VENTURE CAPITAL SYSTEM

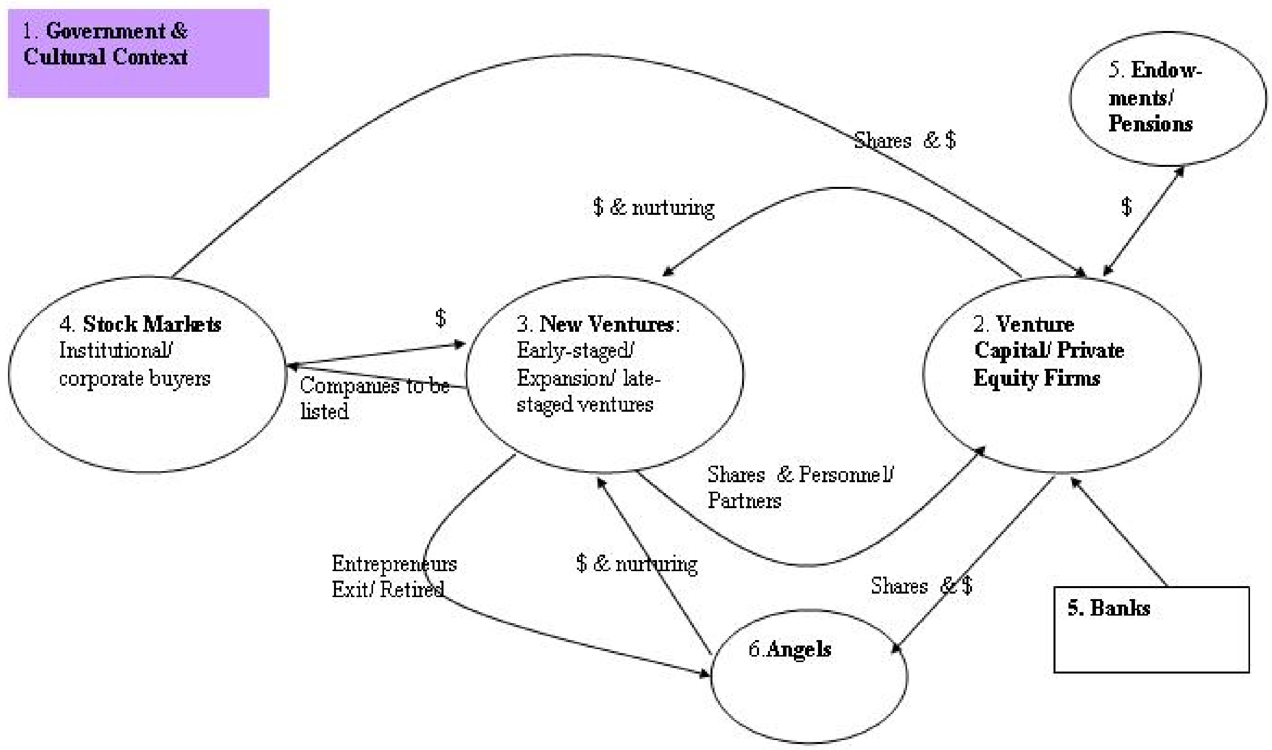
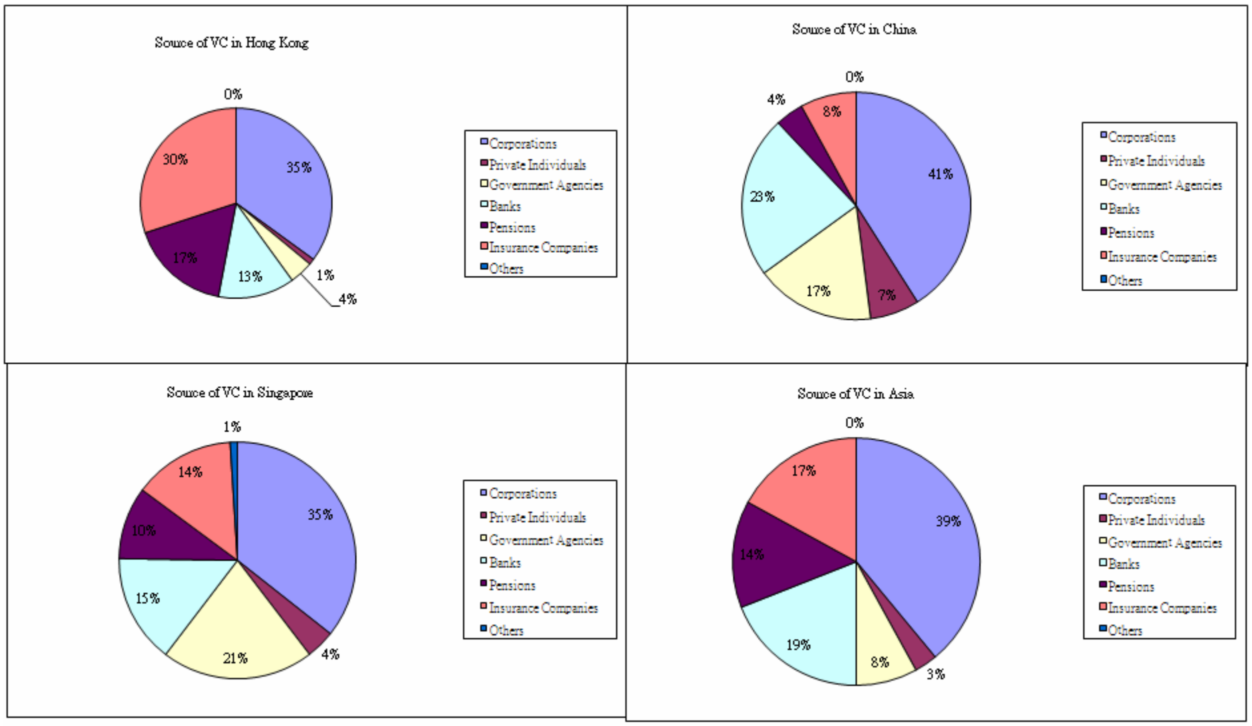


Figure 6

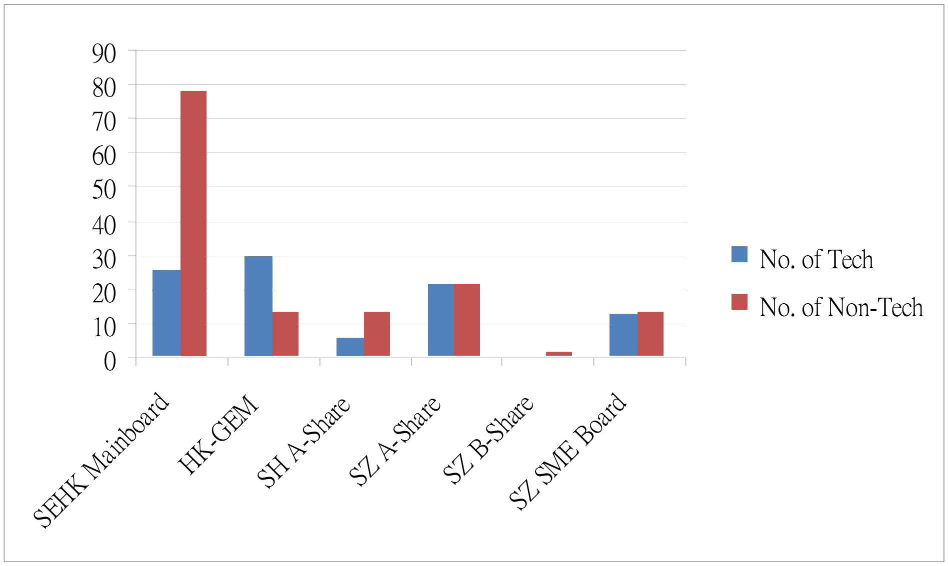
**SOURCES OF VENTURE CAPTIAL FUNDS,
HONG KONG COMPARED TO OTHER COUNTRIES**



Source: *Asian Venture Capital Journal*, Year 2001.

FIGURE 7

VC-BACKED INITIAL PUBLIC OFFERINGS, 2000-2007



Source: *Asian Venture Capital Journal*.