

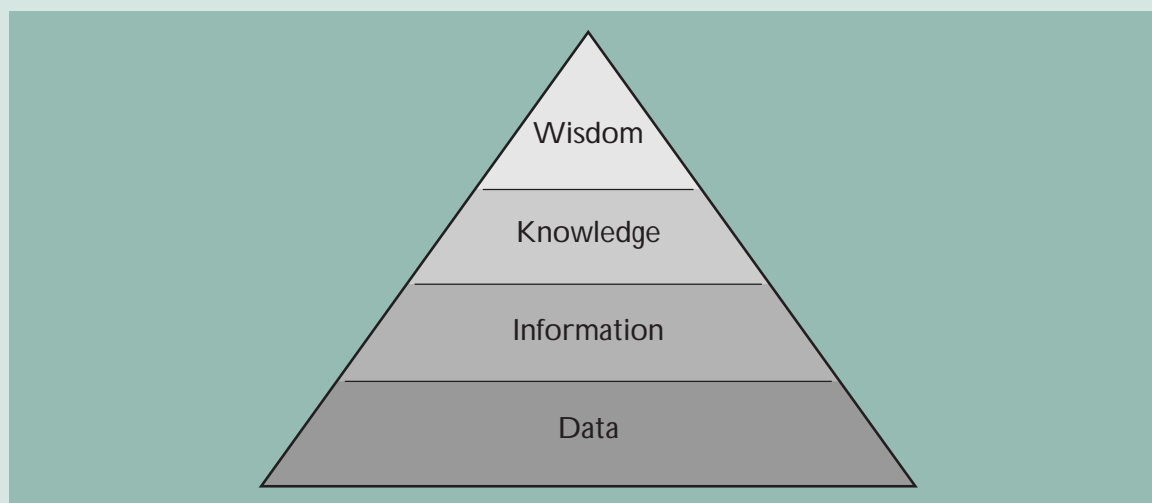
*Financing for technology can be derived from internal (retained earnings) and external sources (banking capital markets, research grants etc). The commercialization of technology should not be “forced” through directed credit or subsidized grants, but through market forces matching the supply and demand from technology. The government has a role to play to facilitate the commercialization of technology by providing the intellectual property right protection for good technology and the venture capital markets to attract capital to good technology ideas.*

I am honoured to be invited to speak in this Symposium on the Commercialization of High Technology. Late last year, the Hong Kong Monetary Authority undertook a major study on the implications of technology on finance, with special reference to Hong Kong's key role as an international financial centre. With the return of Hong Kong to China on 1 July, 1997 and as Hong Kong is a premier financial centre for China, I would like to take the opportunity to share with you our findings on the subject of “Technology and Finance”.

*“Technology is changing financial markets, just as the availability of financing affects technology.”*

Technology is defined as the application of science to industrial or commercial uses. Commercialization literally means the bringing of technology to the market place. Technology is the organization of information for application purposes. As all scientists know, the organization of information has a hierarchy. (Chart 1). The more organized the information, the higher the level of information from raw data to wisdom (Lucky, 1991). Because information itself has market value, whether it is new data, right or wrong, it can affect market prices. Information also has a time value element - old information decays in value, while new information has a market premium.

Chart 1  
Levels of Information Hierarchy



Source: Lucky 1991

<sup>1</sup> This paper was co-authored by Andrew Sheng (Deputy Chief Executive), Peter Hsueh (Head of Information Technology Division) and Christina Lee (Manager of Information Technology Division) of the Hong Kong Monetary Authority, for the Symposium on Commercialization of High Technology in Beijing on 16-17 April 1998.

Technology has changed the gathering, processing, analysis and decision making process of information.

Through advances in computing power, telecommunications and advanced mathematics, information or data can be shared, duplicated, divided and re-organised at low-cost. It can be transmitted easily, and moved with the speed of light across time and space. This means that technology can be diffused across time and geographical zones, adding market value as both supply and demand for information, commodities and services expand through new technology.

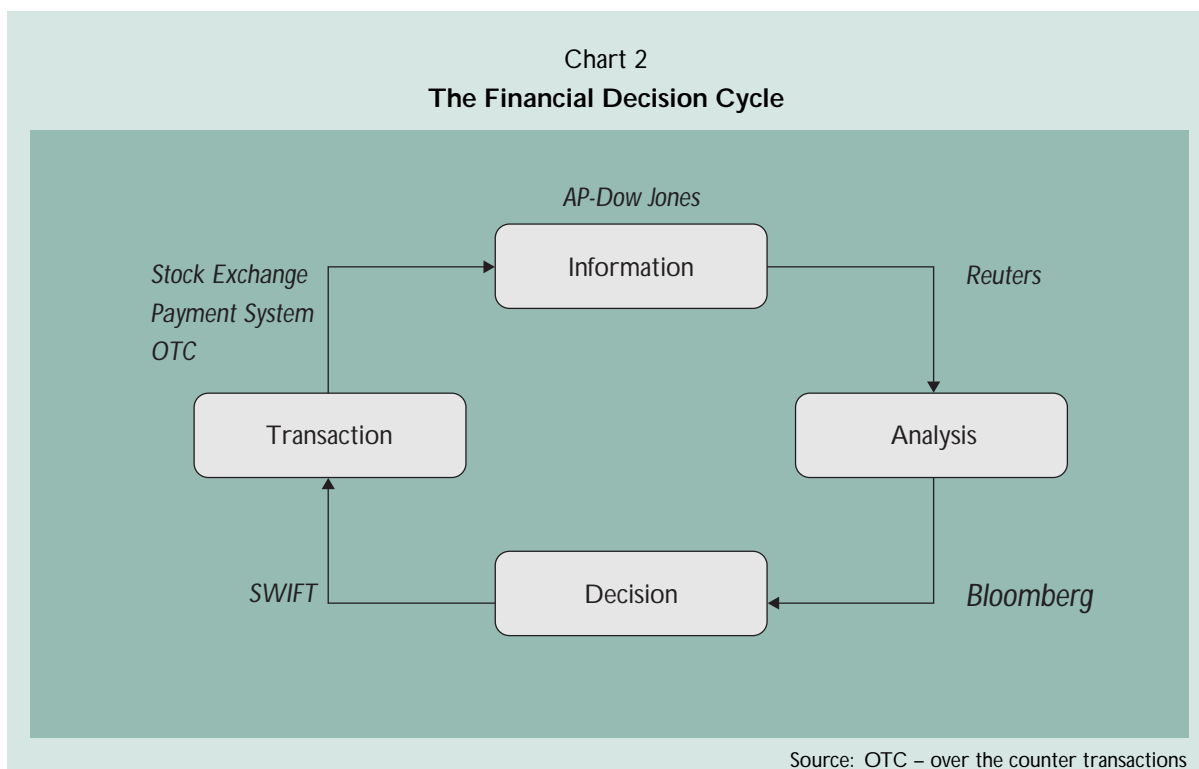
Because financial transactions involve the organization, distillation, analysis and integration of information for decision purposes, technology plays a key role in financial markets. The Financial Decision Cycle [Chart 2] is the cyclical process of receiving information for decision making process, analyzing such information, formulating a decision to transact or not to transact, and after a decision has been made, executing the transaction. The transaction itself generates new information in the

market, which causes the financial decision cycle to be repeated by the market participants.

The application of telecommunications and analytical technology to the financial decision cycle created new service providers by such agencies as Reuters, Telerate or Bloomberg, as well as the banking network, SWIFT.

From the financial decision cycle, we learn that technology is a major contributor to the development of financial markets. Those who can garner, harness and organize information, tapping the expertise and knowledge of individuals and selling these to others can create wealth. Technology is the key towards the 21st century. Those who can harness technology can harness the power of markets.

Until recently, growth in the volume of financial transactions was constrained by the physical burden of paper-based transactions and the capacity to communicate information. However, once information could be reduced to electronic



form, large amounts of financial information, as well as value, could be processed and transferred across markets.

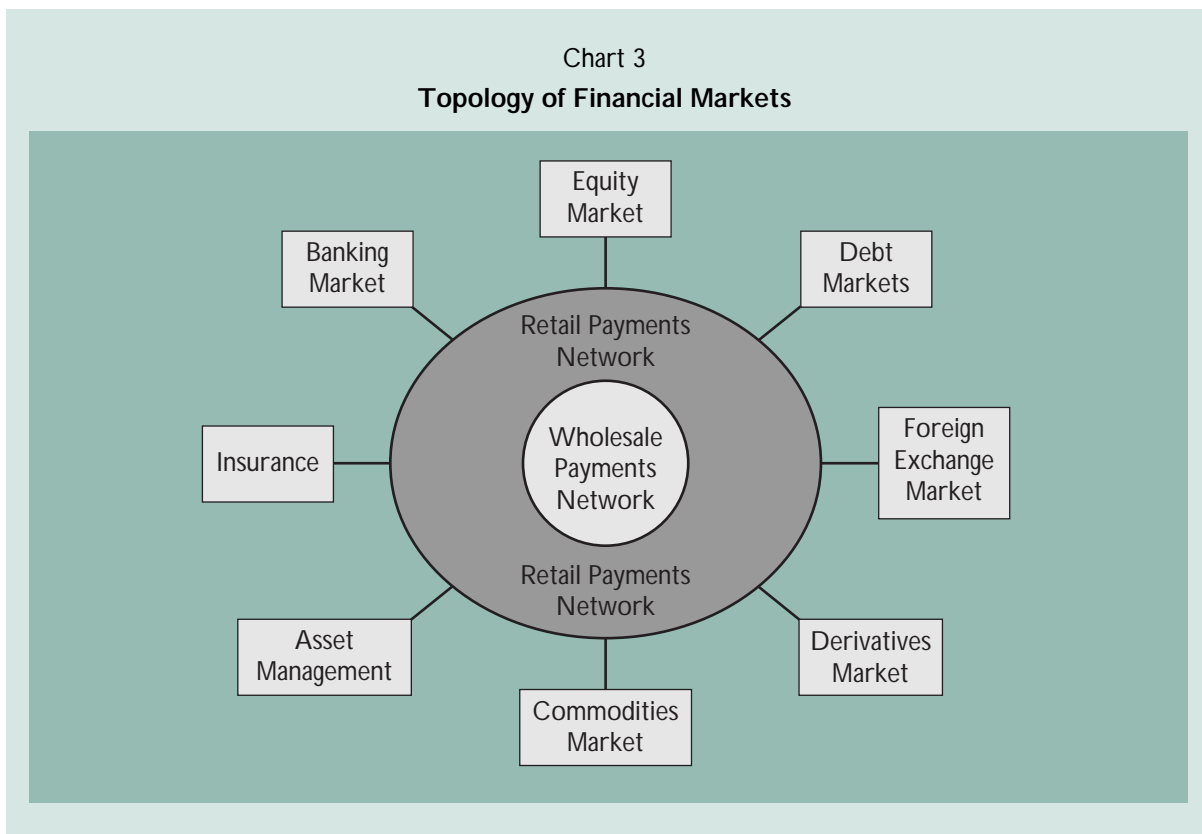
### The Topology of Financial Markets

A financial system can be depicted as a group of different product networks with overlaps in participants who ultimately settle through the payments system [Chart 3]. As financial products become more complex and individual traders transact in a variety of products, the portfolio shifts can put considerable pressure on liquidity, as market participants require funds to ensure that they settle their transactions in finality, before executing the next transaction. Thus failure of one product network could spread to other product networks via the payment networks.

The product networks and payment networks in Chart 3 are not restricted to local operations. As communications improve, markets expand both geographically and in terms of time zones. For

example, as long as investors are not constrained by legal or regulatory barriers, they would be interested to trade in stocks in neighbouring stock exchanges. Thus, markets tend to expand from a local region across international barriers. Similarly, the rise of international telecommunications has facilitated global financial markets.

The best example of network externalities is ATM networks. In 1985, more than 40% of all 60,000 ATMs in the US were proprietary networks that restricted users to exclusive networks. By 1995, almost all of the 120,000 ATMs in the US belong to shared networks, where one card-user can have access to cash through any ATMs. Closed networks lost out to open networks, because consumers wanted maximum convenience not limited access. The growing size of networks also creates “convergence”, as users and producers adopt the same standards and practices. Convergence generates economies of scale by reducing inefficiencies, eliminating unnecessary protocols and utilities.



Another superb example of the economies of scale of networks is the SWIFT story. From a co-operative venture of 200 banks in 1973, SWIFT currently serves 5,000 financial institutions worldwide through its proprietary network covering 130 countries. In 1995, SWIFT carried 603 million messages with a daily traffic of 2.3 million valued at an estimated US\$2-3 trillion daily (Schrank, 1996).

Retail card networks are also growing in size globally. The Eurocard/Mastercard network covers 10.6 million merchant outlets in 220 countries, with access to a global ATM of 124,000 machines (Red Book, BIS, 1993). Presently, Visa and its 20,700 member financial institutions serve over 13 million merchants and 561 million cardholders worldwide. Visa also operates the Visa Global ATM Network, with more than 323,000 ATMs in 109 countries.

The two major international depositories and settlement institutions in the international securities markets are Euroclear and Cedel. Their combined turnover in 1995 amounted roughly to US\$200 billion per business day. As transactions of securities markets accelerate in volume and value, the linkages between domestic clearing, settlement systems (or Central Securities Depositories, CSDs) and global CSDs become more and more important. The issues are not only complicated by different technical standards of operation, but also legal standards, regulations and design architecture.

The importance of networks, through which contagion can spread, means that the role of the government in managing systemic risks increases with technology. For global markets to function efficiently and robustly, domestic authorities have an important role in ensuring that the wholesale payment system, through which all financial transactions ultimately settle, are both efficient and robust. The failure of the inter-bank payment system can be devastating on financial markets, hence the proliferation of netting, DvP & PvP settlement systems, and the introduction of Real Time Gross Settlement (RTGS) systems, which are designed to reduce settlement risks and systemic risks.

## Rise of Internet

*"The development of the Internet and globalization of banking will transform financial markets in the 21st century."*

Technological innovation is making the world increasing small. With the rise of Internet in recent years, electronic commerce has been made possible by connecting a large number of personal computers. The US is the leader in electronic commerce, with 24 Internet connections per 1,000 people in early 1996, compared with five in Europe and two in Japan. Electronic commerce can involve either goods or services. Commerce on the Internet was estimated at US\$20 billion in 1998, with 5 to 10 times growth by the year 2000 (SCMP, March 18, 1998). The number of global Internet/Web users increased from zero in 1990 to 14 million in 1995 and is expected to expand to almost 160 million by 2000.

The success of Internet lies in the connectivity of mass consumers and specialist producers and in disintermediating the old, inefficient distribution systems. In the financial industry, Internet allows smaller financial institutions to compete with larger institutions by reaching out directly to the consumer. These smaller banks and stock brokerages can provide specialized products and services that are directly tailored to the needs of their customers. Through the Internet, they can have access to the same clearing houses and custodians as the larger institutions.

Since consumers and producers can interact through the Internet, the middleman functions are becoming redundant. The intermediation function will have to be re-designed to create and add value to the products or services offered to customers.

Internet clearly demonstrates that financial markets are in fact different networks, linking the market participants together and generating a common good that did not exist without that particular network. Open networks are public goods; they benefit participants who can simultaneously participate in other networks.

The Internet will make electronic commerce (eCommerce) and electronic payments (eCash) a reality in the 21st century with the following benefits: -

- Reduced costs to buyers, with greater competition
- Reduced errors, time and overheads in processing and delivery
- Reduced costs to suppliers
- Reduced time to complete business transactions
- Creation of new markets and products
- Easier entry to new markets
- Higher quality of goods and services
- Faster time to market
- Optimum resource allocation

### Critical Mass

To maintain and generate competitiveness, effective deployment of technology is necessary but not sufficient. It requires attaining a critical mass of complementary technology, services and skills in order to generate competitiveness. Without open access to new information, knowledge and innovation, financial systems could lose their competitiveness rapidly in a global, borderless financial world.

In a knowledge-based economy, fixed assets are less important than the collective "brain-power" of a firm's software, employee skills and access to knowledge. Capital will more and more become a function of knowledge. To be successful, a company has to have the ability to attract, retain, and continually grow the capabilities of knowledge workers and provide the environment for innovation and creativity. The same is true for an industry, a financial system or an economy as a whole.

### Globalization and Standardization

Since technology is information and has a value, it is a property right that must be protected. Therefore the successful commercialization of technology depends not only in the adoption of international standards and practices, but also the creation of an intellectual property right framework that allows the interchange of technology and information both domestically and internationally. Restricting technology to domestic markets does not subject the technology to international supply and demand, and therefore detracts market value.

Technology is moving more and more towards open systems with seamless operations. In back-office terminology, this is called Straight Through Processing (STP). Globalization and STP combined means have common standards, protocols and operational practices. As costs and the need to manage risk rise, more and more financial institutions will evolve towards STP.

### Role of Government in Technology

*"Can the Government use its own public services as a catalyst for widespread implementation of technology, such as eCommerce?"*

The G-7 Ministerial Conference on the Information Society in 1995 evolved a common vision of the Global Information Society which:

- Promotes dynamic competition;
- Encourages private investment;
- Defines an adaptable regulatory framework;
- Provides open access to networks;
- Promoting equality of opportunity to the citizen;
- Promoting diversity of content;
- Pursue adequate education and training; and

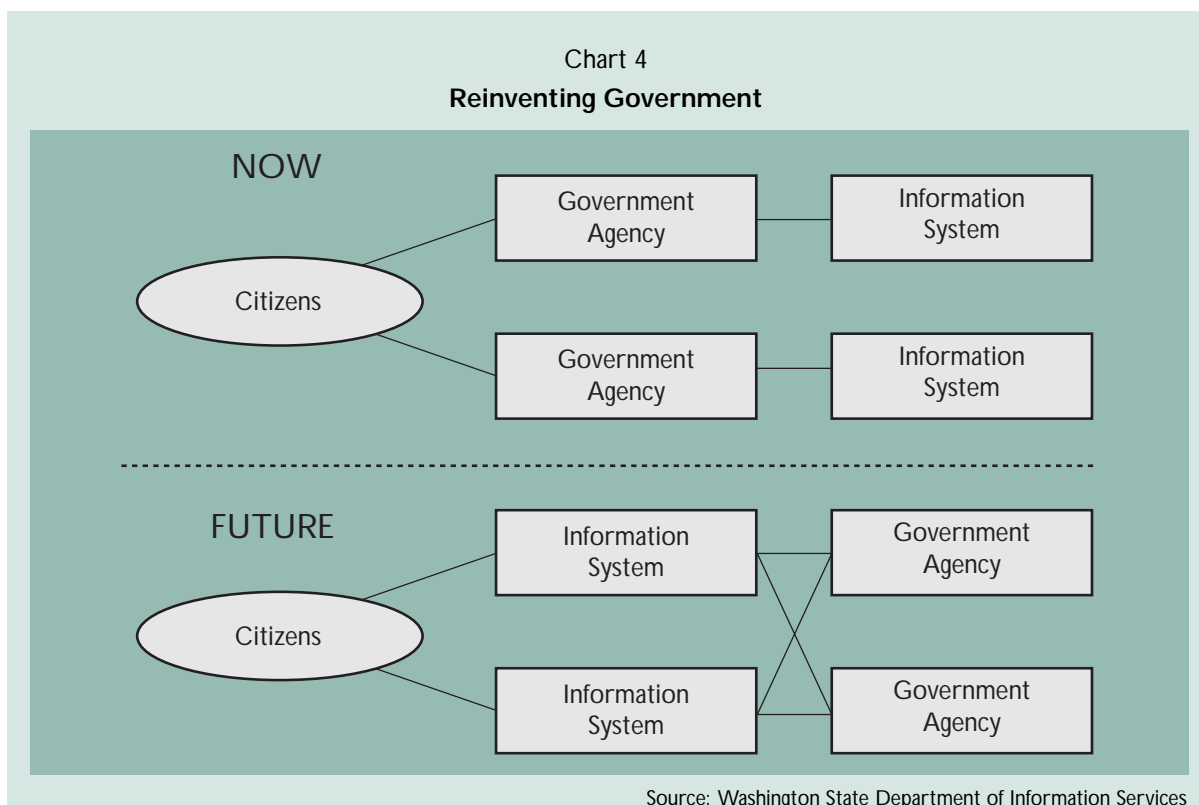
- Encouraging dialogue on worldwide cooperation.

Much of these objectives are similar to the role of a government in technology. The government is a regulator of technology, as well as a provider of education and the basic infrastructure for the development and usage of technology. At the same time, the government is a major user of technology in its public services.

In order to compete globally, government's participation in technology and government services is a critical factor to succeed. As a free port, and a free and global market, Hong Kong has always adopted policies of minimal governmental intervention and allows the private sector to play a leading role in new initiatives. To put it simply, market functioning and development is largely a private sector issue in Hong Kong. But we are not saying that the government keeps its hands completely off the market. Rather, the government plays the role of facilitator and catalyst, help creating the appropriate environment and building

the necessary infrastructure to promote the private initiatives.

The Hong Kong SAR Government is committed to providing the best service possible to the public. To achieve this, the Government spends considerable sums in the IT area. In 1996-97, HK\$330 million was spent on major departmental information strategy projects, another HK\$330 million on other applications/projects and HK\$240 million on increasing the provisions of microcomputers and computer workstations up to a ratio of 300 workstations per 1,000 civil servants. Re-examination of Government-wide services infrastructure would include a review of regulatory, licensing, data reporting requirements through electronic means, so that obstacles of electronic commerce and STP are minimized [Chart 4]. This would involve a pro-active Government policy to allow full electronic commerce for the consumer, as well as for the business firms to access Government information and for the Government to deliver services electronically.



One example of progressive government is the "Victoria 21" strategy of the State of Victoria, Australia, to maximize the benefits of adopting information technology within the Government and to the public. A key component of this strategy is the Electronic Service Delivery (ESD) project to provide impetus and facilitate the transformation of government services through re-engineered service delivery. This would assist Victoria citizens and business to adapt, and align with, the new information age; and promote the development of multimedia industry so Victoria could become a regional centre for media content development. Using new technology, the government would be able to reduce the bureaucracy, improve openness and transparency, and remove obstacles and bottlenecks to STP and electronic commerce.

Through the establishment of a comprehensive ESD infrastructure to service all Victoria citizens, ESD is seen as an integrated approach to transforming government to deliver government services on-line by 2001. The initial launch of the ESD services in December 1997 included the provision of 26 transactions, via 22 kiosks and on Internet. The 26 transactions include the notifications to Government and utilities on change of address and other personal information, booking service, acquiring products, obtaining information, making payment, providing feedback, and monitoring status of applications.

Hong Kong is moving in this direction. Mr. C. H. Tung, the Chief Executive of the Hong Kong SAR, stated in his Policy Address in October 1997 that a special IT Bureau will coordinate overall information technology development in Hong Kong. The new Bureau will formulate policies to facilitate the establishment of an open, common interface information infrastructure, accessible throughout the SAR. In February 1998, the SAR Government announced that the Information Technology and Broadcasting Bureau (ITBB) would replace the existing Broadcasting, Culture and Sport Bureau (BCSB) with effect in April 1998.

ITBB's responsibilities include:

- To formulate policies to facilitate the establishment of an open, common interface information infrastructure, accessible throughout the SAR;
- To lay down an appropriate regulatory framework to remove obstacles to interconnection between networks, and enhance Hong Kong's external information communications links;
- To develop a policy for accelerating the use of information technology applications using the common interface in the public and private sector; and
- To commission pilot projects that make innovative use of the developing infrastructure.

The adoption of electronic commerce is inevitable. Hong Kong already possesses one of the most modern telecommunications infrastructures in the world. 200,000 km of fibre optics have been laid connecting all telephone exchanges and reaching out to 1,500 buildings. With its fine infrastructure, high diffusion of the Internet and high per capita income, Hong Kong is in an advantageous position to put its information infrastructure initiatives into practice once such initiatives are formulated, hopefully not too far from now.

### Financing Technology

*"Financing for technology can be derived from internal (retained earnings) and external sources (banking capital markets, research grants etc)."*

Information technology spending in financial institutions has increased sharply. In 1996, spending on IT in the financial services sector totaled over US\$150 billion globally and is expected to continue to grow at a fast pace [Chart 5]. Such large expenditures mean that information technology has become crucial for firms in the financial services industry.



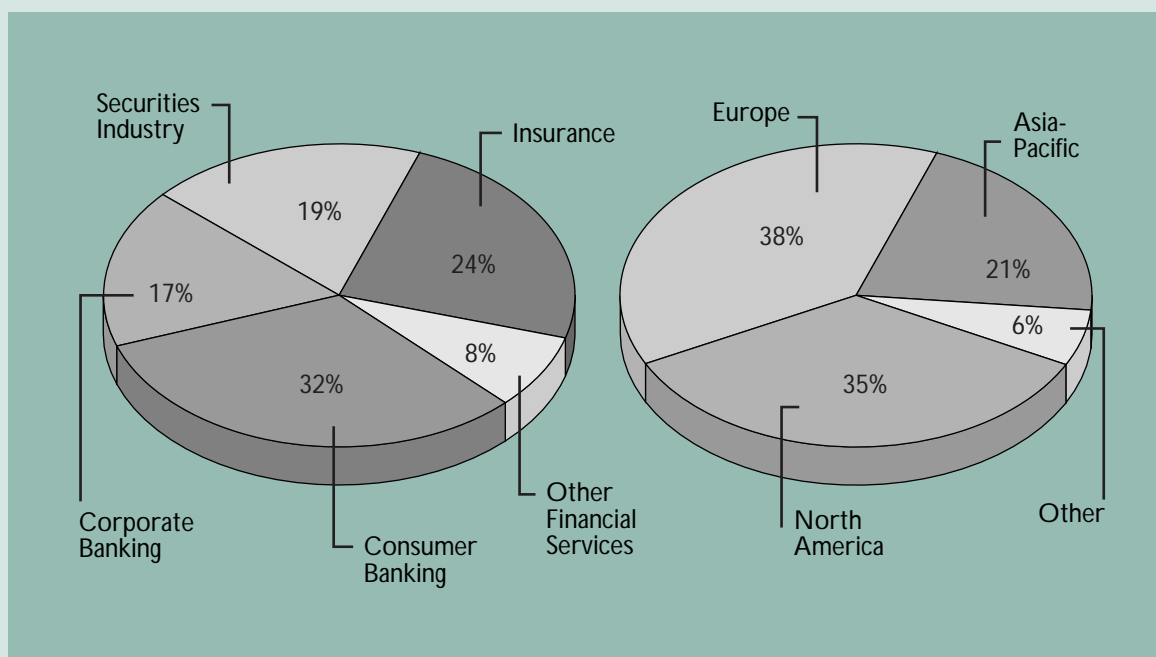
Traditionally, funding for the commercialization of technology has used venture capital as a popular financing means in Europe and the US. In essence, almost every multinational corporation starts as venture capital, in the form of small and medium enterprise (SME). According to a survey by European Venture Capital Association and KPMG, European venture capitalists raised about US\$10 billion in over 8,000 enterprises during 1996. Half of these funds were raised in the UK, while banks and pension funds were the leading investors. Of the total monies raised, almost half were invested in buyouts and another 18% in early-stage (seed and start-up) deals. Investment was mainly made to technology sectors (20%), industrial products and services (16%) and consumer-related deals (16%). For divestment, exits by trade sales continued to lead the choice, accounting for 40%, while public offerings increased to 23%.

Asian venture capital is growing rapidly. In the past five years, the total amount of venture capital from Asia (excluding Japan) invested in US technology firms has jumped more than four-fold to

about US\$400 million [Chart 6]. Yet Asia's own venture capital market is still very immature, and venture capital firms are not that common in Asia as in Europe and the US. It is mainly because of the underdevelopment of capital markets in the region, the bulk of regulatory impediments and the lack of incentives. Meanwhile, there is growing demand for venture capital markets to develop in Asia, which will help provide an efficient means to channel funds raised in Asia for investment back to Asia.

First of all, East Asia and Pacific has one-third of the world's population, which implies a huge potential market. Moreover, the region has experienced fast growth until recently. Since 1960, the region has grown at 1.5 times the global average and the World Bank projects that East Asia will grow at an average annual rate of 7.6% in the coming decade. Though this forecast may need to be revised slightly downwards as a result of the recent consolidation in Asian asset markets, the economic growth will still be strong upon world standards. All these would mean a huge demand

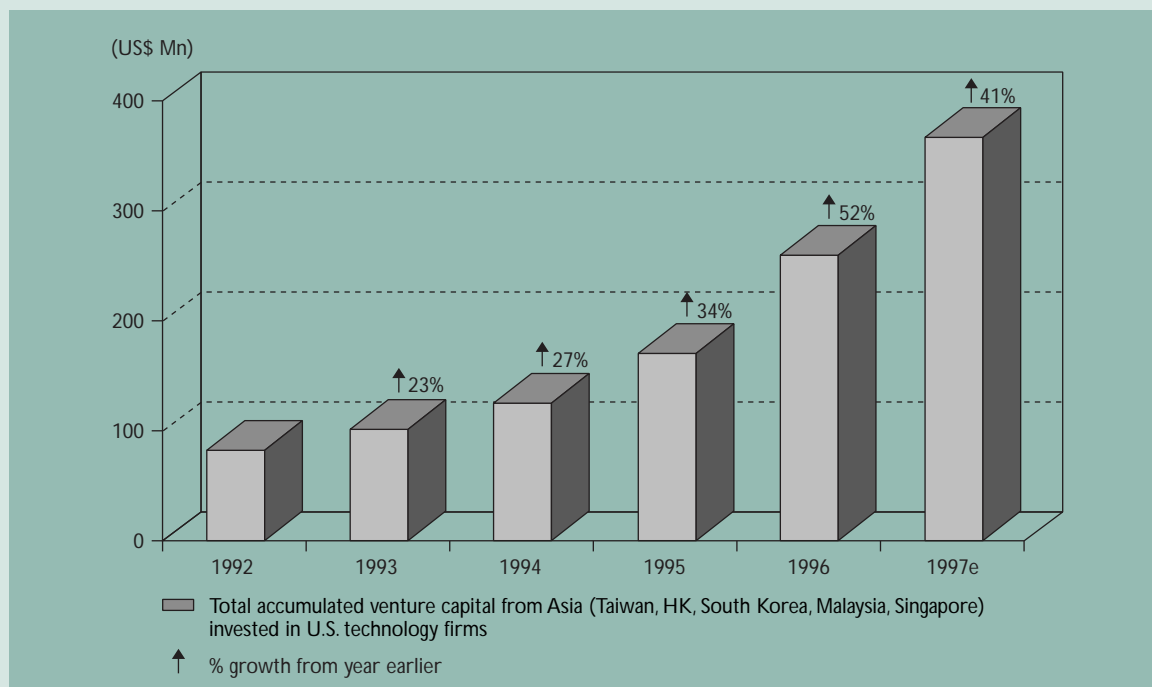
Chart 5  
**Financial Services Industry spends much on Information Technology**  
**Global Total in 1996: US\$150.9 billion**



Source: Financial Technology International, 28 April 1997



Chart 6  
 (Ex-Japan) Asian Venture Capital invested in American hi-tech companies



Source: Far Eastern Economic Review, quoting H&M consulting

for consumer goods and the latest in technology, and an Asian venture capital market would be an excellent source of funds for such purpose. Asia has indeed an abundant supply of funds from its high savings. The only problem is how to create the fostering environment and the required infrastructure to facilitate an efficient financial intermediation.

Having Asia's own venture capital market will bring along a number of benefits: -

- *First*, venture capital helps expand capital markets by offering a new range of products for investors and borrowers.
- *Second*, it helps boost hi-tech growth, as venture capital is specially designed and managed to cater for risky businesses such as hi-tech companies.
- *Third*, venture capital provides value-added services and helps develop

technical abilities. In addition to providing capital, the venture capital may provide business advice, contacts, and reputational capital that are not available from the public equity markets.

- *Fourth*, venture capital is also a way to incubate new business. Venture capital companies bring about new business to home countries, such as sourcing of raw materials and capital goods etc.

An example of how to develop venture capital is Taiwan, the biggest source of Asian venture capital outside Japan. Taiwan-backed funds dominate Asia's capital links to Silicon Valley. There are now almost 80 venture-capital firms in Taiwan, whose authorities have supported the concept for more than a decade as a way to incubate new business domestically. Many of the American start-ups backed by Taiwanese capital, for example, are expected to turn to Taiwanese manufacturers for their semi-conductor needs.

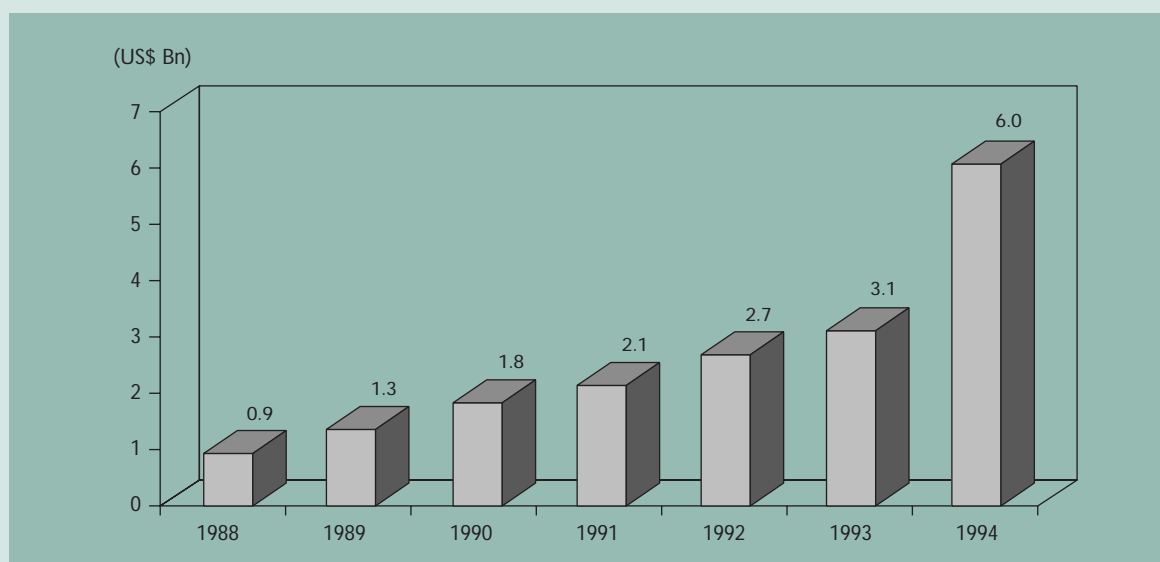
The Taiwan public sector has adopted various strategies to promote the use of technology, such as planning and implementation of an Asia-Pacific manufacturing center in order to create a competitive advantage for industries, and planning of intelligent industrial parks. In recent years the authorities have strongly emphasized a steady increase in spending on the development of industrial technology. This spending has increased 2.5-fold from around NT\$40 mn in 1987 to over NT\$120m in 1996.

Let us now turn to the situation in Hong Kong. Many of us may not realize that venture capital has already had a history of 25 years in Hong Kong. Statistics actually show that venture capital invested in Hong Kong and China has grown sharply over the years. It rose 6 times between 1988-1994, albeit the nominal amount of US\$6 billion is still not too remarkable [Chart 7]. Even now, a lot of local investors are not familiar with this kind of financing arrangements, but we do see great potential for the venture capital market to

develop in Hong Kong. Amongst other favourable factors, the proliferation of hi-tech industries and the domination of small businesses provide good supporting ground for the venture capital market to grow in Hong Kong.

According to a survey in World Link magazine, Hong Kong ranked the 19th "network society" out of a total of 49 nations, placing it well ahead of regional economies such as Taiwan (24th) and South Korea (26th). In terms of computer usage, Hong Kong ranked 14th in the world. Internet usage in Hong Kong is also rapidly gaining acceptance. To date, there are more than 90 Internet Service Providers serving over 500,000 Web users in Hong Kong, one of the highest densities in Asia. Here in East Asia, hi-tech industries are also booming, and they are expected to grow to US\$1 trillion by 2010. In essence, the Hong Kong government's goal is to build a role for Hong Kong's hi-tech industries in the region. Venture capital, specifically structured for risky projects, is a good way to boost these risky hi-tech industries.

Chart 7  
Venture Capital invested in Hong Kong & China



Source: Capital, November 1997

## Commercialization of High Technology

*"The commercialization of technology should not be "forced" through directed credit or subsidized grants, but through forces matching the supply and demand from technology."*

Another good example of using capital markets to reward the commercialization of technology is the development of the US National Association of Securities Dealers (NASD). The NASD played a significant role in facilitating capital formation in the public and private sectors by providing investors, issuers, and members with primary and secondary securities markets that are well regulated, innovative, and rewarding.

NASD was established in 1938 under the Securities Exchange Act of 1934. The NASD created the over-the-counter (OTC) market more visible by providing the National List of OTC quotations to major newspapers. Among the requirements for inclusion of a stock in the list were a \$5 minimum bid, a public float of 200,000 shares, and 1,000 shareholders.

By 1968, with the computerization, 25,000 terminals in more than 500 market makers' offices were linked together to become the fastest-growing equity market in the world. Today, the Nasdaq Stock Market is the largest electronic, screen-based market in the world. Using advanced computer and telecommunication technologies, Nasdaq enables securities firms to execute transactions for investors and for themselves from anywhere they are located in an environment of real-time trade reporting and automated market surveillance. In addition to its sophisticated technology, Nasdaq is distinguished from exchanges by its use of multiple market makers-independent dealers who openly compete with one another for investors' orders in each Nasdaq security. Known for its innovative, leading-edge growth companies, Nasdaq has two tiers: the Nasdaq National Market, with Nasdaq's larger companies whose securities are the most actively traded, and The Nasdaq SmallCap Market, with emerging growth companies.

The NASD helps industry and government raises capital by developing, operating, and regulating securities that are efficient, fair and liquid. Home

to world-leading companies in such cutting-edge industries as technology, telecommunications, and biotechnology, there are presently more than 5,100 companies listed on The Nasdaq Stock Market, making Nasdaq the market of choice for more companies than any other U.S. securities market. In addition, Nasdaq lists more non-U.S.-based issues than all other U.S. securities markets combined. In just 25 years of operation, Nasdaq has solidified its position as a primary engine for growth and innovation in the U.S. economy. The Nasdaq Stock Market is the world's largest computerized equity market that handled at its peak 1,200 messages and 160,000 shares per second. Total dollar volume skyrocketed in 1995, reaching US\$2.4 trillion, an increase of 65 percent over 1994. The market capitalization of the record 5,122 companies listed on Nasdaq surpassed the US\$1 trillion mark for the first time in 1995.

According to a survey published by Cognetics, Inc., Nasdaq-listed companies are creating more than one in six new U.S. jobs. Over the past ten years, Nasdaq has been the fastest growing U.S. market, with share volume increasing 389 percent and dollar volume increasing 906 percent.

## Conclusion

*"Through learning by doing, technology will build sufficient critical mass to reach the take off stage. Financing will follow."*

In a free economy like Hong Kong, it depends on market participants to play a leading role in new initiatives, wherever it is profitable and efficient. On the other hand, the government's attitude is to avoid undue restrictions to entrepreneurship but creating a fair regulatory and business-friendly environment and infrastructure where necessary.

For Hong Kong to maintain itself as a major international financial centre, it must have active markets and an efficient and robust financial infrastructure. With the worldwide growth in electronic commerce and electronic payments developed and pushed by the private sector, Hong Kong must take advantage of its superb telecommunications infrastructure to adapt technology toward the provision of superior services.

With 84% of GDP being accounted for by the services sector, Hong Kong is the leading example of a Virtual economy, an economy that manufactures elsewhere, such as in Mainland China, and provides the services for the region and its trading partners. The Chief Executive, Mr. C. H. Tung, in his Policy Address of October 1997, clearly stated that "Innovation, adapting to new technologies and developing new industries will always be important for Hong Kong." He promised to inject HK\$500 mn into the Applied Research Fund to support the commercialization of research in information technology and other high technology fields. His aim is to make Hong Kong an innovation centre for South China and the region. He has recently set up a high level committee of academics, industrialists, businessmen and officials to advise on the steps and institutional arrangements to achieve this aim.

To help raise capital for small and medium enterprises, the Hong Kong SAR government will support the Stock Exchange's study into establishing a Venture Board that may function like the American Nasdaq. Given that the trend of electronic commerce and electronic money is irreversible, Hong Kong would use technology and management technology to keep itself competitive as a Virtual economy.

To conclude, we believe that as a major user of technology, the key provider of public services, the primary database of public information and the main regulator, the government has a role to play to facilitate the commercialization of technology. However, it is not necessary to go the way of direct subsidies, since good technology must always meet the test of markets. What the government can do is to provide the intellectual property right protection for good technology, and the venture capital markets, such as the American Nasdaq market, to attract capital to good technology ideas.

As an international financial centre, Hong Kong must have open systems that comply with international standards and best practices. To encourage innovation and the application of new technology, the government can look at its role as a facilitator and catalyst, especially its role to remove obstacles to market initiatives. For example, the Government could take the lead in

facilitating electronic commerce and electronic payments by providing government services through a sound and efficient technological infrastructure, such as a robust financial network. In Hong Kong, this network is being established called FinNet. In specific areas, such as license applications, tax payments, trade and customs declarations, welfare payments, and mandatory record keeping, the Government should maximize technology to improve productivity, facilitating easy public access to service electronically. By taking the lead in using high commercial technology, the government would build the critical mass for technology to take off.

We hope some of the results of our study into the development of a financial technology infrastructure in Hong Kong are helpful to your deliberations on the commercialization of high technology in China. 🌐

## References

Asian Venture Capital Journal, July 1997.

Capital, November 1997.

Far Eastern Economic Review, 6 November 1997.

Hong Kong Monetary Authority, "Global Payment Systems", Hong Kong, 1996.

Miller Matt, "Venture Forth", Far Eastern Economic Review, November 6, 1997.

NASD Website, "<http://www.nasd.com/>".

Report by the Informal Working Group on Financial Technology Infrastructure, "Financial Technology Infrastructure for Hong Kong", Hong Kong, December, 1997.

Sheng Andrew, "The Scenarios for the future: Electronic Payments in Asia", The Fifth International ACH Conference, Edinburgh Scotland, May 1997.

Sheng Andrew, "The Government Attitudes Toward venture Capital: A Sea Change in the Making", 1997 Asian Venture Forum, Hong Kong, 14 November 1997.

The Hong Kong Special Administrative Region of the People's Republic of China, "Building Hong Kong for a New Era", address by the Chief Executive, the Honorable Tung Chee Hwa at the Provisional Legislative Council meeting on 8 October 1997.

The Ministry of Economic Affairs, Taiwan, Website, "<http://www.moea.gov.tw>"

Yam Joseph, "The Impact of Technology on Financial Development in East Asia", Hong Kong Monetary Authority, 1997.