Hong Kong

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Overview

Hong Kong is a noisy city. Amid the constant ringing and beeping of electronic devices of every description, one can imagine a constant "popping" sound as companies bubble up from boom to bust . . . and, hopefully, to boom again later!

In fact, it is sometimes difficult to see how anyone can make money in this dynamic and cosmopolitan city of 6.8 million[1] free-spirited, free-thinking entrepreneurs – chaotically doing free trade in one of the world's best- known free markets.[2] But make money they do – by taking calculated risks in a society that has rapidly adopted ICTs over the last ten years. Indeed, Hong Kong recently ranked first in the ITU Mobile/Internet Index,[3] just ahead of Denmark, Sweden, Switzerland and the USA.

Such rankings, while nice, do not tell the full story of Hong Kong's ICT phenomenon. To understand how and why ICTs are playing a central role in modernising Hong Kong's service-based economy, one has to look past the forest of numeric data and see the larger socioeconomic restructuring and convergence that is occurring here. This convergence is not only between digital content and communication technologies but also between the economies of Hong Kong and the People's Republic of China.

Situated on the eastern side of the Pearl River Delta, bordering the South China Sea and China, Hong Kong has 6.8 million people[4] living in a total area of 1,100 square kilometres (about six times the size of Washington DC). It is one of the most densely populated places on earth with some 6,250 people per square kilometre (up to 50,080 people per square kilometre in the Kwun Tong district). While this high density certainly has its drawbacks, it also provides a concentrated and economically viable "market" opportunity which has been seized by ICT providers to quickly and efficiently build a critical mass of customers while lowering prices.

It is no coincidence that the latest mobile and Internet services are predominantly geared towards the young. According to the 2001 census, Hong Kong has a relatively young population, with over 45 percent under the age of 35 years.[5]

After Japan, Hong Kong has one of the highest per capita GDP in Asia at US$24,100 in 2001.[6] The Hong Kong dollar is pegged to the US dollar at HK$7.8 to US$1. The average wage here is HK$11,234 per month (about US$1,440).

Other than its deep-water port, Hong Kong has few natural resources. Indeed, with only 5 percent arable land,[7] primary production from agriculture, fishing, mining and quarrying is insignificant[8] and contributes only 0.1 percent of total GDP.

As far as manufacturing is concerned, products "Made in Hong Kong" characterised its economy only up to the late 1980s, when secondary production (comprising manufacturing, construction and the supply of electricity, gas and water) contributed 31.6 percent of GDP (1980) – it contributed 14.3 percent of total GDP in 2001.

This figure is perhaps misleading, given that most labour-intensive manufacturing has relocated across the border to China's Guangdong province where both land and labour are relatively inexpensive. Currently, it is estimated that over five million Chinese workers are employed there by industrial ventures with Hong Kong interests. This is almost 21 times the size of Hong Kong's own manufacturing workforce.[9] Now it is more appropriate to label these products "Made by Hong Kong".

Hong Kong's GDP is now predominantly derived from the provision of services (83.4 percent of total GDP) comprising wholesale, retail and import/export trades; restaurants and hotels; transport, storage and communications; financial, insurance, real estate and business services; and community, social and personal services. Over the last 20 years, this sector of the economy has grown by over 15 percent from 67 percent of total GDP (1980).

Hong Kong is the ninth largest trading entity in the world and operates the busiest container port in the world in terms of throughput. It is the tenth largest banking centre in terms of external banking transactions and the seventh largest foreign exchange market in terms of turnover. Its stock market is Asia's second largest in terms of market capitalisation. These international logistic, trade and financial services rely heavily on Hong Kong's excellent telecommunications infra-structure.

Hong Kong's telecommunications infrastructure comprises world-class fixed-line, mobile and external facilities (submarine and terrestrial cable, satellite). Subscribers have long enjoyed flat-rate telephony and a telephone network which has been fully digitised since 1993. A comprehensive and complete description of Hong Kong's

telecommunications environment is available from <http://www.info.gov.hk/hkfacts/telecom.pdf>.

In August 2002, the Office of the Telecommunications Authority (OFTA) estimated that there were 1,646,154 registered customer accounts using dial-up modems to access the Internet and 868,753 using broadband access technologies. In June 2002, OFTA also estimated equipped capacity via cable at 554,638 Mbps, via satellite 2,458 Mbps (with only 72,256 Mbps and 1,676 Mbps, respectively, activated). The Hong Kong telecommunications market was fully liberalised on 1 January 2003.

There is one public Internet exchange point, the Hong Kong Internet Exchange (HKIX). In 2002, it had 71 participating ISPs. HKIX is run by the Information Technology Services Centre of the Chinese University of Hong Kong. Participation in the settlement-free, multilateral exchange is open to providers who have a public non-exclusive telecommunications service licence and who connect via a dedicated circuit of at least T1 (1.544 Mbps). In 2002, the exchange passed about 1,709 Mbps on average, peaking at 3,312 Mbps. Common infrastructural services are also provided at HKIX (domain name services, network time services, network news). A useful map to the topology of Internet networks in Hong Kong is provided by the Hong Kong Cybermap (see bibliography).

The Hong Kong Observatory provides network time services via its atomic clock, so that computers may synchronise their clocks to a standard time.[10]

As far as wired Internet technologies are concerned, there was a marked migration of Internet traffic from narrow-band to broadband in 2002. Specifically, the Internet traffic volume by subscribers using broadband has more than doubled from 8.543 terabits to 21.019 terabits between October 2001 and November 2002. During this same period, there was a corresponding decrease of almost 50 percent in dial-up Internet traffic volume from 777,610,000 minutes to 392,851,000 minutes.[11]

As regards to wireless Internet technologies, specifically those based on the IEEE 802.11 family, there are over 100 hotspots in Hong Kong offering wireless Internet access for laptops (e.g. coffee shops and the airport).

In 2001, 60.6 percent of all households in Hong Kong had personal computers (PCs) at home (it was 49.7 percent in 2000), and 80.4 percent of all households with PCs at home had their PCs connected to the Internet (73.3 percent in 2000).[12]

With regard to IT usage among household members aged ten and over, in 2001, 50.3 percent (43.1 percent in 2000) of these persons had used a PC during the immediate 12 months before enumeration, 43.3 percent (30.3 percent in 2000) had used Internet service during the same period and 39.9 percent (29.8 percent in 2000) had knowledge of Chinese input methods.

Where the business sector is concerned, in 2001, 49.7 percent (51.5 percent in 2000) of all establishments had PCs,

Hong Kong facts

Total population: 6.77 million (mid-2002)[23]
Key economic sectors (with percentages of GDP): Agriculture (0.1%), industry (14.3%), services (85.6%)[24]
GDP per capita: US$24,100 (2001)
Literacy in the national language(s): 91.6%[25]
Computer ownership per 100 inhabitants: 38.46 (2001)[26]
Telephone lines per 100 inhabitants: 58 lines or 73 telephones[27]
Internet hosts per 10,000 inhabitants: 573.52[28]
Internet users per 100 inhabitants: 45.86[29]
Cell phone subscribers per 100 inhabitants: 87 (August 2002)[30]
National bandwidth to and from the territory: 73,936 Mbps (June 2002)[31]

Sources:
See Notes.

37.2 percent (37.3 percent in 2000) had Internet connections and 10.7 percent (7.3 percent in 2000) had a webpage or a website. In 1999, the total Internet charge for all establishments was HK$819 million (US$105 million), up by 50.4 percent compared with 1998. In terms of goods, services or information transacted through electronic means in 2001, 6.2 percent (4.9 percent in 2000) of establishments had made such purchases, 40.0 percent (35.3 percent in 2000) had received items, electronically, 1.1 percent (0.3 percent in 2000) had made such sales and 12.4 percent (8.1 percent in 2000) made electronic deliveries. In 1999, business receipts from such sales for all establishments taken together were HK$4.6 billion (US$590 million), and in 2000 the amount rose to HK$7.6 billion (US$974 million).

As regards Internet affordability, the ITU ranked Hong Kong eleventh in the world with 30 hours per month at US$29.27 (being 0.02 percent of GDP per capita). Similarly, Hong Kong was ranked seventh in the world with each 90 minutes of Internet access costing US$22.85 (being 0.01 percent of GDP per capita).

Content

There are two official languages in Hong Kong (Chinese and English). The Cantonese dialect is the most popular spoken language here. One problem that arises in the use of Cantonese is that popular encoding schemes such as Big-5, and the ISO 10646 standard, do not contain all the Cantonese

dialect characters, people's names and place names used in Hong Kong. The adoption of the Internet and the resulting increase in electronic information exchange has highlighted the distortion created in data exchange in Chinese between computers where there is no agreement on how certain characters are to be defined.

In 1999, the government and the Chinese Language Interface Advisory Committee published the Hong Kong Supplementary Character Set (HKSCS). The HKSCS contains 4,702 Chinese characters that are specific to the Hong Kong environment and are used by the public and the government in electronic communication and data exchange conducted in Chinese. In December 2001, 116 additional characters were added to form HKSCS-2001. HKSCS can be readily downloaded from <http://www.info.gov.hk/digital21/eng/hkscs/download.html>.

The most popular Chinese input methods are Changjie and Quick Input. On mobile phones, the stroke method is the most prevalent.

Important local sources of content

The following are some topical and useful sources of Hong Kong content. The sites are bilingual (in Chinese and English) unless otherwise noted:

Centamap <http://www.centamap.com>
Centamap provides searchable online maps of the whole of Hong Kong. Searching can be done by street name or building name. Other information includes the locations of government departments, schools and consulates. Selected urban facilities are also indexed, and images can be panned, scrolled, zoomed, etc.

Centro Digital Pictures Ltd <http://www.centro.com.hk>
Centro is an example of a leading Hong Kong digital content production and service company creating world-class digital content for film, video and interactive media. Famous for work on films such as *A Man Called Hero* and *The Storm Riders*, the company has co-produced projects with US producers, including Industrial Light and Magic and has won awards and praise from the likes of Sony, Microsoft, Intel and IBM. The site is in English.

ESD Life <http://www.esdlife.com>
ESD Life delivers key governmental and commercial services via a highly secured and convenient single online electronic platform. Operated and managed by ESD Services Limited, it is the host of the Electronic Service Delivery Scheme – an attempt to bring IT into the daily life of the community and a core component of the Digital 21 IT strategy (see below).

Hong Kong Public Library <http://www.hkpl.gov.hk>
This is a portal into the Hong Kong public library system that is provided to meet the community's need for information and informal education.

Hong Kong government website <http://www.info.gov.hk>
This is the official website of the Government of Hong Kong Special Administrative Region (HKSAR) of the People's Republic of China. It contains links to the other website of each government bureau or department, their organisation charts, e-mail addresses and telephone directories. Comprehensive background information regarding Hong Kong is also provided here.

Hongkong and Shanghai Banking Corporation (HSBC) <http://www.hsbc.com.hk/hk>
Online banking is increasingly common in Hong Kong. This is the online site provided by one of Hong Kong's best-known banks.

King Comics <http://www.kingcomics.com>
Hong Kong has a lively comic book industry. King Comics was founded by a famous local comics writer Wong Yuk Long to attract and retain his fans. Access to various content, games, and instruction on the basics of producing comic books are provided. Interestingly, King Comics is actively making use of China's inexpensive labour to produce content.

Next Media Interactive Limited <http://www.atnext.com>
Founded by the famous entrepreneur and publisher Jimmy Lai, Next Media provides a view into the popular *Apple Daily* newspaper and *Next Magazine*. Both are well-known, hard-hitting tabloids that test the boundaries of Hong Kong's free press. The freedom of information is guaranteed under the Basic Law, although it is being challenged by Article 23 (see the sidebar "The Great Firewall of China").

PCCW's Netvigator Internet Service <http://www.netvigator.com>
Pacific Century Cyberworks (PCCW) operates one of Hong Kong's leading ISPs in narrowband, broadband and wireless. A link is also provided to "now.com", a comprehensive infotainment site. Services such as NetSee allow for remote videoconferencing as well as remote monitoring.

***South China Morning Post* <http://www.scmp.com>**
This award-winning website is produced by the well-read and respected local English newspaper.

Yahoo HK <http://hk.yahoo.com>
The local Chinese version of Yahoo! offers fairly comprehensive search capabilities of local websites and content, free e-mail, etc.

Online services

In the case of online services, both wireline and wireless, it can be argued that Hong Kong has it all. There is a breathtaking array of online services that go far beyond simple Internet access and now stretch to value-added services that increasingly make use of Hong Kong's high bandwidth infrastructure. These services are increasingly using video (e.g. Internet-based videoconferencing) or still images (online photograph servicing). However, the real question is: "So what?".

It is sometimes hard to see how transferring ring-tones, online games, snapshots, etc., will translate into true economic productivity. Perhaps inexpensive bandwidths will have unforeseen benefits by changing the way people interact and operate. Arguably, Hong Kong's existing "free" local telephony is a precursor of greater productivity and opportunity.

Examples of innovative and key initiatives

Electronic service delivery

The Electronic Service Delivery Scheme is a key initiative of the Digital 21 IT strategy of the government. It attempts to act as a catalyst for the development of e-commerce in Hong Kong by adopting some of the more advanced technologies (e.g. digital certificates). Currently, over 110 types of online services from various government departments and public agencies are on offer. In 2001, it won the Stockholm Challenge Award. Take-up of the service has been slow.

The services include filing of tax returns, payment of tax bills, purchase of tax reserve certificates, search for job vacancies, and search by employers for suitable candidates to fill job vacancies, voter registration, renewal of driving and vehicle licences, changing of personal information stored in government departments (e.g. addresses), payment of government bills, appointment booking for registration of identity cards, application for senior citizen cards, and investment and tourist information.

Cyberport

Situated in Telegraph Bay in the Southern district of Hong Kong Island, the Cyberport is a government attempt to provide a strategic cluster of companies and professional talent specialising in IT applications, information services and multimedia content creation. It had a contentious beginning when the project was awarded, without tender, to PCCW. It is often regarded as a regular real estate project. The first building was completed in March 2002, and up to June 2002 there were seven companies taking up 80 percent of space in that building. It is designed to accommodate over 100 companies.[13]

Science Park

Arguably similar to the Cyberport, although located in New Territories (Tai Po) and targeting a different audience, the Science Park is another infrastructure project. Occupying 22 hectares of reclaimed land, it is designed to create a park-like environment with state-of-the-art facilities in which to conduct innovative business. Specifically, it concentrates on the areas of electronics, IT, biotechnology and precision engineering.

Enabling policies

First published in November 1998, the Digital 21 Information Technology Strategy of the Hong Kong Government clearly sets out its vision of how government, businesses, industry and academia can work together to make Hong Kong a leading information society. It provides for a set of initiatives (e.g. electronic service delivery, a common Chinese character set, public-key infrastructure)[14] and aims to create the right environment for e-business to prosper. Via this initiative, the government took a leading role in creating a landmark document that has guided the development of ICTs in Hong Kong over the last few years. In May 2001, the strategy was reviewed and updated.[15]

The Digital 21 website can be accessed at <http://www.info.gov.hk/digital21/e_index.html>

Regulatory environment

The full texts all the laws of Hong Kong, and the specific chapters (caps) listed below are available online via the Bilingual Laws Information System offered by the Department of Justice at <http://www.justice.gov.hk/index.htm>.

Integration of broadcasting and telecommunications

The government is trying to integrate the four policy areas of broadcasting and film services, IT, telecommunications, and innovation and technology under the Information Technology and Broadcasting Branch (ITBB), which itself falls under the Commerce, Industry and Technology Bureau (CITB). Details are available at <http://www.info.gov.hk/itbb/content-en.htm>.

Electronic transactions and certification authorities

To promote and facilitate the development of e-business in Hong Kong, the *Electronic Transactions Ordinance* (Cap 553) (ETO) was enacted on 5 January 2000, came into operation in April 2000 and was reviewed in March 2002.

ETO aims to provide a clear legal framework so that electronic records and digital signatures have the same legal recognition in Hong Kong as their paper-based counterparts.

This is achieved by addressing the basic concerns of authenticity, integrity, confidentiality and non-repudiation of electronically signed transactions.

Hong Kong currently has four public legally-recognised certification authorities that issue digital certificates. The first was Hongkong Post's e-Cert Service launched on 31 January 2000.[16] Digi-Sign Certification Services Limited was recognised in July 2001. Two more were recognised on 29 April 2002: HiTRUST.COM (HK) Incorporated Limited and Joint Electronic Teller Services Limited (JETCO).[17]

Although the price of obtaining digital certificates is relatively low HK$20 (US$2.56) per year for personal certificates and HK$150 (US$19.2) per year for corporate certificates, less than 1 percent of businesses use them. The majority that do use digital certificates are involved in financal, insurance, real estate and business services.[18]

Background information on ETO is available from <http://www.info.gov.hk/itbb/english/it/eto.htm>.

Cyber crime and computer emergency response

Since 1993, the Computer Crime Section within the Police Commercial Crime Bureau has been responsible for investigating cyber crime in Hong Kong.

Depending on the nature of the cyber crime, three ordinances under the *Crimes Ordinance* (Cap 200), and typically sections 60 and 161, are used in relation to illegal access, denial-of-service attacks, and fraud.

In January 2001, the Hong Kong Computer Emergency Response Team Coordination Centre (HKCERT/CC) was established to provide centralised contact on computer and network security incident reporting and response for local enterprises and Internet users.[19] The centre's website is <http://www.hongkongcert.org/home.html>.

Code on access to information

An *Administrative Code on Access to Information* applies to all government bureaus and departments. It makes available to the public "reasonable access" to government information. The code sets out the types of government information which the public may access. See <http://www.info.gov.hk/access/code.htm> for details.

Data protection and privacy

The Office of the Privacy Commissioner for Personal Data monitors, supervises and promotes compliance with the *Personal Data (Privacy) Ordinance* (Cap 486), which was enacted on 3 August 1995 and came into force on 20 December 1996. Details can be found at <http://www.pco.org.hk>.

Intellectual property protection

In order for Hong Kong to be regarded as an information economy, it is clear that there needs to be adequate respect, protection and enforcement of intellectual property rights according to the highest international standards – especially if Hong Kong wants to encourage innovation, creativity and design in high technology and advanced services.

The Great Firewall of China

In September 2002, there was considerable coverage in the local newspaper *South China Morning Post* of the blocking and redirection of queries to the US-based Google search engine sent by users in the People's Republic of China (PRC). Although the PRC government is known to be trying to balance the "good" aspect of the Internet with its less desirable qualities, the blocking raised some fundamental questions for Hong Kong where no such blocking had been noticed.

A study by Harvard Law School on the magnitude of "The Great Firewall of China" revealed that of the 19,032 inaccessible websites several Hong Kong newspapers (e.g. *Apple Daily*) were included (see <http://cyber.law.harvard.edu/filtering/china>

Under the "one country, two systems" construct, Hong Kong is allowed a great deal of autonomy. The freedom of information is guaranteed in the mini-constitution called the *Basic Law*. On the one hand, Hong Kong is famous for its lively "free press", and the Internet, in its raw form, is alive and well here. Yet, on the other hand, it needs to find mechanisms to co-exist with China.

There is already widespread concern in Hong Kong surrounding the enactment of Article 23 of the *Basic Law* and its possible "chilling effect" on the press and the rights to the freedom of information. Article 23 stipulates that the HKSAR "shall enact laws on its own to prohibit any act of treason, secession, sedition, subversion against the Central People's Government, of theft of state secrets, to prohibit foreign political organisations or bodies from conducting political activities in the Region, and to prohibit political organisations or bodies of the Region from establishing ties with foreign political organisations or bodies".

The case continues . . .

In 1990, the post of Director of Intellectual Property was established as a statutory office by the *Director of Intellectual Property (Establishment) Ordinance*.

Nevertheless, the widespread availability of pirated computer software, DVDs, VCDs in the Wan Chai and Sham Shui Po districts means that much remains to be done. Furthermore, the ready availability of inexpensive CD-ROM burners, colour-copying machines, etc., no doubt adds to the difficulty of the Customs and Excise Department in enforcing intellectual property rights. For more information, visit <http://www.info.gov.hk/ipd/eng/index.htm> and <http://www.info.gov.hk/customs/eng/content_e.html>.

Domain name registry

There are currently five second-level domains (.com.hk, .net.hk, .org.hk, .edu.hk and .gov.hk) under the ".hk" top-level domain. The domain is administered by the Hong Kong Domain Internet Registration Corporation Limited (HKIRD), a non-profit company inaugurated in April 2002. However, the actual registration services are provided by its wholly owned subsidiary Hong Kong Domain Name Registration Company Limited (HKDNR). Previously, the domain was administered by the Joint Universities Computer Centre (JUCC) which was widely known as HKNIC, and was a founding member of the Chinese Domain Name Consortium. Currently, there are 18,123 level-3 domains registered under ".hk".[20] Individual domain names are not available under ".hk". See <http://www.hkdnr.net.hk/hkdnr/index.jsp> and <http://www.info.gov.hk/digital21/eng/structure/dnip_main.html> for details.

Domain name dispute resolution

Hong Kong is gaining experience in resolving domain name disputes not only in ".hk" but also in several additional top-level domain names.

The Hong Kong International Arbitration Centre (HKIAC) was formed in 1985 to provide an independent forum for dispute resolution and is currently the sole provider of dispute resolution services for ".hk". It has also been appointed by the China Internet Network Information Centre to resolve ".cn" domain name disputes.

Furthermore, the Asian Domain Name Dispute Resolution Centre (ADNDRC) was formed by HKIAC, together with the China International Economic and Trade Arbitration Commission. It is one of four domain name dispute resolution providers approved by the Internet Corporation for Assigned Names and Numbers (ICANN). ADNDRC was appointed by ICANN on 3 December 2001 to handle disputes in ".com", ".net", ".org", ".biz", ".name", ".info", ".pro", ".coop", ".aero" and ".museum" using the Uniform Domain Name Dispute Resolution Policy (UDRP) and the UDRP Rules. Further information can be found at <http://www.hkiac.org> and <http://www.adndrc.org/adndrc/index.html>.

Open source movement

The open source movement, as exemplified by the Linux operating system (and its variants), is already well established in Hong Kong – especially among the ISP community. Indeed, there are numerous mirror sites housing the relevant source codes (e.g. RedHat, RedFlag, OpenBSD, FreeBSD). Furthermore, there are popular and widely available magazines in Chinese covering Linux (e.g. LinuxPilot), plenty of computer books, published mainly in Taiwan, and numerous courses providing further instruction. The government is also committed to supporting the adoption of open source standards.

Research into ICTs

While basic research is left to the universities, applied research in ICTs in Hong Kong is actively fostered by both public and private risk capital. Indeed, access to funding, and a potential exit through acquisition or initial public offering, has been a key factor in the recent boom and bust cycle of Internet-related and telecommunication enterprises.

The government runs a HK$5 billion (US$641 million) Innovation and Technology Fund supporting projects that promote innovation and technology upgrading in the manufacturing and service industries. At the end of 2001, it funded 236 projects, amounting to some HK$526 million (US$67 million) in investment. These projects have been undertaken by industrial support bodies, trade and industry associations, higher education institutions, professional bodies and locally incorporated companies.

To promote technological entrepreneurship, a HK$750 (US$96 million) million Applied Research Fund was established in March 1998. This fund replaced two previous schemes to provide equity finance for technological ventures in the private sector. In November 1998, private venture capital firms were appointed as managers of the fund. Besides selecting technological ventures for investment, the venture capital firms provide management and networking advice to the investee companies. By the end of 2000, HK$306 million (US$39 million) in financial support had been provided to 18 companies through these fund managers.

Future trends

It can be argued that Hong Kong enjoys an advanced telecommunications and ICT infrastructure, but is this manifested as increased productivity? As the infrastructural "building" phase is largely complete, with the full range of services already on offer, we shall shortly see if Hong Kong reaps the rewards of past investments. Hopefully, the reality will live up to the earlier promise and hype.

If living in a crowded and efficient economic environment is not enough, the rapid adoption of ICTs will further blur the boundaries between work and leisure. What

will be the cost to society of being "always on", 24 hours a day? Hong Kong will probably be the first to find out what is, and what is not, socially, economically and politically acceptable.

Furthermore, with the nature and definition of "content" changing to include real-time video and location-based services,[21] there will be new challenges to privacy, especially from new services that now include remote monitoring and tracking of people and machines, in Hong Kong or across the border.

Nevertheless, the main challenge facing Hong Kong is how to deliver high value-added services as it seeks to complement the low-cost, and increasingly sophisticated, economy of China. Although China and Hong Kong are experimenting with the theory of "one country, two systems", it is clear that on a technical level this really needs to be, "one country, one system" if they are to be compatible. Therefore, the technical advantage that is currently enjoyed is not necessarily a guarantee for the long-term success of Hong Kong, especially when it may have to export this advantage to China to survive.

Ultimately, China's concerns over managing content (see the sidebar) may limit how far Hong Kong can expand its economic reach across the border. Fortunately, Hong Kong is still only addressing technical, interoperability issues – the social and political dimensions are much harder questions to address and ultimately they may well be the more important questions that Hong Kong needs to find answers to – and find them quickly![22]

Select bibliography on Hong Kong

Hongkong 2001 **<http://www.info.gov.hk/yearbook>**
This yearbook published by the Hong Kong government has all the background information about Hong Kong. While the entire content is published for the last five years on the Web, it is also available in book and CD-ROM form. Indeed, one of Hong Kong's best buys at HK$20 (US$2.56)!

Thematic Household Survey Report No. 6
Published by the Census and Statistics Department, this book provides comprehensive results of the April–June 2001 survey of how IT is used by Hong Kong households. It contains lots of interesting raw data, the interpretation of which is left to the reader. Softcopy is available for purchase online at <http://www.statisticalbookstore.gov.hk>.

Hong Kong as an Information Society **(2002 Edition)**
Published in September 2002, it provides a fascinating summary of the main results of both surveys on IT usage and penetration in households, the business sector and the government in both 2000 and 2001. Operating characteristics of the IT and telecommunications sector, as well as statistics on related imports and exports, are also provided.

Report on 2001 Annual Survey on Information Technology Usage and Penetration in the Business Sector
This book provides comprehensive results of the April–June 2001 survey of how IT is used by the business sector. Softcopy is available for purchase online at <http://www.statisticalbookstore.gov.hk>.

Made by Hong Kong
This book by Suzanne Berger (published 1997, ISBN 0-19-590358-7), provides the results of a year-long study by a team from the Massachusetts Institute of Technology on the challenges and opportunities provided by the integration of Hong Kong's economy with that of China.

In Search of Information Policy: A Discourse on the Hong Kong Information Infrastructure
This book provides an interesting historic snapshot of presentations made between December 1996 and April 1997 to the Legislative Council Panel on Information Policy. In this era of "superhighways" and "information infra-structures", it presents the ideas and concerns regarding the development of Hong Kong's information infrastructure.

Cybermap of Hong Kong <http://www.idg.com.hk/cybermap>
A picture is worth a thousand words. This map of the network topology and interconnection of Hong Kong's ISPs show who is connected to whom and at what speed. It is published every other month in Hong Kong's *Computer World Magazine* and is also available for sale online.

Office of the Telecommunications Authority <http://www.ofta.gov.hk >
All you ever wanted to know about telecommunications in Hong Kong can be found here. It has a particularly good data section and is well organised.

Sin Chung Kai's Cyber Office <http://www.sinchungkai.org.hk/ehp.html>
This provides a glimpse into the thoughts and concerns of the legislator representing the Information Technology Functional Constituency (ITFC) in Hong Kong, the Honorary Sin Chung-Kai. So far, he is the first and only ITFC representative, having served since 1998 (although he has been involved in Hong Kong politics for over 17 years). This is an outspoken person with some interesting points of view.

Notes

1. 6.77 million as of mid-2002 and 6.725 million as of mid-2001 <http://www.info.gov.hk/yearbook/2001/ehtml/facts/index.htm>.

2. Hong Kong ranked first for the last nine years as the world's freest economy according to the US Heritage Foundation <http://cf.heritage.org/index/indexoffreedom.cfm>. The US Cato Institute ranked Hong Kong as the freest economy in the world in 2002 <http://www.cato.org/pubs/policy_report/v22n2/ecofreedom.html>.

3. <http://www.itu.int/osg/spu/publications/sales/mobileinternet/>.

4. As of mid-2002, the population stood at this total <http://www.info.gov.hk/ef3.htm>.

5. Census and Statistics Department (2001). *Population Survey* <http://www.info.gov.hk/censtatd/eng/hkstat/fas/01c/cd0032001_index.html>.

6. *Hong Kong 2001*, p. 42

7. CIA. *The World Factbook* <http://www.cia.gov/cia/publications/factbook/geos/hk.html>.

8. *Hong Kong 2001*, p. 43

9. *Hong Kong 2001*, p. 51, or <http://www.info.gov.hk yearbook/2000/eng/04/c04-01.htm>.

10. Hong Kong Observatory <http://www.hko.gov.hk/   nts/ntime.htm>.

11. Internet Service Data and Statistics, OFTA <http://www.ofta.gov.hk/frameset/facts_index_eng.html>.

12. Summary of Survey Results, Household Survey on Information Technology Usage and Penetration <http://www.info.gov.hk/digital21/eng/milestone/download/itsurveysummary2001.pdf>.

13. Cyberport <http://www.info.gov.hk/itbb/english/cyberport/project.html>.

14. Digital 21 <http://www.info.gov.hk/itbb/english/new/digital21.pdf>.

15. 2001 Hong Kong Digital 21 Strategy: Connecting the World <http://www.info.gov.hk/digital21/eng/strategy2001/strategy_main.html>.

16. *Hong Kong 2001*, p. 390.

17. <http://www.info.gov.hk/gia/general/200204/29/0429123.htm>.

18. *Hong Kong as an Information Society*, Table 2.19, p. 52.

19. ITS/255/00 <http://www.itf.gov.hk/secure/general.asp>.

20. Network Wizards, July 2002 Internet Domain Survey <http://www.isc.org/ds/WWW-200207/dist-byname.html>.

21. Hutchison Telecoms, the Pinpointcompany, Location-Based Workforce Management Service <http://www.thepinpointcompany.com>.

22. Discussion on Article 23 regarding secession, subversion, etc., is already posing challenges to Hong Kong's rights to the freedom of information under the "one country, two systems" construct see the sidebar.

23. <http://www.info.gov.hk/censtatd/eng/hkstat/fas/01c/01c_index.html>.

24. *Hong Kong 2001*, p. 43.

25. Census and Statistics Department. *Population Survey, 2001*. Defined by population aged 15 that never attended school nor kindergarten.

26. ITU (2002), *Internet for a Mobile Generation*, p. A-11

27. *Hong Kong 2001*, p. 382 or 57.66 (2001) and ITU (2002), *Internet for a Mobile Generation*, p. A-25

28. ITU (2002). *Internet for a Mobile Generation*, p. A-11

29. ITU (2002). *Internet for a Mobile Generation*, p. A-37

30. OFTA (August 2002) <http://www.ofta.gov.hk/frameset/facts_index_eng.html>.

31. OFTA (June 2002) <http://www.ofta.gov.hk/frameset/facts_index_eng.html>.