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**Progress Report of ICT Statistics Development in
Hong Kong, China**

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Introduction

People in Hong Kong are generally ICT-savvy. Adoption of new information and communication technology (ICT) has become part and parcel of our daily lives. In Hong Kong, we have developed an excellent ICT infrastructure and have almost 100% mobile phone coverage over the territory. The penetration rate of mobile phone has increased to 127% with a total number of subscribers of over 8.6 million. In 2005, 70% of households in Hong Kong had personal computers (PC) and 65% of all households in Hong Kong had their PCs at home connected to Internet. The PC and Internet penetration rates for large corporations¹ reached 98% and 92% respectively in 2005.

2. The Census and Statistics Department (C&SD) of Hong Kong, China regularly compiles and develops a host of ICT statistics. The following is a brief description of C&SD's current statistical activities in this area.

IT Usage and Penetration in the Business Sector

3. C&SD has been conducting an *Annual Survey on IT Usage and Penetration in the Business Sector* since 2000 to assess the use and uptake of IT in different sectors. The 6th round of the survey was conducted between May and August 2006 covering some 4 700 establishments in different industry sectors and the results will be available in end-2006.

4. Apart from the core data items on PC usage, Internet usage, Website usage, electronic business/electronic commerce and budget for IT, new topics were added in each survey round to gauge the latest trend. For instance, in view of the increasing popularity of wireless and mobile applications, questions on the use of wireless and mobile devices, technology employed, and applications involved have been added since the 2004 survey so as to map out a full picture of the way wireless and mobile solutions are adopted in enhancing business operations. As for the 2005 survey, more information on network usage (e.g. LAN, Intranet, Extranet) as well as PC and Internet usage by employees was collected. For the 2006 survey, questions on IT security have been expanded in order to capture more information on IT security measures adopted by the business enterprises.

¹ Large corporations are defined as firms with 100+ persons in the manufacturing sector and 50+ persons in other sectors.

IT Usage and Penetration in the Household Sector

5. C&SD also regularly conducts the *Thematic Household Survey on IT Usage and Penetration*. The survey was first launched in 2000. The latest round was conducted in mid-2006 and the results will be released in end-2006. The survey covers the land-based non-institutional population of Hong Kong, representing some 99% of the Hong Kong Resident Population. Some 10 000 households were successfully enumerated in each of the previous rounds of the household survey.

6. The survey collects information on the penetration of PC and Internet among households, and individual household member's PC and Internet usage at different locations, usage of electronic business services, usage of online government services and awareness of information security. Besides, demographic and socio-economic characteristics of the respondents are also collected to allow for an in-depth understanding and analysis of the extent of digital divide in Hong Kong.

7. Same as the business IT survey, C&SD will review the survey questionnaire for each round of household IT survey by taking into consideration the views of relevant government policy advisor, feedback from respondents and other data users as appropriate. This ensures that the information collected can reflect the changing needs of Hong Kong's IT market. For instance, the 2004 survey covered new questions on the type of wireless technology used by mobile devices and views on online Government services, while the 2005 survey included new questions related to pattern of playing electronic games and usage of electronic Government services.

ICT Sector Statistics

8. The coverage of the information technology and telecommunications (IT&T) sector in Hong Kong is drawn up with reference to that of the ICT sector promulgated by the Organisation for Economic Cooperation and Development (OECD) with local adaptations. The Hong Kong Standard Industrial Classification (HSIC) is used to demarcate the IT&T sector, which covers establishments engaged in the manufacturing, distribution, installation and maintenance of IT&T products and provision of IT&T services.

9. Statistics on the operating characteristics of IT&T sector, including number of establishments, number of persons engaged, number of vacancies, business receipts and value added, are compiled from data collected in a series of annual economic surveys. These help reflect the contribution of the IT&T sector to the economy.

IT Expenditure

10. Some data on IT expenditure in the business sector have been collected in a series of annual economic surveys since the reference year 1998. Data items collected include:

- (i) expenditure on purchases of computer hardware (e.g. PCs, mainframes, notebook computers, storage devices and components) and peripherals (e.g. printers, scanners) for own use;
- (ii) expenditure on purchases of computer programs, software and databases for own use, including both standard ones available in the market and those specifically designed/developed by other firms;
- (iii) payments for other IT-related services (e.g. system design and development, computer training, Internet page design, Internet connection, Website hosting, computer equipment leasing, repair and maintenance of computer products); and
- (iv) cost of in-house development of computer programs and databases for own use (the total cost is taken to be the sum of labour costs and non-labour costs incurred).

11. Based on the survey results, a statistical series on IT expenditure in Hong Kong for 1998 – 2004 has been compiled and analysed.

IT Manpower

12. A competent IT workforce is vital to Hong Kong's future prosperity as a premier digital city in a globally connected world. The *Manpower Survey of the IT Sector* continues to be conducted by C&SD on behalf of the Vocational Training Council on a bi-annual basis to collect data on the manpower demand and training situation of IT staff in various economic sectors and government

bodies. The 2006 survey was conducted in March 2006 and the results will be released in end-2006.

13. The survey covered 9 broad categories of IT job, viz. IT management, IT/software development, telecommunications and networking, IT security, database, systems programming, field support, operation services and IT education and training. The IT manpower survey collects information on the number of IT employees by occupation; preferred academic qualification, experience, average remuneration package; recruitment difficulties; rating of character and competence of new recruits; and IT outsourcing.

Electronic Commerce

14. Hong Kong basically adopts the broad definition of e-commerce promulgated by the OECD². Data on e-commerce are mainly collected via the above-mentioned survey on IT usage and penetration in the business sector. However, instead of defining e-commerce in the survey, data on the following activities are collected:

- (i) Order or purchase of goods, services or information via electronic means³,
- (ii) Receipt of goods, services or information via electronic means⁴,
- (iii) Sales of goods, services or information via electronic means⁵, and
- (iv) Delivery of goods, services or information via electronic means⁶.

² The OECD has promulgated both narrow and broad definitions of e-commerce based on a transactional approach. The broad definition covers all electronic transactions conducted via computer-mediated networks, while the narrow definition covers only those conducted via the Internet. For both definitions, the payment and the ultimate delivery of the goods or services may be conducted on or off-line.

³ An establishment is regarded to have ordered or purchased goods, services or information through electronic means if the confirmation of order or purchase is done completely via electronic means, regardless of whether the payment and the ultimate delivery of the goods, services or information are conducted via electronic means.

⁴ Browsing of information on the Internet is regarded as receiving information via electronic means. Goods and services received through electronic means are only restricted to products which could be transmitted via electronic media, such as software packages and songs.

⁵ A firm is considered to have sold their goods, services or information via electronic means if they offered and accepted orders or purchases that were placed completely via electronic means. Apart from the sales of goods, services or information through electronic means such as the Internet, telephone, it also includes cases where a firm, in accordance with an agreement with its client, automatically delivers certain product to the client for replenishment of stock when the firm learns, via electronic means, that the stock kept by the client falls to a certain level.

⁶ Placing information about a firm or the products sold on the Internet is considered to have delivered their information via electronic means.

Telecommunication Indicators

15. The success of Hong Kong as a regional finance and trading hub depends critically on the availability of a reliable and efficient communication infrastructure. The telecommunication sector in Hong Kong is one of the highly sophisticated, competitive and liberalised markets in the world. Consumers in Hong Kong can enjoy the best telecommunication services in terms of capacity, speed and price.

16. The fixed line and mobile penetration rates in Hong Kong are among the highest in the world. As at January 2006, the telephone density was 92 lines per 100 household or 54% by population, while the mobile penetration has reached 127% in mid-2006. Currently, there are ten licensees offering local Fixed Telecommunications Network Services (FTNS), four 3G licensees providing 3G mobile services, six licensees operating satellite-based external FTNS facilities.

17. Telecommunication statistics could shed light on the infrastructural readiness of ICT development. Statistics on the supply of telecommunications services are compiled regularly by the Office of Telecommunications Authority (OFTA) based on administrative returns from the telecommunications operators.

Major Issues and Challenges

18. ICT is an ever-evolving field and this necessitates a dynamic view in compilation of ICT indicators to reflect the latest changes. Below are some of the major issues and challenges in developing and compiling ICT statistics:

- (a) Questions on PC penetration need to keep in pace with the ever changing technological landscape. For example, the definition of PC has been changed to include not only desktop computer, but also laptop/notebook computer and Personal Data Assistant. While this is a necessary adaptation to changes, this may make the penetration rates over the years not strictly comparable.
- (b) The above also applies to the measurement of Internet penetration. The speed and mode of Internet connection is changing rapidly. Thus, instead of just looking at the overall penetration rate, detailed analysis of Internet penetration by different modes of connection is necessary.

- (c) As an official statistical agency, C&SD has to balance the sometimes conflicting needs of increasing demand from data users for more ICT statistics and escalating concerns of respondent reporting burden.
- (d) The advent of new technologies such as wireless LAN, Broadband Wireless Access (BWA), Next Generation Network (NGN) as well as the mega-trend of fixed-mobile convergence also poses challenges in development of new telecommunication indicators. Apart from the definitional issues, soliciting the cooperation of telecommunication operators to provide the detailed figures has become increasingly difficult.

Concluding Remarks

19. Quality and timely ICT statistics can provide an objective basis for identifying focal areas for promoting ICT use and at the same time serve as a useful reference for developing ICT strategies and policies. C&SD believes that the usefulness of statistics is related to the timeliness with which the statistics are made available to users. As such, statistics of the IT business and household surveys are concurrently released within 6 months after the conclusion of fieldwork.

20. On ICT statistics development, most of the core ICT indicators⁷ can be compiled from the existing statistical systems in Hong Kong. Nevertheless, the dynamism of this subject also demands a progressive statistical framework in development and compilation of ICT statistics. On this front, C&SD will continue to keep abreast of the latest development and enhance its ICT statistical framework, with a view to meeting the needs of Hong Kong and contributing to the international statistical community.

⁷ The Core ICT Indicators provides definitions, model questions and methodological notes agreed at 2005 global meeting organised by the *Partnership on Measuring ICT for Development*. (www.itu.int/ITU-D/ict/partnership/material/CoreICTIndicators.pdf)