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## **Hong Kong as an Information Society**

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# Hong Kong as an Information Society

## A. Introduction

### Background

1. In the past decades, information technology (IT) has been increasingly used in Hong Kong. The application of IT has greatly enhanced work productivity and quality of living.

2. In November 1998, the Hong Kong Special Administrative Region (HKSAR) Government announced the "Digital 21" IT Strategy. This is a comprehensive strategy to enhance and promote Hong Kong's information infrastructure and services so as to make Hong Kong a leading digital city in the globally connected world of the 21<sup>st</sup> century.

3. Telecommunications services are important enablers of the growth of IT and electronic commerce (EC). It is the challenge for the HKSAR Government to provide an open, fair and predictable regulatory framework which is conducive to the development of broadband networks and services by the private sector.

4. Along with such development, there is an increasing demand for more comprehensive statistical information related to information technology and telecommunications (ITT). This paper gives a brief account on how the Census and Statistics Department (C&SD) collects statistics on several aspects of information society. The following topics are included:

- use of ITT in the business sector;
- use of ITT in domestic households;
- manpower supply and demand in the IT industry; and
- other statistics related to ITT.

## B. Use of ITT in the Business Sector

5. One important use of ITT is in the area of EC. Regarding the definition of EC, it is well known that there is at present no international guidelines and standards on what constitutes EC and how it is to be

measured.

6. Instead of trying to define EC, C&SD tries to collect data on individual activities commonly considered to be highly related to EC, including:

- goods, services or information purchased through electronic means;
- goods, services or information received through electronic means;
- goods, services or information sold through electronic means;
- goods, services or information delivered through electronic means; and
- business receipts received from selling goods, services or information through electronic means.

Detailed definitions of the relevant terms are in Annex I. It would then be up to the users to decide on the exact piece of statistics to use to suit their specific requirements.

7. In addition to statistics on EC, various other statistics are closely related to the usage of ITT, including:

- personal computer (PC) usage;
- Internet usage; and
- Web site usage.

8. The usage statistics of ITT in business sector mentioned above were collected through the following establishment surveys:

- Survey on Information Technology Usage and Penetration in the Business Sector; and
- Annual Economic Surveys.

## **Survey on Information Technology Usage and Penetration in the Business Sector**

9. C&SD conducted a *Survey on Information Technology Usage and Penetration in the Business Sector* in early 2000 to collect data on the extent of EC application in business. Other IT related data are also collected. Survey results are expected to be available later in the year.

10. The survey covered firms in the private sector but not government. About 4 600 establishments were enumerated. The industries covered included:

- manufacturing;
- electricity, gas and water;
- construction;
- wholesale, retail and import/export trades, restaurants and hotels;
- transport, storage and communications;
- financing (including banking), insurance, real estate and business services; and
- community, social and personal services.

11. Information sought in the survey included:

- PC usage;
- Internet usage;
- Web site usage;
- EC; and
- budget for IT.

12. Based on the result of this survey, the following statistical indicators can be compiled:

- PC usage
  - Number of establishments with PC;
  - Number of PC by category;
- Internet usage
  - Number of establishments having Internet connection;
  - Internet connection charges in 1998 and 1999;

- Web site usage
  - Number of establishments having Web page/Web site/Web server;
  - Number of establishments having their Web page/Web site connected with their related in-firm database or with their business partners' computer systems;
- EC
  - Number of establishments having ordered or purchased/received/sold/delivered their goods, services or information through electronic means;
  - Business receipts received from selling goods, services and information through electronic means.

### **Annual Economic Surveys**

13. C&SD has been conducting a series of *Annual Economic Surveys* to collect information on the operating characteristics of various economic sectors in Hong Kong. The surveys covered firms in private sector. About 28 000 establishments in the major economic sectors were enumerated in the 1998 survey round.

14. As from the 1999 round of the surveys, an additional question on sales/business receipts from selling of goods and services through electronic means has been added to the questionnaires. Survey results are expected to be available in early 2001.

### **C. Use of ITT in Domestic Households**

15. Various usage statistics (such as PC usage, Internet usage) in domestic households were compiled from the following surveys:

- An Enquiry on the Utilization of Internet Service via the General Household Survey (GHS).
- Household Survey on Penetration and Usage of Information Technology; and
- Household Expenditure Survey.

## **An Enquiry on the Utilization of Internet Service via the GHS**

16. The GHS is conducted on a continuous basis to collect information on labour force characteristics. C&SD conducted an enquiry on the utilization of Internet service via the GHS during January to March 1998. The GHS covered all households in Hong Kong except:

- hotel transients and inmates of institutions;
- military personnel and their dependents; and
- persons living on board vessels.

In this special enquiry, about 11 000 households were sampled and the household head or a knowledgeable person aged 12 or over was selected for interview.

17. The purposes of the enquiry were to gauge the number of households with PC at home, the number of Internet users aged 12 and over and also the characteristics of these households and Internet users respectively. The Internet users in this survey refer to the users of Internet at home, irrespective of the purpose, time or duration of the usage. An Internet user might use Internet at home for leisure, academic or work purpose.

## **Household Survey on Penetration and Usage of Information Technology**

18. C&SD conducted the *Household Survey on Penetration and Usage of Information Technology* in early 2000. Survey results are expected to be available later in the year.

19. The coverage of the survey is the same as the GHS. About 10 000 households were sampled and the household members aged 10 or above were enumerated.

20. The survey collected data on the IT usage of the person at different locations, including at home, at work, at school and at other locations. Information sought in the survey included PC usage, Internet usage and EC, in addition to the demographic data of the person.

## **Household Expenditure Survey**

21. C&SD included additional questions in the 1999/2000 *Household Expenditure Survey* on household purchases made through the Internet. The survey results are intended for use in reviewing the existing methodology of compiling consumer price indices insofar as purchases via the Internet are different from conventional purchases.

22. The survey covered all households in Hong Kong except marine households and collective households. About 6 000 households were sampled and information on purchases of all household members was collected.

### **D. Manpower Supply and Demand Related to the ITT**

23. Statistics on manpower supply and demand related to IT are available from the manpower surveys conducted by C&SD on behalf of the Vocational Training Council. The manpower surveys on various sectors are conducted bi-annually and the statistics available include number of persons engaged, number of vacancies, number of forecast new posts, job turnover rates, and job training information. The results of the manpower survey are relevant to the analysis of Hong Kong as an information society.

### **1998 Manpower Survey on Information Technology Sector**

24. This survey was concerned with the manpower and training situation of IT staff. IT was defined in the survey as methods and techniques used in information handling, transmission and retrieval by automatic means, including computing, telecommunication (voice, data and video transmission by digital or analogue means), office automation and industrial automation. As IT employees are not only found in computer firms, but also in the other commercial and industrial companies and public organizations, the survey has covered the whole economy and all relevant government units. A stratified random sampling method was adopted to select 1 500 companies including the government units.

25. The survey covered 9 job levels, namely, IT management, system analysis, application programming, software development and support, consultancy and specialist, hardware support, computer operations, IT research and development, and IT education and training.

## **E. Other statistics related to ITT**

26. In addition to information on the usage of IT and EC, information on the operating characteristics and economic contribution of industries related to ITT are also useful indicators of Hong Kong as an information society. A number of manufacturing and service industries are considered highly related to ITT. A list of the industries is in Annex II.

27. Among the various industries closely related to ITT, the telecommunications industry is a very important one. It generated about \$21.0 billion value added in 1998, contributing to 1.8% of the Gross Domestic Product of Hong Kong. In the first quarter of 2000, there were 1 190 establishments rendering fixed and mobile telephone services, radio paging services, Internet services and other communications services, which provided jobs for some 36 100 people.

28. Besides, Hong Kong is a major intermediary centre for the trading of computer hardware and software between foreign firms and the mainland of China or other Asian countries. The value of trading activities related to computer products grew remarkably in the past decade. In 1999, imports of computer hardware and software reached \$45.1 billion, much greater than the figure (\$5.4 billion) in 1989; the corresponding total exports (including domestic exports and re-exports) reached \$33.5 billion, as against the \$7.2 billion figure in 1989.

29. The statistics of the industries mentioned above are available from the following sources:

- Annual Economic Surveys;
- Quarterly Survey of Service Industries; and
- The Office of the Telecommunications Authority.



## **Annual Economic Surveys**

30. The principal statistics on the operation characteristics of the industries closely related to ITT are collected by *Annual Economic Surveys*. The statistics available include:

- number of establishments;
- number of persons engaged;
- compensation of employees;
- operating expenses;
- business receipts;
- value added; and
- gross addition to fixed assets.

31. Recognising the importance of some of the services products in understanding the performance of the telecommunications industry and the data processing and tabulation services, C&SD collects in the annual economic surveys data on business receipts derived from specific service products rendered by these two industries.

32. As a specific product might be produced by several industries, industries which are the major providers of the product are first identified. Questions on product statistics are then added to the questionnaires of the annual economic surveys in respect of those industries.

## **Quarterly Survey of Service Industries**

33. Moreover, some short-term industry performance indicators, such as business receipts indexes, are available through the *Quarterly Survey of Service Industries*. The following two industries are covered:

- Telecommunications industry; and
- Computer and information services domain<sup>\*</sup>.

34. The surveys cover the private sector only. About 200 establishments were enumerated in the first quarter of 2000 survey round.

## **The Office of the Telecommunications Authority**

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<sup>\*</sup> A service domain differs from a service industry in that it comprises those parts of economic activities straddling different industries but somehow related to a common purpose. It may include all activities carried out by all establishments in a service industry that is closely related to the domain. In some other cases, however, only some establishments in an industry or even only part of the establishments' activities are related to the domain. The computer and information services domain refers to distributors who mainly deal in computer equipment, and establishments rendering data processing and tabulation services.

35. Statistics on the usage of various telecommunications services were collected regularly by the Office of the Telecommunications Authority. Some of them are listed below.

- (a) local wireline telecommunications services
  - number of exchange lines
  - number of network operators
- (b) external telecommunications services
  - external telephone traffic volume
  - number of services providers
- (c) wireless telecommunications services
  - number of subscribers
  - number of network operators
- (d) Internet services
  - number of subscribers
  - number of services providers

## **F. Concluding Remarks**

36. Information technology and telecommunication services are developing at a fast pace. Both policy makers and business sectors demand for more comprehensive statistical information to monitor the progress in this area.

37. C&SD is collecting information on ITT through the established survey systems by enquiring additional data items. Where appropriate, new survey systems are also designed to collect the required information.

Census and Statistics Department  
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## Annex I

### **Definition of Terms adopted in the Survey on IT Usage and Penetration in the Business Sector**

- (a) *Goods, services or information ordered or purchased through electronic means*

An establishment was considered to have **ordered or purchased** goods, services or information through electronic means if the confirmation of order or purchase was completely done through electronic means.

- (b) *Goods, services or information received through electronic means*

Browsing of information on the Internet was also considered as **receiving** information through electronic means. Goods received through electronic means were only restricted to products which could be transmitted through electronic media, such as software packages and songs.

- (c) *Goods, services or information sold through electronic means*

An establishment was considered to have **sold** their goods, services or information through electronic means if they offered and accepted orders or purchases that were placed completely through electronic means.

- (d) *Goods, services or information delivered through electronic means*

Placing information about an establishment or the products sold on the Internet was considered to have **delivered** goods, services or information through electronic means.

- (e) *Electronic Means*

Electronic means refer to the processing and transmission of digitized data which are transmitted through electronic media such as the Internet, designated private network and interactive voice response system through telephone lines.

## **Industries highly related to Information Technology and Telecommunications**

- Manufacturing of computing machinery and equipment
- Manufacturing of telephone and communication equipment
- Manufacturing of electronic parts and components of computer and telecommunication equipment
- Intercommunication system installation and maintenance
- Telecommunication system, installation and maintenance
- Wholesale of telecommunication equipment
- Wholesale of computer, computer peripherals, software packages and telephone system
- Retail of telecommunication equipment
- Retail of computer, computer peripherals, software package and telephone system
- Import and Export of computer, computer peripherals, software packages and telephone system
- Telephone and telegraph services
- Radio paging services
- Mobile telephone services
- Internet access services
- Satellite communication services
- Other telecommunication services
- Software development and maintenance
- Data processing and tabulation services
- Internet related technical services
- Computer related services, n.e.c.
- Engineering and technical supporting services related to computer and telecommunication equipment