



2001-based Manpower Projection for the Information Technology Domain up to 2007

Government of the Hong Kong Special Administrative Region

June 2003



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Economic Analysis Division, Financial Services and the Treasury Bureau
in collaboration with
Education and Manpower Bureau and
Census and Statistics Department

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Introduction

This report focuses on manpower requirement in the information technology (IT) domain⁽¹⁾, to supplement the main report on “Manpower Projection to 2007”. Following a brief description of the major features and development trends in the domain, it presents the results of projection of manpower requirement from some selected statistical models, along with a summary of survey feedback from the employers and employees concerned.

Major features of the information technology domain

2. Hong Kong’s IT industry is one of the most developed in the region. Its main areas of business activities encompass computer equipment installation and maintenance, computing networking, system integration and development, software development, data processing, e-commerce consultancy, EDI service, IT consultancy, and Internet web page design and related services, etc. The IT industry provides support to a wide range of economic sectors, like banking and finance, trading and logistics, retailing, manufacturing and public administration. Upon growing IT applications in recent years, operating cost of the companies concerned has been reduced through office automation and enhanced communications facilities.

3. Most of the IT companies in Hong Kong are small and medium-sized establishments, which are well versed in providing customised software to local and foreign clients at competitive prices. According to a survey conducted by Hong Kong Productivity Council in 2002, there are 720 independent software vendors (ISVs) in Hong Kong, with an average employment size of 19 persons per establishment. In addition to ISVs, IT services are also provided by numerous software outsourcing companies, software consultancy firms, application service providers and systems integrators, together with the in-house IT departments of companies.

(1) As IT personnel are found not only in IT services related firms, but also in other business establishments and public organisations, analysis and projection of IT manpower should more appropriately be made on a “domain” basis by pooling together IT personnel in different economic sectors.

4. In view of the small domestic market, more and more IT companies in Hong Kong go north into the mainland of China (the Mainland) to tap the vast market opportunities there upon China's accession to the World Trade Organisation (WTO), as well as to deploy the manpower resources there for saving cost. Furthermore, some of them are in collaboration with large international corporations to market the products, and to provide software and service support. As pointed out by some of the business operators, the development prospect of Hong Kong's IT industry depends very much on how best it could capitalise on the resources of the Mainland's IT industry and the vast Mainland market without losing its own competitiveness.

Development trends

5. In 2002, the number of IT personnel⁽²⁾ totalled 63 100, more than doubled from that of 31 200 in 1991. This gave an average annual growth rate of 6.6% between 1991 and 2002, much exceeding the 1.0% increase in the total workforce. As a result, the share of IT personnel in the total employed population rose from 1.2% in 1991 to 2.1% in 2002 (*Annex I*).

6. Analysed by job category within the IT sector, one-quarter of the IT personnel were engaged in application systems development in 2002. Other major job categories included systems programming (with a share of 17%), hardware support (12%), IT management (11%), and operation support services (10%).

(2) Statistics on IT personnel in this report are based primarily on the manpower survey conducted by the Vocational Training Council (VTC). According to the definition adopted by VTC, IT personnel refers to those who are engaged in principal jobs related to IT management, application systems development, e-business/Internet services, telecommunications and networking, database, systems programming, hardware support, operation support services, IT research and product development, and IT education and training. End-users of IT systems and frequent users of IT packages are not included.

Chart 1: Employment in the IT domain

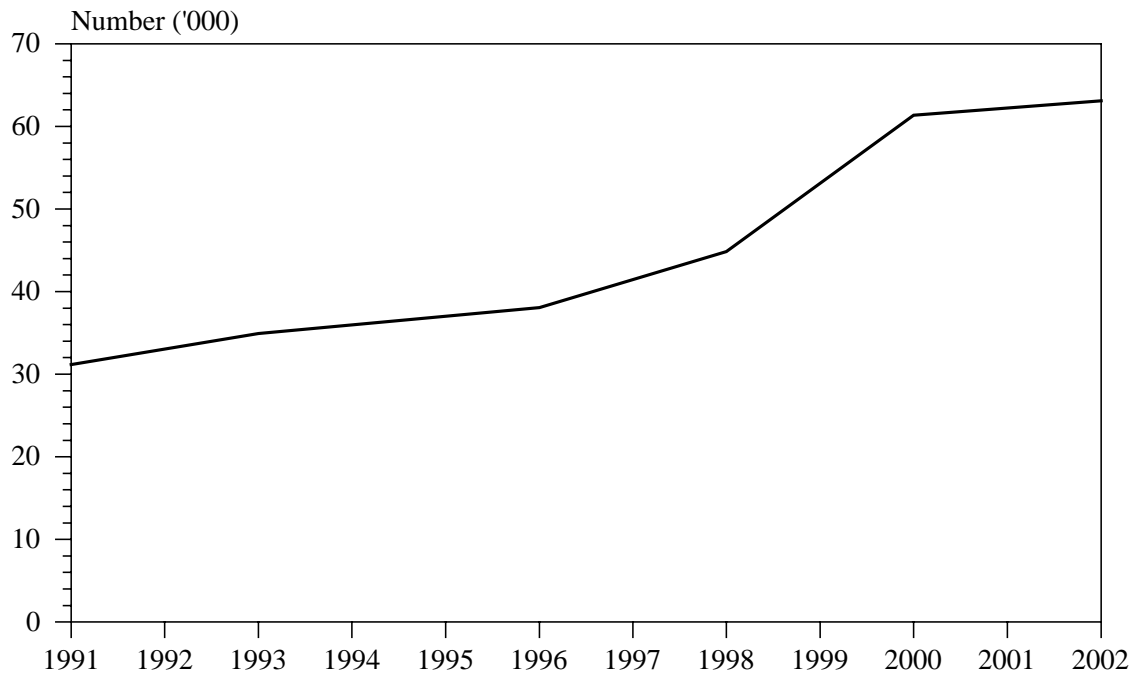
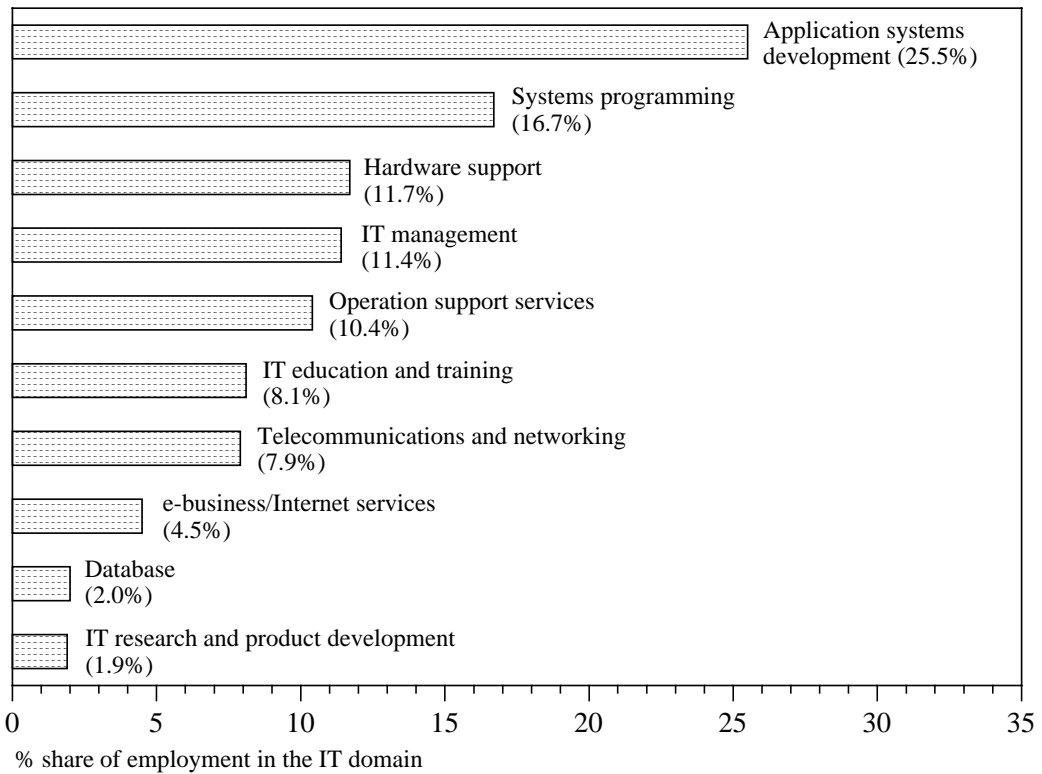
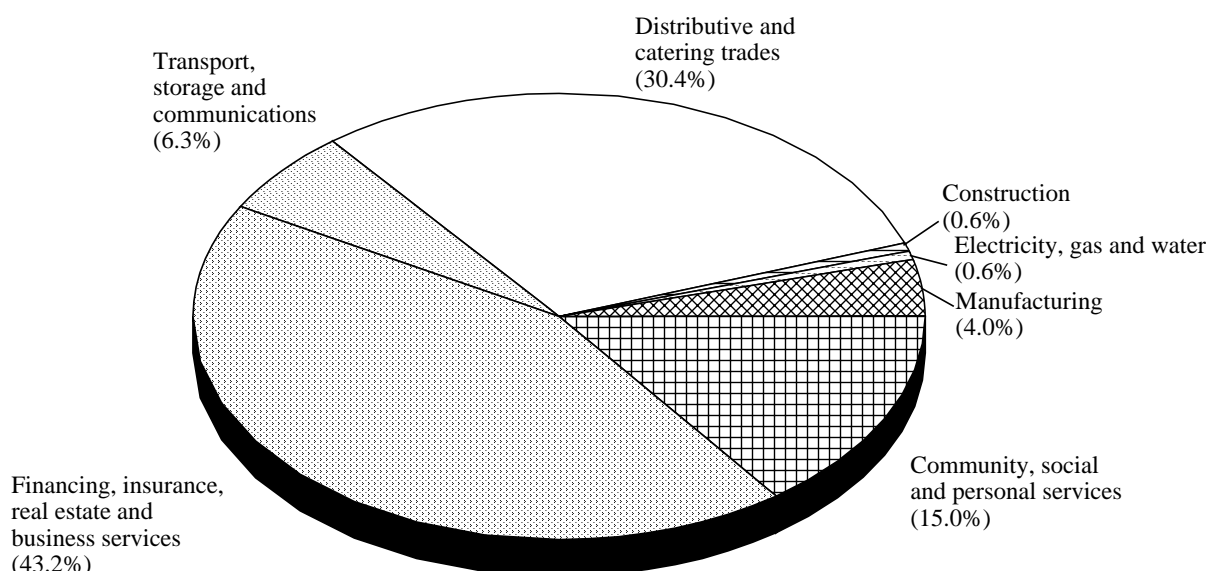


Chart 2 : Employment in the IT domain by job category in 2002



7. Analysed by economic sector, 43% of the IT personnel were engaged in financing, insurance, real estate and business services. This was followed by the distributive and catering trades (with a share of 30%); community, social and personal services (15%); transport, storage and communications (6%); and manufacturing (4%).

Chart 3 : Employment of IT personnel by economic sector in 2002



Total employment of IT personnel in 2002 : 63 100

8. Along with the surge in IT personnel, there has been a trend of increasing IT usage and penetration in the business sector⁽³⁾ :

- In 2002, about 55% of all the business establishments had used personal computers (PCs) and 44% had their PCs connected to the Internet. The corresponding proportions were 52% and 37% in 2000. A notable increase in the respective proportions was seen in 2002, notwithstanding the economic slow-down (*Annex 2*).
- About 12% of the establishments had launched their own Web pages and Web sites in 2002, up significantly from the proportion of 7% in 2000. Within the total for 2002, 61% were large establishments, 32% were medium-sized establishments, and 8% were small establishments.

(3) From 2000 onwards, the Census and Statistics Department conducts the Survey on Information Technology Usage and Penetration in the Business Sector on an annual basis to collect such information from various economic sectors. The most recent one was conducted in the second quarter of 2002.

- On electronic business, about 45% of the establishments had received goods, services or information through electronic means in the 12 months before the survey in 2002. This again exceeded the corresponding proportion of 35% in 2000. In 2002, 7% of the establishments had ordered/purchased through electronic means, up from 5% in 2000.
- Furthermore, the value of business receipts from selling goods, services or information through electronic means surged by 193% to \$22.1 billion in 2001. Though representing only around 0.43% of the total business receipts of all establishments in the economy in 2001, this was distinctly larger than the corresponding proportion of 0.17% in 2000.

9. Similarly, there has been a rising trend of IT usage and penetration in the household sector⁽⁴⁾ :

- In 2002, some 62% of all the households in Hong Kong had PCs installed at home. Amongst these households, some 85% had their PCs connected to the Internet, representing 53% of all the households in Hong Kong. In 2000, 50% of all the households in Hong Kong had PCs installed at home, and 36% of all the households in Hong Kong had their PCs connected to the Internet. There was thus a rapid increase in IT usage and penetration in the household sector over the past two years.
- Some 54% of the persons aged 10 and above had used PCs in the 12 months before the survey in 2002, much larger than the proportion of 43% in 2000. Moreover, 48% of all the persons in that age group had used Internet service in the 12 months before the survey in 2002, also distinctly exceeding the proportion of 30% in 2000.

(4) The Census and Statistics Department also conducts the Thematic Household Survey on Information Technology Usage and Penetration on an annual basis from 2000 onwards, to collect such information from households. The most recent one was conducted in the second quarter of 2002.

- Utilisation of electronic business services⁽⁵⁾ continued to be high, with 93% of the persons aged 15 and above having used electronic business services of one form or another for personal matters in the 12 months before the survey in 2002. In 2000, the proportion was 85%.

Projection of manpower requirement for the information technology domain up to 2007

10. Based on the historical data compiled by the Vocational Training Council, projection has been made of the requirement for IT personnel in the various economic sectors over the medium term⁽⁶⁾. IT manpower requirement is projected to rise from 63 100 in 2002 to 85 000 in 2007, equivalent to an average annual growth rate of 6.1%. This is considerably faster than the projected average annual growth of 1.5% in overall manpower requirement in the economy over the same period⁽⁷⁾, indicating rapid expansion in IT usage in business establishments and public organisations (*Annex 3*).

11. Analysing the projection results by *economic sector* (*Annex 4*), the following observations are noteworthy :

- Between 2002 and 2007, the proportion of IT personnel in the sectoral total is projected to increase in financing, insurance, real estate and business services, in community, social and personal services, and in transport, storage and communications. As a result, the share of IT personnel in these three sectors is expected to go up significantly over the same period.

(5) These include the use of Octopus card, Automatic Teller Machine (ATM), e-cash, Easy Pay System (EPS), Payment by Phone Service (PPS), on-line searching for financial information/information on goods and services/job vacancies, etc.

(6) In the projection exercise, statistical models have been calibrated for projecting the ratio of IT personnel in each of the major economic sectors in 2007. The preliminary projection results thereby generated are then examined carefully and refined, taking into account the views of industry leaders, trade association representatives, academic experts, and relevant Government bureaux and departments as obtained from a consultation exercise conducted during June - September of 2002. By applying the projected ratio of IT personnel to the projected manpower requirement in the corresponding economic sector, the projected number of IT personnel required for this sector is obtained.

(7) This includes all employed Hong Kong residents regardless of their place of work, and excludes foreign domestic helpers.

- The share of IT personnel in the manufacturing sector is also projected to pick up notably over the same period.
- The financing, insurance, real estate and business services sector is envisaged to continue to employ the largest number of IT personnel in 2007, at 39 400, reflecting more extensive application of IT within the sector as well as the trend of out-sourcing of IT development jobs to firms providing such services.
- Ranked in terms of growth rate, transport, storage and communications is the sector with the largest projected increase in IT manpower requirement, by an average of 12% per annum over 2002-07, partly owing to robust outlook of the logistics sector. This is followed by the growth envisaged for community, social and personal services, and for financing, insurance, real estate and business services.

12. Analysed by *occupation category*, IT personnel at all levels are projected to have broadly similar growth by an average of 5-7% per annum over 2002-07, upon wider use of IT in all economic sectors. As a result, the occupation mix of IT personnel is likely to remain stable throughout the projection period (*Annex 5*).

13. Analysed by *educational attainment*, the following observations on manpower requirement are noted :

- The shares of manpower requirement at the postgraduate, first degree and sub-degree levels are all projected to increase between 2002 and 2007, in line with the general trend of skill upgrading amidst continued transformation into a knowledge-based economy. The combined share for these three groups is projected to rise from 73% to 83% over the period (*Annex 6*).
- By contrast, the shares of manpower requirement at the technician and upper secondary levels are projected to fall, from 5% and 14% respectively in 2002 to 3% and 9% in 2007.

Feedback from the establishment survey on business environment, manpower requirement and training needs in respect of establishments primarily engaged in the provision of information technology and telecommunications (IT&T) services

14. In the third quarter of 2002, the Census and Statistics Department conducted an establishment survey⁽⁸⁾ on business aspirations and training needs, upon Hong Kong's economic restructuring and China's accession to WTO. With IT personnel spreading across a wide spectrum of economic sectors, a complete canvass would be difficult, and views were just collected from those establishments engaged primarily in the provision of IT&T services⁽⁹⁾. The feedback is as follows :

- On *business prospects*, 36% of the establishments surveyed were optimistic about the business outlook for the period up to 2007, with 2% holding a "very optimistic" view. On the other hand, 24% of the establishments were pessimistic about the medium-term outlook, with 4% being "very pessimistic" (*Annex 7*).
- On *business turnover*, 31% of the establishments surveyed predicted further increase over the next five years, with 4% even anticipating a "significant increase". By contrast, 29% of the establishments envisaged a contraction in business turnover, with 13% expecting a "significant decrease" (*Annex 8*).
- On *investment projects in the Mainland*, 10% of the establishments surveyed had undertaken such projects (*Annex 9*).

(8) The survey successfully enumerated some 4 200 establishments to collect their views on manpower requirement and training needs in Hong Kong over the next five years, amidst further structural change in the economy, as induced by rapid advances in information technology and e-commerce, globalisation and liberalisation of trade and investment, China's accession to WTO, and closer economic integration between Hong Kong and the Mainland. The response rate attained was 90%.

It is estimated from the survey that about 8 600 establishments were primarily engaged in the provision of IT&T services, employing some 92 500 persons, as at mid-2002.

(9) IT &T services are formally defined to include manufacturing of computing machinery and equipment, telephone and communications equipment, electronic parts and components for computer and telecommunications equipment; installation and maintenance of intercommunication and telecommunications system; wholesaling, retailing and import/export of computer, computer peripherals and software packages, telecommunications equipment; wireline based and other fixed telecommunications network, radio paging, mobile communications, internet access, satellite communications and telecommunications services; software development and maintenance, data processing and tabulating, and other IT related services, engineering and technical services related to computer and telecommunications equipment.

- A considerable proportion (50%) of the establishments surveyed expected that China's accession to WTO would generate *new business opportunities*, while 42% did not think so (*Annex 10*).
- On *business environment in Hong Kong*, China's accession to WTO was considered to yield mixed effects, bringing both opportunities and challenges to Hong Kong in the coming years. The more distinct concerns expressed by the establishments surveyed were "face keener competition from enterprises in the Mainland", "need to better understand the market and changes in investment environment in the Mainland" and "more companies to relocate business operations to the Mainland" (*Annex 11*).
- In order to *cope with changes in business environment*, over half of them indicated intention to adopt the following measures (*Annex 12*) :
 - increase the use of IT within the company (62%);
 - upgrade the skills of existing staff (55%); and
 - diversify the business of the company (52%).

15. As to *future manpower requirement and training needs*, establishments engaged primarily in the provision of IT&T services had the following views :

- Future manpower requirement was expected to shift more towards the higher end of educational attainment, with increases in share at the postgraduate, first degree and matriculation levels between 2002 and 2007, but decreases in share at the upper secondary, technician and lower secondary and below levels (*Annex 13*).
- Analysed by occupation category, increases in share between 2002 and 2007 were predicted for professionals, associate professionals, service workers and shop sales workers, and craft and related workers. Yet decreases in share were predicted for managers and administrators, clerks and elementary occupations (*Annex 14*).
- On training plans and budget, the establishments surveyed gave the following feedback :

- Amongst those establishments with employees, 18% had training plans and 17% had training budget for their staff (*Annex 15*).
- Analysed by occupation category, managers and administrators were preferred to have their management skills enhanced. As to professionals, associate professionals, service workers and shop sales workers, and craft and related workers, the focus of training should preferably be geared to IT skills. For the remaining occupation categories, it was language skills that needed to be enhanced (*Annex 16*).
- As regards mode of training, self-learning was most preferred, followed by extra-mural courses and in-house training (*Annex 17*).

Feedback from the household survey on employment concerns and training needs in respect of persons engaged in the information technology domain

16. In the third quarter of 2002, the Census and Statistics Department had also conducted a thematic household survey on employment concerns and training needs of the local workforce⁽¹⁰⁾. From the IT personnel engaged, the following feedback is relevant :

- On *perceived prospects* of the domain, 51% of the persons engaged were optimistic about the prospects over the next five years, anticipating either a moderate or fast growth. On the other hand, 33% predicted only slow growth, 7% nil growth, and 8% even a contraction in business (*Annex 18*).
- On *challenges/problems faced*, “corporate downsizing” was most commonly cited, being reported by 43% of the persons engaged. This was followed by “keen competition amongst companies within the domain” (35%) and “cost reduction (including salary/wage cuts)” (25%) (*Annex 19*).

(10) The survey successfully enumerated some 8 000 households. Within each successfully enumerated household, all economically active persons were interviewed to collect information on their aspirations as well as their employment concerns and training needs over the medium term in face of structural change in the economy. The response rate of the survey was 72%.

- When asked about *whether they had been affected by the prevalence of corporate restructuring*, 26% of the persons engaged replied in the affirmative. Amongst those affected, 53% indicated that they had experienced “increasing work pressure”, 49% “salary/wage cuts”, and 32% “longer working hours” (*Annex 20*).
- On possession of *job-specific skills*, 96% of the persons engaged claimed to have sufficient/very sufficient job-specific skills to cope with the current job requirements (*Annex 21*).
- On *training needs*, 19% of the persons had attended job-related training/retraining courses arranged by their employers in the past 12 months while 17% had attended job-related training/retraining courses on their own initiative (*Annex 22*).
- 28% of the persons engaged had *plans to attend job-related training/retraining courses* in the coming 12 months.

Employment of information technology (IT) personnel*

| | <u>Number of persons engaged</u> | | | <u>Average annual growth rate</u> | | |
|---|----------------------------------|-----------------|-----------------|-----------------------------------|-------------------------|-------------------------|
| | <u>1991</u> | <u>1996</u> | <u>2002</u> | <u>1991-96</u> (%) | <u>1996-2002</u> (%) | <u>1991-2002</u> (%) |
| IT personnel | 31 200 (1.2) | 38 100 (1.3) | 63 100 (2.1) | 4.1 | 8.8 | 6.6 |
| <i>Within which :</i> | | | | | | |
| (a) Manufacturing | 2 400 | 1 700 | 2 500 | -6.8 | 7.2 | 0.6 |
| (b) Electricity, gas and water | 200 | 300 | 400 | 10.4 | 1.1 | 5.3 |
| (c) Construction | 700 | 700 | 400 | -0.9 | -9.5 | -5.7 |
| (d) Wholesale, retail and import/export trades, restaurants and hotels | 13 900 | 9 800 | 19 200 | -6.9 | 11.9 | 2.9 |
| (e) Transport, storage and communications | 1 800 | 3 500 | 4 000 | 14.5 | 1.8 | 7.4 |
| (f) Financing, insurance, real estate and business services | 9 200 | 18 200 | 27 200 | 14.6 | 6.9 | 10.4 |
| (g) Community, social and personal services | 2 900 | 3 900 | 9 500 | 5.5 | 16.2 | 11.2 |
| <i>c.f.</i> Total employment in the economy (net of foreign domestic helpers) | 2 682 700 | 2 925 200 | 2 996 500 | 1.7 | 0.4 | 1.0 |

Notes : (*) Statistics on IT personnel in this report are based primarily on the manpower survey conducted by the Vocational Training Council (VTC). According to the definition adopted by VTC, IT personnel refers to those who are engaged in principal jobs related to IT management, application systems development, e-Business/Internet services, telecommunications and networking, database, systems programming, hardware support, operation support services, IT research and product development, and IT education and training. End-users of IT systems and frequent users of IT packages are not included.

() Figures in brackets represent % shares in total employment in the economy.

Figures may not add up exactly to the total due to rounding.

Source : Report on the Manpower Survey of the Information Technology Sector, Vocational Training Council.

Annex 2

Statistical indicators on information technology development in Hong Kong

| Type of indicator | Level of indicator | | | | Average annual rate of change | | |
|---|--------------------|--------------------|-------------------|---------|-------------------------------|------------------|------------------|
| | 1991 | 1996 | 2001 | 2002 | 1991-96 (%) | 1996-2002 (%) | 1991-2002 (%) |
| Telecommunications and Internet services (as at end of the period) (Mn) | | | | | | | |
| Number of fixed telephone lines | 2.46 | 3.09 | 3.51 | 3.30 | 4.7 | 1.1 | 2.7 |
| Number of facsimile lines | 0.14 | 0.31 | 0.41 | 0.55 | 17.6 | 10.0 | 13.4 |
| Number of public mobile radiotelephone service subscribers | 0.19 | 1.21 | 5.70 | 6.22 | 44.9 | 31.4 | 37.3 |
| Number of radio paging subscribers | 0.88 | 1.09 | 0.25 | 0.20 | 4.4 | -24.8 | -12.7 |
| Annual Internet traffic volume | | | | | | | |
| Public switched telephone network (Mn minutes) | -- | 5 359 [#] | 11 056 | 5 550 | -- | -- | 0.9 [#] |
| Broadband network (terabits) | -- | -- | 73 607 | 215 296 | -- | -- | -- |
| Information technology penetration ('000) | 2000 | 2001 | 2002 | | | 2000-02 | |
| | | | | | | (%) | |
| Business establishments | | | | | | | |
| With personal computers | 175.1 (51.5) | 166.5 (49.7) | 181.7 (54.5) | | | 1.85 | |
| With Internet connection | 126.8 (37.3) | 124.7 (37.2) | 147.5 (44.2) | | | 7.85 | |
| With Web page/Web site | 24.9 (7.3) | 35.9 (10.7) | 39.2 (11.8) | | | 25.49 | |
| Having received goods, services and information through electronic means | 120.1 (35.3) | 133.9 (40.0) | 150.5 (45.2) | | | 11.95 | |
| Households | | | | | | | |
| With personal computers | 1 051.1 (49.7) | 1 258.4 (60.6) | 1 322.0 (62.1) | | | 12.1 | |
| With Internet connection | 770.2 (36.4) | 1 009.8 (48.7) | 1 118.1 (52.5) | | | 20.5 | |
| Persons aged 10 and above having used PCs in the past year | 2 639.7 (43.1) | 3 020.0 (50.3) | 3 270.3 (54.0) | | | 11.3 | |
| Persons aged 10 and above having used Internet services in the past year | 1 855.2 (30.3) | 2 601.3 (43.3) | 2 918.8 (48.2) | | | 25.4 | |
| Persons aged 15 and above having used electronic business services in the past year | 4 852.1 (84.9) | 4 933.6 (88.5) | 5 209.0 (92.6) | | | 3.6 | |

Notes : (--) Not available.

(#) Referring to the figure in 1998, as the data series begins from 1998 and hence the growth rate calculated is between 1998 and 2002.

() Figures in brackets represent respective % shares in the total number of business establishments, households and persons.

Sources : Office of the Telecommunications Authority.

Survey on Information Technology Usage and Penetration in the Business Sector, Census and Statistics Department.

Thematic Household Survey : Information Technology Usage and Penetration, Census and Statistics Department.

Projection of manpower requirement for IT domain in 2007

| | <u>Actual employment in 2002</u> | <u>Projected manpower requirement in 2007</u> | <u>Change in 2007 over 2002</u> | | |
|--|--|---|---------------------------------|-----------------|--|
| | <u>Number</u> | <u>Number</u> | <u>Number</u> | <u>% change</u> | <u>Average annual % change</u> |
| All IT personnel ⁺ | 63 100 | 85 000 | 21 900 | 34.7 | 6.1 |
| <i>Of whom, in :</i> | | | | | |
| (a) Manufacturing | 2 500 (4.0) | 3 100 (3.7) | 600 | 23.1 | 4.2 |
| (b) Electricity, gas and water | 400 (0.6) | 300 (0.4) | -100 | -16.9 | -3.6 |
| (c) Construction | 400 (0.6) | 400 (0.4) | # | 1.4 | 0.3 |
| (d) Wholesale, retail and import/export trades, restaurants and hotels | 19 200 (30.4) | 20 300 (23.9) | 1 100 | 5.8 | 1.1 |
| (e) Transport, storage and communications | 4 000 (6.3) | 7 000 (8.2) | 3 000 | 76.2 | 12.0 |
| (f) Financing, insurance, real estate and business services | 27 200 (43.2) | 39 400 (46.4) | 12 200 | 44.8 | 7.7 |
| (g) Community, social and personal services | 9 500 (15.0) | 14 500 (17.0) | 5 000 | 52.9 | 8.9 |
| <i>c.f.</i> Total employment in the economy (net of foreign domestic helpers)* | 3 029 400 [2 996 500] | 3 222 700 | 193 300 [226 100] | 6.4 [7.5] | 1.0 [1.5] |

Notes : (+) Statistics on IT personnel are based on the respective manpower survey conducted by VTC. As the survey is not conducted on an annual basis, statistics on employment of IT personnel in 2001 are not available.

() Figures in brackets represent % shares of IT personnel within individual economic sectors in the total IT personnel employed.

(#) Change in number being less than 50.

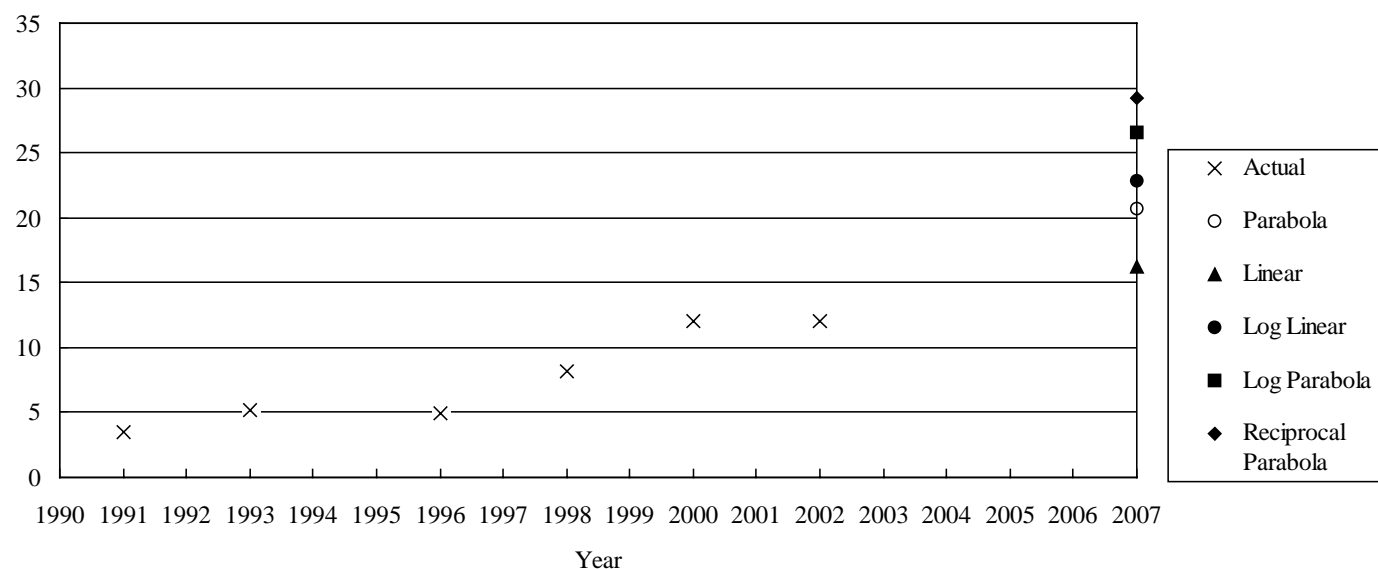
(*) For comparison with manpower requirement projections for the other strategic economic sectors/domains, figures not in square brackets refer to total employment in 2001, and hence the projected change in overall manpower requirement is for the period 2001 to 2007. Figures in square brackets refers to total employment in 2002, and hence the projected change in overall manpower requirement is for the period 2002 to 2007.

Figures may not add up exactly to the total due to rounding.

Source : 2001-based Manpower Requirement Projection by Economic Sector, Census and Statistics Department.

Projection of IT personnel in the manufacturing sector

IT personnel ratio



| Year | 1991 | 1993 | 1996 | 1998 | 2000 | 2002 | Year | 2007 | | Average annual growth rate (%) | | |
|--|-------|-------|-------|-------|-------|-------|--------------------|-----------------|---------------------|--------------------------------|-------|-------|
| | | | | | | | | Projected ratio | Projected number | 2002-07 | | |
| Number of IT personnel | 2 400 | 2 700 | 1 700 | 2 200 | 2 800 | 2 500 | Model | | | | | |
| IT personnel ratio | 3.53 | 5.14 | 4.98 | 8.23 | 12.01 | 11.97 | Parabola | 20.70 | 3 100 | 4.24 | | |
| Average annual growth rate (based on number of IT personnel) | | | | | | | Linear | 16.24 | 2 500 | -0.69 | | |
| | | | | | | | Log Linear | 22.80 | 3 400 | 6.27 | | |
| 1991-2002 : 0.57% | | | | | | | 1996-1998 : 13.90% | | Log Parabola | 26.54 | 4 000 | 9.56 |
| 1991-1996 : -6.82% | | | | | | | 1998-2002 : 3.95% | | Reciprocal Parabola | 29.20 | 4 400 | 11.67 |

Assumptions adopted

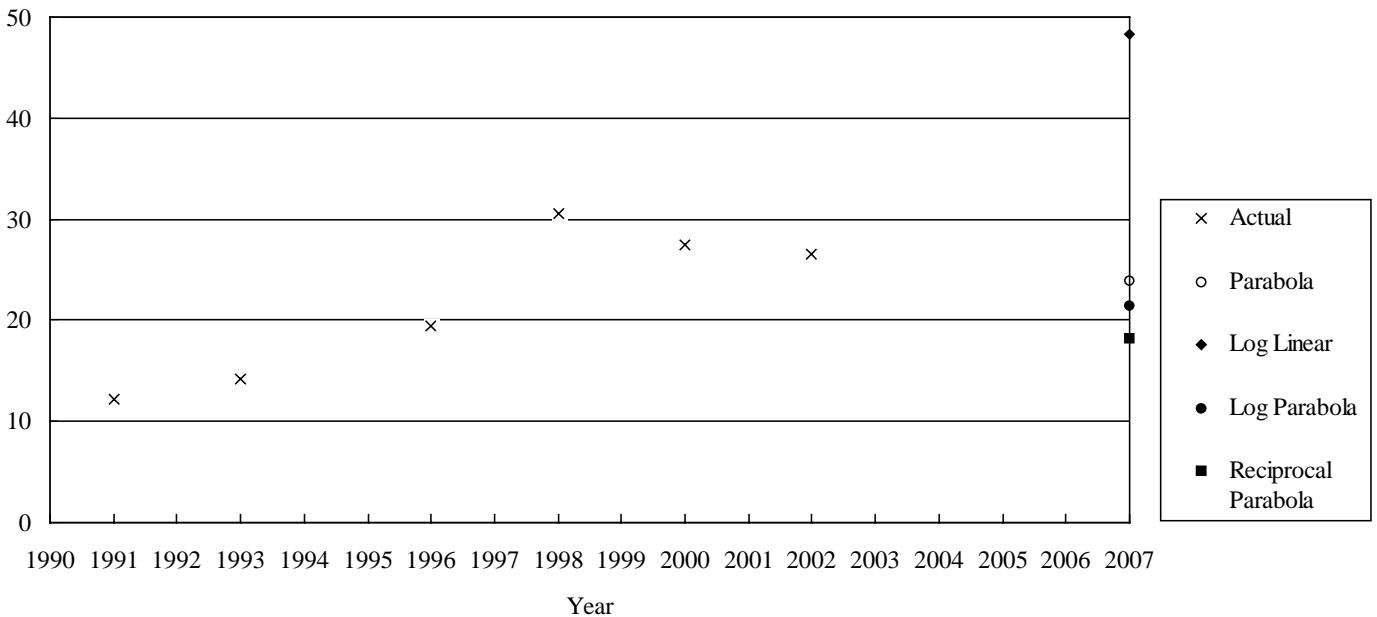
| Model chosen | Base year (2002) | | 2007 | | Average annual growth rate (%) (based on number of IT personnel) |
|--------------|------------------|--------|-----------------|------------------|---|
| | Ratio | Number | Projected ratio | Projected number | |
| Parabola | 11.97 | 2 500 | 20.70 | 3 100 | 4.24 |

Notes : IT personnel ratio refers to the number of IT personnel per 1 000 persons engaged.

The projected number of IT personnel is obtained by multiplying the projected ratio to the projected manpower requirement in the corresponding economic sector.

Projection of IT personnel in the electricity, gas and water sector

IT personnel ratio



| Year | 1991 | 1993 | 1996 | 1998 | 2000 | 2002 | Year | 2007 | | Average annual growth rate (%) |
|--|------------------------|-------|-------|-------|-------|-------|---------------------|-------|-----------------|--------------------------------|
| | Number of IT personnel | 200 | 200 | 300 | 500 | 400 | | 400 | Projected ratio | Projected number |
| IT personnel ratio | 12.18 | 14.26 | 19.46 | 30.61 | 27.48 | 26.60 | Parabola | 23.85 | 300 | -3.62 |
| Average annual growth rate (based on number of IT personnel) | | | | | | | Log Linear | 48.32 | 600 | 11.00 |
| | | | | | | | Log Parabola | 21.46 | 300 | -5.63 |
| 1991-2002 : 5.26% 1996-1998 : 16.79% | | | | | | | Reciprocal Parabola | 18.26 | 200 | -8.59 |
| 1991-1996 : 10.41% 1998-2002 : -5.86% | | | | | | | | | | |

Assumptions adopted

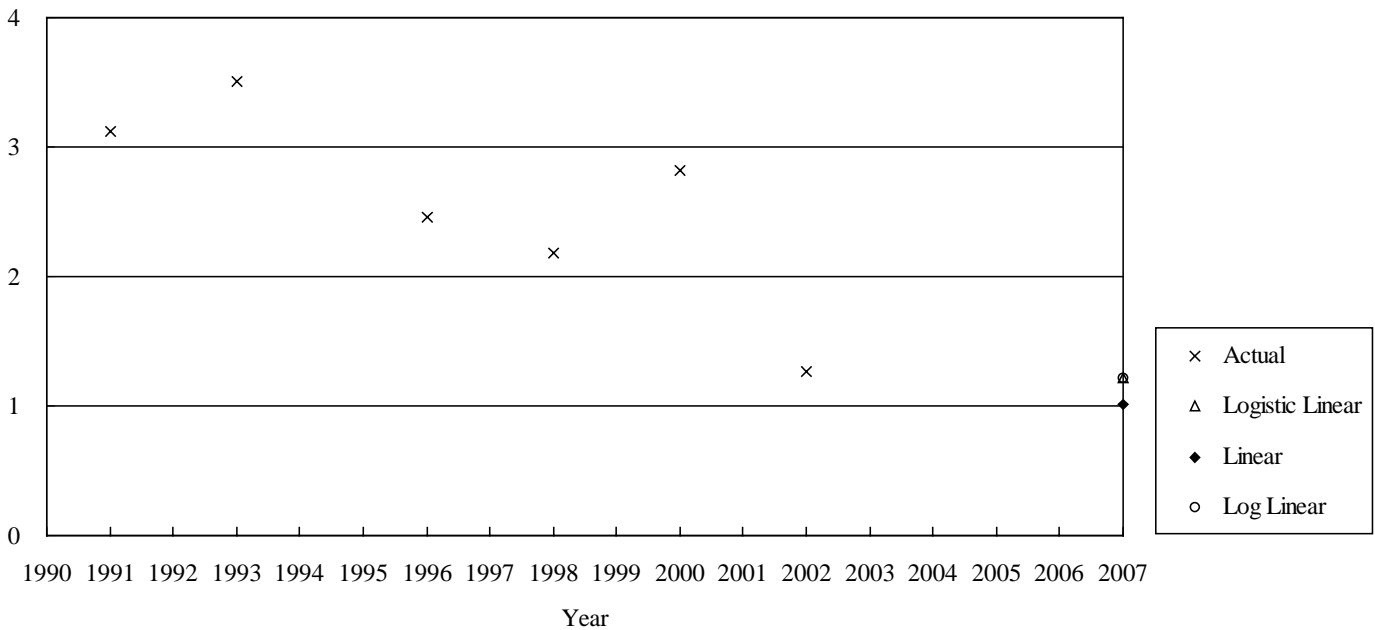
| Model chosen | Base year (2002) | | 2007 | | Average annual growth rate (%) (based on number of IT personnel) |
|--------------|------------------|--------|-----------------|------------------|---|
| | Ratio | Number | Projected ratio | Projected number | |
| Parabola | 26.60 | 400 | 23.85 | 300 | -3.62 |

Notes : IT personnel ratio refers to the number of IT personnel per 1 000 persons engaged.

The projected number of IT personnel is obtained by multiplying the projected ratio to the projected manpower requirement in the corresponding economic sector.

Projection of IT personnel in the construction sector

IT personnel ratio



| Year | 1991 | 1993 | 1996 | 1998 | 2000 | 2002 | Year | 2007 | | Average annual growth rate (%) |
|--|------------------------|------|------|------|------|------|-----------------|-------------|-------|--------------------------------|
| | Number of IT personnel | 700 | 800 | 700 | 700 | 900 | | 400 | Model | |
| IT personnel ratio | 3.12 | 3.50 | 2.45 | 2.18 | 2.82 | 1.27 | Logistic Linear | 1.21 | 400 | 0.27 |
| Average annual growth rate (based on number of IT personnel) | | | | | | | Linear | 1.01 | 300 | -3.36 |
| | | | | | | | Log Linear | 1.21 | 400 | 0.27 |
| 1991-2002 : | | | | | | | -5.67% | 1996-1998 : | | -0.15% |
| 1991-1996 : | | | | | | | -0.90% | 1998-2002 : | | -13.79% |

Assumptions adopted

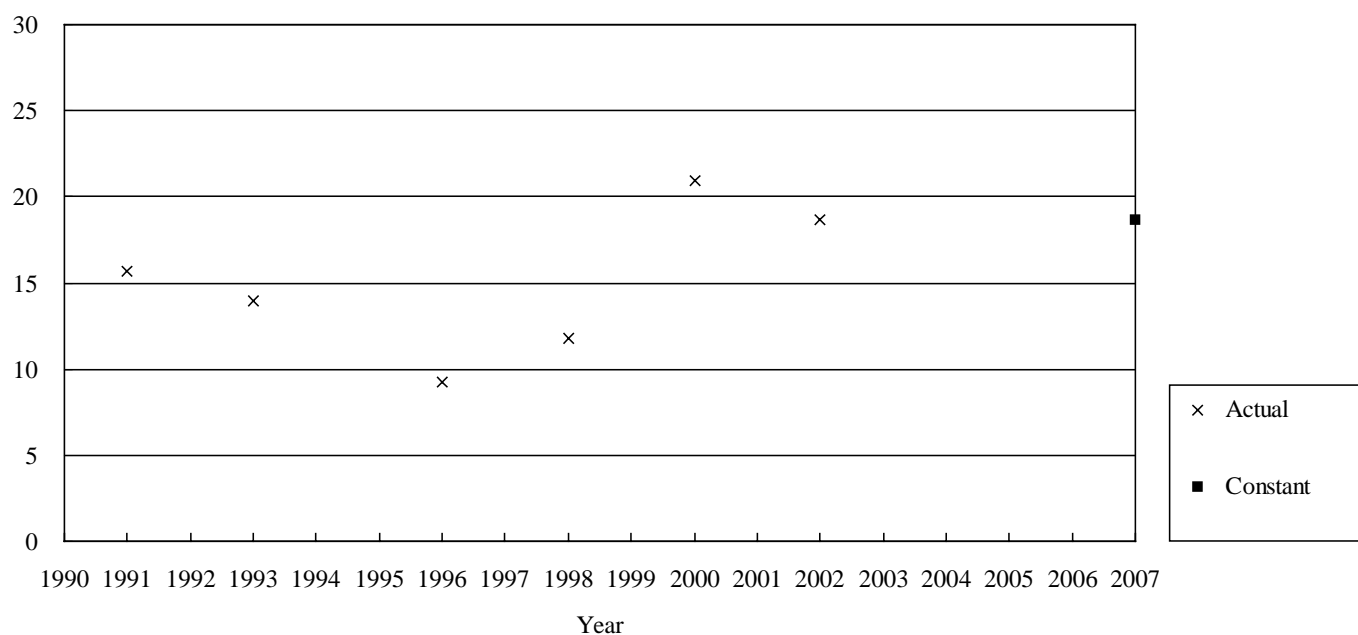
| Model chosen | Base year (2002) | | 2007 | | Average annual growth rate (%) (based on number of IT personnel) |
|-----------------|------------------|--------|-----------------|------------------|---|
| | Ratio | Number | Projected ratio | Projected number | |
| Logistic Linear | 1.27 | 400 | 1.21 | 400 | 0.27 |

Notes : IT personnel ratio refers to the number of IT personnel per 1 000 persons engaged.

The projected number of IT personnel is obtained by multiplying the projected ratio to the projected manpower requirement in the corresponding economic sector.

Projection of IT personnel in the wholesale, retail and import/export trades, restaurants and hotels sector

IT personnel ratio



| Year | 1991 | 1993 | 1996 | 1998 | 2000 | 2002 | Year | 2007 | | Average annual growth rate (%) 2002-07 |
|--|--------|--------|-------|--------|--------|--------|----------|-----------------|------------------|---|
| | | | | | | | | Projected ratio | Projected number | |
| Number of IT personnel | 13 900 | 13 300 | 9 800 | 11 200 | 21 800 | 19 200 | Model | | | |
| IT personnel ratio | 15.66 | 13.93 | 9.29 | 11.76 | 20.98 | 18.71 | Constant | 18.71 | 20 300 | 1.14 |
| Average annual growth rate (based on number of IT personnel) | | | | | | | | | | |
| 1991-2002 : | | | | | | | 2.94% | 1996-1998 : | | 7.31% |
| 1991-1996 : | | | | | | | -6.88% | 1998-2002 : | | 14.29% |

Assumptions adopted

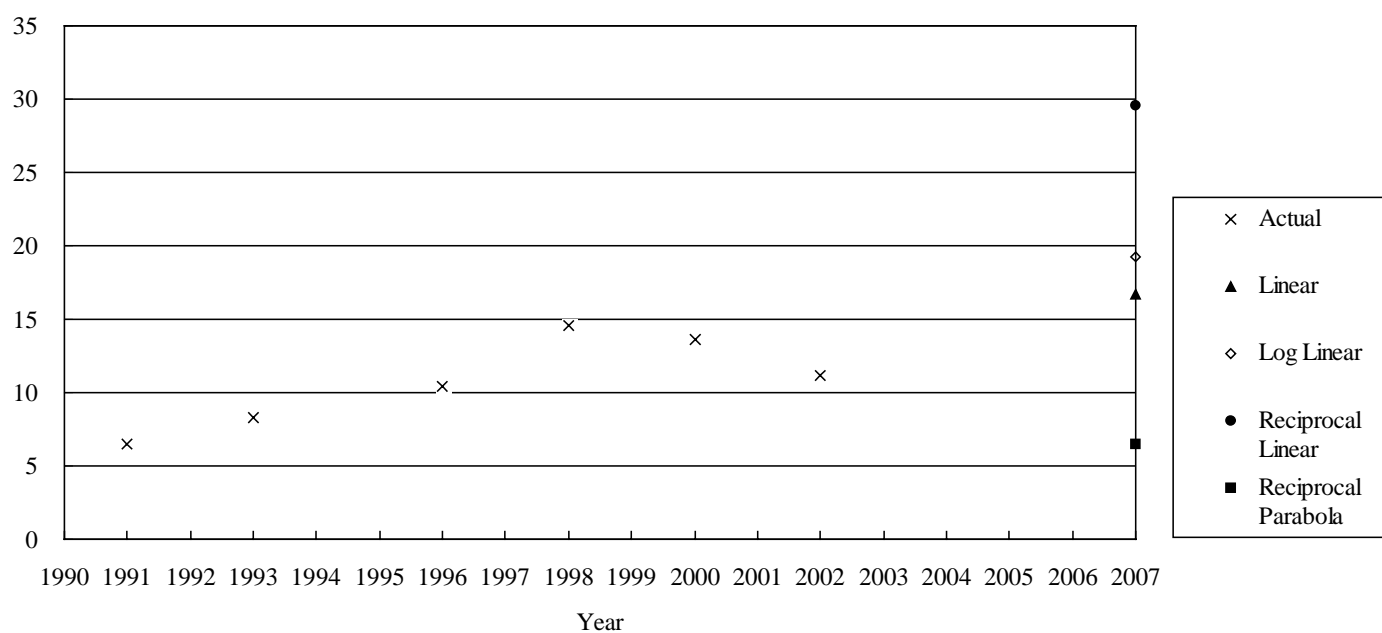
| Model chosen | Base year (2002) | | 2007 | | Average annual growth rate (%) (based on number of IT personnel) |
|--------------|------------------|--------|-----------------|------------------|---|
| | Ratio | Number | Projected ratio | Projected number | |
| Constant | 18.71 | 19 200 | 18.71 | 20 300 | 1.14 |

Notes : IT personnel ratio refers to the number of IT personnel per 1 000 persons engaged.

The projected number of IT personnel is obtained by multiplying the projected ratio to the projected manpower requirement in the corresponding economic sector.

Projection of IT personnel in the transport, storage and communications sector

IT personnel ratio



| Year | 1991 | 1993 | 1996 | 1998 | 2000 | 2002 | Year | 2007 | | Average annual growth rate (%) 2002-07 |
|--|------------------------|-------|-------------|-------|--------|-------|---------------------|-------|--------|---|
| | Number of IT personnel | 1 800 | 2 600 | 3 500 | 5 100 | 4 900 | | 4 000 | Model | |
| IT personnel ratio | 6.54 | 8.26 | 10.44 | 14.53 | 13.65 | 11.16 | Linear | 16.70 | 7 000 | 11.99 |
| Average annual growth rate (based on number of IT personnel) | | | | | | | Log Linear | 19.21 | 8 000 | 15.18 |
| | | | | | | | Reciprocal Linear | 29.55 | 12 300 | 25.53 |
| 1991-2002 : | 7.43% | | 1996-1998 : | | 19.74% | | Reciprocal Parabola | 6.54 | 2 700 | -7.15 |
| 1991-1996 : | 14.54% | | 1998-2002 : | | -6.07% | | | | | |

Assumptions adopted

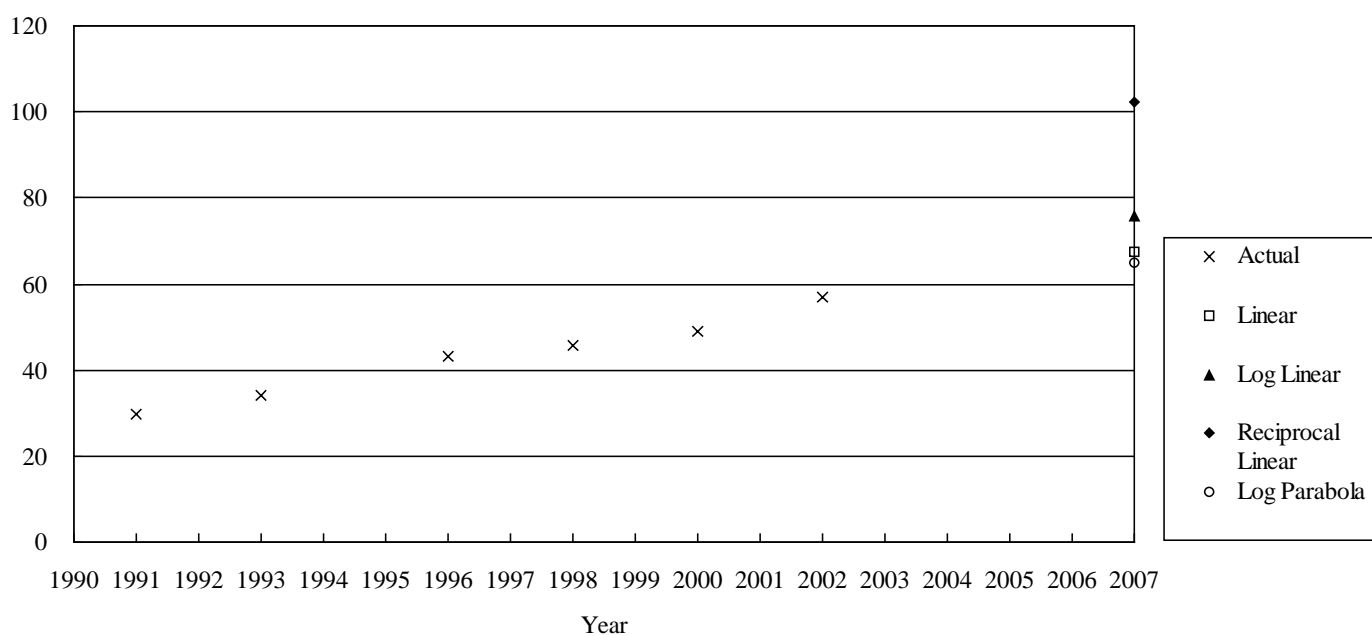
| Model chosen | Base year (2002) | | 2007 | | Average annual growth rate (%) (based on number of IT personnel) |
|--------------|------------------|--------|-----------------|------------------|---|
| | Ratio | Number | Projected ratio | Projected number | |
| Linear | 11.16 | 4 000 | 16.70 | 7 000 | 11.99 |

Notes : IT personnel ratio refers to the number of IT personnel per 1 000 persons engaged.

The projected number of IT personnel is obtained by multiplying the projected ratio to the projected manpower requirement in the corresponding economic sector.

Projection of IT personnel in the financing, insurance, real estate and business services sector

IT personnel ratio



| Year | 1991 | 1993 | 1996 | 1998 | 2000 | 2002 | Year | 2007 | | Average annual growth rate (%) | | |
|--|-------|--------|--------|--------|--------|--------|-------------------|-----------------|------------------|--------------------------------|--------|------|
| | | | | | | | | Projected ratio | Projected number | | | |
| Number of IT personnel | 9 200 | 12 300 | 18 200 | 20 000 | 23 300 | 27 200 | Model | | | 2002-07 | | |
| IT personnel ratio | 29.57 | 34.16 | 42.96 | 45.68 | 48.85 | 56.89 | Linear | 67.35 | 39 400 | 7.68 | | |
| Average annual growth rate (based on number of IT personnel) | | | | | | | Log Linear | 75.62 | 44 300 | 10.20 | | |
| | | | | | | | Reciprocal Linear | 102.09 | 59 800 | 17.02 | | |
| 1991-2002 : 10.36% | | | | | | | 1996-1998 : 4.65% | | Log Parabola | 65.06 | 38 100 | 6.94 |
| 1991-1996 : 14.64% | | | | | | | 1998-2002 : 8.07% | | | | | |

Assumptions adopted

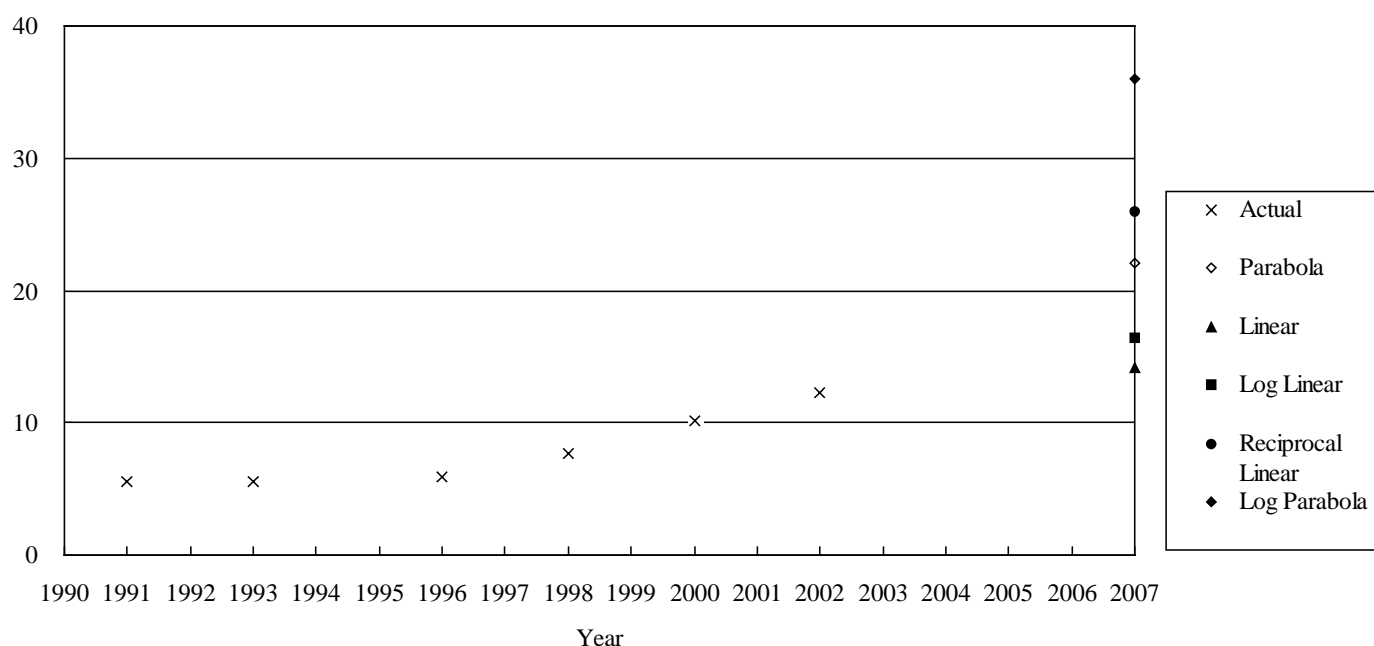
| Model chosen | Base year (2002) | | 2007 | | Average annual growth rate (%) (based on number of IT personnel) |
|--------------|------------------|--------|-----------------|------------------|---|
| | Ratio | Number | Projected ratio | Projected number | |
| Linear | 56.89 | 27 200 | 67.35 | 39 400 | 7.68 |

Notes : IT personnel ratio refers to the number of IT personnel per 1 000 persons engaged.

The projected number of IT personnel is obtained by multiplying the projected ratio to the projected manpower requirement in the corresponding economic sector.

Projection of IT personnel in the community, social and personal services sector

IT personnel ratio



| Year | 1991 | 1993 | 1996 | 1998 | 2000 | 2002 | Year | 2007 | | Average annual growth rate (%) | |
|--|-------|--------|-------|-------------|-------|--------|------------|-------------------|------------------|--------------------------------|-------|
| | | | | | | | | Projected ratio | Projected number | 2002-07 | |
| Number of IT personnel | 2 900 | 3 100 | 3 900 | 5 300 | 7 400 | 9 500 | Model | | | | |
| IT personnel ratio | 5.57 | 5.50 | 5.92 | 7.70 | 10.15 | 12.24 | Parabola | 22.07 | 14 500 | 8.86 | |
| Average annual growth rate (based on number of IT personnel) | | | | | | | Linear | 14.19 | 9 300 | -0.34 | |
| | | | | | | | Log Linear | 16.36 | 10 700 | 2.54 | |
| 1991-2002 : | | 11.19% | | 1996-1998 : | | 16.83% | | Reciprocal Linear | 25.95 | 17 000 | 12.44 |
| 1991-1996 : | | 5.51% | | 1998-2002 : | | 15.83% | | Log Parabola | 35.96 | 23 600 | 20.03 |

Assumptions adopted

| Model chosen | Base year (2002) | | 2007 | | Average annual growth rate (%) (based on number of IT personnel) |
|--------------|------------------|--------|-----------------|------------------|---|
| | Ratio | Number | Projected ratio | Projected number | |
| Parabola | 12.24 | 9 500 | 22.07 | 14 500 | 8.86 |

Notes : IT personnel ratio refers to the number of IT personnel per 1 000 persons engaged.

The projected number of IT personnel is obtained by multiplying the projected ratio to the projected manpower requirement in the corresponding economic sector.

**Projected manpower requirement
for IT domain⁺ in 2007
by occupation category**

| | Actual employment in 2002 | | Projected manpower requirement in 2007 | | Change in 2007 over 2002 | | Average annual % change |
|--|--|----------------|---|----------------|---------------------------------|-----------------|-------------------------------|
| | <u>Number</u> | <u>% share</u> | <u>Number</u> | <u>% share</u> | <u>Number</u> | <u>% change</u> | |
| IT/Computer managers | 7 300 | 11.6 | 9 500 | 11.1 | 2 200 | 29.6 | 5.3 |
| IT/Computer professionals | 37 600 | 59.6 | 52 100 | 61.3 | 14 500 | 38.6 | 6.7 |
| IT/Computer associate professionals | 17 100 | 27.0 | 21 800 | 25.7 | 4 700 | 27.8 | 5.0 |
| IT assistants | 1 200 | 1.8 | 1 600 | 1.9 | 500 | 39.3 | 6.9 |
| Overall | 63 100 | 100.0 | 85 000 | 100.0 | 21 900 | 34.7 | 6.1 |

Notes : (+) Statistics on IT personnel are based on the respective manpower survey conducted by VTC. As the survey is not conducted on an annual basis, statistics on employment of IT personnel in 2001 are not available.

Figures may not add up exactly to the total due to rounding.

Source : 2001-based Manpower Requirement Projection by Occupation Category and Educational Attainment within Economic Sector, Education and Manpower Bureau.

**Projected manpower requirement
for IT domain⁺ in 2007
by educational attainment**

| | Actual employment in 2002 | | Projected manpower requirement in 2007 | | <u>Change in 2007 over 2002</u> | | |
|---------------------------|--|----------------|---|----------------|--|-----------------|--|
| | <u>Number</u> | <u>% share</u> | <u>Number</u> | <u>% share</u> | <u>Number</u> | <u>% change</u> | <u>Average annual % change</u> |
| Postgraduate | 7 300 | 11.5 | 12 300 | 14.5 | 5 000 | 69.0 | 11.1 |
| First degree | 31 800 | 50.4 | 48 000 | 56.5 | 16 100 | 50.7 | 8.5 |
| Sub-degree | 7 200 | 11.4 | 10 400 | 12.3 | 3 300 | 45.6 | 7.8 |
| Technician | 3 400 | 5.4 | 2 400 | 2.8 | -1 000 | -30.3 | -7.0 |
| Craft | 100 | 0.1 | 100 | 0.1 | # | -26.7 | -6.0 |
| Matriculation | 3 800 | 6.1 | 3 700 | 4.4 | -100 | -2.9 | -0.6 |
| Upper secondary | 8 800 | 14.0 | 7 500 | 8.8 | -1 300 | -15.0 | -3.2 |
| Lower secondary and below | 600 | 1.0 | 600 | 0.7 | -100 | -9.9 | -2.1 |
| Overall | 63 100 | 100.0 | 85 000 | 100.0 | 21 900 | 34.7 | 6.1 |

Notes : (+) Statistics on IT personnel are based on the respective manpower survey conducted by VTC. As the survey is not conducted on an annual basis, statistics on employment of IT personnel in 2001 are not available.

(#) Change in number being less than 50.

Figures may not add up exactly to the total due to rounding.

Source : 2001-based Manpower Requirement Projection by Occupation Category and Educational Attainment within Economic Sector, Education and Manpower Bureau.

**Business prospects over the next 5 years in view of
Hong Kong's economic restructuring and China's accession to WTO**
- **Establishments engaged primarily
in the provision of IT&T services**

Number of establishments

Degree of optimism :

| <u>Size of establishment*</u> | <u>Very optimistic</u> | <u>Optimistic</u> | <u>Neither optimistic nor pessimistic</u> | <u>Pessimistic</u> | <u>Very pessimistic</u> | <u>No comment</u> | <u>Total</u> |
|-------------------------------|------------------------|-------------------------|---|-------------------------|-------------------------|----------------------|--------------------------|
| Small | 176 (2.4) | 2 227 (30.3) | 2 737 (37.3) | 1 556 (21.2) | 327 (4.4) | 321 (4.4) | 7 344 (100.0) |
| Medium-sized | 19 (1.8) | 517 (49.4) | 213 (20.3) | 175 (16.7) | 27 (2.6) | 97 (9.3) | 1 048 (100.0) |
| Large | 7 (3.0) | 137 (58.4) | 53 (22.5) | 8 (3.6) | 0 (0.0) | 29 (12.6) | 234 (100.0) |
| Overall | 201 (2.3) | 2 881 (33.4) | 3 002 (34.8) | 1 739 (20.2) | 354 (4.1) | 448 (5.2) | 8 625 (100.0) |

Notes : (*) Establishments are categorised into small, medium-sized and large enterprises according to the number of persons engaged. For establishments in the manufacturing sector, those employing less than 10 persons are classified as small enterprises, 10-99 persons as medium-sized enterprises, and 100 persons and above as large enterprises. For establishments in the non-manufacturing sector, those employing less than 10 persons are classified as small enterprises, 10-49 persons as medium-sized enterprises, and 50 persons and more as large enterprises.

() Figures in brackets represent % shares in the respective row totals.

Source : Report on 2002 Establishment Survey on Manpower Training and Job Skills Requirements, Census and Statistics Department.

**Impact of Hong Kong's economic restructuring and
China's accession to WTO on business turnover over the next 5 years**
- **Establishments primarily engaged
in the provision of IT&T services**

Number of establishments

Impact on business turnover

| <u>Significant increase</u> | <u>Some increase</u> | <u>No change</u> | <u>Some decrease</u> | <u>Significant decrease</u> | <u>No comment</u> | <u>Total</u> |
|---------------------------------|--------------------------|----------------------|--------------------------|---------------------------------|-----------------------|------------------|
| 333 (3.9) | 2 329 (27.0) | 3 001 (34.8) | 1 382 (16.0) | 1 147 (13.3) | 433 (5.0) | 8 625 (100.0) |

Note : () Figures in brackets represent % shares in the total.

Source : Report on 2002 Establishment Survey on Manpower Training and Job Skills Requirements, Census and Statistics Department.

**Investment in the mainland of China
- Establishments primarily engaged
in the provision of IT&T services**

Number of establishments

Whether having investment in the mainland of China

| <u>Yes</u> | <u>No</u> | <u>Not specified</u> | <u>Total</u> |
|---------------|-----------------|----------------------|------------------|
| 867 (10.1) | 7 400 (85.8) | 359 (4.2) | 8 625 (100.0) |

Note : () Figures in brackets represent % shares in the total.

Source : Report on 2002 Establishment Survey on Manpower Training and Job Skills Requirements, Census and Statistics Department.

**New business opportunities brought about by China's accession to WTO
- Establishments primarily engaged
in the provision of IT&T services**

Number of establishments

Whether expecting new business opportunities

| <u>Yes</u> | <u>No</u> | <u>Not specified</u> | <u>Total</u> |
|-----------------|-----------------|----------------------|------------------|
| 4 349 (50.4) | 3 658 (42.4) | 618 (7.2) | 8 625 (100.0) |

Note : () Figures in brackets represent % shares in the total.

Source : Report on 2002 Establishment Survey on Manpower Training and Job Skills Requirements, Census and Statistics Department.

**Implications for Hong Kong's business environment
over the next 5 years upon China's accession to WTO
- Establishments primarily engaged in the provision of
information technology and telecommunications (IT&T) services**

| <u>Major areas of concern</u> | <u>Number of establishments</u> |
|--|---------------------------------|
| Face keener competition from enterprises in the mainland of China | 6 468 (75.0) |
| Need to better understand the market and changes in investment environment in the mainland of China | 6 230 (72.2) |
| More companies to relocate business operations to the mainland of China | 5 930 (68.7) |
| Face keener competition from overseas companies | 5 289 (61.3) |
| More inducement to conduct business in the mainland of China upon more objective and transparent rules and regulations | 4 936 (57.2) |
| Benefit from increase in business opportunities upon liberalisation of the Mainland market | 4 593 (53.3) |
| Hong Kong's middleman role to diminish | 4 548 (52.7) |
| Hong Kong's middleman role in provision of services to strengthen further | 4 483 (52.0) |

Note : () Figures in brackets represent % shares in the total number of establishments primarily engaged in the provision of IT&T services.

Source : Report on 2002 Establishment Survey on Manpower Training and Job Skills Requirements, Census and Statistics Department.

**Measures to be taken over the next 5 years to cope with
Hong Kong's economic restructuring and China's accession to WTO
- Establishments primarily engaged
in the provision of IT&T services**

| <u>Measure</u> | <u>Number of establishments</u> |
|---|---------------------------------|
| Increase the use of IT within the company | 5 327 (61.8) |
| Upgrade the skills of existing staff | 4 772 (55.3) |
| Diversify the business of the company | 4 482 (52.0) |
| Upgrade the capability of the workforce on technology and language skills | 4 161 (48.2) |
| Restructuring of organisation and/or business process to stay competitive | 3 778 (43.8) |
| Expand business in Hong Kong | 3 579 (41.5) |
| Focus on the core business and reduce the peripheral business with lower value-added content | 3 573 (41.4) |

Note : () Figures in brackets represent % shares in the total number of establishments primarily engaged in the provision of IT&T services.

Source : Report on 2002 Establishment Survey on Manpower Training and Job Skills Requirements, Census and Statistics Department.

**Percentage distribution of persons engaged as at mid-2002
and mid-2007 by educational attainment
- Establishments primarily engaged
in the provision of IT&T services**

| <u>Educational attainment</u> | <u>Percentage distribution of persons engaged</u> | |
|-------------------------------|---|-----------------|
| | <u>Mid-2002</u> | <u>Mid-2007</u> |
| Postgraduate | 2.1 | 3.4 |
| First degree | 41.2 | 45.7 |
| Sub-degree | 8.1 | 7.9 |
| Technician | 7.8 | 6.3 |
| Craft | 0.8 | 0.4 |
| Matriculation | 7.2 | 10.1 |
| Upper secondary | 28.2 | 22.8 |
| Lower secondary and below | 4.7 | 3.3 |
| Overall | 100.0 | 100.0 |

Source : Report on 2002 Establishment Survey on Manpower Training and Job Skills Requirements, Census and Statistics Department.

**Percentage distribution of persons engaged as at mid-2002
and mid-2007 by occupation category
- Establishments primarily engaged
in the provision of IT&T services**

| <u>Occupation category</u> | <u>Percentage distribution of persons engaged</u> | |
|---|---|-----------------|
| | <u>Mid-2002</u> | <u>Mid-2007</u> |
| Managers and administrators | 18.4 | 18.0 |
| Professionals | 24.6 | 24.7 |
| Associate professionals | 16.2 | 16.3 |
| Clerks | 22.0 | 21.1 |
| Service workers and shop sales workers | 11.8 | 12.8 |
| Craft and related workers | 3.0 | 3.2 |
| Plant and machine operators and assemblers | 1.8 | 1.8 |
| Elementary occupations | 2.3 | 2.1 |
| Overall | 100.0 | 100.0 |

Source : Report on 2002 Establishment Survey on Manpower Training and Job Skills Requirements, Census and Statistics Department.

Training plans/training budget for employees
- Establishments primarily engaged
in the provision of IT&T services

Number of establishments

| | <i>Whether having training plans/training budget for employees</i> | | | |
|-----------------|--|-----------------|----------------------|------------------|
| | <u>Yes</u> | <u>No</u> | <u>Not specified</u> | <u>Total</u> |
| Training plans | 1 187 (17.8) | 4 887 (73.5) | 574 (8.6) | 6 647 (100.0) |
| Training budget | 1 134 (17.1) | 4 939 (74.3) | 575 (8.6) | 6 647 (100.0) |

Note : () Figures in brackets represent % shares in the respective totals.

Source : Report on 2002 Establishment Survey on Manpower Training and Job Skills Requirements, Census and Statistics Department.

**Types of skills to be enhanced by occupation category
- Establishments primarily engaged
in the provision of IT&T services**

| <u>Occupation category</u> | <u>Type of skills to be enhanced</u> |
|---|--------------------------------------|
| Managers and administrators | Management skills |
| Professionals | IT skills |
| Associate professionals | IT skills |
| Clerks | Language skills |
| Service workers and shop sales workers | IT skills |
| Craft and related workers | IT skills |
| Plant and machine operators and assemblers | Language skills |
| Elementary occupations | Language skills |

Source : Report on 2002 Establishment Survey on Manpower Training and Job Skills Requirements, Census and Statistics Department.

Preferred training mode
- Establishments primarily engaged
in the provision of IT&T services

| <u>Ranking</u> | <u>Preferred training mode</u> |
|----------------|--------------------------------------|
| 1 | Self-learning (outside office hours) |
| 2 | Extra-mural courses |
| 3 | In-house training |
| 4 | On-the-job training |
| 5 | Contract-out |
| 6 | Web-based training |
| 7 | Distance learning |

Source : Report on 2002 Establishment Survey on Manpower Training and Job Skills Requirements, Census and Statistics Department.

**Persons engaged by perceived prospects of the domain
- IT**

| <u>Perceived prospects</u> | <u>%</u> |
|----------------------------|--------------|
| Fast growth | 13.3 |
| Moderate growth | 38.1 |
| Slow growth | 33.3 |
| No growth | 7.2 |
| Contraction | 8.1 |
| Total | 100.0 |

Source : Thematic Household Survey Report No. 13 : Employment Concerns and Training Needs of the Labour Force, Census and Statistics Department.

**Persons engaged by challenges/problems faced
- IT**

| <u>Challenges/problems faced[#]</u> | <u>%</u> |
|---|----------|
| Corporate downsizing | 43.1 |
| Keen competition amongst companies within the domain | 34.9 |
| Cost reduction (including salary/wage cuts) | 25.1 |
| Contraction of business | 18.3 |
| Slow growth | 15.2 |
| Outsourcing | 13.7 |
| Relocation of work place to other countries/territories | 12.0 |
| Less competitive against other countries/territories | 8.4 |
| No challenge/problem | 9.0 |

Note : (#) Multiple answers are allowed.

Source : Thematic Household Survey Report No. 13 : Employment Concerns and Training Needs of the Labour Force, Census and Statistics Department.

**Persons engaged by whether having been affected
by the prevalence of corporate restructuring
since 2001 and impact on persons engaged
as a result of corporate restructuring
- IT**

| Whether having been affected by the prevalence of corporate restructuring since 2001/impact on persons engaged as a result of corporate restructuring [#] | <u>%</u> |
|--|--------------|
| Yes [#] | 25.5 |
| <i>Increasing work pressure</i> | (53.2) |
| <i>Salary/wage cuts</i> | (49.2) |
| <i>Longer working hours</i> | (32.1) |
| <i>Reduction in fringe benefits</i> | (23.5) |
| <i>Risk of being laid-off/dismissed</i> | (12.5) |
| <i>More flexible working hours</i> | (12.4) |
| <i>Had ever been laid-off/dismissed</i> | (8.5) |
| No | 74.5 |
| Total | 100.0 |

Notes : (#) Multiple answers are allowed.

Figures in brackets represent % shares of all persons engaged in the IT domain who had been affected by the prevalence of corporate restructuring since 2001.

Source : Thematic Household Survey Report No. 13 : Employment Concerns and Training Needs of the Labour Force, Census and Statistics Department.

**Persons engaged by whether possessing sufficient job-specific skills
to meet the current job requirements
- IT**

| <u>Whether possessing sufficient job-specific skills to meet the current job requirements</u> | <u>%</u> |
|---|--------------|
| Very sufficient | 20.2 |
| Sufficient | 75.9 |
| Insufficient | 3.1 |
| Very insufficient | 0.9 |
| Total | 100.0 |

Source : Thematic Household Survey Report No. 13 : Employment Concerns and Training Needs of the Labour Force, Census and Statistics Department.

**Persons engaged by whether having attended job-related training/retraining courses arranged by employers or on own initiative in the past 12 months
- IT**

| | <u>Yes</u> (%) | <u>No</u> (%) | <u>Total</u> (%) |
|--|-------------------|------------------|---------------------|
| Attended job-related training/ retraining courses | | | |
| <i>arranged by employer</i> | 18.7 | 81.3 | 100.0 |
| <i>on own initiative</i> | 17.2 | 82.8 | 100.0 |

Source : Thematic Household Survey Report No. 13 : Employment Concerns and Training Needs of the Labour Force, Census and Statistics Department.