

ANNUAL SURVEY ON INFOCOMM MANPOWER FOR 2008



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PART I: SURVEY COVERAGE AND METHODOLOGY

1. INTRODUCTION

Infocomm manpower surveys have been carried out by IDA annually since 1999. This is the 10th in the series.

An infocomm manpower is a person engaged primarily in infocomm-related work either in an IT or telecommunication equipment and/or services provider, or user organisation. He/She must be employed by the Singapore-based organisation on a full-time/part-time basis either as a permanent or direct contract staff to work in Singapore or to station overseas. The work of the person:

- a. may include the development, distribution, implementation, support, operation, sales or marketing of telecommunication, computer hardware/software, IT services or multimedia contents; and
- b. is classified under one of the job categories listed in Annex A.

The definition does not include infocomm manpower under the employment of contractors and subcontractors.

2. SURVEY OBJECTIVES

To determine the demographic and employment profiles of Singapore's infocomm manpower covering the period **1 Jun 07 to 31 May 08**.

3. METHODOLOGY

The sample, covering all industrial sectors, was selected from the Establishment Sampling Frame maintained by the Department of Statistics. The sample was stratified by the Singapore Standard Classification of Industrial Codes (SSIC). Data collection (via self-administered questionnaires by mail/email/Internet submission) and processing for the Survey was carried out from Aug to Dec 08.

PART II: SURVEY FINDINGS

1. SUMMARY

The number of employed infocomm manpower grew by 6.6% to reach 139,000 as at Jun 08¹. Together with 6,500 infocomm job vacancies, the total infocomm jobs reached 145,500 in Jun 08 compared to 135,100 in Jun 07. This represented a growth of 7.7%, or 10,400 in terms of the number of infocomm jobs created.

83% of employed infocomm manpower were local residents i.e. citizens and permanent residents.

About 6 in 10 of the infocomm manpower worked in infocomm organisations with the rest in end-user organisations. *Infrastructure Support, Infocomm Sales & Marketing* and *Software Development* were the 3 largest infocomm job categories in Jun 08.

About 6 in 10 of the infocomm job vacancies were in infocomm organisations with the rest in end-user organisations. *Software Development, Infrastructure Support* and *Infocomm Sales & Marketing* were the top 3 job categories with the highest vacancies, accounting for about half the number of the total vacancies.

The profile of infocomm manpower was substantially unchanged. The male to female ratio of infocomm manpower employed remained at 2 to 1. About 7 in 10 infocomm manpower employed were aged below 40 years old. The proportion of infocomm manpower with tertiary education (i.e. diploma and above) stayed fairly constant at 82%.

¹ All manpower figures in the report for the 2008 Survey refer to figures as of 1 Jun 08 (unless otherwise specified); similarly, for the survey findings for the earlier years.

2. EMPLOYMENT

Moderate infocomm employment growth

The number of employed infocomm manpower grew by 6.6% to reach 139,000 in Jun 08 ([Table 2.1](#)).

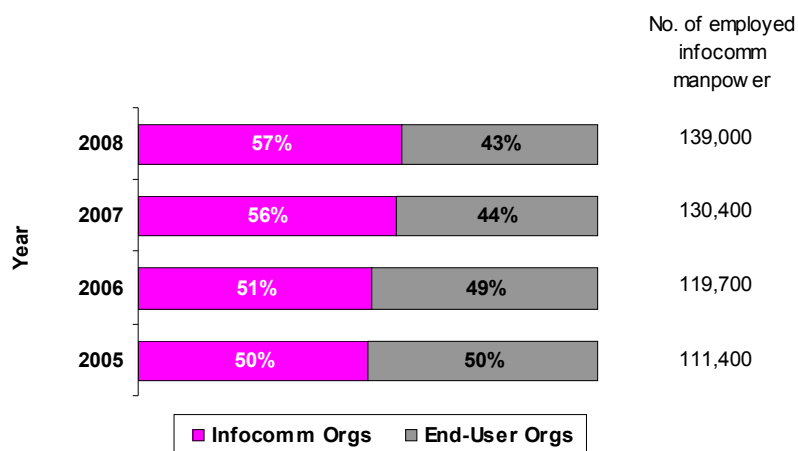
Table 2.1: Infocomm manpower in Singapore²

	2005	2006	2007	2008
Infocomm manpower ('000)	111.4	119.7	130.4	139.0
- Annual growth (%)	3.1	7.5	8.9	6.6

2.1. Employment in segments / sectors

57% of the infocomm manpower employed worked in infocomm organisations and the rest in end-user organisations ([Chart 2.1](#)) in Jun 08. Employment in infocomm organisations (*by infocomm market segment*) and in end-user organisations (*by economic sector*) are shown in [Tables 2.2 and 2.3](#).

Chart 2.1: Infocomm manpower by organisation type



² As at 1 Jun of the respective years

Table 2.2: Infocomm manpower employed in infocomm organisations by market segment

Segment	2005	2006	2007	2008
IT Services	22%	23%	35%	33%
Hardware	26%	28%	22%	27%
Software	20%	19%	25%	21%
Telecommunication Services	23%	22%	16%	18%
Content Services	9%	8%	2%	1%
Total	100%	100%	100%	100%

Base: All infocomm manpower in infocomm organisations

Table 2.3: Infocomm manpower in end-user organisations by economic sector

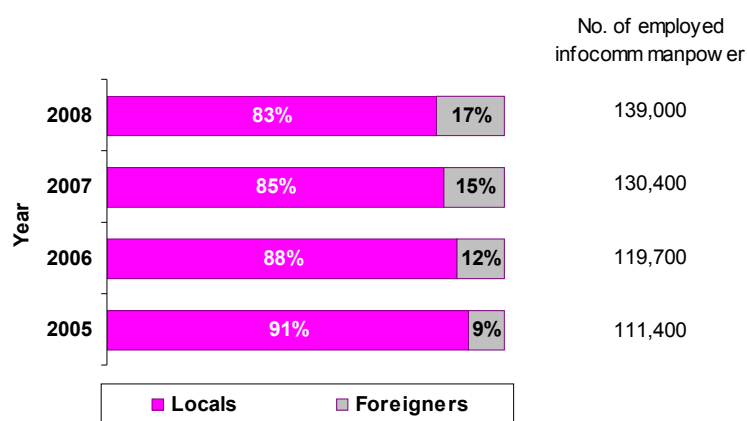
Sector	2005	2006	2007	2008
Wholesale and Retail Trade	21%	18%	18%	18%
Real Estate, Renting and Business Activities	13%	13%	20%	18%
Manufacturing	12%	14%	22%	17%
Financial Services	20%	37%	11%	12%
Construction	1%	2%	6%	7%
Education	11%	4%	5%	5%
Transport and Storage	10%	3%	5%	4%
Others	12%	10%	11%	18%
Total	100%	100%	100%	100%

Base: All infocomm manpower in end-user organisations

2.2. Residential status

Foreign manpower helped to complement the infocomm manpower needed.

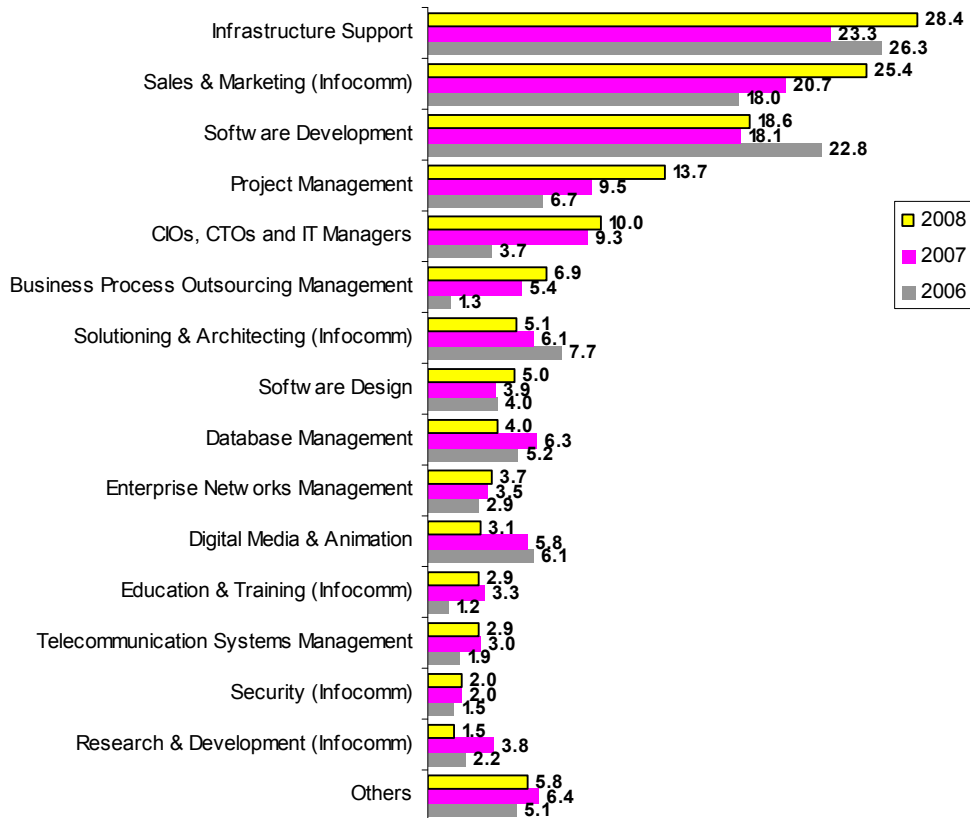
Chart 2.2: Infocomm manpower by residential status



2.3. Job category

In Jun 08, the top 3 job categories with the highest number of employed infocomm manpower were *Infrastructure Support*, *Infocomm Sales & Marketing* and *Software Development* (Chart 2.3).

Chart 2.3³: Infocomm manpower by job category (in thousands)



³ "Others" here include Telecommunication Systems Design; Quality Assurance (Infocomm); Enterprise Networks Design; Technical Writing; and Games Development.

3. JOB VACANCIES

More vacancies in infocomm organisations

The number of infocomm job vacancies stood at 6,500 in Jun 08 ([Chart 3.1](#)), with a larger proportion from infocomm organisations. [Chart 3.2](#) shows the distribution of the vacancies among the various job categories.

Chart 3.1: Infocomm job vacancies by organisation type

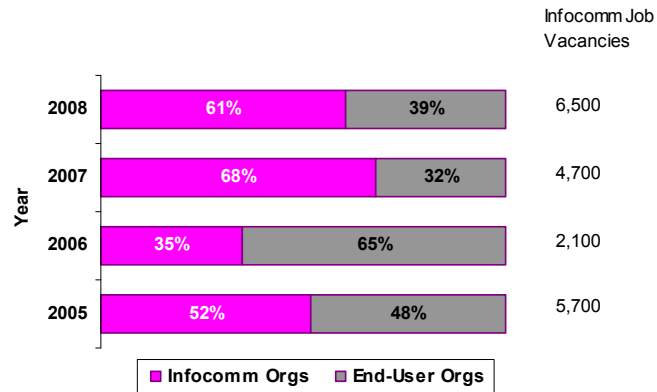
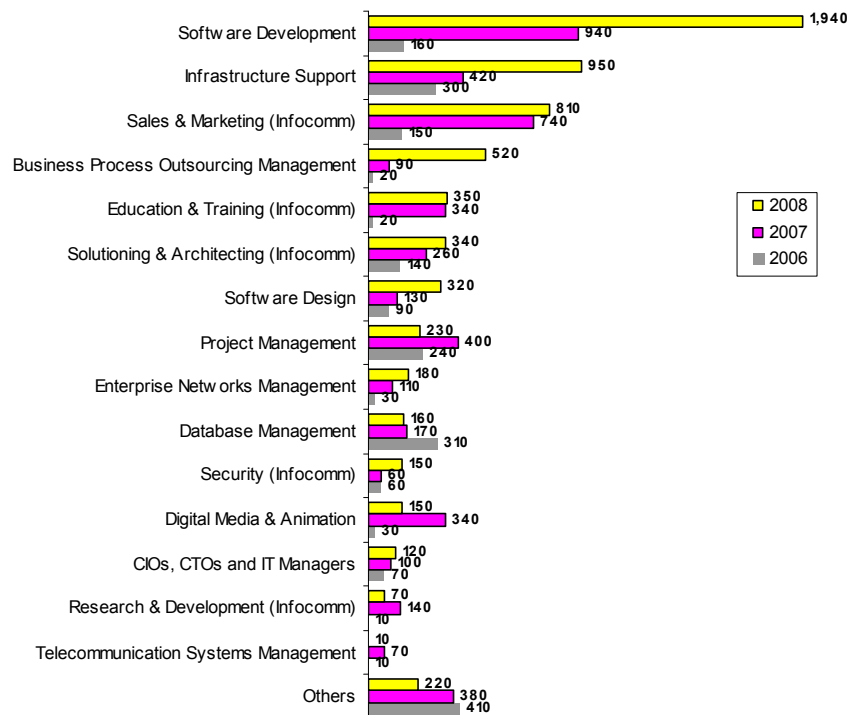


Chart 3.2⁴: Infocomm job vacancies by job category (nearest ten)



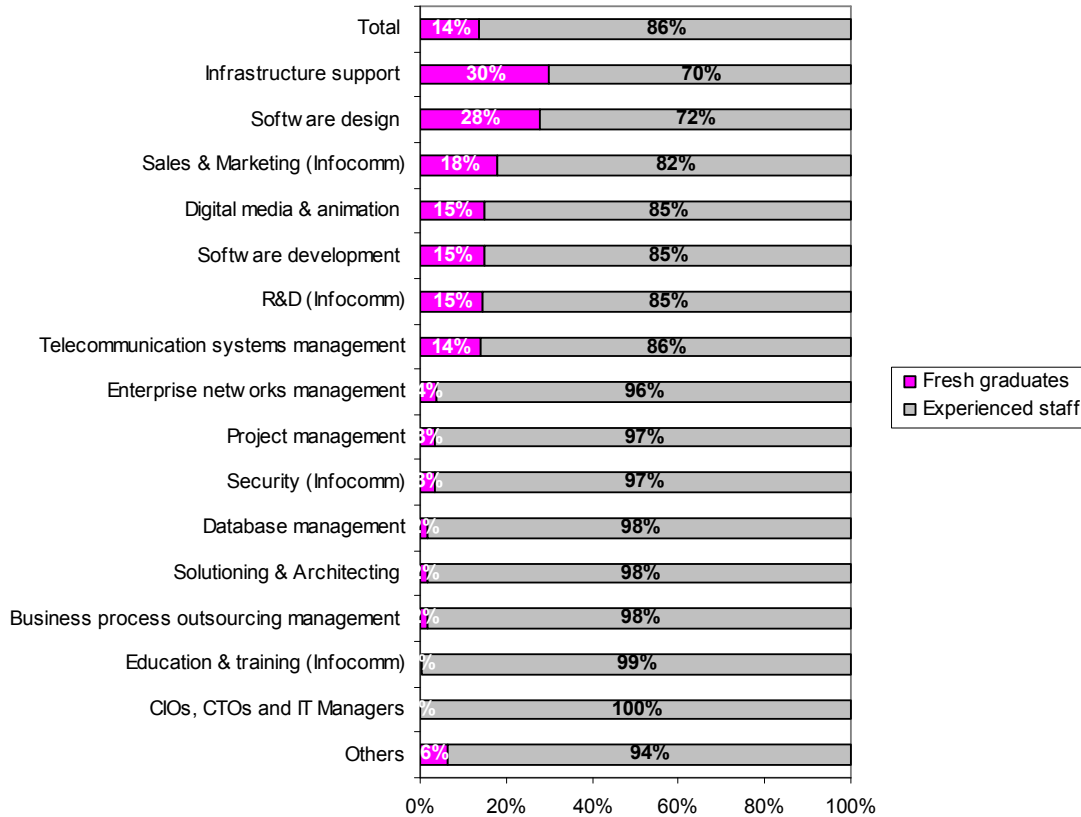
⁴ "Others" here include Telecommunication Systems Design; Quality Assurance (Infocomm); Enterprise Networks Design; Technical Writing; and Games Development.

Experienced staff preferred over fresh graduates

Though there was demand for fresh graduates, most job vacancies required prior job experience (Chart 3.3).

Chart 3.3⁵: Infocomm job vacancies by job category and hire type

(Job categories arranged in descending order of % of fresh grads in total vacancies)



Base: Infocomm job vacancies for each job category

Tables 3.1 and 3.2 show the infocomm manpower (employed and vacancies) as grouped by job category, infocomm market segment and economic sector.

⁵ "Others" here include Telecommunication Systems Design; Quality Assurance (Infocomm); Enterprise Networks Design; Technical Writing; and Games Development.

Table 3.1⁶: Total infocomm manpower (employed and vacancies) by job category

Job Category	Infocomm Manpower in 2008		
	Total	Employed	Vacancies
Overall	100.0%	100.0%	100.0%
Infrastructure Support	20.2%	20.4%	14.5%
Sales & Marketing (Infocomm)	18.0%	18.3%	12.4%
Software Development	14.1%	13.3%	29.9%
Project Management	9.6%	9.9%	3.6%
CIOs, CTOs and IT Managers	6.9%	7.2%	1.9%
Business Process Outsourcing Management	5.1%	5.0%	8.0%
Solutioning & Architecting	3.7%	3.7%	5.2%
Software Design	3.6%	3.6%	5.0%
Database Management	2.8%	2.9%	2.4%
Enterprise Networks Management	2.7%	2.7%	2.8%
Digital Media & Animation	2.2%	2.2%	2.3%
Education & Training (Infocomm)	2.2%	2.1%	5.3%
Telecommunication Systems Management	2.0%	2.1%	0.1%
Security (Infocomm)	1.5%	1.4%	2.2%
R&D (Infocomm)	1.1%	1.1%	1.1%
Others	4.1%	4.2%	3.4%

Base: Total – 145,500; Employed – 139,000; Vacancies – 6,500

⁶ Numbers may not add up due to rounding. “Others” here include Telecommunication Systems Design; Quality Assurance (Infocomm); Enterprise Networks Design; Technical Writing; and Games Development.

Table 3.2⁷: Total infocomm manpower (employed and vacancies) by segment / sector

Segment / Sector	Infocomm Manpower in 2008		
	Total	Employed	Vacancies
Overall	100.0%	100.0%	100.0%
Infocomm Organisations (Segment)			
IT Services	19.0%	18.6%	28.0%
Hardware	14.9%	15.2%	8.5%
Software	12.0%	11.8%	14.7%
Telecommunication Services	10.0%	10.2%	4.6%
Content Services	0.8%	0.6%	4.9%
Infocomm Organisations Overall	56.8%	56.6%	60.5%
End-User Organisations (Sector)			
Real Estate, Renting and Business Activities	8.2%	7.8%	15.4%
Wholesale and Retail Trade	7.8%	7.9%	5.9%
Manufacturing	7.3%	7.6%	1.3%
Financial Services	5.3%	5.3%	4.1%
Construction	3.0%	3.0%	2.8%
Education	2.1%	2.2%	0.3%
Transport and Storage	1.8%	1.8%	0.4%
Others	7.8%	7.7%	9.3%
End-User Organisations Overall	43.2%	43.4%	39.5%

Base: Total – 145,500; Employed – 139,000; Vacancies – 6,500

⁷ Numbers may not add up due to rounding.

4. INFOCOMM MANPOWER MOVEMENT

The number of newly hired infocomm manpower reached 28,400 in Jun 08. Compared to Jun 07, the attrition rate fell, with 18,700 resignations and 700 retrenchments in Jun 08 ([Table 4.1](#)).

Table 4.1: Infocomm manpower movement

Period	Newly hired infocomm manpower	Resigned infocomm manpower	Retrenched infocomm manpower
1st June 2004 to 31st May 2005	17,200	12,300	1,500
1st June 2005 to 31st May 2006	22,100	14,200	600
1st June 2006 to 31st May 2007	31,900	20,000	2,300
1st June 2007 to 31st May 2008	28,400	18,700	700

The top 3 reasons cited by survey respondents who reported a decrease in infocomm manpower remained “*High labour costs*”, “*Poor business*” and “*Restructuring of business processes*” ([Table 4.2](#)).

Table 4.2: Reasons for decrease in infocomm manpower in ranking order

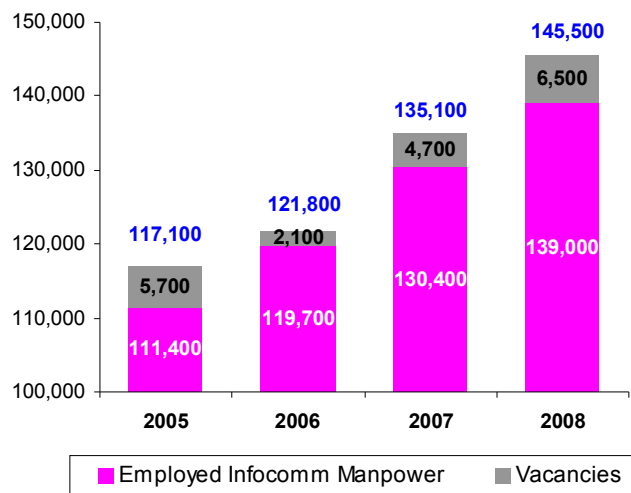
Reason for decrease	2008	2007	2006
High labour costs	1	1	1
Poor business	2	2	2
Restructuring of business processes	3	3	3
Reorganisation of businesses	4	5	5
High operating costs	5	4	7
Outsourcing to enterprises in Singapore	6	7	8
Lack of availability of skilled infocomm manpower	7	6	6
Outsourcing to enterprises outside Singapore	8	9	9
High productivity, hence smaller pool required	9	8	4

5. TOTAL JOBS & PROJECTED DEMAND

5.1. Total jobs

Total infocomm manpower demand⁸ increased by 7.7% (10,400) in Jun 08, after taking into account employment and vacancies (Chart 5.1).

Chart 5.1: Total infocomm jobs, employed and vacancies



5.2. Projected growth of infocomm manpower

Survey respondents projected some growth in infocomm jobs (employed infocomm manpower and vacancies) for 2009 and 2010 (Table 5.1).

Most of the infocomm manpower growth would be generated by infocomm organisations (Table 5.2).

⁸ Total manpower demand is the sum of employed manpower and job vacancies.

Table 5.1⁹: Projected growth of infocomm jobs by job category

(Arranged in descending order of projected growth in 2009)

Job category	Annual Growth of Infocomm Jobs		
	2008 (Actual)	2009 (Projected)	2010 (Projected)
Education & Training (Infocomm)	-11.2%	27.9%	12.8%
Digital Media & Animation	-46.7%	27.2%	18.8%
Software Design	31.7%	24.8%	13.7%
Solutioning & Architecting	-15.2%	9.7%	5.1%
Project Management	40.2%	9.3%	6.0%
Software Development	7.7%	8.7%	11.1%
Security (Infocomm)	2.3%	7.1%	0.2%
Sales & Marketing (Infocomm)	22.4%	6.2%	5.4%
Database Management	-36.2%	3.0%	5.7%
Enterprise Networks Management	8.7%	0.3%	0.8%
Infrastructure Support	23.6%	-1.1%	3.9%
R&D (Infocomm)	-59.2%	-3.6%	3.7%
CIOs, CTOs and IT Managers	7.1%	-6.0%	3.3%
Telecommunication Systems Management	-4.2%	-6.1%	-0.7%
Business Process Outsourcing Management	36.1%	-10.9%	6.1%
Others	-10.5%	-5.3%	8.9%
Total	7.7%	4.3%	6.7%

⁹ "Others" here include Telecommunication Systems Design; Quality Assurance (Infocomm); Enterprise Networks Design; Technical Writing; and Games Development.

Table 5.2: Projected growth of infocomm jobs by segment / sector

(Arranged in descending order of projected growth in 2009)

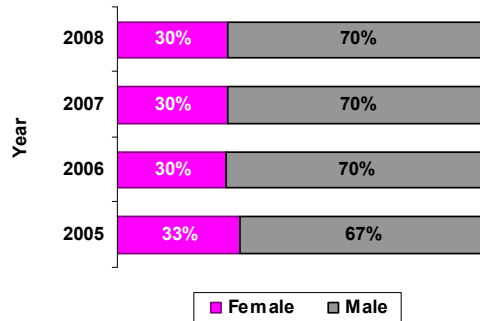
Segment/ Sector	Projected Growth of Infocomm Jobs	
	2009	2010
Overall	4.3%	6.7%
Infocomm Organisations (Segment)		
IT Services	15.4%	15.7%
Software	12.9%	11.2%
Content Services	10.3%	25.1%
Telecommunication Services	2.1%	2.3%
Hardware	1.3%	2.2%
Infocomm Organisations Overall	8.6%	9.3%
End-User Organisations (Sector)		
Real Estate, Renting and Business Activities	16.8%	7.6%
Education	8.0%	4.9%
Financial Services	6.7%	8.9%
Construction	-0.4%	-8.8%
Transport and Storage	-0.9%	1.2%
Manufacturing	-4.4%	0.5%
Wholesale and Retail Trade	-17.1%	-1.8%
Others	-10.1%	2.6%
End-User Organisations Overall	-1.3%	2.8%

6. DEMOGRAPHIC PROFILE

Male to female ratio of infocomm manpower remained unchanged

The proportion of male to female infocomm manpower remained fairly constant at the ratio of 2 males to 1 female employed in Jun 08 ([Chart 6.1](#)).

Chart 6.1: Infocomm manpower by gender

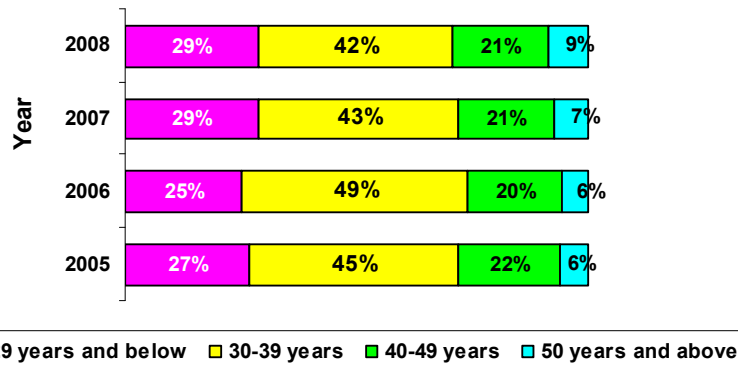


Base: All employed infocomm manpower (2005-111,400; 2006-119,700; 2007-130,400; 2008-139,000)

7 in 10 infocomm manpower were below 40 years old

71% of the infocomm manpower were aged 39 years old and below ([Chart 6.2](#)) in Jun 08. The largest proportion of infocomm manpower continued to be those aged between 30 to 39 years.

Chart 6.2: Infocomm manpower by age

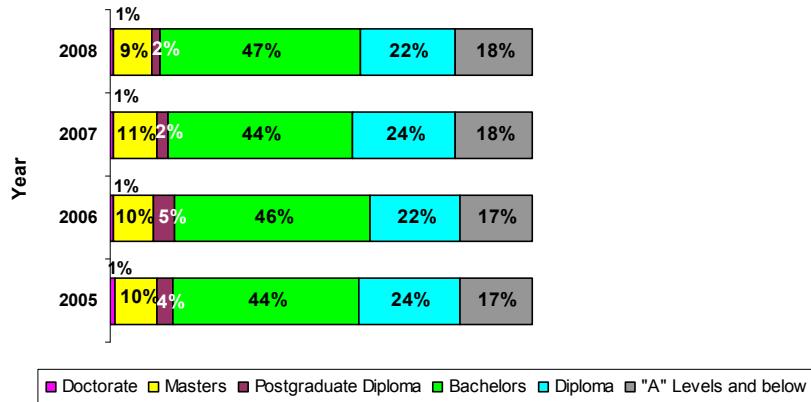


Base: All employed infocomm manpower (2005-111,400; 2006-119,700; 2007-130,400; 2008-139,000)

Highly qualified infocomm manpower

The proportion of tertiary qualified (i.e. having at least diploma qualifications) infocomm manpower has remained fairly constant at 82% (Chart 6.3) in Jun 08.

Chart 6.3: Infocomm manpower by highest qualification attained

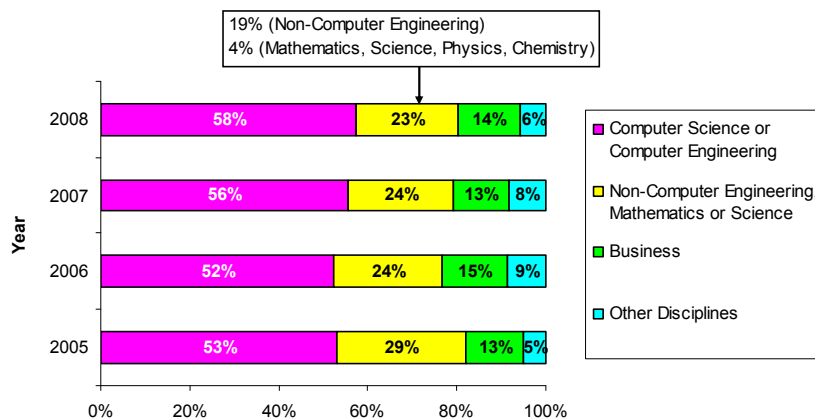


Base: All employed infocomm manpower (2005-111,400; 2006-119,700; 2007-130,400; 2008-139,000)

Computer studies still the dominant discipline

Almost 6 in 10 (58%) of infocomm manpower were trained in computer studies (Table 6.4).

Chart 6.4: Infocomm manpower by discipline of study¹⁰



All employed infocomm manpower with at least a diploma qualification
(2005-84,200; 2006-99,400; 2007-106,400; 2008-113,700)

¹⁰ Other Disciplines include Humanities, Design, etc.

PART III: ANNEX

ANNEX A: Infocomm Job Categories

- 1. Business Process Outsourcing Management**
- 2. Chief Information Officers, Chief Technology Officers and IT Managers**
- 3. Database Management**
- 4. Digital Media & Animation**
- 5. Education and Training (Infocomm)**
- 6. Enterprise Networks Design**
- 7. Enterprise Networks Management**
- 8. Games Development**
- 9. Infrastructure Support**
- 10. Project Management**
- 11. Quality Assurance (Infocomm)**
- 12. Research & Development (Infocomm)**
- 13. Sales & Marketing (Infocomm)**
- 14. Security (Infocomm)**
- 15. Software Design**
- 16. Software Development**
- 17. Solutioning and Architecting (Infocomm)**
- 18. Telecommunication Systems Design**
- 19. Telecommunication Systems Management**
- 20. Technical Writing**