

ANNUAL INFOCOMM MANPOWER SURVEY, 2010 EXECUTIVE SUMMARY

Introduction

The 2010 Annual Survey on Infocomm Manpower ("Survey") is the 12th in its series conducted by IDA since 1999. The objective of the Survey is to assess the infocomm manpower pool and its profile in Singapore as at **1 Jun 2010**.

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 overseas¹.

The work of the person may include the development, distribution, implementation, support, operation, sales or marketing of telecommunication, computer hardware/software, IT services or multimedia contents.

Survey Methodology

The sample, covering all sectors, was selected from the Establishment Sampling Frame maintained by the Department of Statistics (DOS). The sample was stratified by the Singapore Standard Industrial Classification (SSIC). Data collection (via self-administered questionnaires by mail, email or Internet submission) and processing for the Survey was carried out from Aug to Dec 2010.

Key Findings on Infocomm Manpower

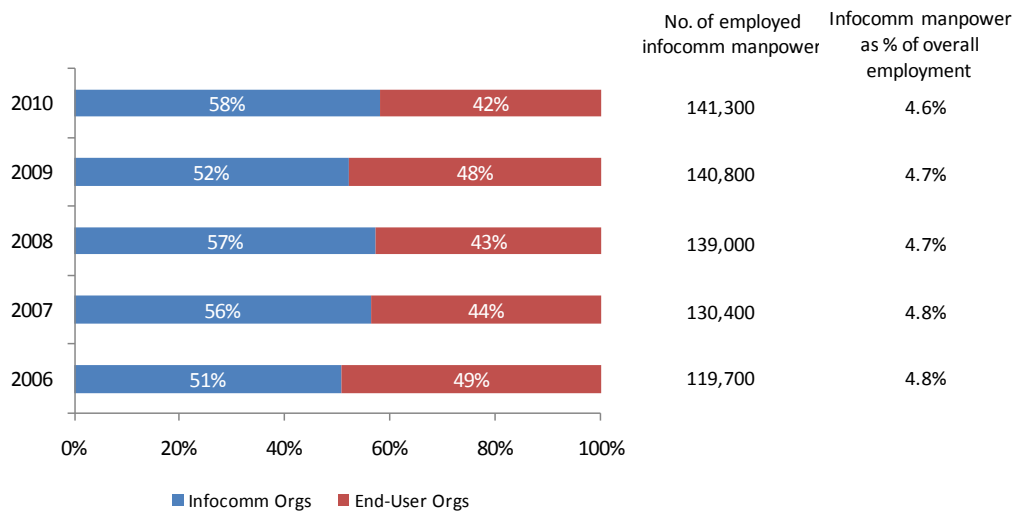
Infocomm employment grew by 0.4% to reach 141,300 ([Table 1](#)) in Jun 2010 with 58% of infocomm manpower employed in infocomm organisations ([Chart 1](#)).

Table 1: Employed Infocomm Manpower in Singapore²

	2006	2007	2008	2009	2010
Infocomm Manpower ('000)	119.7	130.4	139.0	140.8	141.3
- Annual Growth (%)	7.5	8.9	6.6	1.3	0.4

¹ The definition does not include infocomm manpower under the employment of contractors and subcontractors.

² Data is as of Jun of the respective years.

Chart 1: Infocomm Manpower by Organisation Type

Job Categories³

The top three job categories with the highest number of employed infocomm manpower were *Operations & Support*, *Infocomm Sales & Marketing*, and *Application Engineering* (Chart 2).

Chart 2: Infocomm Manpower by Job Category (in thousands)

³ The description of infocomm job categories can be found in Annex A.

Job Vacancies

There were 16,100 infocomm job vacancies and about 7 in 10 were from infocomm organisations (Chart 3). The distribution of vacancies by job categories is shown in Chart 4.

Chart 3: Infocomm Job Vacancies by Organisation Type

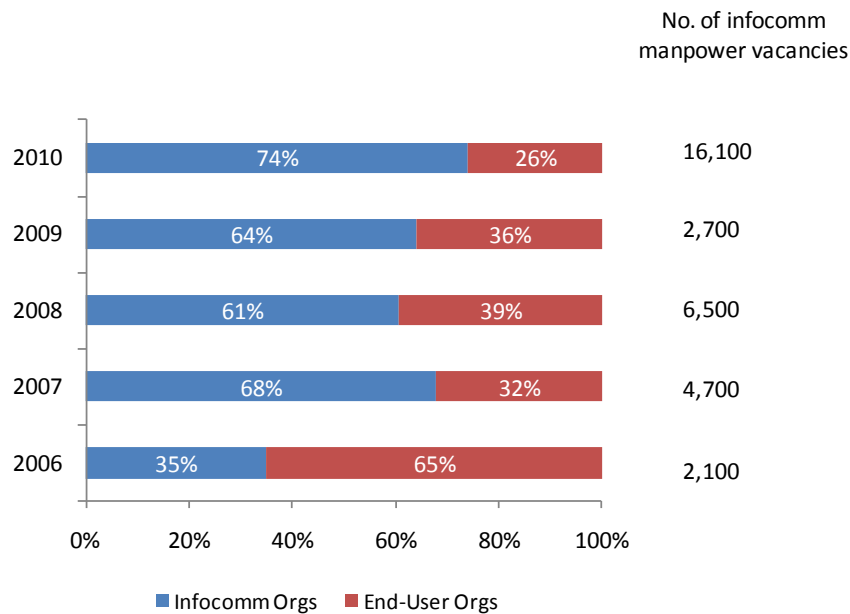


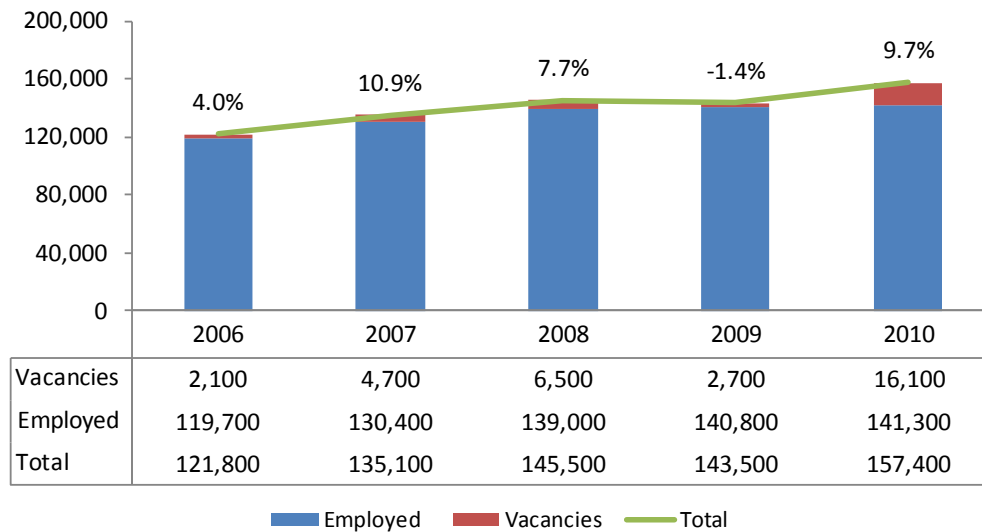
Chart 4: Infocomm Job Vacancies by Job Category (nearest ten)



Total Infocomm Demand⁴

Total infocomm demand increased by 9.7% (+13,900) from 2009 (Chart 5).

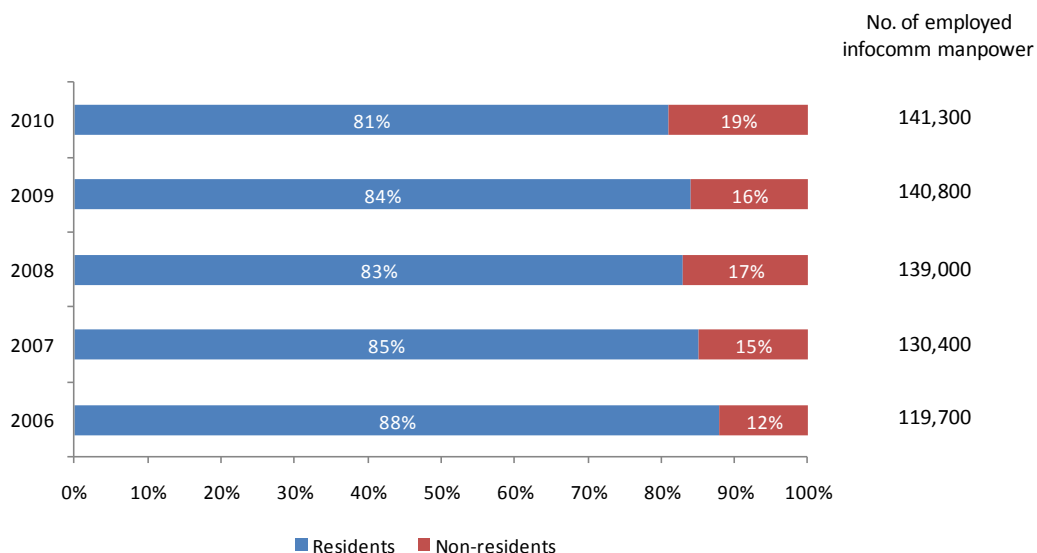
Chart 5: Total Infocomm Demand (Employed and Vacancies)



Residential Status of Infocomm Manpower

About 8 in 10 infocomm manpower were residents⁵ (Chart 6).

Chart 6: Infocomm Manpower by Residential Status



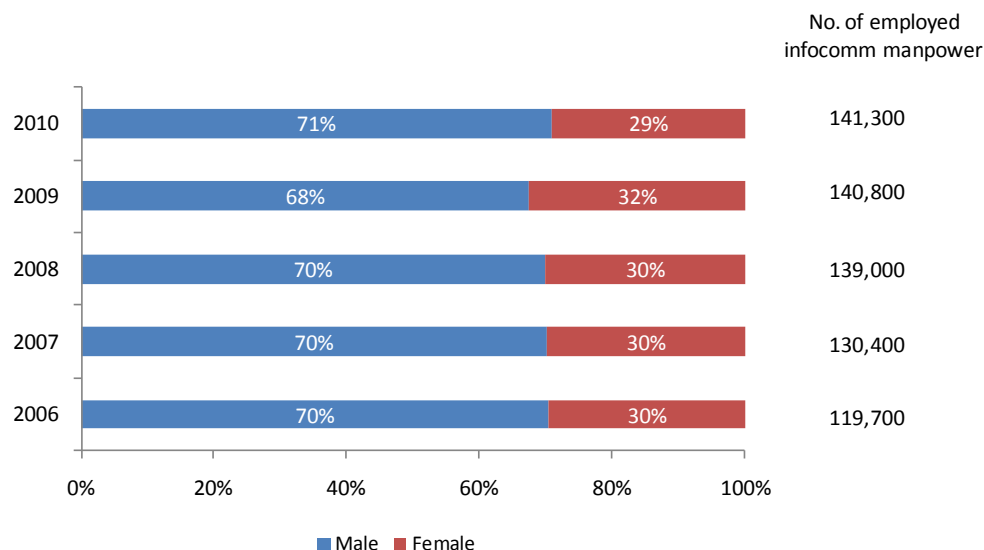
⁴ Total infocomm demand is the sum of employed infocomm manpower and infocomm vacancies.

⁵ Residents consist of Singapore Citizens and Permanent Residents (PRs).

Gender Composition of Infocomm Manpower

The proportion of male to female infocomm manpower remained fairly constant at the ratio of 2:1 (Chart 7).

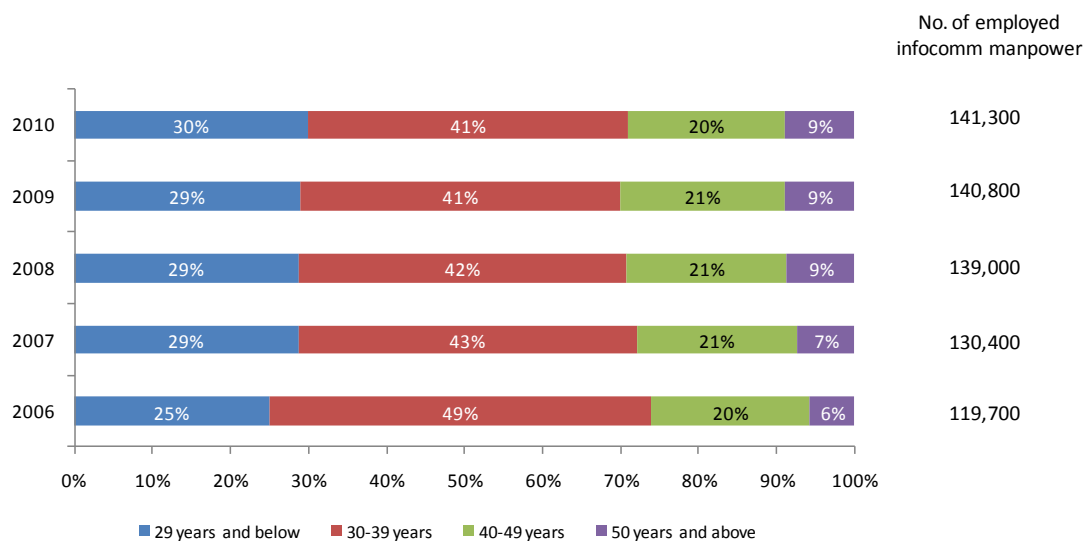
Chart 7: Infocomm Manpower by Gender



Age Profile of Infocomm Manpower

About 7 in 10 infocomm manpower were below the age of 40 (Chart 8). The largest proportion of infocomm manpower continued to be those aged between 30-39 years.

Chart 8: Infocomm Manpower by Age⁶

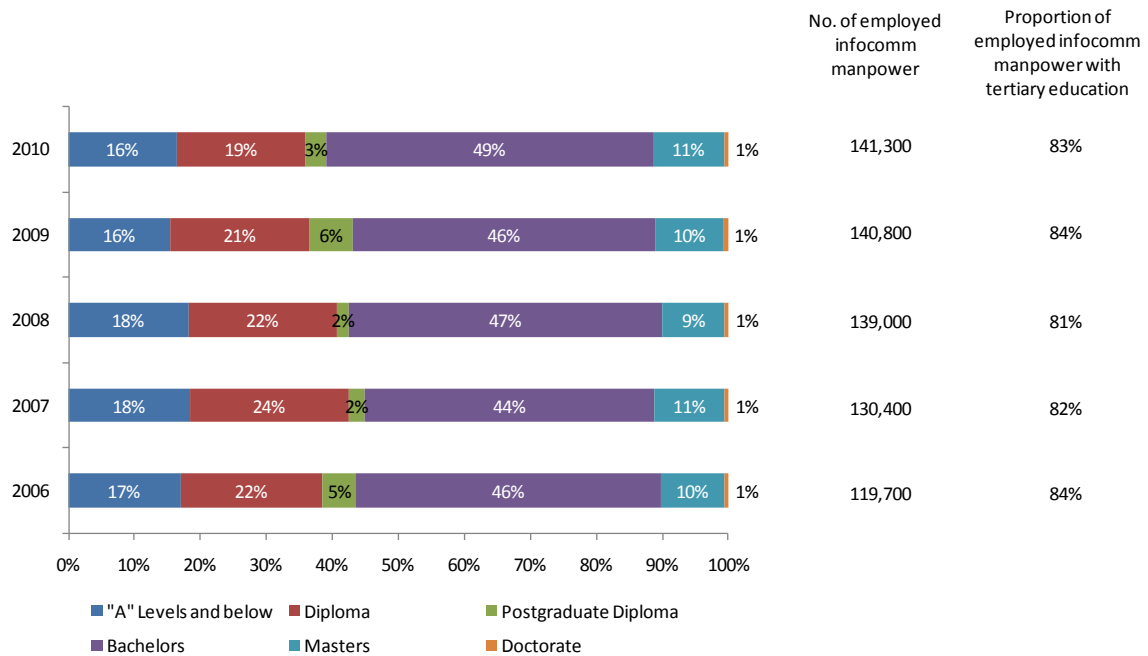


⁶ Percentages may not add up to 100% due to rounding.

Education Profile of Infocomm Manpower

The proportion of tertiary qualified (i.e. having at least diploma qualifications) infocomm manpower was 83% ([Chart 9](#)).

Chart 9: Infocomm Manpower by Highest Qualification Attained⁷



⁷ Percentages may not add up to 100% due to rounding.

ANNEX A: DESCRIPTION OF INFOCOMM MANPOWER JOB CATEGORIES

No.	Infocomm Manpower Job Category	Description
1	IT Business Analysis	<p>IT Business Analysis personnel improve on business processes by serving as a bridge between users and the IT team to understand business needs and communicating user requirements. They design and modify business processes to fully utilise the IT systems and drive business solutions.</p> <p>Positions can range from Associate Business Analyst to Principal Business Analyst.</p>
2	IT Architecture	<p>IT Architecture personnel are involved in designing a technical structure that matches the business needs and aligns with the strategies. Their jobs include researching, analysing, planning and delivering IT architecture solutions by collaborating with different business functions.</p> <p>Positions can range from IT Architect to Enterprise Architect.</p>
3	Application Engineering	<p>Application Engineers manage the lifecycle of an application, ranging from planning, designing, analysing, developing, testing, implementing to supporting after implementation.</p> <p>Positions can range from Associate Application Engineer to Principal Application Engineer.</p>
4	Infrastructure Engineering	<p>Infrastructure Engineers can be involved in any elements of infrastructure, ranging from designing, analysing, developing, testing, implementing to supporting after implementation.</p> <p>Positions can range from Associate Infrastructure Engineer to Principal Infrastructure Engineer.</p>
5	Quality Assurance (QA) and Testing Analysis (Infocomm)	<p>Quality Assurance (QA) and Testing Analysis personnel are concerned with ensuring product integrity and compliance with customer requirements or in maintaining consistent quality IT services within an organisation.</p> <p>Positions can range from Senior QA & Testing Analyst to Associate QA & Testing Analyst.</p>
6	Service Delivery	<p>Service Delivery personnel manage the implementation of technology changes that improve operations. They assess that the changes and the ensuing impact maintains operational integrity.</p> <p>Positions can range from Senior Service Delivery Analyst to Associate Service Delivery Analyst.</p>
7	Operations & Support	<p>Operations and Support personnel are involved in providing continuing management, fault detection, correction and enhancements to the IT systems. Their job also includes the management of corporate systems like servers and computing equipment and the maintenance of operating plans.</p> <p>Positions can range from Operations & Support Technician to Operations & Support Analyst.</p>
8	Database Management	<p>Database Managers are involved in managing and maintaining the components of a database system. They write, review, and debug database software code for data manipulation and assist users with research and data analysis questions. Their jobs include managing and maintaining storage and software as needed and ensure data integrity by coordinating and logging data exchanges.</p> <p>Positions can range from Database Management Analyst to Database Management Supervisors.</p>

No.	Infocomm Manpower Job Category	Description
9	Security (Infocomm)	<p>Infocomm Security personnel are involved in protecting the hardware, software, network and services of an organisation against unauthorised access, modification, destruction, or disclosure. Their jobs include designing the overall enterprise-wide security architecture, and integrating security principles, methods and techniques; monitoring, identifying and responding to key information security threats; installation, monitoring and maintenance of information security systems and infrastructure; and providing services such as audit & compliance, computer forensics.</p> <p>Positions can range from Associate Security Engineer to Chief Information Security Officer</p>
10	Project Management (Infocomm)	<p>Project Managers ensure that targets are achieved while optimising the use of resources over the course of infocomm projects. They work on activities such as project scope and cost management, communications, timelines and risk assessments.</p> <p>Positions can range from Program Manager to Project Coordinator.</p>
11	IT Business Management	<p>IT Business Managers assess IT Service Delivery performance and work on improvement programmes while adhering to corporate and financial standards and regulations.</p> <p>Positions can range from Principal Business Management Analyst to Associate Business Management Analyst.</p>
12	Chief Information Officers (CIOs) and Chief Technology Officers (CTOs)	<p>The leadership management are involved in determining and formulating policies, best practices and/or business strategies. They manage activities at the highest level of management and are accountable for enterprise results or the business unit's effectiveness. They are the overall managers of infocomm resources and functions, and are responsible for technology strategy, product direction and technology standards. They also manage mega and/or multiple projects at a strategic level.</p>
13	Education & Training (Infocomm)	<p>Infocomm Educators and Trainers are those who teach or train people in infocomm skills/courses. Infocomm skills/courses include handling information technology and communications equipment, using software/design applications and Internet-based applications.</p>
14	Research & Development (Infocomm)	<p>Infocomm Researchers and Developers are those who are involved in research and experimental development (R&D) work in the infocomm area. This comprises creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of man, culture and society and the use of knowledge to devise new applications.</p>
15	Sales & Marketing (Infocomm)	<p>Infocomm Sales and Marketing professionals are responsible for the sales and marketing activities of infocomm products (including telecommunication equipment) and/or services.</p>
16	Software Design and Development (excluding games)	<p>Software Designers are involved in planning and sourcing the components of a system.</p> <p>Their activities include analysis of needs; designing of system and components, including customisation of interfaces; and designing of data structure.</p> <p>Software Developers are involved in creating the components of a system.</p> <p>Their activities include designing, coding, debugging, and testing software components and products on various platforms independently in a high-availability, high performance environment; and coding of database query.</p>

No.	Infocomm Manpower Job Category	Description
17	Digital Media & Animation, Games Design & Development	<p>Digital Media personnel are concerned with the presentation and/or consumption of media and content in one or multiple or integrated digital manner. The content can include sound, graphics, video, text, animation or any other form of information representation.</p> <p>Digital animators are concerned with simulation of movement created by displaying a series of pictures, or frames. Examples of animation include television, commercials, films, Internet and interactive presentations, etc.</p> <p>Digital media and animation activities include drafting and design; 2D/3D illustration and modelling, visual effects; texture generation; rendering; and staging and movement. The activities may also include cross-platform modelling and other post production activities.</p> <p>Games Developers are concerned with software development specialising in digital technology that creates games for various platforms.</p>