



# Information Communications Technology (ICT)

ICT professionals are recognised for their technology expertise across a wide range of business-technology practice areas. Some smaller organisations may combine various types of analyst, designer and programmer roles into one, while larger organisations may employ teams of specialists such as: Business Systems Analyst, IT Analyst and IT Programmer.

## Business Systems Analyst

Business systems analysts study the overall business and information needs of an organisation, in order to develop solutions to business and related technology problems. A business systems analyst's role is usually undertaken prior to the system design, building and programming stages of the systems development process. **Business systems analysts** may perform the following tasks:

- Work closely with clients to identify business needs and the costs and benefits of implementing a computing solution
- Construct information technology (IT) definitions based on identified needs of the organisation
- Work with other IT experts to address networking and hardware needs
- Look at finance and budgetary matters
- Devise and document a general system design based on the client's anticipated requirements
- Negotiate options with the client.

## Information Technology (IT) Analyst

IT Analysts define software requirements and specifications and guide program design and development. The IT analyst's role sits between the initial business analysis stage and the detailed system design, building and programming stages of the systems development process. **IT analysts** may perform the following tasks:

- Research how IT systems are used and look at ways to improve use and efficiency
- Review and develop computer systems, computer languages, data communication processes and user interface devices
- Test new IT system designs and fix design problems found
- Test new system components
- Write reports describing findings, sometimes for publication.

## Information Technology (IT) Programmer

IT programmers write, test and maintain computer programs to ensure that the computer application meets the needs of the users of the computer system. **IT Programmers** may perform the following tasks:

- Work closely with clients to identify business needs and the costs and benefits of implementing a computing solution
- Assist systems analysts and/or designers in researching and documenting computer users' requirements
- Analyse objectives and problems specified by analysts and/or designers
- Translate the solutions provided by systems designers into detailed program specifications
- Prepare documentation for other programmers, users of the system and other support services workers
- Undertake program design activities including definition of data and error message arrangements
- Supervise and report on the work of junior programmers
- Modify and document program code to correct errors or to enhance a program's capabilities
- Test the programs and make amendments
- Prepare reports on the status, operation and maintenance of system software for use by computer equipment suppliers, systems designers, other programmers and computer operators.

## Specialisations:

### Applications Systems Analyst

An applications systems analyst builds IT systems once the requirements have been defined by a business systems analyst and uses data modelling to generate different possible solutions as a means of finding the best result for the client. They analyse system components and monitor data flow to improve efficiency. They draw up detailed design documents for systems, using charts and diagrams that indicate the various steps involved for designers and programmers, and describe the system in ways that the client can understand. They prepare other detailed documentation, including hardware and tender specifications, process flow documentation, rules and instructions for designers and programmers and help with client-site installation activities.

### Computer Tester

A computer tester may have several different roles, including initial testing of a newly built system. This could be undertaken together with experts in the subject area and other IT professionals such as programmers. Computer testers may also be involved with clients at the application testing stage.

## **Data Modeller**

A data modeller undertakes data modelling, which is the analysis and design of the information in the system, as part of the development of options for the client.

## **Network Analyst**

A network analyst is involved in the analysis of data flow and the technical requirements and equipment that best suits an organisation's network and investigates the physical space requirements for network equipment. They plan a network's size, capacity and configuration and talk with network system management to ensure that client needs are met. They may also work with network designers and programmers to build and implement network solutions.

## **Communications Programmer**

A communications programmer is involved in activities associated with programming telecommunications infrastructures, for example stored program-controlled telephone exchanges. Communications programming has also been used to describe the work of network programmers. See the section below on network programmers.

## **Database Programmer**

A database programmer is involved in the development of programs to suit access and maintenance of databases. It is often considered to be part of the database design role.

## **Network Programmer**

A network programmer works with vendor networking languages to support the implementation or modification of network configurations. Ongoing education in vendor products and technical matters is important.

## **Personal Requirements:**

- Imaginative and good at creative reasoning
- Good interpersonal and communication skills
- Able to make informed decisions on a wide range of complex business and technical issues
- Able to work independently or as part of a team
- Able to think logically and analytically in a problem-solving environment
- Willing to continuously update personal IT skills and knowledge as technology changes.
- Good at technical activities
- Logical approach to the solution of problems

*Source: Job Guide 2011*