

## Lecture 1 Introduction to Information Systems

### Chapter 1 outline

- 1.1 Why should I study information systems?
- 1.2 Overview of computer-based information systems
- 1.3 How does IT impact organisations?
- 1.4 Why are information systems important to society?

### Learning objectives

1. Identify the reasons why being an informed user of information systems is important in today's world.
2. Describe the various types of computer-based information systems in an organisation.
3. Discuss ways in which information technology can affect managers and non-managerial workers.
4. Identify positive and negative societal effects of the increased use of information technology.

### Introduction

- Is Information Technology (IT) the same as Information System (IS)?
  - IT refers to computer-based tools that support data-processing.
  - IS utilises IT to collect, process, store, analyse, and disseminate (transfer) information for a specific purpose.
  - IT is a part of IS

### 1.1 Why should I study information systems?

- You are Homo conexus, the most connected generation in history
  - In what ways do you stay “connected”?
- You practice continuous computing
  - You are surrounded by a personal, **movable digital network** that allows you retrieve and share information from anywhere at anytime. (Web based activities: communication, online shopping)
- Three reasons why you should learn about ISs and ITs:
  1. To become an informed user
- Informed user – A person knowledgeable about information systems and information technology.
  - utilises IT and IS, generates more value/benefit from the IT resources

### An informed user...

- Benefits more from an organisation's IT resources
- Helps enhance IT resources with his/her input

- Recommends new/adapted IT resources- you!
- Keeps up with IT development/updates/security
- Improves overall organisational effectiveness

Your personal information network is created by constant cooperation between:

- (1) The digital devices you carry;
- (2) The wired and wireless networks that you access as you move about;
- (3) Web-based tools for finding information and communicating and collaborating with other people.

You can *pull* information from the Web and *push* your ideas back to the Web.

## 2. To explore career opportunities in IT

IT offers career opportunities

- “The people who are able to make sense of (digital data) information, market products to customers online and use their digital expertise are in demand.” [www.news.com.au](http://www.news.com.au)
- “Hot job titles include: IT project manager, business analyst, digital marketing manager, mobile app developer, JavaScript developer and almost anyone with IT knowledge.”

CIO: highest ranking IS manager- all strategic planning

IS director: manages all systems, day-to-day operations of the IS organisation

Info centre manager: help desks, hot lines, training and consulting

Business Analyst: designs solutions for business problems, interacts closely with users how IT can be used innovatively

Systems analyst: users and programmers- info requirements, technical specs for new apps

Position	Job description
Chief information officer (CIO)	Highest ranking IS manager; is responsible for all strategic planning in the organisation
IS director	Manages all systems throughout the organisation and day-to-day operations of the entire IS organisation
Information centre manager	Manages IS services such as help desks, hot lines, training and consulting
Applications development manager	Coordinates and manages new systems development projects
Project manager	Manages a particular new systems development project
Systems manager	Manages a particular existing system
Operations manager	Supervises the day-to-day operations of the data and/or computer centre
Programming manager	Coordinates all applications programming efforts
Systems analyst	Interfaces between users and programmers; determines information requirements and technical specifications for new applications

Business analyst	Focuses on designing solutions for business problems; interfaces closely with users to demonstrate how IT can be used innovatively
Systems programmer	Creates the computer code for developing new systems software or maintaining existing systems software
Applications programmer	Creates the computer code for developing new applications or maintaining existing applications
Emerging technologies manager	Forecasts technology trends and evaluates and experiments with new technologies
Network manager	Coordinates and manages the organisation's voice and data networks
Database administrator	Manages the organisation's databases and oversees the use of database-management software
Auditing or computer security manager	Oversees the ethical and legal use of information systems
Webmaster	Manages the organisation's world wide web (www) site
Web designer	Creates world wide websites and pages

### 3. To take part in managing information resources

#### 1.2 Overview of computer based information systems

- Key terms: – Data– Information – Knowledge

What are examples of data, information, and knowledge?

**Data** -Elementary description of things, events, activities, and transactions that are recorded, classified, and stored but are not organised to convey any specific meaning.

- Categorical and Numerical (phrase)

**Information**- Data that have been organised so that they have **meaning and value** to the recipient.

- E.g. Andres' GPA is 4.0 (makes more sense- sentence)

**Knowledge**- Consists of data and/or information that have been organised and processed to convey understanding, experience, accumulated learning, and expertise as they apply to a current business problem.

**Computer-Based Information System (CBIS)** is an IS that performs some or all of its tasks using computer technology

- There are also traditional IS (e.g. Finding a book in the library- without the use of IT, older ways).

## CBIS Components

- **Hardware** is a device such as a processor, monitor, keyboard, or printer. Together, these devices accept data and information, process them, and display them.

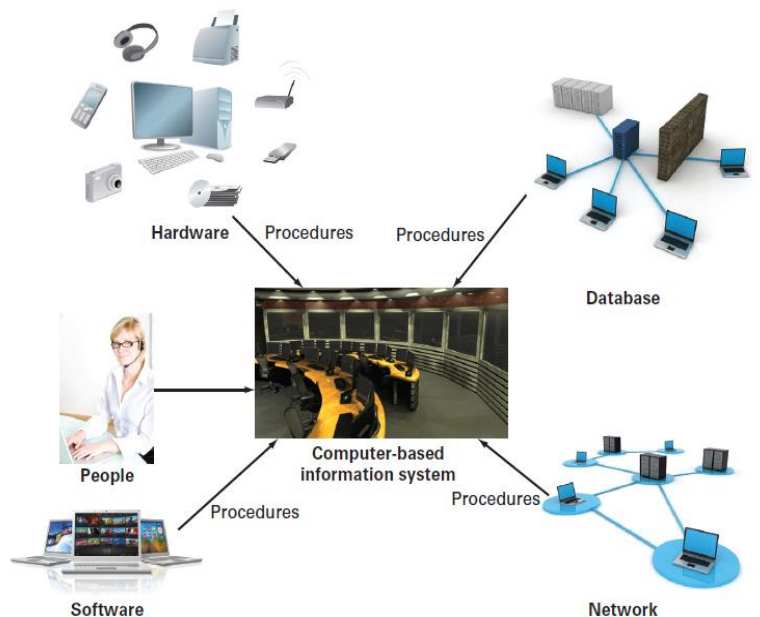
- **Software** is a program or collection of programs that enable the hardware to process data.

- A **database** is a collection of related files or tables containing data.

- A **network** is a connecting system (wireline or wireless) that permits different computers to share resources.

- **Procedures** are the set of instructions about how to combine hardware, software, databases, and networks in order to process information and generate the desired output.

- *Users* are those individuals who use the hardware and software, interface with it, or utilise its output.



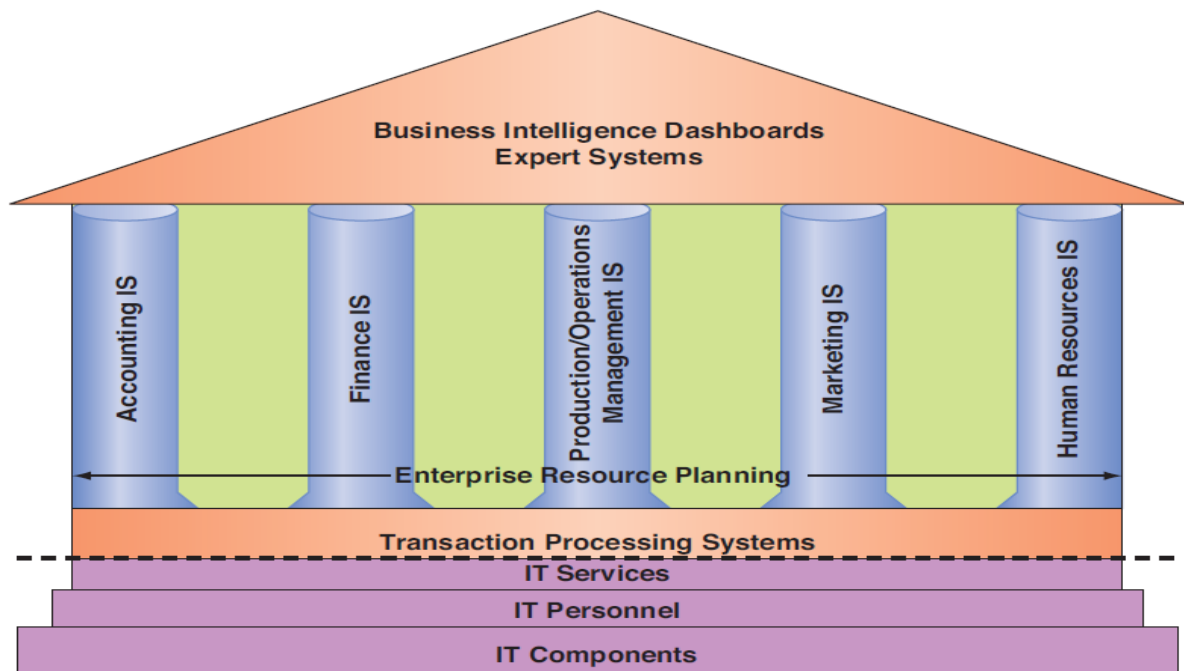
IT components: Hware, Sware, Dbase, Nwork

IT personnel (staff) + IT platform (H, S, D, N, P- CBIS components) = IT Services

## Major Capabilities (benefits) of Information Systems

- Perform high-speed, high-volume numerical computations.
- Provide fast, accurate communication and collaboration within and among organizations.
- Store huge amounts of information in an easy-to-access, yet small space.
- Allow quick and inexpensive access to vast amounts of information, worldwide.
- Interpret vast amounts of data quickly and efficiently.
- Automate both semiautomatic business processes and manual tasks.

Figure 1.7 Integration of IT components



- Lower level elements support higher level
- ERP: serves as a communication tool between departmental IS.

#### Breadth of Support of Information Systems

Two Information Systems support the entire organization:

- **Enterprise Resource Planning (ERP) Systems:** Provide communication among functional area ISs
- **Transaction Processing Systems (TPS):** Support the “real time” monitoring, collection, storage, and processing of data from the organization’s day to day operations
  - E.g. Barcode scanning in supermarkets (collects data as soon as they are scanned)

**Interorganizational Information Systems (IOS)-** Supports many Interorganizational operations.

Examples of IOS: Supply Chain Management (SCM), Electronic commerce (e-commerce) systems