



Information Technologies: Concepts and Management



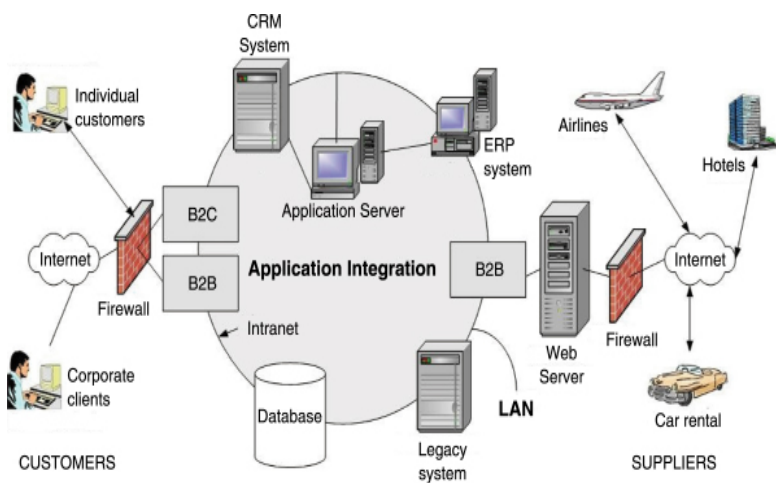
Information Technology (IT)

Broadly , an organization's collection of information resources, their users, and the management that oversees them; includes the IT infrastructure and all other information systems in an organization.

Concepts and Definitions

- **Information technology architecture:** A high-level map or plan of the information assets in an organization, which guides current operations and is a blueprint for future directions.
- In preparing the IT architecture, the designer needs similar information, which can be divided into two part:
 - The business needs for information
 - The existing and planned IT infrastructure and applications of the organization.

The IT architecture: e-business





IT Infrastructure

- The physical facilities, IT components, IT services, and IT management that support an entire organization.
- IT components are the computer hardware, software and communications technologies that are used by IT personnel to produce IT services.
- IT services include data management systems development , and security concerns .
- IT infrastructure include these resources as well as their integration, operation, documentation, maintenance and management.



Computer- Based Information Systems

- Information System (IS): A Process that collects, processes, stores, analyzes, and disseminates information for a specific purpose.
- Computer Based information system (CBIS): an information system that uses computer technology to perform some or all of its intended tasks.



Application Program

- A computer program designed to support a specific task, a business process , or another application program.
- The collection of application programs in a single department is usually considered a departmental information system.



Data, Information, and Knowledge

- **Data items.** An elementary description of things, events, activities, and transactions that are recorded, classified, and stored, but are not organized to convey any specific meaning.
- **Information.** Data that have been organized to that they have meaning and value to the recipient.
- **Knowledge.** Data and/ or information that have been organized and processed to convey understanding, experience, accumulated learning, and expertise as apply to a current problem or activity.



Computing Environment

- **Computing Environment:** The way in which an organization's information technologies (hardware, software, and communications technology) are organized and integrated for optimal efficiency and effectiveness.
- **Legacy system:** Older systems, typically those that process an organization's high-volume transactions, that are central to the operations of a business.



Distributed Computing

Computing architecture that divides the processing work between two or more computers, using a network for connection, also called distributed processing.

Client / server architecture

- A type of distributed architecture that divides distributed computing units into two major categories, clients and servers, connected by a network .
- **Client.** A computer (such as a PC attached to a network) that is used to access shared network resources.
- **Server.** A computer that is attached to a client/server network and provides clients with variety of services.

Client/Server Architecture cont...

- **Enterprise wide computing.** Computing environment in which each client/ server architecture is used throughout an organization.
- **Peer- to – Peer (P2P).** A distribute computing network in which each client/ server computer shares files or computer resources directory with others but not through a central service (as in traditional client/ server architecture).



Web-Based Systems

- Web based systems: Applications or service that are resident on a server that is accessible using a web browser and is therefore accessible from anywhere via the internet.
- Internet (“ the Net”): a world wide system of computer – a network of networks; a public, cooperative and self-sustaining facility accessible to hundreds of millions of people worldwide.
- Information Superhighway. A fiber-optic- based network and wireless infrastructure that will connect all internet users in a country



World Wide Web

An application that uses the transport functions of the Internet; has universally accepted standards for storing, retrieving formatting, and displaying information via a client/server architecture



Intranet

A private network, usually within one enterprise that uses web technologies such as browsers and internet protocols separated from the Internet by a security gateway such as a firewall



Extranet

A secured network that connects several intranet via the Internet; allows two or more enterprise to communicate and collaborate in a controlled fashion .



Corporate portal

Web site that provide the gateway to corporate information from a single point of access.



Web-Based E-Commerce Systems

- **Electronic Storefront:** The web- equivalent of a showroom or a physical store through which an e-business can display and/or sell its products.
- **Electronic market:** A network of interaction and relationships over which information, products service and payments are exchanged.

Web-Based E-commerce cont...

- **Electronic exchange:** A web based public electronic market in which many buyer and many sellers interact electronically .
- **Mobile commerce:** The buying and selling of goods and services in a wireless environment.
- **Location based commerce:** M-commerce transaction targeted to customers in specific locations at specific times.
- **Enterprise Web:** An open environment for managing and delivering web application by combining service from different vendors in a technology layer that spans platform and business systems.

Emerging Computing Environment

- **Utility computing:** Unlimited computing power and storage capacity that, like electricity and water services, can be obtained on demand from virtual utilities around the globe.
- **Subscription computing:** A type of utility computing that puts the pieces of a computing platform together as services, rather than as a collection of separately purchase component .
- **Grid computing:** The use of networks to harness unused processing cycles of various computers in order to create powerful computing capabilities.



Emerging Computing cont...

- **Pervasive computing**: invisible, everywhere computing that is embedded in objects around us.
- **Web services**: Universal, prefabricated business process software modules, delivered over the Internet that users can select and combine through almost any device enabling disparate system to share data and services.