

## **Information System**

An information system refers to a group of interconnected components, e.g., hardware, software, data, etc., that work together to collate, store, process, and disseminate information, typically in service of a business or organization.

### **Components of Information Systems**

Five major components

- Hardware
- Software
- Data
- People
- Processes

**Technology** The application of scientific knowledge for practical purposes

**Hardware** The tangible, physical portion of an information system.

**Software** The set of instructions that tell the hardware what to do.

- Application - Allows users to perform productive tasks
- Operating - Provides the interface between the hardware and application software

**Data** A collection of facts.

### **Networking Communication**

**People** Front-line user support staff, system analysts, developers, and chief information officer (CIO).

**Processes** A series of steps undertaken to achieve a desired outcome or goal.

## **Role of Information Systems**

### **Mainframe Era** Late 1950s - 1970s

- Room-sized business computers with several machines linked together
- Primarily used to organize and store large volumes of information, e.g., scientific calculations and accounting.
- Expensive to buy and maintain, so were used by large firms, universities, and government agencies.
- Manufacturing Resources Planning (MRP) systems running on mainframes allowed firms also to manage the manufacturing process. Tasks like creating bills of materials and scheduling production.

### **Pc Revolution**

- 1975 with the creation of microcomputers
- Improvements in usability and availability of practical software led to relatively widespread adoption
- Apple II and IBM PC
- The proliferation of computer companies and their products drove computer prices down and encouraged innovation
- These PCs were standalone machines, i.e. not connected to a network
- IBM PC
- MS-DOS
- WordPerfect, Lotus 1-2-3

### **Client-Server**

- mid 1980s
- Connecting computers as a way to collaborate and share resources, i.e., client-server
- Clients were PCs connected to central computers, known as Servers, via Local Area Network (LAN). Servers would determine permissions for each user as a way of managing access to resources.
- This networking stayed mainly within the confines of each business.
- The rise of Enterprise Resource Planning (ERP) systems (An application with a centralized database that could be used to run a company's entire business)
- Windows
- Microsoft Word, Excel

### **The Internet, World Wide Web, and E-Commerce**

- Advanced Research Projects Administration (ARPA) Net.
- 1989 with the development of the World Wide Web by Tim Berners-Lee. This became a catalyst for the growth of the Internet as a way for businesses to share information about themselves.
- Dot-Com bubble burst.
- The increased speed of data sharing via the Internet led to a rise in malicious software creation and infection.

### **Web 2.0**

- 2000s
- Websites became more interactive as customers wanted more customizability.
- Website creation became more accessible as the users now did not need to do any programming to make an interactive website
- Key developments in this stage include Blogging, Social Networking, and Interactive Comments.
- Disintermediation was rampant, key examples being the decline of physical bookstores, Video rental chains, and the newspaper industry.

#### **Disintermediation**

The process of technology replacing a middleman in a transaction

### **The Post-PC World**

- With the introduction of the more mobile and easy-to-operate smartphone, PC sales have dropped slightly. Although with this decline in sales, the PC still has a vital role in the business environment.
- Cloud computing provides users with mobile access to data and applications relegating the PC to more of a part of the communications flow rather than a repository of programs and information.