

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.