

# Information Systems

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# Definitions

## Data

Raw facts such as an employee's name and number of hours worked in a week, inventory part numbers or sales orders.

## Information

A collection of facts organized in such a way that they have additional value beyond the value of the facts themselves.

### Data

\$35,000 12 Units  
\$12,000 J. Jones  
Western Region  
\$100,000 100 Units  
35 Units

### Data Processing

### Information

Salesperson: J. Jones  
Sales Territory:  
Western Region  
Current Sales: 147  
Units = \$147,000

# Definitions

## Information Systems

An information system(IS) is typically considered to be a set of interrelated elements or components that collect(input), manipulate(processes), and disseminate (output) data and information and provide a feedback mechanism to meet an objective.

Open System

Close System



# Types of Information Systems

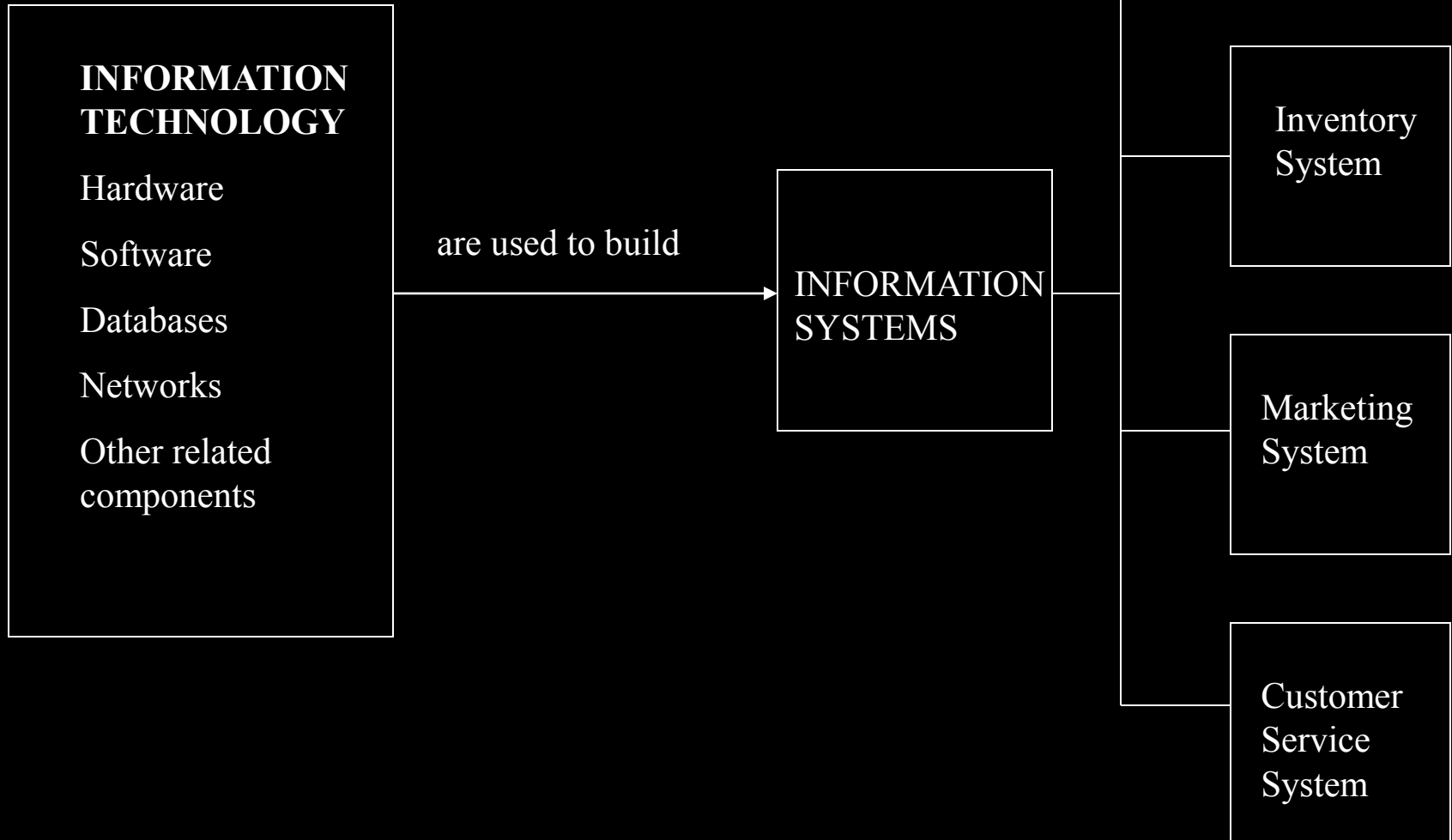
1. Informal Information System
2. Formal Information System

# Computer-based Information System

An Information System is an organized combination of people, hardware, software, communication networks and the data resources that collects, transforms and disseminates information in a organization.



# IS Vs IT

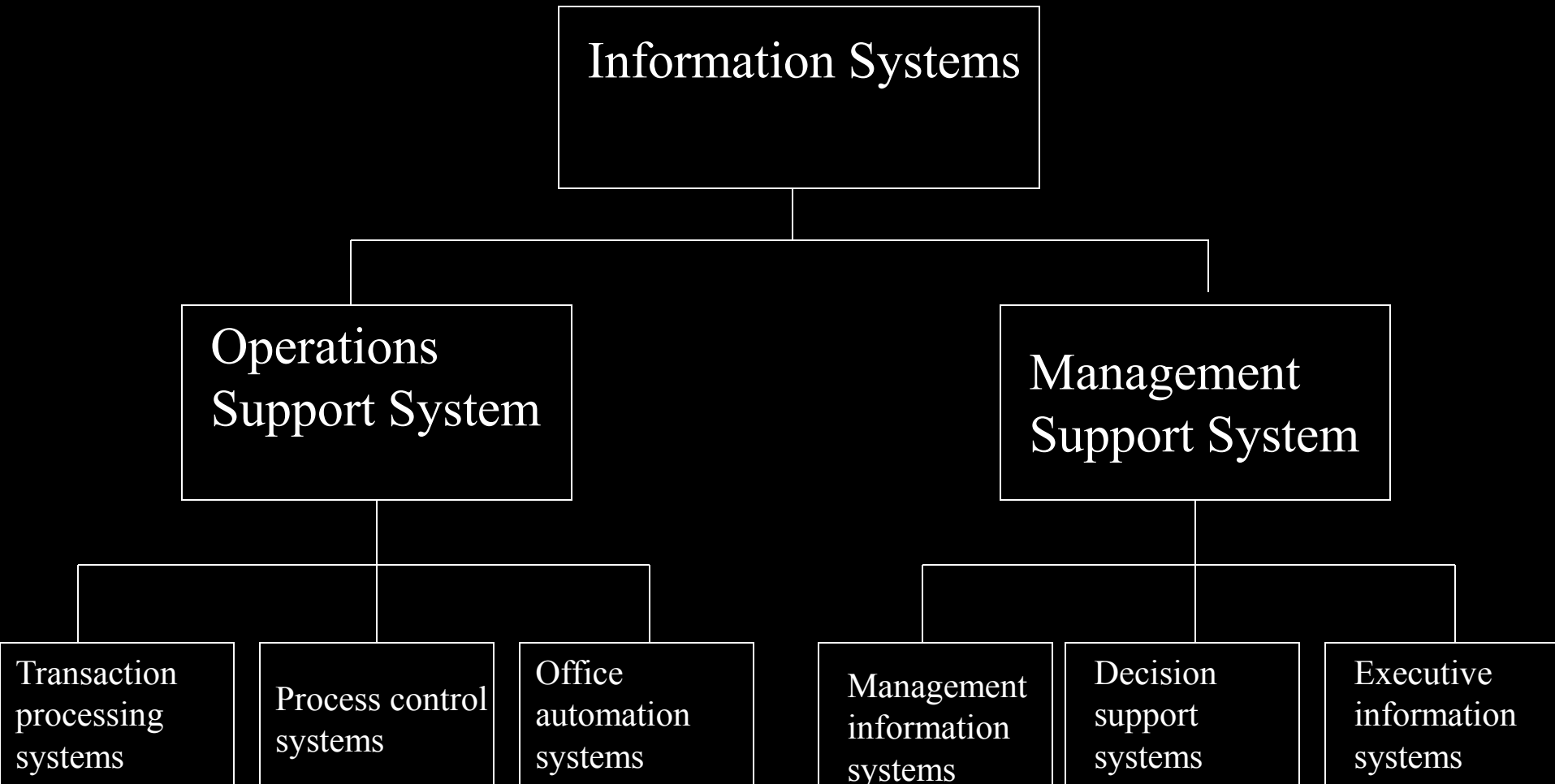


# Expanding Roles of IS

- 1. Data Processing: 1950s-1960s**
- 2. Management Reporting: 1960s-1970s**
- 3. Decision support: 1970s-1980s**
- 4. Strategic and End User Support: 1980s-1990s**
- 5. Global Internetworking: 1990s-2000s**



# Classification of IS



# **1. Operations support systems** process data generated by business operations

Major categories are:

- i) Transaction processing systems
- ii) Process control systems
- iii) Office automation systems

# **2. Management Support Systems** provide information and support needed for effective decision making by managers

Major categories are

- i) Management Information System
- ii) Decision Support Systems
- iii) Executive Information System

# **1. Operations Support System**

## **i) Transaction processing systems**

- Process business exchanges
- Maintain records about the exchanges
- Handle routine, yet critical, tasks
- Perform simple calculations

**ii) Process control systems** monitor and control industrial processes.

**iii) Office automation systems** automate office procedures and enhance office communications and productivity.

**2. Management support systems** provide information and support needed for effective decision making by managers

Major categories are:

**i) Management information systems**

- ❖ Routine information for routine decisions
- ❖ Operational efficiency
- ❖ Use transaction data as main input
- ❖ Databases integrate MIS in different functional areas

## **ii) Decision Support System**

- Interactive support for non-routine decisions or problems
- End-users are more involved in creating a DSS than an MIS

## **iii) Executive information systems**

provide critical information tailored to the information needs of executives

## **Other categories**

- a) Expert systems**
- b) End user computing systems**
- c) Business information systems**
- d) Strategic information systems**

- a) Expert Systems are knowledge-based systems that provides expert advice and act as expert consultants to the users
- b) End user computing systems support the direct, hands on use of computers by end users for operational and managerial applications
- c) Business information systems support the operational and managerial applications of the basic business functions of a firm
- d) Strategic information systems provide a firm which strategic products, services, and capabilities for competitive advantage

# Challenges

1. Workforce downsizing
2. Information overload
3. Employee mistrust
4. Difficult to built
5. Security breaches

# Opportunities

1. Enhanced global competitiveness
2. Capture market opportunities
3. Support corporate strategy
4. Enhance worker productivity
5. Improve quality of goods and services



# Information Assurance

It is the practice of assuring information and managing risks related to the use, processing, storage, and transmission of information or data and the systems and processes used for those purposes.

Information assurance includes protection of the integrity, availability, authenticity, non-repudiation and confidentiality of user data.

It uses physical, technical and administrative controls to accomplish these tasks.

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While focused predominantly on information in digital form, the full range of IA encompasses not only digital but also analog or physical form.

These protections apply to data in transit, both physical and electronic forms as well as data at rest in various types of physical and electronic storage facilities. Information assurance as a field has grown from the practice of information security