

Professional Development

Lesson 1 Introduction to Information Systems

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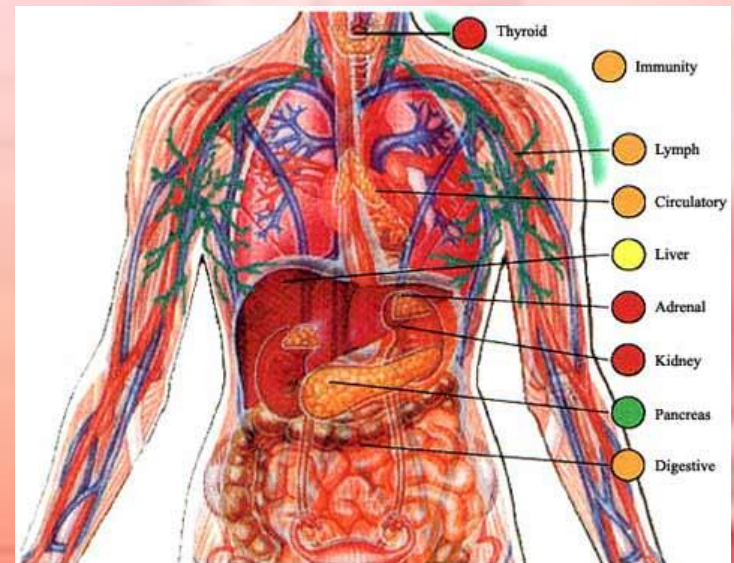
Lesson Content

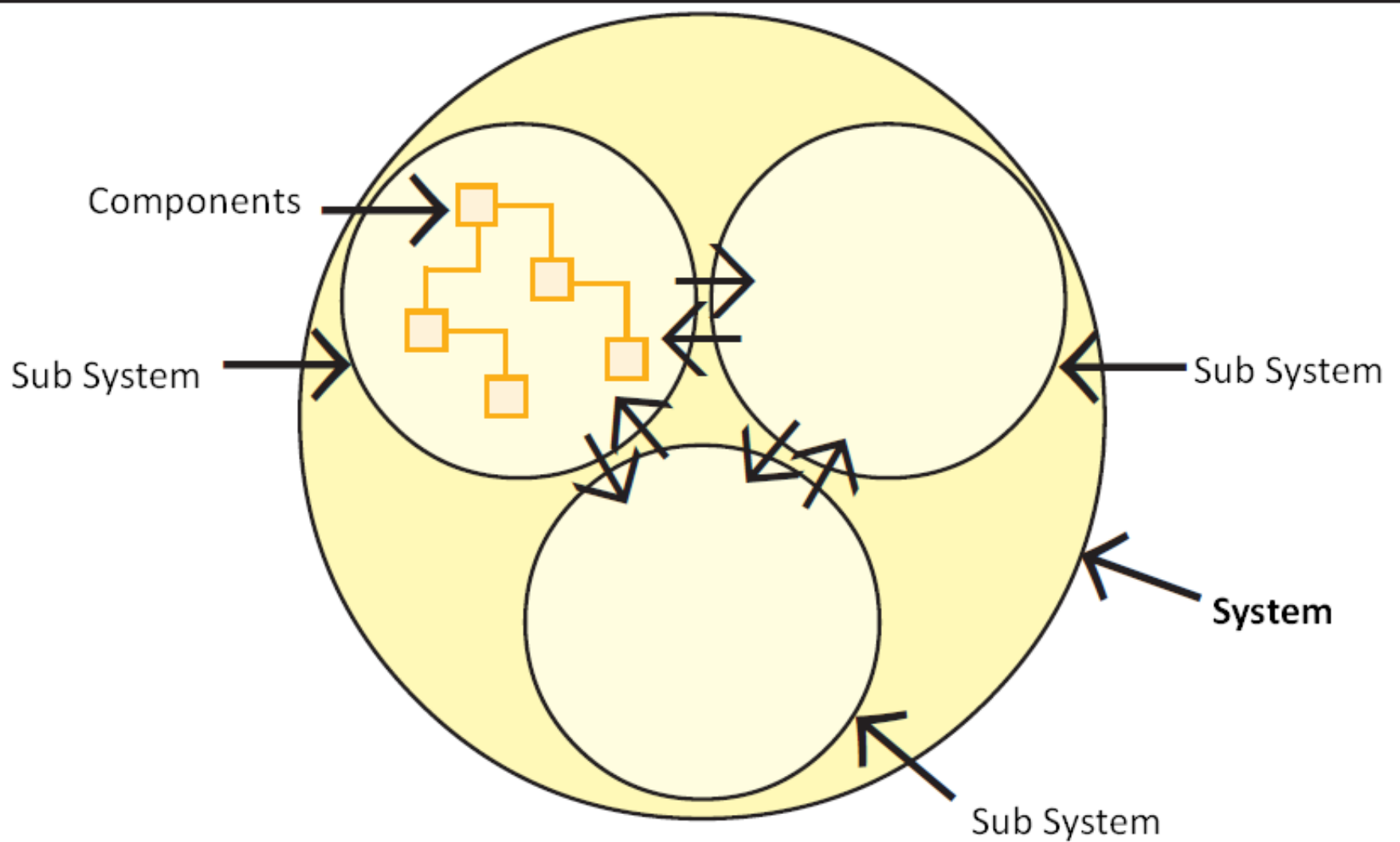
- System Concept
- Information System (IS)
- Elements of IS
- Characteristics of information
- Types of information systems
- Factors affect to IS

What is a System?

- A collection of interrelated components that function together to achieve some tasks.
- A group of activities and elements, which have been arranged to achieve a certain objective.
- A collection of several interrelated subsystems.

Eg: ????





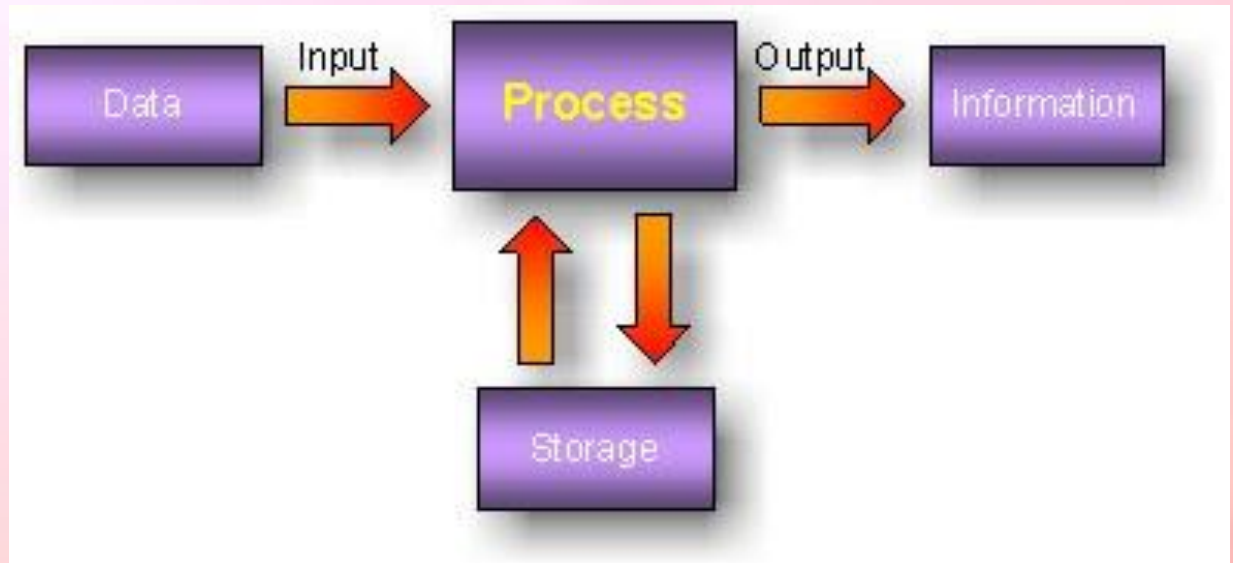
A System and Sub Systems

Information System (IS)

- A collection of interrelated components used to collect, process, store, retrieve & distribute information which support to complete daily business operations in an organization.
- It helps in planning, controlling, coordinating, analyzing & decision making in business organizations.
- Also helps to increase the productivity and efficiency of organizations.

Elements of an IS

- It consists of
 - Input
 - Process
 - Output
 - Storage



- Data is entered to the system.
- Processing converts data into information.
- Information is either stored or distributed as outputs.

Data

- Raw facts
- A collection of numbers, facts, letters, figures, measurements etc.
- Unprocessed facts.
- Does not give a meaningful value directly.
- Entered into the computer system with the support of input devices.
- Eg: cake, John, 250, delicious, Rs.

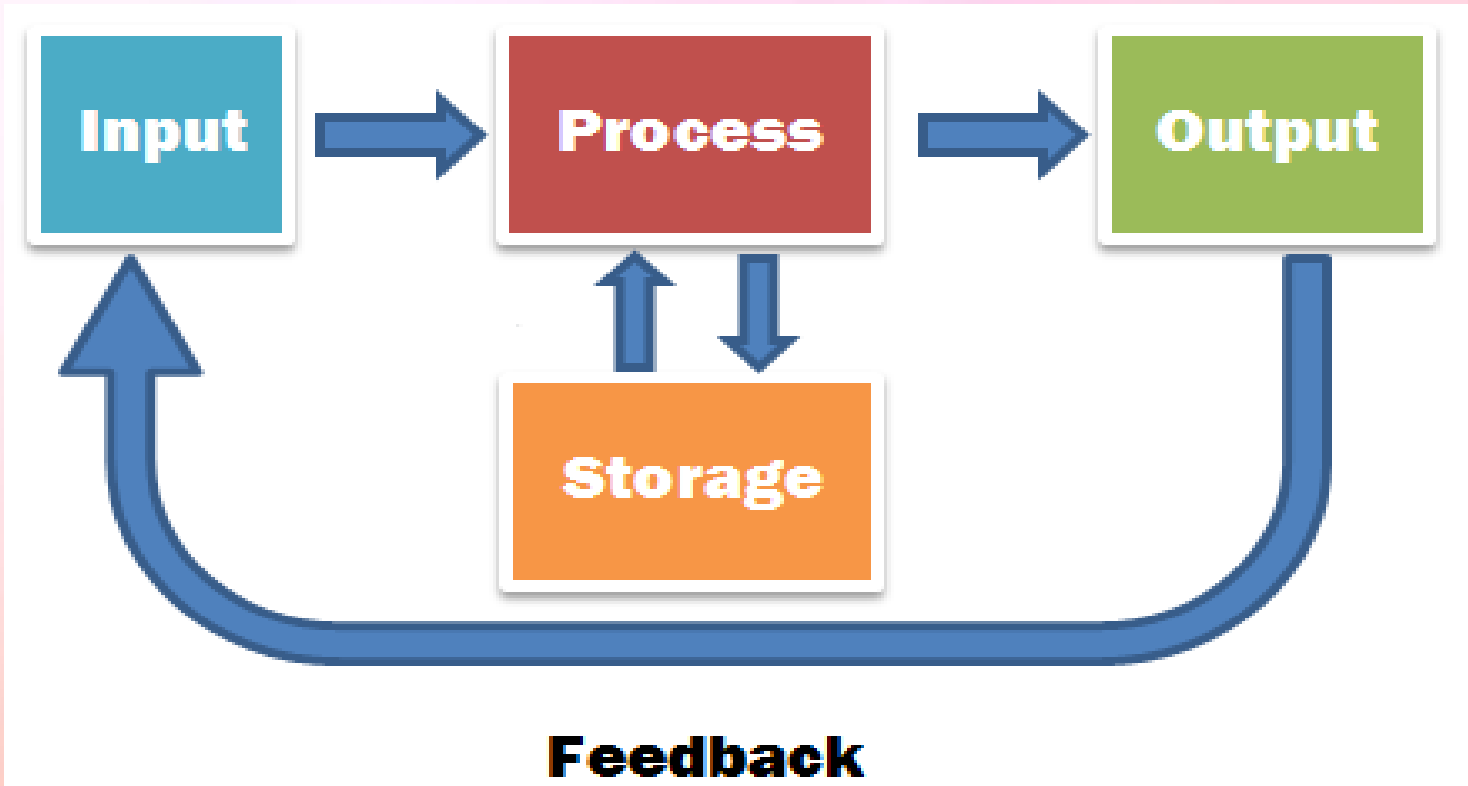
Processing

- Converts data into information.
- Can perform different mathematical operations or logical comparisons on data.
- Can also perform analytical operations on data for decision making purpose.
- Eg:
 - Mathematical operations (Addition, Subtraction, Multiplication, Division etc)
 - Logical operations/comparisons ($>$, $<$, $=$, $<>$, AND, OR, NOT)
 - Analytical operations (Create tables, Draw graphs, Generate reports etc)

Information

- The processed data.
- Can be in a form of sentences, picture, symbol, sound, graphs etc.
- Helps in decision making
- Information is either stored or distributed as outputs.
- Eg:
 - The cake is delicious
 - It is Rs. 250
 - John purchased a cake

Data Processing Framework



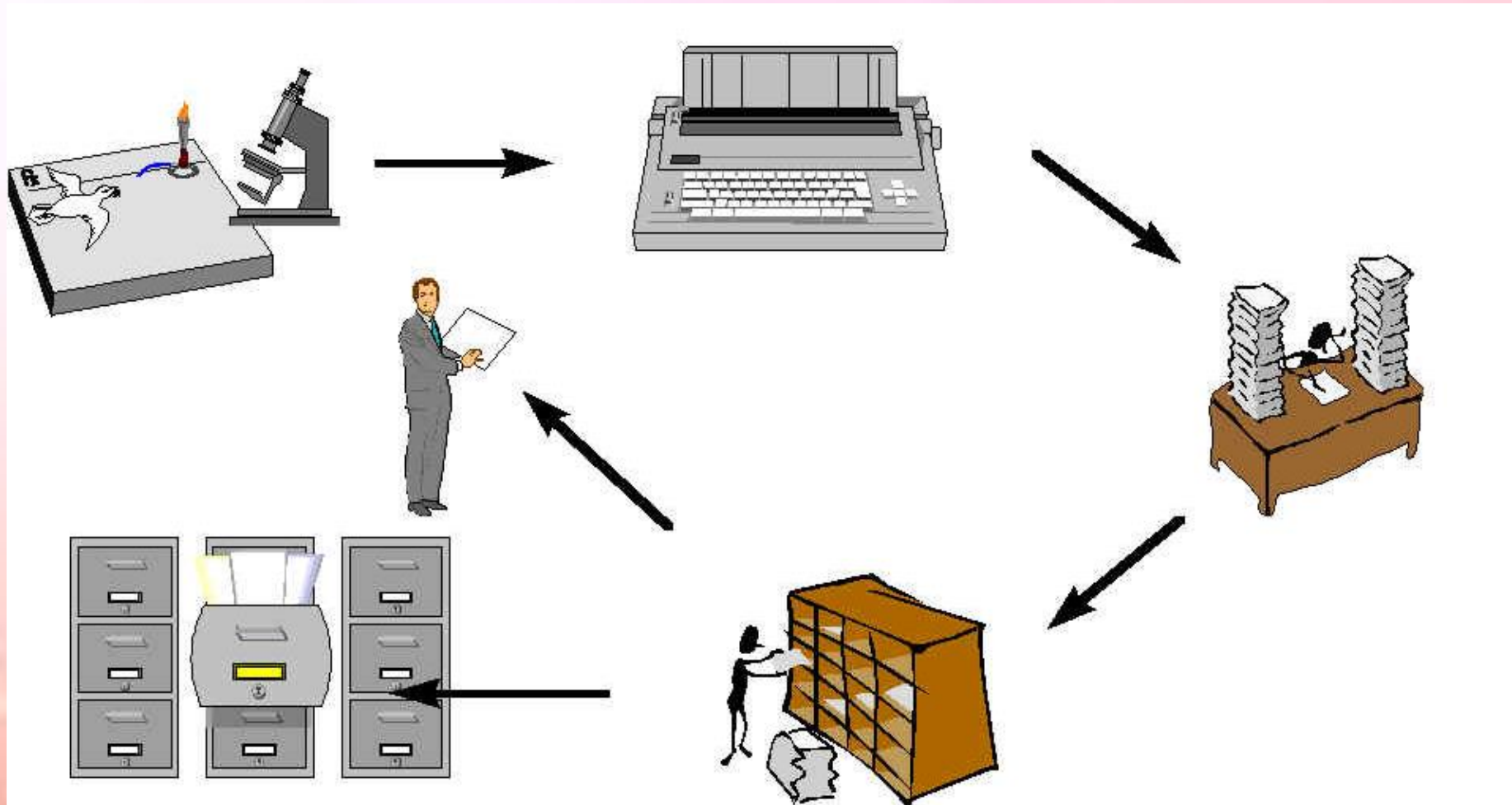
Characteristics of Information

- Relevant to the purpose
- Accurate
- Complete
- Up to date
- Reliable
- Meaningful
- Delivered on time
- Understandable by the receiver
- Useful for decision making
- Has to be available when needed
- Communicated to the right person

Types of Information Systems

- Mainly there are two types of IS.
- Manual Information Systems
 - All the business activities are performed manually.
 - High Paper work.
 - Many employees are required.
- Computerized Information Systems
 - The business activities are performed with the help of computer related components and technologies.
 - Hardware, Software, Networking, Database, Internet etc.
 - Less Paper work.

Manual Information System



What are the advantages and disadvantages of Manual Information Systems?

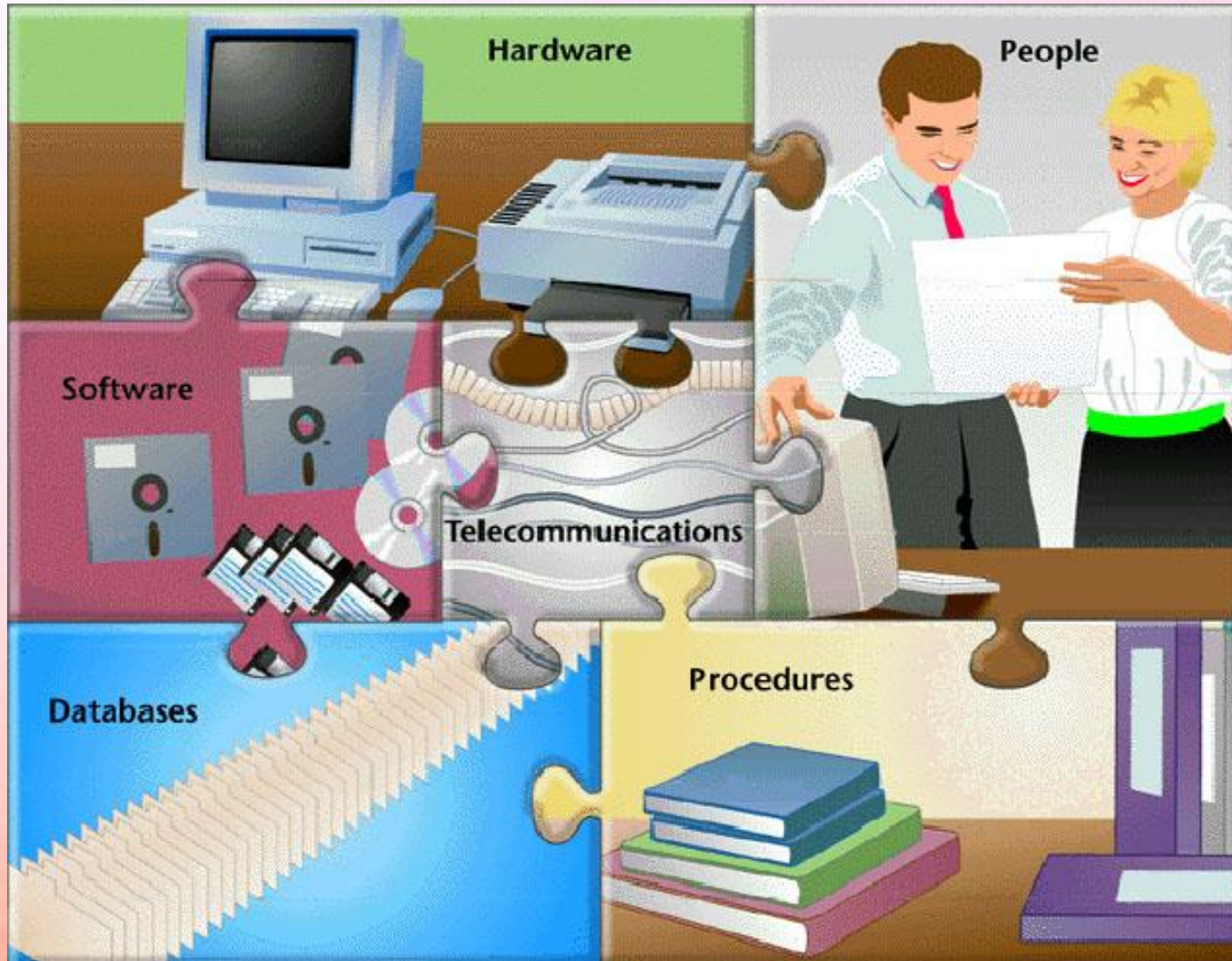
Disadvantages

- Time consuming
- Data Redundancy (Duplication)
- Less accuracy
- Less data integrity
- Difficult in retrieving information
- Need large storage space
- Need many employees
- Less security to data & information
- Less confidentiality
- Difficult to share information
- Documents get damaged and destroyed easily

Advantages

- Less implementation and maintenance cost
- People will get many jobs
- No need to train employees much
- No need technical knowledge

Computerized Information System



What are the advantages and disadvantages of Computerized IS?

Advantages

- Less data redundancy (duplication)
- Reduce unnecessary cost and wastage
- Increase data accuracy and integrity
- Increase data security and confidentiality
- Offer services with greater customer satisfaction
- Handle business processes at a greater speed
- Increase the productivity and efficiency
- Streamline business processes
- Achieve better profitability levels



Disadvantages

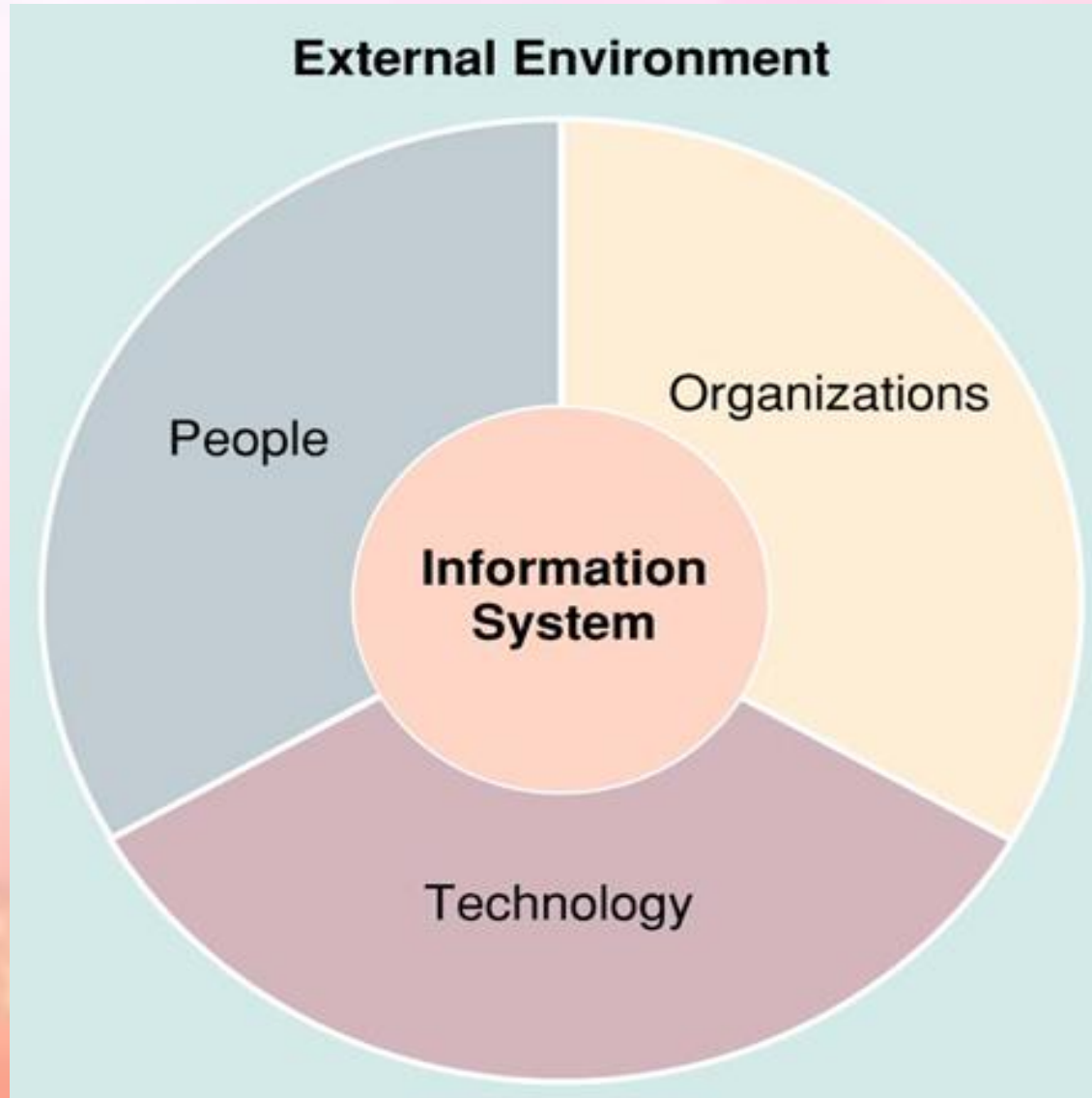
- Implementation Expenses
 - Initial cost to set up the system is high
- Job Elimination
 - Some people will loose their jobs
- Technical knowledge and skills required
- Maintenance cost will be high
- Cost for training employees
- High risk for data lost



Importance of an IS to an organization

- Information should have a high quality and accuracy.
- Organizations need to analyze data to make strategic and timely decisions.
- Information must be organized, managed and distributed effectively.
- The success of a business depends on the information system.
- An effective information system should be able to exceed customer expectations and fulfill business needs.

Factors affect to IS



Internal Environment

- People
 - Attitude of employees
 - Skills and capabilities of employees
 - Managerial support and influence
 - Decisions of executives and top management
- Organization
 - Policies, Rules and regulations
 - Resources (Investment, money, infrastructure, number of employees)
 - Goals and objectives
- Technology
 - Number of computers
 - Networking facilities
 - Performance of hardware
 - Quality of Software

External Environment

- Government
- Society
- Competitors
- Legal facts
- Economical facts
- Trends in the industry
- Technology updates
- International market