

What is a System?

A System can be defined as a collection of components that work together to achieve one or more common goals.

System is a group of interacting, interrelated or interdependent elements forming a complex whole and behaving as a single unit.

Every System has three main activities :

- Anything to be captured by the system from its environment.
- Involves capturing and assembling elements that enter the system to be processed.

Input :

- Involves transformation processes that convert input to output

Processing :

- Involves transforming elements that have been produced by a transformation process to their ultimate destination.

Output :

The system also includes other two additional activities

Feedback :

- Data about the performance of a system
- Idea of monitoring the current system output and comparing it to the system goal

Control :

- Involves monitoring and evaluating feedback to determine whether a system is moving toward the achievement of its goals
- Make necessary adjustments to a system's input and processing components to ensure that it produces proper output

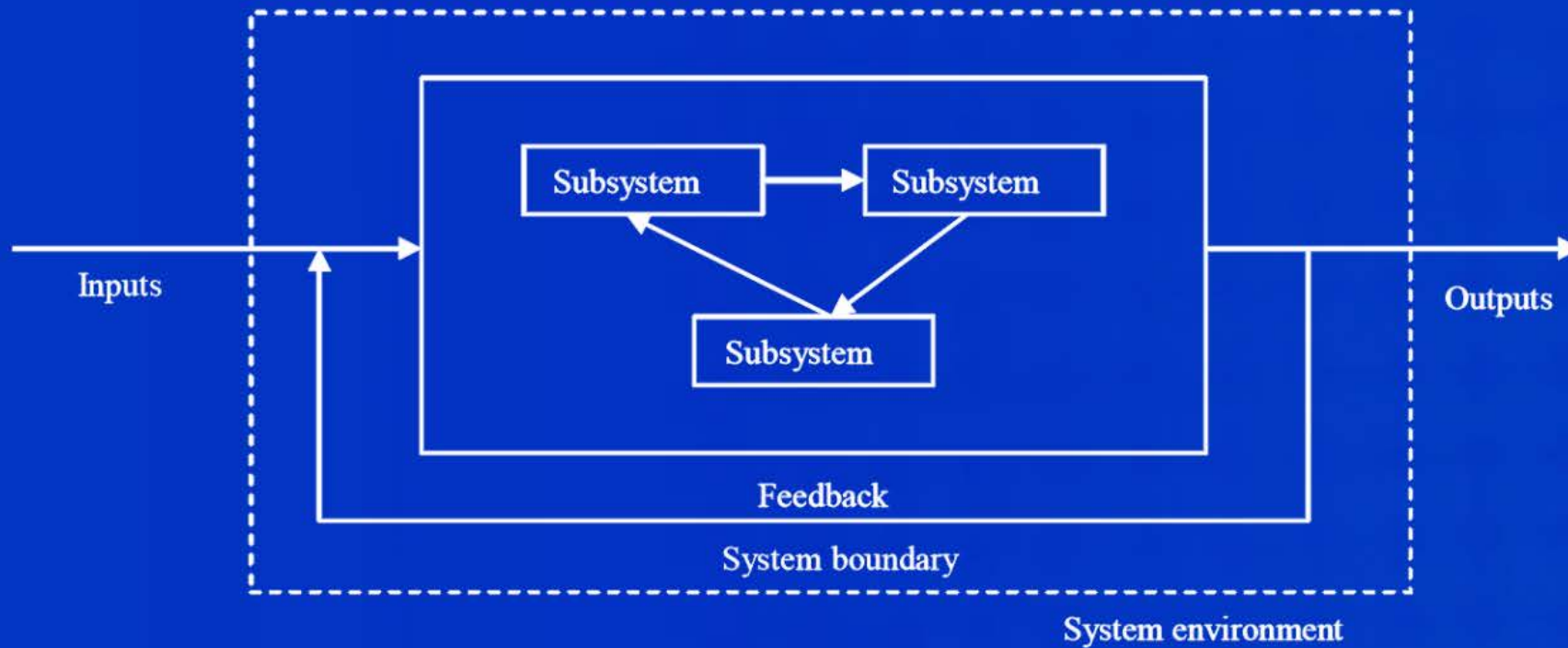


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Systems may be made up of other smaller systems, which are called as Subsystems. Subsystems in turn are made up of other subsystems.

What is Information System?

The information system is an arrangement of people, machines, ideas and activities that gather and process data in such a way that meets the information requirements of an organization.

An information system is a set of processes and procedures that transform data into information and knowledge.

The information system aims at providing detailed information on a timely basis throughout the organization so that the top management can take proper and effective decisions.

Information systems in organizations capture and manage data to produce useful information that supports an organization and its employees, customers, suppliers and partners.

An Information System is considered as subsystem of business. Information Systems consists of subsystems, including customized hardware and software along with data that's central to the company or organization's mission.

Types of Information System

- There are various types of Information Systems based on the function they serve.
- The information needs are different at different organizational level
- The classification of Information systems mostly depend on the way in which task and responsibilities are divided in different levels in an organization.
- The different classes of information systems tends to follow the hierarchy which is often described as "the pyramid model"



Strategic Top Level

Executive Support System

Tactical Middle Management Level

Management Information System

Decision Support System

Operational Bottom Level

Transaction Processing System

Although the pyramid model remains useful, since it was first formulated a number of new technologies have been developed and new categories of information systems have emerged, some of which no longer fit easily into the original pyramid model.

Some examples of such systems are:

- Expert Systems
- Data Warehouses
- Enterprise Resource planning
- Search Engines
- Geographic Information system
- Global Information System
- Office Automation System.

Strategic Top Level

 Executive Support System

Executive Support System

- Also called Executive Information System (EIS)
- Serve the strategic level of the organization
- These systems are designed to address unstructured decision making through advanced graphics and communication.
- These systems incorporate data about external events such as new tax laws or competitors, but they also draw summarized information from internal MIS and DSS.
- Not designed to solve a specific problem but they provide a generalized computing and telecommunication capacity that can be applied to a changing array of problems.

Tactical

Middle Management Level



Management Information System



Decision Support System

Management Information System (MIS)

- Information system at the management level of an organization and serve functions like planning, controlling, and decision-making.
- Person - machine system and a highly integrated grouping of information processing functions designed to provide management with a comprehensive picture of specific operations.
- Use internal data provided by the transaction processing systems and provide structured information
- Allows managers to evaluate an organization's performance by comparing current with previous outputs.
- An important element of MIS is database (a systematic collection of interrelated data).
- Examples:
Sales management systems, Inventory control systems, Budgeting systems, Management Reporting Systems, Personnel (Human Resource) Management Systems

Decision Support System (DSS)

- Assist higher management to make long term decisions.
- Handle unstructured or semi-structured decisions
(A decision is considered unstructured if there are no clear procedures for making the decision and if not all the factors to be considered in the decision can be readily identified in advance)
- Collects and Analyzes the data and then presents it in a way that can be interpreted by human
- A decision support system must very flexible.
- DSS usually have three major components:
 - Database contains data relevant to the decision to be made.
 - Model base contains one or more models that can be used to analyze the decision situation.
 - Dialogue module provides a way for the decision maker, usually a non-technical manager, to communicate with the DSS.
- Examples:
 - Group Decision Support Systems (GDSS)
 - Computer Supported Co-operative work (CSCW)
 - Logistics systems
 - Financial Planning systems

Operational Bottom Level



Transaction Processing System

Transaction Processing System (TPS)

- operational-level systems at the bottom of the pyramid.
- usually operated directly by operational staff (workers or front line staff)
- provide the key data required to support the management of operations.
- data is usually obtained through the automated or semi-automated tracking of low-level activities and basic transactions.
- Managers need TPS to monitor the status of internal operations and the firm's relations with external environment.
- major producers of information for the other types of systems.
- **Examples :**
Payroll systems, Order processing systems, Reservation systems, Stock control systems

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System Development Life Cycle (SDLC)

The System Development Life Cycle (SDLC) can be defined as a framework for developing computer-based information system through a multi-step process.

SDLC is a structure followed by a development team within the software organization which consists of a detailed plan describing how to develop, maintain and replace specific software.