

# Types of Systems

Systems have been classified in different ways. Common classifications are:

1. Physical or abstract systems
2. Open or closed systems
3. Deterministic or probabilistic systems
4. Man-made information systems

**Physical or Abstract Systems:** Physical systems are tangible entities that may be static or dynamic in operation. Abstract systems are conceptual or non-physical entities which may be as straightforward as formulas of relationships among sets of variables or models – the abstract conceptualization of physical situations.

**Open or Closed Systems:** An open system continually interacts with its environments. It receives inputs from and delivers output to the outside. An information system belongs to this category, since it must adapt to the changing demands of the user. In contrast, a closed system is isolated from environmental influences. In reality completely closed systems are rare.

**Deterministic or Probabilistic Systems:** A deterministic system is one in which the occurrence of all events is perfectly predictable. If we get the description of the system state at a particular time, the next state can be easily predicted. An example of such a system is a numerically controlled machine tool. Probabilistic system is one in which the occurrence of events cannot be perfectly predicted. An example of such a system is a warehouse and its contents.

**Man-made Information Systems:** It is generally believed that information reduces uncertainty about a state or event. For example, information that the wind is calm reduces the uncertainty that a trip by boat will be enjoyable. An information system is the basis for interaction between the user and the analyst. It determines the nature of relationship among decision makers. In fact, it may be viewed as a decision centre for personnel at all levels. From this basis, an information system may be defined as a set of devices, procedures and operating systems designed around user-based criteria to produce information and communicate it to the user for planning, control and performance. Many practitioners fail to recognise that a business has several information systems; each is designed for a specific purpose.

The major information systems are:

- formal information systems
- informal information systems
- computer based information systems

A Formal information system is based on the organisation represented by the organization chart. The chart is a map of positions and their authority relationships, indicated by boxes and connected by straight lines. It is concerned with the pattern of authority, communication and work flow.

An Informal information system is an employee-based system designed to meet personnel and vocational needs and to help in the solution of work-related problems. It also funnels information upward through indirect channels. In this way, it is considered to be a useful system because it works within the framework of the business and its stated policies.

Third category of information system depends mainly on the computer for handling business applications. Systems analysts develop several different types of information systems to meet a variety of business needs. There is a class of systems known collectively as Computer Based Information Systems. As we have different types of transportation systems such as highway systems, railway systems and airline systems, computer based information systems are of too many types. They are classified as:

- Transaction Processing Systems (TPS)
- Management Information Systems (MIS)
- Decision Support Systems (DSS)
- Office Automation Systems (OAS)