Definition of MIS

A management information system is

- A integrated user-machine-system
- for providing information
- to support the operations, management, analysis, and decision-making functions

In an organization

The system utilizes

- Computer, hardware, software
- Manual procedures
- Models for analysis, planning, control, and decision making and
- A database

Management Information System (MIS)

- **Management Information System (MIS)** is one of the five major Computer Based Information Systems (CBIS). Its purpose is to meet the general information needs of the managers in firm or organization. MIS is a computer based system that makes information available to users with similar needs.

- A management information system (MIS) is a computer system consisting of hardware and software that serves as the backbone of an organization's operations. An MIS gathers data from multiple online systems, analyzes the information, and reports data to aid in management decision-making.

What is MIS?

- MIS supports Management with information for:
  - Operations –
  - Administration –
  - Decision making –
- The foundation of MIS is databases.
- Today's MIS is a computerized processing system.
- MIS differ from other ISs because:
  - MIS is used to analyze information
  - MIS also facilitates strategic and operational activities.

- **Primary Components of MIS?**
- The five primary components of MIS are:
    1. Hardware
    2. Software
    3. Data (information for decision making),
    4. Procedures (design, development and documentation),
    5. People (individuals, groups, or organizations).
- Raw facts representing events.
- Data is organized in standard formats or databases
- Databases ease understanding and use.
- MIS is founded on databases.

Management Information System

- **Evolution of MIS**
- At first, MIS treated data and reported at regular intervals.
- Later, data was distinguished from information;
  - data being a raw material and,
  - information the finished product.
- MIS had to present information in formats that:
  - create impact on its user;
  - And, provokes a decision or an investigation.
- The concept of exception reporting makes MIS more impactful
  - Data is rendered accessible to authorized parties.
  - But processed further to suit the needs of different users.
  - Data is one, but viewed in different ways.

Functions of MIS

MIS is an organized collection of people, procedures, software, databases, and devices used to provide routine information to managers and decision makers Thus, MIS must perform the following functions in order to meet its objectives.

 1. **Data Capturing:** MIS captures data from various internal and external sources of an organization. Data capturing may be manual or through computer terminals. End users typically, record data about transactions on some physical medium, such as a paper form, or enter it directly into a computer system.

2. **Processing of Data:** The captured data is processed to convert it into the required management information. Processing of data is done by such activities as calculating, comparing, sorting, classifying and summarizing. These activities organize, analyze, and manipulate data using various statistical, mathematical, operations research and other business models.

3. Storage of Information: MIS stores processed or unprocessed data for future use. If any information is not immediately required, it is saved as an organizational record. In this activity, data and information are retained in an organized manner for later use. Stored data is commonly organized into fields, records, files and databases.

4. Retrieval of Information: MIS retrieves information from its stores as and when required by various users. As per the requirements of management users, the retrieved information is either disseminated as such or it is processed again to meet the exact management information demands.

5. Dissemination of Information: Management Information, which is a finished product of MIS, is disseminated to the users in the organization.

Characteristics of MIS

1. System Approach: The information system follows a System's approach. The system's approach implies a holistic approach to the study of system and its performance in the light for the objective for which it has been constituted.

2. Management Oriented: This is an important characteristic of MIS. For designing of MIS, top-down approach should be followed. Top-down approach suggests that the system development starts from the determination of management needs and overall business objectives. The MIS development plan should be derived from the overall business plan. Management oriented characteristic of MIS also implies that the management actively directs the system development efforts.

3. Need Based: MIS design and development should be as per the information needs of managers at different levels, strategic planning level, management control level and operational control level. In other words, MIS should cater to the specific needs of managers in an organization's hierarchy.

4. Exception Based: MIS should be developed on the exception based reporting principle, which means an abnormal situation, i.e. the maximum; minimum or expected values vary beyond tolerance limits. In such situations, there should BE exception reporting to the decision maker at the required level.

5. Future Oriented: Besides exception based reporting, MIS should also look at the future. In other words MIS should not merely provide past or historical information; rather it should provide information, on the basis of projections based on which actions may BE initiated.

6. Integrated: Integration is a necessary characteristic of a management information system. Integration is significant because of its ability to produce more meaningful information. For example, in order to develop an effective production scheduling system, it is necessary to balance such factors as Set-up costs, Work force, Overtime rates, Production capacity, Inventory level, Capital requirements and Customer services.

7. Long Term Planning: MIS is developed over relatively long periods. Such system does not develop overnight. A heavy element of planning is involved. The MIS designer must have the future objectives and needs of the company in mind.

8. Sub-System Concept: The process of MIS development is quite complex and one is likely to lose insight frequently. Thus, the system, though viewed as a single entity, must be broken down into digestible sub-systems which are more meaningful at the planning stage.

9. Central Database: A central database is the mortar that holds the functional systems together. Each system requires access to the master file of data covering inventory, personnel, vendors, customers, etc. It seems logical to gather data once, validate it properly and place it on a central storage medium, which can be accessed by any other sub system.

Planning for MIS

IS design and development process has to address the following issues successfully:

1. There should be effective communication between the developers and users of the system.

2. There should be synchronization in understanding of management, processes and IT among the users as well as the developers.

3. Understanding of the information needs of managers from different functional areas and combining these needs into a single integrated system.

4. Creating a unified MIS covering the entire organization will lead to a more economical, faster and more integrated system, however it will increase in design complexity manifold.

5. The MIS has to be interacting with the complex environment comprising all other sub-systems in the overall information system of the organization. So, it is extremely necessary to understand and define the requirements of MIS in the context of the organization.

6. It should keep pace with changes in environment, changing demands of the customers and growing competition.

7. It should utilize fast developing in IT capabilities in the best possible ways.

8. Cost and time of installing such advanced IT-based systems is high, so there should not be a need for frequent and major modifications.

9. It should take care of not only the users i.e., the managers but also other stakeholders like employees, customers and suppliers.