Unit-2
An overview of Management Information Systems

- Definition of a management information system
- MIS versus Data processing
- MIS & Decision Support Systems
- MIS & Information Resources Management
- End user computing
- Concept of an MIS
- Structure of a Management information system

Management Information System

- Management Information System is an accumulation of 3 different terms as explained below.
- **Management**: Management is an art of getting things done by others. However, for the purpose of Management Information System, management comprises the process and activity that a manager does in the operation of their organization, i.e., to plan, organize, direct and control operations.
- **Information**: Information simply means processed data or in the layman language, "data which can be converted into meaningful and useful form for a specific user".
- **System**: The system is a set of elements joined together for a common objective.

- According to Schwartz, 'MIS is a system of people, equipment, procedure, documents and communication that collects, validates, operates on transformers, stores, retrieves and present data for use in planning, budgeting, accounting, controlling and other management process'.
- According to Jerome Kanter, 'MIS is a system that aids management in making, carrying out and controlling decisions.'
- According to Davis and Olson, 'MIS is an integrated user machine system designed for providing information to support operational control, management control and decision-making functions in an organization. The information systems make use of resources such as hardware, software, human, procedures as well as suppliers'.

Data processing

- Data processing is the manipulation of data by computers. It represents the automation of routines processing to support operations. Basically, it converts raw data into readable format which can be easily utilized by the people in the organization.
- The data processing functions are data collection, manipulation, storage as used to report and analyze business activities. It is primarily oriented to processing transaction data for day-to-day transactions.

MIS versus Data processing

MIS	DPS
It uses an integrated database.	It does not use integrated databases.
It provides greater flexibility to the management.	It provides no such flexibility.
It integrates the information flow between functional areas.	It tends to support a single functional area.
It focuses on information needs of all level of management.	It focuses on departmental level support.
Output is in the form of graph.	Output is in the form of the table.
The model is simple.	Sometimes, the model becomes complex.
Focuses on operational functionality.	It focuses on converting data to another form or language.

MIS & Decision Support Systems

- Decision support system (DSS) in an outcome of management information system, providing support for management at operational control, management control, and strategic planning.
- Management activity of each of these classes includes planning, control, and decision making.
- DSS are ideally suited for problem like location selection, identifying new products to be marketed, scheduling personnel, and analyzing the effect that price increases for resources have on profits.
- DSS are human/machine systems and are suitable of semi structured problems. The problem must be important to the manager and the decision required must be an important one.
- DSS use internal information from TPS and MIS; they often bring in information from external sources such as current stock prices or product prices of competitors.
- DSS have more analytical power than other systems.
- The most recent embellishment of the DSS concept is the group decision support system (GDSS).
- The GDSS endeavors to improve communication among group members by providing simulating environment

MIS vs DSS

Sr. No.	Key	MIS	DSS
1	Primary Task	MIS identifies the information required.	DSS identifies the tools to be used in decision process.
2	Focus	Focus is on efficiency.	Focus is on effectiveness.
3	Database	Corporate Databases are used.	Special Database needed.
4	Data	Focus is on data storage.	Focus is on data manipulation.
5	Dependency	Dependent on computer.	Dependent on management jurisdiction.
6	Usage	MIS is used to control process.	DSS is used in planning, staffing and decision making.
7	Users	MIS is used by middle level, low level users and senior executives in some cases.	DSS is used by analysts, professionals and managers.
8	Focus	Focus is on information processing.	Focus is on decision making, support and analysis.

MIS & Information Resources Management

- Information Resource Management (IRM) as "techniques of managing information as a shared organizational resource." IRM includes
    - identification of information sources,
    - type and value of information they provide, and
    - ways of classification, valuation, processing, and storage of that information.

- Information Resource Management (IRM) is a broad term in IT that refers to the management of records or information or data sets as a resource. This can relate to either business or government goals and objectives.

Functional components of IRM:

- There are basically three main components of IRM. These are:
- **Data processing:** Organizations where information systems have a broader charter, data processing continues to play a signification role. Development of major applications, ongoing operations of 'production' systems, operations of the corporate data base, and cost control over major system expenditures are part of the data processing.

- **Telecommunications:** The advances in communication technology support corporate –wide telecommunications capabilities that integrate voice and data communications. Data communications are also an integral component of both data processing and office automation applications.

- **0ffice automation:** The components typically began as the word processing function under the responsibility of office administrators. Local area network and wide area communications are key components for interacting office automation function and providing access to data processing facilities

Benefits of IRM

- Identifies gaps and duplication of information
- Clarifies roles and responsibilities of owners and users of information;
- Provide costs saving in the procurement and handling of information;
- Identifies cost/benefits of different information resources;
- Actively supports management decision processes with quality information.

MIS Vs IRM

- While MIS deals with the business as a whole, Information resource management deals with information as a resource.
- IRM allocates, stores and plans the information and its use. MIS uses IRM for implementation.
- MIS also helps in IRM by allocation information across the organization through the central database. It also preserves information in the central repository (database) and uses this information for taking decisions. Thus, MIS has a larger perspective than IRM.
- IRM is the responsibility of Chief information officer. Similarly, MIS development is his responsibility but not sole responsibility.
- IRM focuses on data as resource, MIS is correct utilization of that data.

End-user computing (EUC)

- End-user computing (EUC) is a class of technology that allows non-programmers to achieve results that would have required help from a programmer.
- EUC is a group of approaches to computing that aim to better integrate end users into the computing environment.
- These approaches attempt to realize the potential for high-end computing to perform problem-solving in a trustworthy manner.
- End-user computing can range in complexity from users simply clicking a series of buttons, to writing scripts in a controlled scripting language, to being able to modify and execute code directly.

Types of EUC

1. **Business Rules:** Tools that allow users to configure business rules form a user interface.
2. **Analytics:** Tools that allow users to explore data to build dashboards and reports.
3. **Scripts:** Scripting language designed for end-users. For example, an office productivity suite that allows users to change a wide range of information processing functions with scripts.
4. **Bots:** An application or web platform that allows users to automate things with bots.
5. **Configuration:** A software that allows users to achieve a high degree of customization without touching code.
6. **Skins:** A toolkit for changing the user interface of an application with skin or theme.
7. **Visual programming:** visual environment that generate code.
8. **Fifth generation language:** A programming language that seeks to solve problems input.
9. **Artificial intelligence:** Tools that allows end users to train AI to solve particular sets of problems.

EUC Advantages

- Systems tailored to users
- Enables creative use of IS

- Generates competitive advantage
- Puts users nearer the information
- Allows for variety
- Increases user awareness of IS
- Relieves work load of IT professional

EUC Disadvantages

- Produces inappropriate systems
- Causes duplication
- Takes users away from their real job
- Ignores long range and technical issues
- Causes integration problems

Challenges of EUC

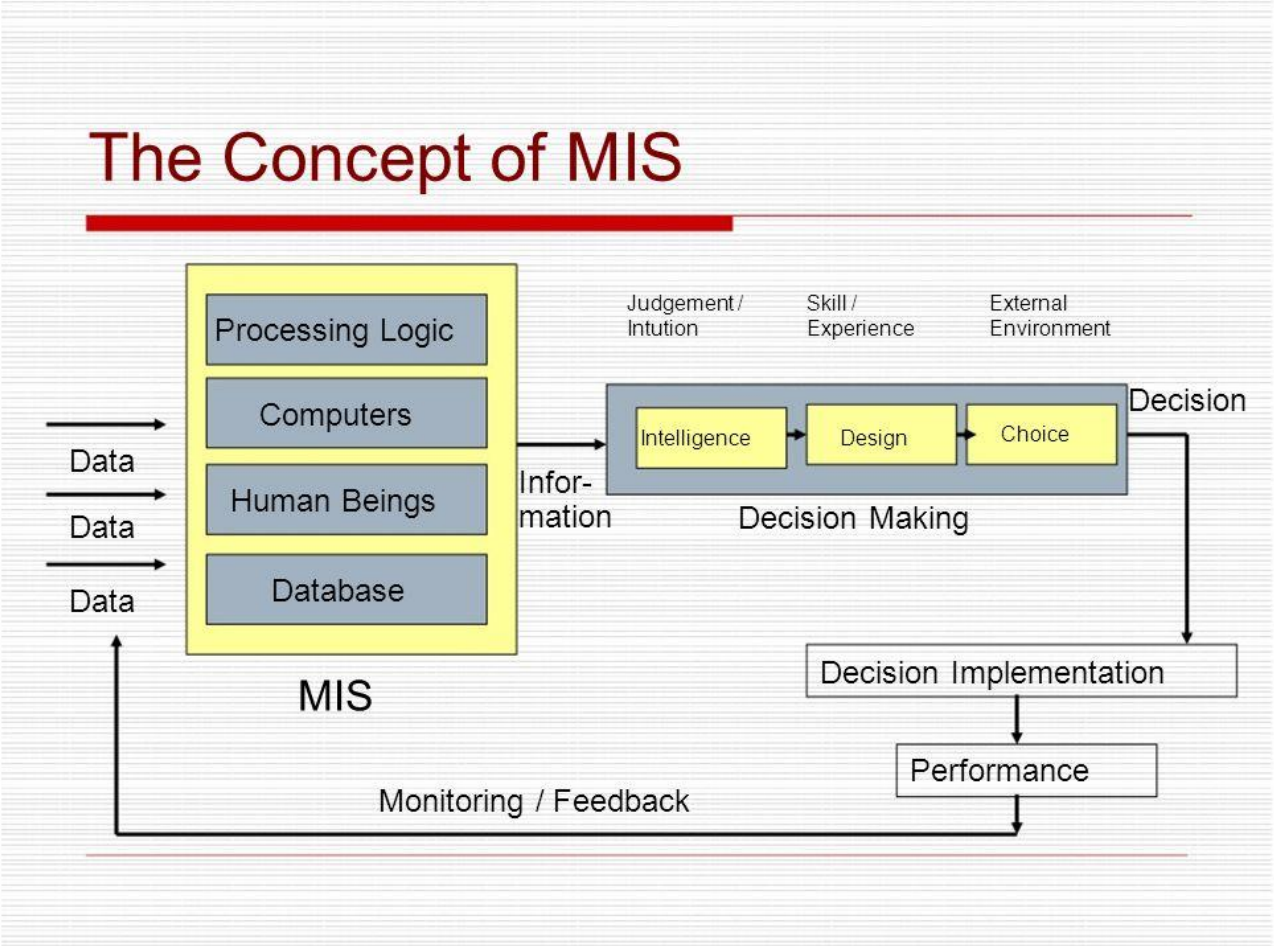
- For all the benefits of adopting EUC, there are risks to watch for. First, since every user requires connectivity to the data center, any loss of availability of either the data center itself (whether on-premises or cloud-based) or the connectivity to the data center will result in downtime for a considerable number of users.

- From a user experience perspective, rapid growth in the number of concurrent users can lead to a poor experience as the number users scales upwards, unless there is adequate room in the infrastructure or at the cloud provider to support such growth. Increases in latency or sluggishness can rapidly lead to user frustration and the desire to seek work-arounds for the enterprise application at hand.

- Complexity always leads to more risk, and so as EUC applications themselves become more intricate the opportunity for problems in performance, security, or availability will grow, for instance to ensure data entered and created on EUC devices has not been compromised in any way.

Concept of an MIS

- The MIS is an idea which is associated with human, machine, marketing and methods for collecting information's from the internal and external source and processing this information for the purpose of facilitating the process of decision-making of the business.
- MIS is not new, only the computerization is new, before computers MIS techniques existed to supply managers with the information that would permit them to plan and control business operations. The computer has added on more dimensions such as speed, accuracy and increased volume of data that permit the consideration of more alternatives in decision-making process.
- Management information system is an integrated set of component or entities that interact to achieve a particular function, objective or goal. Therefore, it is a computer-based system that provides information for decisions making on planning, organizing and controlling the operation of the sub-system of the firm and provides a synergistic organization in the process.
- The component of an information system includes: a hardware which is used for input/output process and storage of data, software used to process data and also to instruct the hand-ware component, data bases which is the location in the system where all the organization data will be automated and procedures which is a set of documents that explain the structure of that management information system.



Structure of a Management information system

MIS structure be described by following a variety of different approaches:

- Physical components,
- Information system processing functions,
- Decision support
- Levels of management activities
- Organizational functions

Structure of MIS may be understood by looking at the physical components of the information system in an organization.

- Hardware: Hardware refers the physical data processing equipment and peripheral devices.
- Software: software is broad term given to the instruction or program that direct the operation of the hardware. Database: the data base consists of all data utilized by application software.
- Input and output: various physical input and output from the information system, existing in the form like printout, report etc.

Information system structure can also be understood in term of its processing functions. The main processing functions of information system are described below:

- To Process Transactions: Information systems process transaction may be defined as an activity taking place in an organization.
- To Maintain Master files: Information systems create and maintain master files in the organization. A master file stores the historical data about the organization.

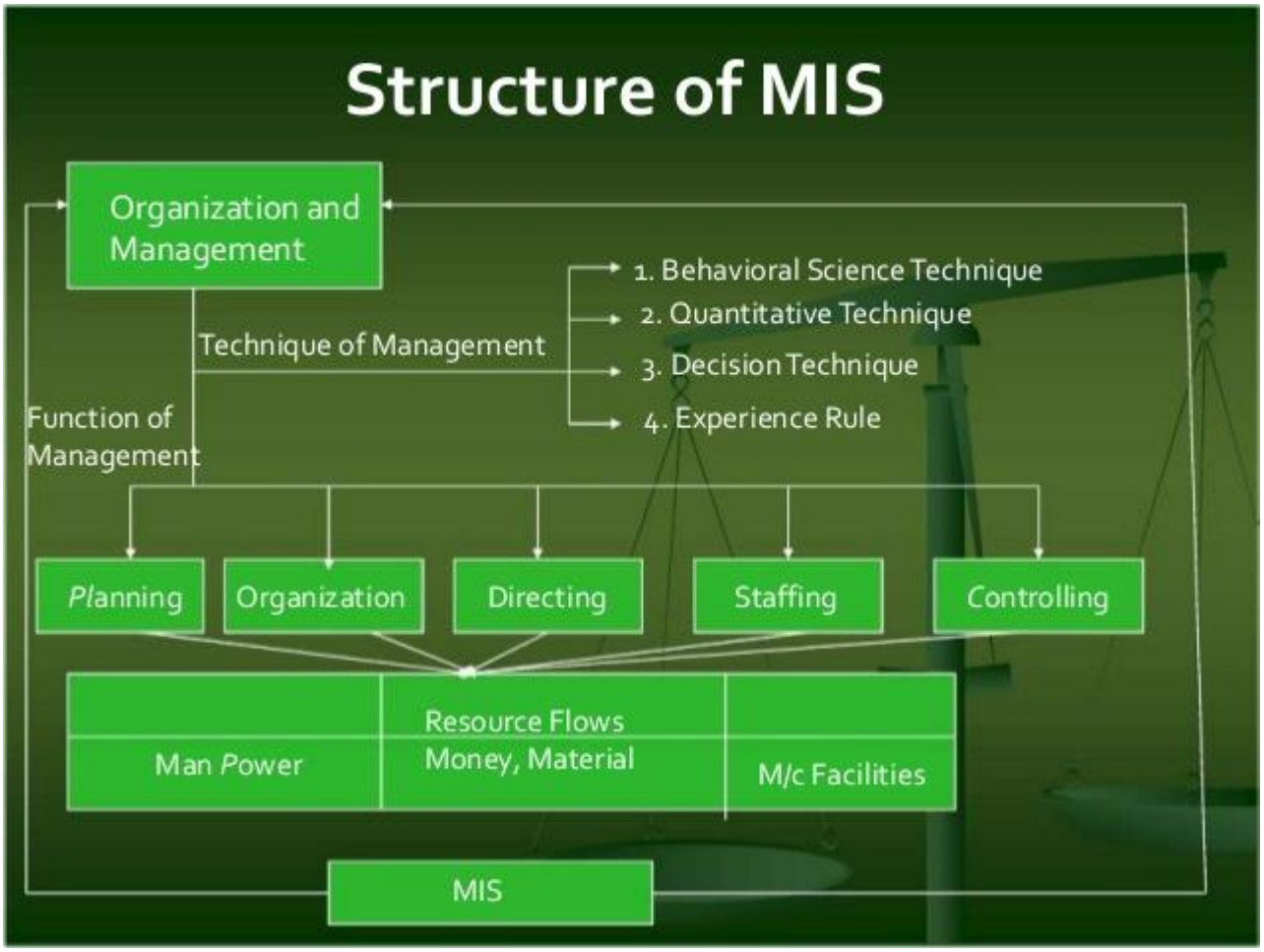
- To Produce Reports: Reports are significant products of an information system. Many reports are produces on a regular basis, which are called scheduled reports.
- To Process Interactive Support Applications

Decision varies with respect to the structure that can be provided for making them. A highly structured decision can be pre-planned. A structured decision, because of its well-defined nature can be said to be programmable.

The structure of an information system can be categorized in terms of level of the management activities.

- Strategic planning deals with long-range considerations. The decisions include the choice of business directions, market strategy, product etc.
- Management control level includes acquisition and organization of resource, structuring of work and training of personnel.
- Operational control is related to short-term decision for current operations. Pricing, inventory level etc.

The structure of management information system can also be described in terms of the organizational functions such as planning, organization, directing, staffing, controlling etc.



Assignment;

1. Why EUC is necessary/important?
2. Explain about role and impact of MIS.