Computer Application And Management Information System
MB 402

UNIT V – **M**anagement **I**nformation **S**ystem (**MIS**)

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Decision Making System(Contd...) & MIS Design

Period : 03 (1hr.)

Decision Making & MIS

- In MIS, **Decision Support System (DSS)** is a special class of subsystem, which is used as a support in decision making.
- Many of the decision making situations, at all levels of management, are such that, its occurrence is infrequent but the methodology of decision making is known.
- Some of the methods are proven and are widely used. Such applications are separated and are packed in the DSS.
- These systems use data from the general MIS and are used by a manager or a decision maker, for decision support.

Decision Making & MIS

- When the decision making is required **in real time dynamic mode**, DSSs are designed to read, measure, monitor, evaluate, analyse and act, as per decision guidance embedded in the system.
- Thus an MIS becomes more useful when the decision making is made **person independent** and executed with well designed **DSS** (AI).
- The ultimate purpose of the MIS is to make decisions, at all levels of operations, based upon the information flow.
- If decisions cannot be automated through MIS, the objective becomes only of providing information to improve the decision making ability of the manager.
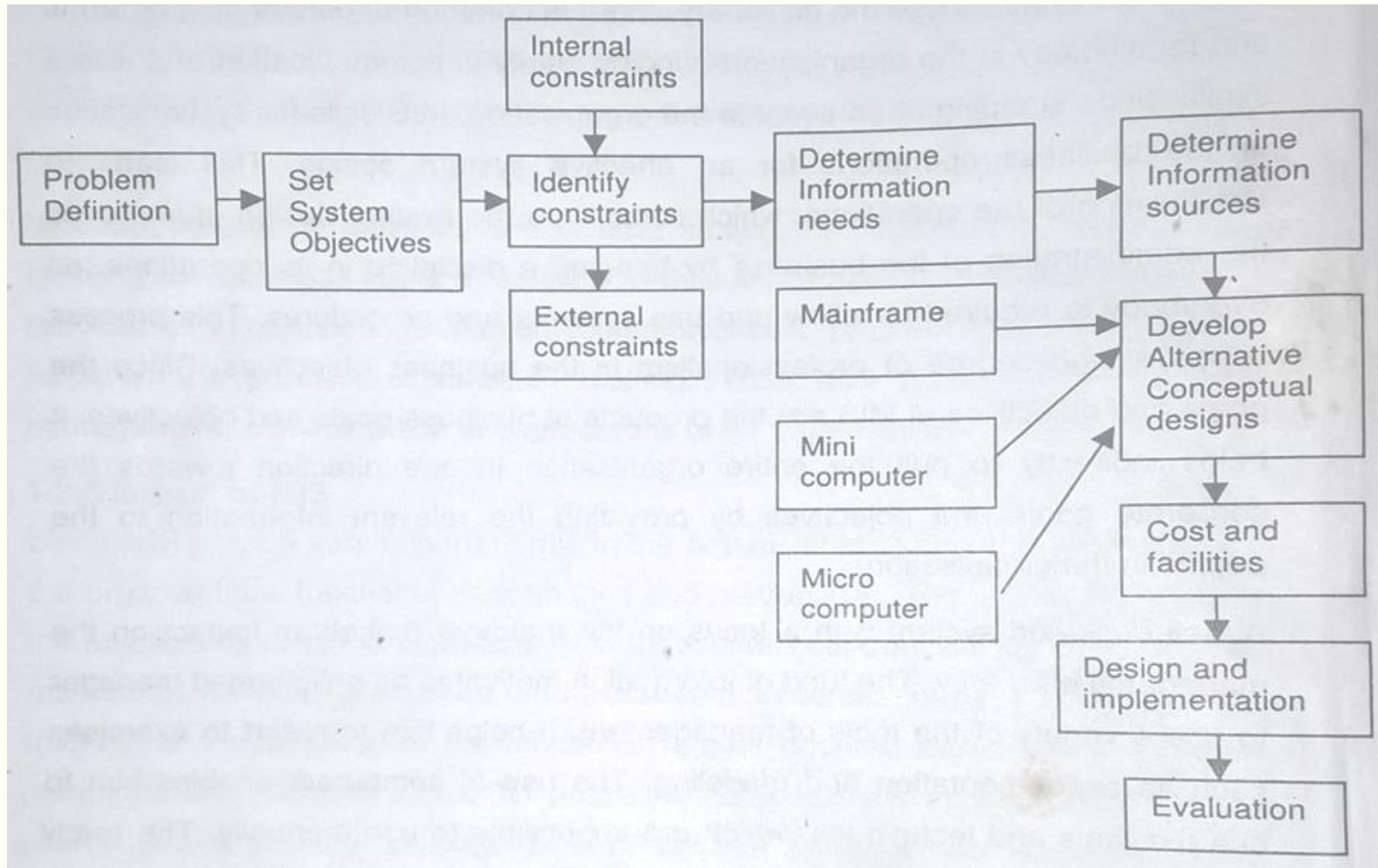
MIS Design

- While designing a management information system, a general approach has to be followed so that a suitable system can be devised to cater to the needs of different organizations, as per their functions and decision making requirements.

- Irrespective of the organization, the data gets generated at various levels of the management.

- These data when processed and analyzed, become information which, when properly communicated, in-time, to the decision-maker, helps in making decisions and taking actions.

Steps in Designing an MIS

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- **Identifying information needs at all levels of management :** There are problems in every growing business organisation, but most of the time a clear definition of problems and a priority system for their solution is not known. Thus, as a first step in MIS design, the management should identify, in detail, the problems to be solved.

- **Listing objectives of MIS and anticipated benefits:** The system objectives must be defined in terms of information demands. For example, in several organizations, prior to the designing of an information system, the system objective was, the automation of hundreds of reports without looking at the management of tasks related to functional or resource system represented by the report. These are training needs, employee relations, safety, recruitment and staffing.

Steps in Designing an MIS

- Such attention is possible only by automation of records or processing of existing data, otherwise the true objectives of the organization represented by the system are overlooked.
- The system objective should be defined in terms of what a decision-maker can do and how effectively he would be able to function after his information requirements have been complied with.
- The basic questions which are asked, while listing down the objectives of the MIS system design are :
  - What is the purpose of the system ?
  - Why is it needed ?
  - What is it expected to do ?
  - Who are the users and what are their objectives ?

Steps in Designing an MIS

- **Identifying systems constraints (internal and external) :** The systems constraints are also called problem boundaries or restrictions under which objectives may be achieved.
- These constraints (or limitations) in the design of the system are the creation of the manager-user or the designer himself, because of his limited freedom of action in designing a system, to achieve the objectives.
- The internal constraints are viewed in the following terms :
  - top management support
  - organizational policy
  - manpower needs and availability
  - cost and resource
  - acceptance

Steps in Designing an MIS

- The external constraints are mainly concerned with the customer. Order entry, Billing and other systems that interface with the systems of the customer, must be designed with the customer's need in mind.
- **Determining information needs and resources :** The system design must begin with determining the real information needs of the management. Information that can increase the perception of managers, in critical areas such as problems, alternatives, opportunities and plans.
- In other words, if a decision maker can define his objectives and spell out the items of information that are needed to attain the objectives, then he/she is at least half way through, in a good system design.

Steps in Designing an MIS

- A decision maker needs information for a variety of reasons concerned with the management process. The type of information which is required at various times and for various purposes, depends on two factors :
    - Personal managerial attitudes like knowledge of information systems, managerial style, perception of information needs, etc. of the individual manager.
    - Organisational environment like nature of the company, level of management, structure of the organisation.
- After estimating the need of information and clearly defining the objectives, the next step in MIS system design is to determine the sources of information. The sources of information may be categorized as follows :

Steps in Designing an MIS

- **internal sources** : It is in the form of written materials like file records, letters, reports containing information about the existing system etc.
- **external sources** : It may be in the form of trade and government publications, personal interviews of managers and personal interaction With decision makers.
- **Developing alternative conceptual design and selecting one :** The conceptual design of MIS is considered as a skeleton of the MIS, which guides and restricts the form of the detailed design. The concept of design of an MIS consists of patterns of information flow, channels of information, role of decision makers and competitors etc.

Steps in Designing an MIS

- The alternative concepts of a system can be evaluated on the basis of the following :
  - compare anticipated performance of the conceptual design with respect to objectives of the system developed earlier;
  - for quantified comparison amongst systems, prepare a preliminary cost effectiveness data for the system;
  - examine the quality of databases and information to be made available. Study the number of operations, dispersions and duplication of files, and potential breakdown points;
  - expand the conceptual designs in greater detail if none of these provide a preferred design.

Steps in Designing an MIS

- **Preparing the conceptual design report :** The conceptual design report is a proposal prepared for the expenditure of funds and possible changes in the organisational set-up. Since this report is submitted to management, it must contain the summary of problems that necessitate the system, the objectives, the general nature of the system, reasons why this concept was selected over others, and time and resources required to design and implement the system.