

Unit II: Management Information System - Management Information System

Definition of MIS:

MIS are information system at the management level of an organization that senses the functions of planning, controlling and decision making by providing routine summary reports and exception reports.

MIS helps the management level of the organization by providing managers all the required report and in some cases online access to the organization's current performance and historical records.

Typically MISs are oriented towards internal business event more than the external event. Generally, they depend on the data provided by various TPSs.



The output of MIS takes the form of summary reports and exception reports. The summary reports accumulate data from several transactions and present the results in compressed form.

Exception reports outline any deviation from expected output. Its main purpose is to draw the attention of middle managers to any significant difference between actual performance and expected performance.

MIS usually serves managers interested in weekly, monthly, quarterly or annual reports not on day to day activities. MIS generally provides answers to routine questions that have been specified in advance and have a predefined procedure for answering them. These systems are not generally flexible and have little analytical capabilities.

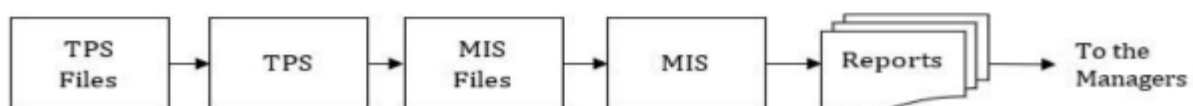


Fig: A Typical Management Information System

Historical Development of MIS:

Data is a raw material from which the meaningful and desired information can be obtained by using the system called information system. The information system only derived from the data and information for the logical and decision making.

The management information system is one kind of an information system that can be used only for the analysis, manage, control and decision making on the processed data or collection of information. So, MIS is computer-based software that can be used only for the decision making at right time.

The information system is derived by the Silver at el @ 1995 which defines the data, information, system and information system. After the needed of a desired and right result, there was the use of computer-based software called slightly information system.

After the evolutions of the information system, then the information system was more useful for the enterprise and any firm. So, the Zheng has developed the concept of a computer-based system that was used for financial tools.

After the evolution of concept of MIS then the company ACM (Association of Computer Machinery) maintain the standards of information system as well as management information system.

Characteristics of Management Information System:

The purpose off a management information system is to help executives of an organization make decisions that advance the organization's goals. The most important characteristics of MIS are those that give decision maker's confidence that their actions will have the desired consequences:

1. Usefulness:

The information a manager receives from MIS maybe relevant and accurate, but it is only useful if it helps him with the particular decisions he has to make. For example: if a manager has to make decisions on which employees to cut due to staff reductions, information on resulting cost savings is relevant, but information on the performance of the employees in question are more useful.

2. Timeliness:

MIS output must be current. Management has to make decisions about the future of the organization based on data from the present, even when evaluating trends. The more recent the data the more these decisions will reflect present reality and correctly anticipate their effects on the company.

3. Completeness:

An effective MIS presents all the most relevant and useful information for a particular decision. If some information is not available due to missing data, it highlights the gaps and either display possible scenarios or presents possible consequence resulting from the missing data.

4. Accuracy:

Management information systems are accurate and provide up-to-date and correct information based on factual data. All processed information derived from an accurate and correct management information system is typically free of flaws, consistent and complete.

5. Integrated:

Organizations are involved in various functions and sub-functions, such as manufacturing, finance, human resources, marketing and other specialized areas. A management information system is an integrated collection of information systems, each designed to support a unique functional area.

6. Available:

Information may be useless if it is not readily accessible in the desired form when it is needed. Advances in technology have made information more accessible today than ever before.

7. Reliable:

The information should be counted on to be trustworthy. It should be accurate, consistent with facts and verifiable. Inadequate or incorrect information generally leads to decisions of poor quality. For example, sales figures that have not been adjusted for returns and refunds are not reliable.

8. Cost-effective:

The information is not desirable if the solution is more costly than the problem. The cost of gathering data and processing it into information must be weighed against the benefits derived from using such information.

9. Control Database:

Another important characteristic of MIS is that it always based on centralized data and information. It is because of this fact that MIS is to supply data and information is such a way so that the management can take its important decision.

Components of MIS:

MIS is a system or process that consists of people, machines, procedures, data methods and database as the elements of the system. Different components of MIS are discussed follow:



Fig: Components of MIS

1. Hardware:

The hardware component of MIS means all the input and output devices that help the inputting and displaying the information as per requirement. Different input devices are a keyboard, scanners and mouse, etc. The output devices are monitor, printer, network devices, etc. Hardware devices are the physical parts of MIS.

2. Software:

Software's are the programs and applications which convert the machine into readable language. Different software's generally used for processing the information of an organization is ERP.

ERP is a software package that combines all data and processes of an organization. In order to achieve integration, it uses multiple components of computer software as well as hardware.

Advantage of an ERP system is that it uses a single, unified database to store data for various systems. Under the ERP system all functions of an organization can be controlled.

3. Procedure:

The procedure implies a set of scales and guidelines, which are established by an organization for the use of a computer-based information system. Procedure depends on the nature and purpose of the organization.

So, procedures are different for different organizations. Moreover, it may vary from one department to another department according to requirement. So, different departments have to set their procedures in different ways so that the MIS can help in retrieving the information as per requirement of a particular department.

4. Personnel (Human Resources):

Different personnel of MIS are computer experts, managers, users of computer-based information system. Majority of the personnel use the computer-based information for preparing plans and programs, rules and regulations, and for taking different decisions.

Advantages of MIS:

The following are some of the benefits that can be attained using MIS:

1. Helps in the Formulation of Planning:

With the help of MIS, the management can formulate correct planning because preparation of planning requires various data and information, which can be systematically supplied by the process of MIS.

2. Provides Coordination:

Under this system of MIS, data and information are collected from each sub-system of the organization, through unifying the concept of each sub-system. So, the MIS can provide the facility of coordination.

3. Systematic Decentralization:

MIS also provides systematic decentralization in the organization. Under the process of MIS, different middle and lower-level officers and managers are authorized to supply their information.

So, by implementing MIS, the authority can be distributed among various officers and managers of middle and lower levels without the loss of control. It also provides a system for monitoring performance. Likewise, the MIS can help in decentralization.

4. Help in Control System:

To be an effective control system, it should be based on relevant data and information. On the other hand, relevant data and information can be provided regularly in a systematic manner by the MIS. So, MIS can help in taking proper control.

5. Increase Speed in Operation:

In order to increase the speed of operation of a business, data and information should be supplied at the right time at the right place because without data and information no operation can be done in a proper way. By supplying necessary data and information, MIS can increase the speed of the operation of a business.

6. Reduce Duplicate of Efforts:

Under the Process of MIS, various data and information are stored in a scientific manner. So, the managers can take the help of these data and information before and at the time of performing their activities. Thereby, the MIS can prevent unnecessary duplication of efforts likely to be done by the managers. Generally, duplication of effort happens owing to the lack of sufficient data provided timely to the managers.

Disadvantages of MIS:

A management information system is an approach a company uses when making various business decisions. Business owners and managers are responsible for operational, technical and strategic decisions. Some disadvantages can exist when using a management information system in a company:

1. Expensive:

Installing a management information system can be expensive for a company. Information technology while cheaper today than previous years can represent a significant expense, especially for larger organizations.

These systems may also require ongoing support or upgrade fees, which can represent future fixed cash outflows. Companies must create a budget to pay for these items to ensure the information system stays current with business technology.

2. Maintenance:

Companies may need to hire maintenance individuals to help keep an electronic information system running smoothly. Individuals often need experience in computer science functions and other business topics.

Business technology can change frequently, creating an environment where companies must have trained individuals who can properly maintain computers, websites, servers and other equipment in use by the management information system.

3. Ineffective:

Management information systems have the potential to become ineffective in a company's operations. As with all computer systems, the management information system is only as good as the programmer.

Gathering unimportant or non-essential information can delay business decisions because managers must request additional input. Spending too much time reprogramming or correcting issues can also increase the time spent in the decision-making process.

4. Unemployment:

While information technology may have streamlined the business process it has also created job redundancies, downsizing and outsourcing. This means that a lot of lower and middle-level jobs have been done away with causing more people to become unemployed.

5. Privacy:

Though information technology may have made communication quicker, easier and more convenient, it has also brought along privacy issues. From cell phone signal interceptions to email hacking, people are now worried about their once private information becoming public knowledge.

6. Lack of Job Security:

Industry experts believe that the internet has made job security a big issue as since technology keeps on changing with each day. This means that one has to be in a constant learning mode if he or she wishes for their job to be secure.

7. Dominant Culture:

While information technology may have made the world a global village, it has also contributed to one culture dominating another weaker one. For example, it is now argued that the US influences how most young teenagers all over the world now act, dress and

behave. Languages too have become overshadowed with English becoming the primary mode of communication for business and everything else.

Roles of MIS:

The role of the MIS in an organization can be compared to the role of the heart in the body. The information is the blood and MIS is the heart. Here are some of the important roles of the MIS:

1. The MIS satisfies the diverse needs through a variety of systems such as query system, analysis system, modelling system and decision support system.
2. The MIS helps in strategic planning, management control, operational control and transaction processing. The MIS helps the person in the transactional processing and answers the queries on the data to the transaction, the status of a particular record and reference on a variety of documents.
3. The MIS helps the junior management personnel by providing the operational data for planning, scheduling and control and helps them further in the decision making at the operation level to correct an out of control situation.
4. The MIS helps the middle management in short term planning, target setting and controlling the business functions. It is supported by the use of the management tools of planning and control.
5. The MIS helps the top-level management in goal setting, strategic planning and evolving the business plans and their implementation.
6. The MIS plays the role of information generation, communication, problem identification and helps in the process of decision making. The MIS therefore plays a vital role in the management, administration and operation of an organization.

Importance of MIS for Managers:

It goes without saying that all managerial functions are performed through decision-making; for taking a rational decision, timely and reliable information is essential and is procured through a logical and well-structured method of information collecting, processing and disseminating to decision-makers. Such a method in the field of management is widely known as MIS.

In today's world of ever-increasing complexities of business as well as a business organization, in order to service and grow, must have a properly planned, analyzed, designed and maintained MIS so that it provides timely, reliable and useful information to enable the management to take speedy and rational decisions.

MIS has assumed all the more important role in today's environment because a manager has to take decisions under two main challenges:

First, because of the liberalization and globalization, in which organizations are required to compete not locally but globally, a manager has to take quick decisions, otherwise, his business will be taken away by his competitors. This has further enhanced the necessity for such a system.

Second, in this information age wherein information is doubling up every two or three years, a manager has to process a large voluminous data; failing which he may end up taking a strong decision that may prove to be very costly to the company.

In such a situation managers must be equipped with some tools or a system, which can assist them in their challenging role of decision-making. It is because of the above-cited reasons, that today MIS is considered to be of permanent importance, sometimes regarded as the name center of an organization.

Such a system assists decision-makers in organizations by providing information at various stages of decision making and thus greatly help the organizations to achieve their predetermined goals and objectives.

On the other hand, the MIS which is not adequately planned for analyzed, designed, implemented or is poorly maintained may provide developed inaccurate, irrelevant or obsolete information which may prove fatal for the organization.

In other words, organizations today just cannot survive and grow without properly planned, designed, implemented and maintained MIS. It has been well understood that MIS enables even small organizations to more than offset the economies of scale enjoyed by their bigger competitors and thus helps in providing a competitive edge over other organizations.

Steps of Management Information System:

1.Collection of Data:

The designing of MIS is based on the collection of data. Generally, data are not collected independently for special purposes, but they are collected for multiple uses such as data of inventory can be used by managers in production, accounting and purchase department.

After the collection of data, assembly is immensely important. Data should be assembled according to the needs and purpose of the management.

There are mainly two sources of data and information: Internal source and External source. The company should use both these sources.

2. Processing:

In the second step, data should be processed in a systematic manner. Processing of data implies editing of data, their classification and summation. By the editing of data correction and modification can be done and classification should be done according to the need of organization.

3. Storage and Retrieval:

In this step of MIS different activities such as indexing, coding, filing of data information are done. As a result of this step, the managers and directors of the company can easily use and operate the data and information as per their requirement.

4. Evaluation:

It is an important step, where the accuracy and relevance of data can be determined. Determination of relevance of data is immensely important for taking an effective decision.

5. Dissemination:

By this step, the relevant information is supplied in the proper form at the right time. Information should be supplied according to the requirement of the top management. So, it may be different for different companies and also may be different at different times by the same company.

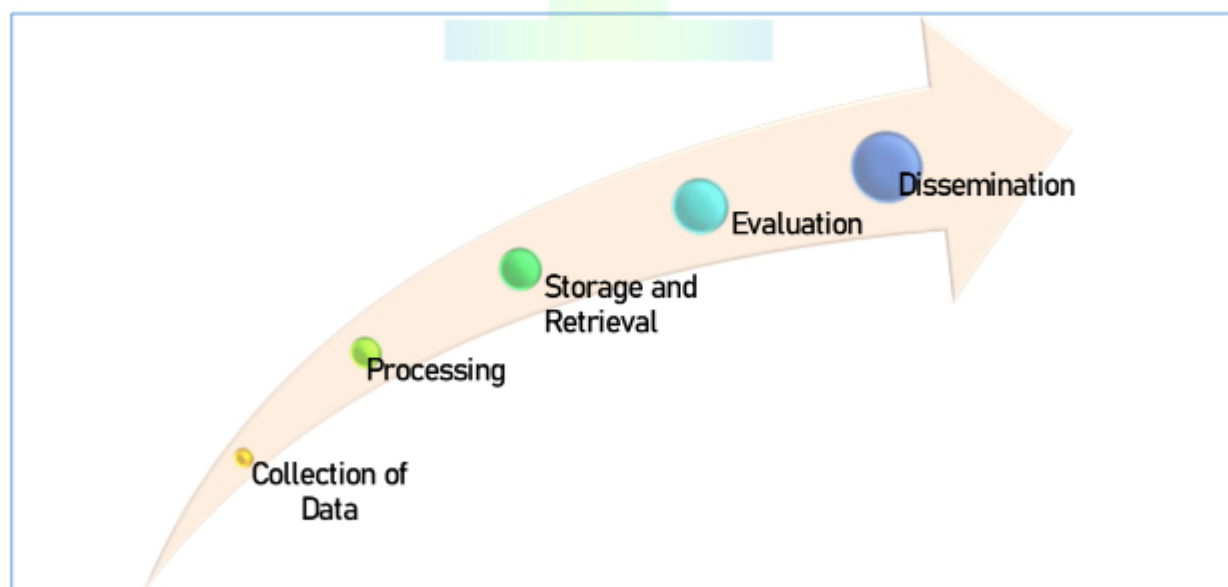


Fig: Steps of Management Information System

Objectives of MIS:

The goals of an MIS are to implement the organizational structure and dynamics of the enterprise for the purpose of managing the organization in a better way and capturing the potential of the information system for competitive advantage. Following are the basic objectives of an MIS:

1. Capturing Data:

Capturing contextual data, or operational information that will contribute to decision making from various internal and external sources of organization.

2. Processing Data:

The captured data is processed into information needed for planning, organizing, coordinating, directing and controlling functionalities at the strategic, tactical and operational level. Processing data means:

- a. Making calculations with the data
- b. Sorting data
- c. Classifying data and
- d. Summarizing data

3. Information Storage:

Information or processed data need to be stored for future use.

4. Information Retrieval:

The system should be able to retrieve this information from the storage as and when required by various users.

5. Information Propagation:

Information or the finished product of the MIS should be circulated to its users periodically using the organizational network.

