

## MANAGEMENT INFORMATION SYSTEM AND DECISION MAKING PROCESS IN ENTERPRISE

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**Abstract:** *Management Information System (MIS) is basically concerned with the process of collecting, processing, storing and transmitting relevant information to support the management operations in an organization. Thus, the success of decision-making, which is the heart of administrative process, is highly dependent partly on available information, and partly on the functions that are the components of the process. This paper will discuss the concept, characteristics, types of MIS, the MIS model, and in particular it will highlight the impact and role of MIS on decision making.*

**Keywords:** *information, management information system, decision making process*

### 1. INTRODUCTION

Management Information System (MIS) is an organized, automated, and diverse information system that gathers, stores, processes, and distributes data associated with different departments of the organization. This data is processed in various forms, such as graphs, diagrams, charts, and reports to generate accurate, relevant and valuable information for the management. This information is further communicated to the various departments to be used for decision-making and business management. MIS system provides central storage of all the business information. There are various types of MIS systems which are used to gain better understanding of the market and enterprise.

MIS is used across all levels in an organization. For example, MIS provides vital information at senior levels to help make strategic decisions. At other levels, MIS observes an organization's activities and distributes information to everyone in the organization and customers. MIS is very important for every organization because it not only collects and manages information, but also represents it in various formats useful for the management to make important organizational decisions.

### 2. MIS CONCEPT AND INFORMATION

Information is a set of classified and interpreted data used in decision making and it has also been defined as “some tangible or intangible entity which serves to reduce uncertainty about future state or events” [1]. Management information is an important input at every level in the organization for decision making, planning, organizing, implementing, and monitoring and controlling. In the context of different levels of decision making, information can be described as:

- source,
- data,
- inferences and predictions drawn from data,

- value and choices (evaluation of inferences with regard to the objectives and then choosing a course of action), and
- action which involves course of action.

Management information system is one of the major computer based information systems. Its purpose is to meet the general information need of all the managers in the firm or in some organizational subunits of the firm. A subunit can be based on functional areas on management levels.

There are many definitions for MIS, but one of the most appropriate definitions describes management information system (MIS) as "an organizational method of providing past, present and projected information related to internal operations and external intelligence. It supports the planning, control and operation functions of an organization by furnishing uniform information in the proper time frame to assist the decision makers" [2]. The information in MIS describes the firm or one of its major systems in terms of what has happened in the past, what is happening now and what is likely to happen in the future. The information is made available in form of periodic reports, special reports and output of mathematical simulations. All managers use the information output as they make decisions to solve the firm's problems [3].

A management information system has also been defined as "an integrated user-machine system for providing information to support operations, management and decision making functions in an organization. The system utilizes computers, manual procedures, models for analysis, planning, control and decision making, and a database" [4]. MIS facilitates managerial functioning and it is an important system because of its content, form and timing of presentation.

### 3. MIS CHARACTERISTICS

In general, management information systems have a number of characteristic, which include the following [5]:

- Report with fixed and standard formation.** For example scheduled reports for inventory control may contain the same type of information placed in the same location on the reports.
- Have report developed and implemented using information system personnel, including systems analysts and a computer programmer.** Typically analysts and programmers are involved in developing and implementing MIS reports. Users are normally involved in the design of the reports, but they are not typically involved in writing the computer programs to produce them.
- Require a formal request from users.** Because information systems personnel typically develop and implement MIS reports, a formal request to the information systems department for report is usually required.
- Produce scheduled and demand reports.** The major type of reports produced by MIS is scheduled; demand reports (Stair, 1992).
- External data is not captured by the organization but is used by MIS,** (i.e., customer, supplier and competitor information).

#### 4. TYPES OF MIS

MIS can be categorized as follows:[6]

- *Databank information systems* refer to creation of a database by classifying and storing data which might be potentially useful to the decision-maker. The information provided by the databank is merely suggestive. The decision-maker has to determine contextually the cause and effect relationships. MIS designs based on the databank information system are better suited for unstructured decisions.

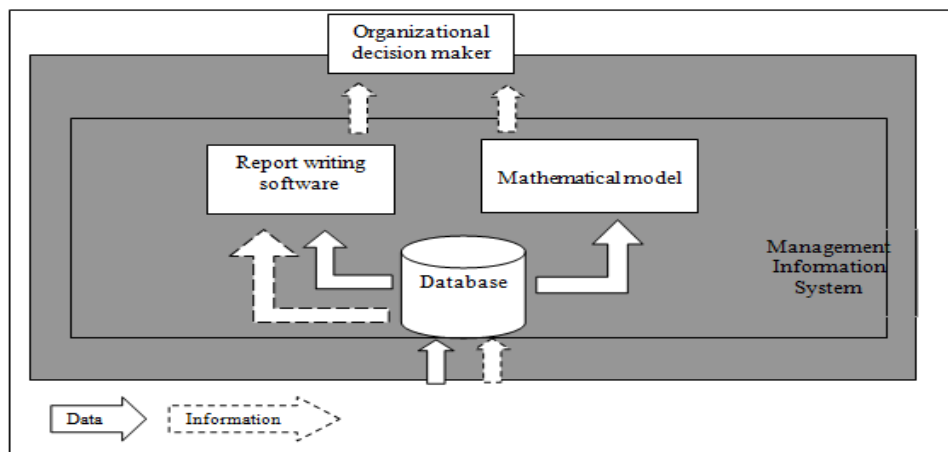
- *Predictive information systems* provide source and data along with predictions and inferences. The decision-maker can also enquire as to 'what if a certain action is taken?' and whether the underlying assumptions are true. This type of MIS is useful for semi-structured decisions.

- *Decision-making information systems* provide expert advice to the decision-maker either in the form of a single recommended course of action or as criteria for choice, given the value system prevailing in the organization. The decision-maker has just to approve, disapprove or modify the recommendation. Decision-making information systems are suitable for structured decisions. Operations research and cost-effectiveness studies are examples of decision-making information systems.

- *Decision-taking information systems* integrate predictive information and decision-making systems.

#### 5. MIS MODEL

The database contains the data provided by accounting information system. In addition, both data and information are entered from the environment [5]. The data based content is used by software that produces periodic and special report, as well as mathematical model that simulate various aspects of the firm operations. The software output is used by people who are responsible for solving the firm's problems. Note that some of the decision makers might exist in the firm's environment. The environment will involve once the firm bonds together with other organizations such as suppliers to form an Inter Organizational Information System (IOS). In such case, MIS supplies information to the other member of the IOS [3]. MIS model is illustrated in Figure 1 [3].



**Figure 1: MIS Model**

## 6. MIS AND DECISION MAKING PROCESS

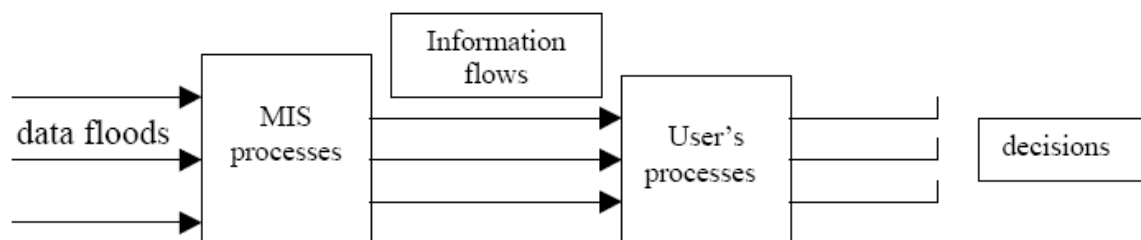
MIS is a system providing management with accurate and timely information. Such information is necessary to facilitate the decision-making process and enable the organizations planning, control, and operational functions to be carried out effectively. MISs increase competitiveness of the firm by reducing cost and improving processing speed. The power of technology has transformed the role of information in a business firm. Now information has become recognized as the lifeblood of an organization and without information, the modern company is dead [7].

MIS and its organizational subsystems contribute to the decision making process in many ways. Power [8] has stated that making decisions is an important part of working in the business environment. Companies often make decisions regarding operational improvements or selecting new business opportunities for maximizing the company's profit. Companies develop a decision-making process based on individuals responsible for making decisions and the scope of the company's business operations. A useful tool for making business decisions is a management information system. Historically, MIS was a manual process used to gather information and funnel it to individuals responsible for making decisions.

MIS is an organization – wide effort to provide decision making process information. The system is a formal commitment by executive to make the computer available to all managers. MIS sets the stage for accomplishments in the other area, which is DSS, the virtual office and knowledge based systems. The main idea behind MIS is to keep a continuous supply of information flowing to the management. Afterwards, by data and information gathered from MIS, decisions are made [5].

According to Obi (2003), MIS is useful in the area of decision making as it can monitor by itself disturbances in a system, determine a course of action and take action to get the system in control. It is also relevant in nonprogrammer decisions as it provides support by supplying information for the search, the analysis, the evaluation and the choice and implementation process of decision making. Adebayo (2007) stressed the need for MIS in decision making as it provides information that is needed for better decision making on the issues affecting the organization regarding human and material resources [9].

MIS may be viewed as a mean for transformation of data, which are used as information in decision-making processes. Figure 1 shows this understanding about information as data processed for a definite purpose [10].



**Figure 2: MIS and decision making process**

MIS differs from regular information systems. The primary objectives of these systems are to analyze other systems dealing with the operational activities in the organization. MIS is a subset of the overall planning and control activities covering the application of humans, technologies, and procedures of the organization. Within the field of scientific management, MIS is most of ten tailored to the automation or support of human decision making [11].

## 7. CONCLUSION

The role of information in decision making cannot be overemphasized. Effective decision making demands accurate, timely and relevant information. MIS provides accurate and timely information necessary to facilitate the decision-making process and enable the organizations planning, control, and operational functions to be carried out effectively. MIS also plays the crucial role of providing a wide range of streamlined options from which decision-makers are able to make their preferred choices and this ensures that whatever choices are made by decision makers, the outcome, more often than not, becomes positive. This, as a matter of fact, is the reason why many decision makers tend to prefer using MIS tools when making tough business choices. MIS as renowned concept, having good decision choices guarantees viable decisions in our businesses.

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