

# An Analysis of Management Information Systems (MIS)

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**ABSTRACT:** *This article focuses on comprehending the idea of management information systems (MIS), the necessity for MIS, the benefits of MIS in an organization, the MIS model, choices and decision-making systems, and, most importantly, the function of MIS in decision-making. It discusses MIS in detail, including the idea of MIS, the MIS model utilized by companies, how MIS is useful, and why a company needs MIS. The next section provides an overview of choices and the decision-making system, which is required to comprehend the decision-making process. Management information systems (MIS) are a structured, varied, and automated information system that is concerned with the process of collecting, storing, and transmitting important information to support an organization's management activities. Finally, the function of management information systems (MIS) in organizational decision-making is the main emphasis of this article. How MIS is used to make choices in a company, what difficulties the organization faces in this process, and a few suggestions to address these issues. It gives a quick overview of why MIS helps people make better decisions.*

**KEYWORDS:** *Data, Information, Management, Organization, Systems.*

## 1. INTRODUCTION

Management information systems (MIS) are a structured, varied, and automated information system that is concerned with the process of collecting, storing, and transmitting important information to support an organization's management activities. The data is dispersed across an organization's different divisions. Data is processed in a variety of ways, including graphs, diagrams, charts, and reports, to provide accurate and relevant information to management. The MIS serves as a central repository for all company data. An organization's management information system (MIS) is utilized at all levels. Management information systems come in a variety of shapes and sizes. The emphasis of this article is on decision-making information systems. MIS is critical for not just gathering and managing data, but also presenting it in a variety of forms that management may utilize to make key organizational decisions [1],[2].

MIS enables organizations to get quicker access to needed information, allowing them to make more effective and timely choices on a variety of issues, including investments, employment, and product development. Choosing a course of action from a variety of options is what decision making is all about. Integral management is used at all levels of management and in all functions. The quality of the choices that guide the organization's operations determines its effectiveness. The ability to make decisions is a key indicator of an organization's success or failure. This article focuses on the necessity, benefits, kinds of MIS, the MIS model, decision-making system, and, most importantly, the function of MIS in organizational decision-making [3]–[6].

### *1.1 Need for MIS:*

Prior to the advent of computer technology, organizations found it challenging to handle all of their data. Managers may now quickly collect, integrate, store, and manage information in the form they need, depending on their requirements and timeliness, thanks to advances in computer technology. Many individuals utilize information at the same time. Current, accurate, succinct, timely, comprehensive, well-presented, and storable information is required. Depending entirely on personal computers for organizational efficiency is unreliable unless they are utilized efficiently and effectively.

Advanced technical solutions for integrating and sorting data may also be expensive unless top management makes them available to employees. As a result, information systems came into play. An information system is a framework that guarantees managers have access to information when and when they need it. It offers useful information for making decisions. At every level of the company, management information is critical for decision-making, planning, organizing, executing, and monitoring and controlling. Managers must absorb large amounts of data, turn it into information, draw conclusions from it, and make choices that lead to the accomplishment of company goals. Information, like money, equipment, and people, is a valuable resource for a company. It is critical to the company's long-term existence. As a result, management information systems play a critical role in information management, making it easier for managers to gather, integrate, and allocate data, as well as ensuring effective and efficient decision-making.

### *1.2 Concept of MIS:*

Information is a collection of categorized and interpreted data used in decision-making, as well as "some real or intangible object that helps to decrease uncertainty about future states or events". Information may be defined as source, data, inferences and predictions derived from data, value and choices, and action, which includes path of action. The goal of a management information system is to satisfy the general information requirements of all managers in an organization or specific subdivisions of an organization. A subunit may be organized by functional areas or by management levels.

When it comes to MIS definitions, one of the most often used definitions defines management information system (MIS) as "a technique of delivering past, present, and future information on internal operations and external intelligence that is organized. It assists decision makers by providing consistent information in a timely manner to support the planning, control, and operation activities of an organization ". MIS data defines the business or one of its main systems in terms of what has occurred in the past, what is occurring now, and what is expected to occur in the future. The data is presented in the form of reports and mathematical simulation results. Periodic and special reports are the two kinds of reports. When making choices to address the firm's issues, all management utilize the information produced. An integrated user machine system for delivering information to assist operations, management, and decision-making activities in an organization has also been described as a management information system. Computers, manual processes, models for analysis, planning, control, and decision-making, and a database" are all used in the system. All of these concepts provide a clear picture of MIS as a whole [7], [8].

### *1.3 Benefits of MIS:*

For commercial organizations, MIS makes a significant impact. It has many advantages, including:

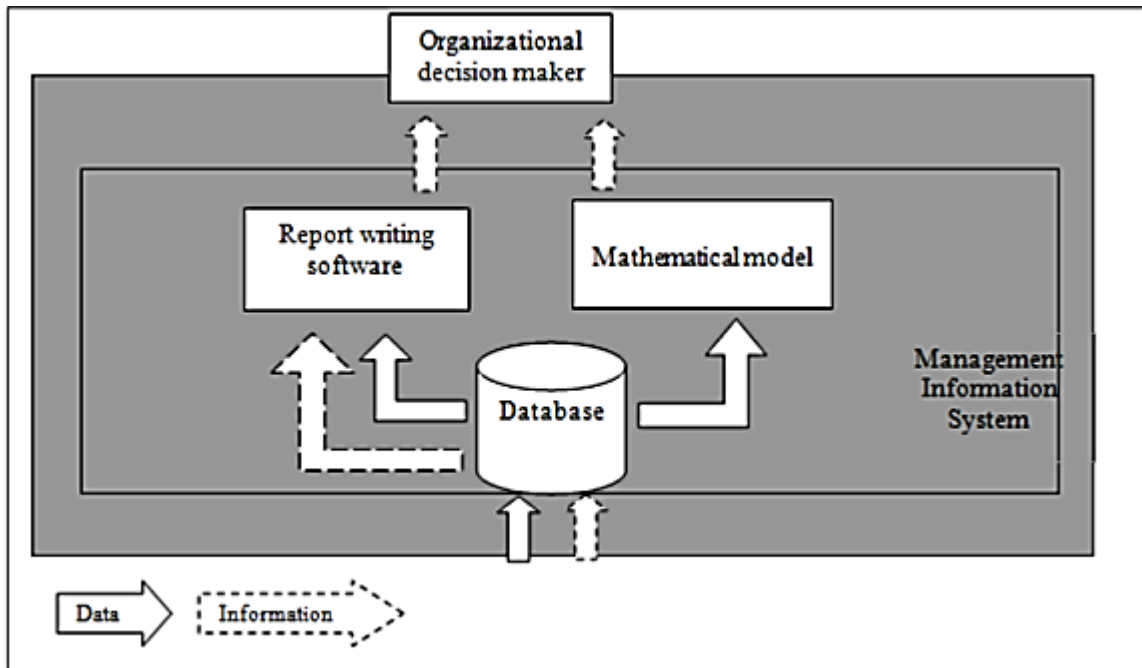
- effective and efficient departmental collaboration
- fast and reliable reference
- access to essential data and documentation
- provides a significant time-saving advantage to the workforce
- improves organizational and departmental methods
- management of day-to-day operations
- Day-to-day help in a Department and tighter contact with the rest of the world.

The most essential aspect for an organization is to do efficient and effective work in the shortest period of time possible. This element of profit-making is supported by MIS, which eliminates the need for workers to manually gather data for filing and analysis. Instead, the data may be rapidly and simply input into a computer program. Because it is getting more difficult for business analysts to evaluate data as it grows, MIS offers a foundation for developing programs to access data in response to management inquiries. Managers can make better choices regarding processes, future directions, and competitor developments if they have quicker access to essential information.

### *1.4 The MIS Model:*

The components of the MIS model consist of:

- Database
- Organizational decision maker
- Report writing software
- Mathematical model



**Figure 1: Representation of architecture of MIS Model.**

The MIS model's operation begins with data and information gathered from many sources. The accounting information system's data is saved in the database. The facts and information are gathered from the surrounding area. Data is transmitted to the report writing software, which generates periodic and special reports, as well as the mathematical model, which simulates different elements of the organization's activities (Figure 1). The report writing software's output and the mathematical model are then delivered to the individuals in charge of addressing the issues. For productivity, good decision-making is needed to address the issue. In the firm's environment, there are decision makers who may or may not exist. Other organizations with whom the business has worked, such as suppliers, may be found in the environment, according to an Inter Organizational Information System (IOS). In this instance, MIS relays information to the other IOS member.

### *1.5 Decisions and The Decision Making Systems:*

#### *a. Decision making systems :*

Decision-making systems are based on the knowledge of the decision maker or management about the environment. They may be divided into two categories:

#### *i. Closed Decision Making Systems:*

Closed decision making occurs when the decision maker works in a known environment. The following are the requirements for the same:

- The manager has a set of choice options that he or she is familiar with, as well as their expected consequences in terms of values if they are adopted.
- The manager has a model, a technique, and criteria for generating, testing, and ranking decision alternatives.

- Based on the aims and objectives, the manager may choose one of the options. Example: A method for determining whether or not a student has passed or failed an examination.
- ii. *Open Decision Making Systems:*

The manager's decision-making is referred to as open decision-making when he or she is operating in an uncertain environment. The following are the requirements for the same:

- The decision maker is unaware of all the choice options.
- The decision's result is likewise unknown in its entirety, implying that knowledge of the outcome may be probabilistic.
- There is no technique, rule, or model accessible to analyse and settle one choice from the many options.
- Setting objectives and goals is tough. As a result, the choice maker reports to the decision where dreams and wants collide.

#### *1.6 Role Of MIS In Decision Making:*

In response to opportunities and dangers, decision-making is the process through which organizational members choose a particular course of action from a variety of options. The end result of the decision-making process is either a good or poor choice. A good decision leads to successful organizational productivity and courses of action that help an individual, group, or organization be effective, whereas a bad decision leads to ineffective and inefficient course of action, resulting in poor or no productivity and overall waste of time, effort, money, and labor. The choices made by the members of any organization determine whether it develops, prospers, or fails. The effectiveness of decision-making is reliant on a variety of factors, including accessible information and the components of the process known as functions. There is no foundation for a search, for example, if management goals are missing or ambiguous, most often owing to a lack of information[9]–[11]. Without the information, the search will be meaningless since there will be no alternatives to compare search results, resulting in an unfavourable outcome owing to the random selection of a specific course of action. According to Alabi, the search may be conducted as follows:

- **Undirected viewing:** When a viewer is exposed to a large amount of information without a particular goal in mind, he or she is randomly looking for information throughout the whole information pool.
- **Conditioned viewing:** Information is presented in a controlled manner. It does not, however, include an active search for a more or less precisely defined region or kind of data.
- **Informal search:** This is an unstructured and restricted attempt to find particular information for a specified reason. The desired information is being sought.
- **Formal search:** This is a purposeful attempt to obtain particular information related to a certain problem, typically following a pre-established strategy, process, or approach.

Another important element to consider when considering the different components of how MIS aids decision-making is the selection of people for decision-making. MIS is a very complicated procedure that requires a great deal of care. As a result, companies should carefully choose the people who will be in charge of the systems. The more professional a person is, the more equipped they are to make choices, increasing the likelihood of accurate decisions and good

results for the company. On another level, decision-making is influenced by previous work or historical data. This is when maintaining records comes into play. MIS is critical in maintaining databases that may readily store sensitive and important information. The administrators of the company guarantee that the information in the databases is secure. Furthermore, databases offer a platform from which information may be accessed. As a result, MIS record keeping and database technologies guarantee that viable choices are made while companies continue to operate efficiently without interruption.

## 2. DISCUSSION

Both public and private companies need a management information system. A management information system (MIS) is a tool that assists managers in making choices on how to solve issues in their companies, both public and private. Managers may use MIS to make smart choices in the sense of being able to overcome issues that are occurring and without creating new problems that might jeopardize an organization's existence. The existence of computer technology has made a significant contribution to the management information system, and MIS is also critical for responsible decision-making by executives in an organization or business. Several elements of the Management Information System are discussed in this article.

## 3. CONCLUSION

Management information systems (MIS) offer organizations with the accurate, timely, relevant, and comprehensive data they need to make better decisions. It aids in the effective and efficient execution of planning, control, and operational tasks. It gives decision-makers a broad variety of options from which to choose, allowing them to make their choice based on the system and the circumstance. It guarantees that the decision leads to a good conclusion more frequently. These are the primary reasons why famous companies use MIS for decision-making and information management. With all of its benefits, MIS has a few obstacles that must be addressed. When it comes to MIS, organizations should guarantee top-level management participation to maintain seamless operations. In such companies, decision-making would be quicker and more in line with contemporary and efficient business methods. Without learning to deal with the ever-changing trends in MIS and decision making, business leaders would find it difficult to achieve good development in decision making. Finally, it's important to remember that better decision-making is primarily intended to guarantee consumer happiness while companies continue to thrive. The MIS strategy should be tailored to the needs of the company and should strive to accomplish the company's objectives.

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