

# IMPACT OF MANAGEMENT INFORMATION SYSTEMS (MIS) IN DECISION MAKING

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## ABSTRACT:

This paper focuses on understanding the concept of MIS, the need for MIS, the advantages of MIS in an organization, the MIS model, decisions and the decision making system and majorly the role of MIS in decision making. It talks about MIS in brief considering the concept of MIS, the MIS model that is used by organizations, how MIS is beneficial, why is there a need of MIS in an organization. It then gives an overview of decisions and the decision making system which is necessary to understand the decision making process. Finally, the major focus of this paper is the role of MIS in decision making of an organization. How decisions are made in an organization using MIS, what challenges are faced by the organization in this process and a few recommendations to curb these challenges. It also provides a brief understanding of why MIS improves decision making.

**Keywords:** MIS, MIS concept, Need for MIS, Benefits of MIS, MIS model, Decision making.

## INTRODUCTION

Management information systems (MIS) is an organized, diverse and automated information system that is concerned with the process of gathering, storing and transferring relevant information to support the management operations in an organization. The data is distributed among the various departments in an organization. The processing of data takes place in various forms such as graphs, diagrams, charts, reports to generate accurate and relevant information for the management. MIS provides central storage of all the business information. MIS is used across all levels in an organization.

There are different types of management information systems. This paper focuses on decision making information system. MIS plays a vital role in not only collecting and man-aging information, but also representing it in various formats useful for the management to make important organizational decisions. MIS provides faster access to the required information which helps the organization to make effective and timely decisions regarding every aspect

such as investments, employments, products, etc depending upon the organization. Decision making basically refers to choosing a certain line of action from among several alternatives. It is integral management that occurs in every level of management and in every function. The effectiveness of the organization depends upon the quality of decisions that informs its operation. Decision making is a major metric to determine the organizations success or failure. This paper focuses on understanding the need, benefits, types of MIS, the MIS model, decision making system and majorly the role of MIS in decision making of the organization

## CONCEPT OF MIS

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”. There are different levels of decision making, for which information can be described as:

- 1) Source
- 2) Data
- 3) Inferences and predictions drawn from data

- 4) Value and choices
- 5) Action which involves course of action.

Management information system has a purpose to meet the general information needs of all the managers in an organization or in some subunits of the organization. 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”. 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 provided in the form of reports and outputs of mathematical simulations. There are two types of reports namely, periodic and special report. All managers use the information output as they make decisions to solve the firm’s problems. 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,

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and a database". All these definitions give a concise understanding of MIS as a whole.

### NEED OF MIS IN ORGANIZATIONS

Developments in computer technology made it possible for the managers to easily gather, integrate, store and manage the information in the form they require depending upon their needs and timing. Information is used simultaneously by many people. The information needs to be current, accurate, concise, timely, complete, well presented and storable. For organizational productivity, solely depending on personal computers is not reliable until it is used efficiently and effectively. Also, advanced technological systems for integrating and sorting the data can be costly unless the senior management provisions it to the staff. Thus, information systems came into picture. Information system is a mechanism that ensures information is available to the managers as per their need and time. It provides relevant information for decision making. Management information is an important input at every level in the organization for decision making, planning, organizing, implementing, and monitoring and controlling. Managers have to assimilate masses of data, convert that data into information, form conclusions about that information and make decisions leading to the achievement of business objectives. For an organization, information is as important resource as money, machinery and manpower. It is essential for the survival of the enterprise. Hence management information system plays a major role in managing information and making it easy for the managers to collect, integrate and assign the information and ensures effective and efficient decision making.

### BENEFITS OF MIS

MIS makes a major difference for the

business organizations. It provides several benefits such as:

- 1) Effective and efficient coordination between Departments
- 2) Quick and reliable referencing
- 3) Access to relevant data and documents
- 4) Use of less labor.
- 5) Improvement in organizational and departmental techniques.
- 6) Management of day-to-day activities.
- 7) Day-to-day assistance in a Department and closer contact with the rest of the world.
- 8) Provides a valuable time-saving benefit to the workforce.

For an organization the most important factor is to efficient and effective work in minimum amount of time. MIS supports this aspect of gaining profit and ensures that employees do not have to collect data manually for filing and analysis. Instead, that information can be entered quickly and easily into a computer program. As the data is growing, it is becoming difficult for business analysts to analyze the data, hence MIS provides a platform for building programs to access the data in response to the queries by management. With faster access to needed information, managers can make better decisions about procedures, future directions, and developments by competitors, and make them more quickly.

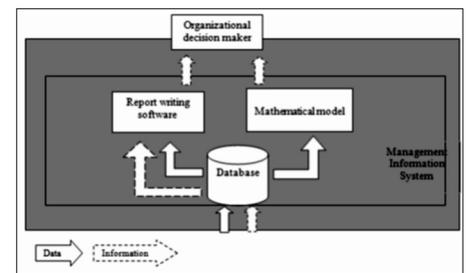
### THE MIS MODEL

This section describes how a MIS model actually looks like. The components of the MIS model consist of:

- 1) Database
- 2) Organizational decision maker
- 3) Report writing software
- 4) Mathematical model

The organization of these components can be referred from Figure A, given below.

Figure A



The working of the MIS model starts with data and information coming from different sources. The data provided by accounting information system is stored in the database. The data and the information are entered from the environment. Data based information is sent to the report writing software for generating periodic and special reports, as well as to the mathematical model for simulation of the various aspects of the organization's operations. The output from the report writing software and the mathematical model is then sent to the people who are responsible for solving the problems. To solve the problem, effective decision making is required for productivity. There are decision makers which may or may not exist in the firm's environment. The environment might consist of other organizations to which the firm has collaborated such as suppliers, to from an Inter Organizational Information System (IOS). In such case, MIS supplies information to the other member of the IOS.

### DECISIONS AND THE DECISION MAKING SYSTEMS

According to Haynes and Massie, a decision is a course of action which is consciously chosen for achieving a desired result. According to Trewatha and Newport, Decision making involves the selection of course of action from among two or more possible alternatives in order to arrive at a solution for a given problem. Considering the classification of decisions, there are classification based on the situation and their nature. The types of decision on the basis of

situation are based on the knowledge about the outcomes that are yet to take place. For a successful decision, the decision maker should be aware of the outcome that will take place once that decision is taken. In addition to that, if the decision maker has the full knowledge of the system then it is a situation of certainty. Contrastingly, if the decision maker has partial or incomplete knowledge of the system, then it's a risk situation. Lastly, if the decision maker has no knowledge of the system then it is a situation under uncertainty.

On the basis of nature, decisions can be classified as programmed decisions and non-programmed decisions

- 1) Programmed decision: - If a decision is based on rules, methods or some guidelines then it is called as programmed decision. The programmed decision making can be delegated to a lower level in the management.
- 2) Non- programmed decision: - A decision which cannot be made using a rule or method is called as non programmed decisions. This decision making is non-deterministic and is handled by top management.

*Decision making systems:* Decision making systems are based on the decision maker's or the manager's knowledge about the environment. They can be classified into two types:

*Closed Decision Making Systems:* If the decision maker operates in a known environment then it is called as closed decision making. The conditions for the same are as follows:

- a) The manager has a known set of decision alternatives with their outcomes fully in terms of values if implemented.
- b) The manager has a model, a method, rules where the decision alternatives can be generated, tested and ranked.

- c) The manager can choose one of the alternatives based on the goals and objectives. Example: Examination system to declare a pass and fail.

*Open Decision Making Systems:* If the manager operates in an unknown environment then the decision-making is called as open decision making. The conditions for the same are as follows:

- a) The decision maker doesn't know all the decision alternatives.
- b) The outcome of the decision is also not known fully i.e. the knowledge of the outcome may be probabilistic one.
- c) No method, rule or model is available to study and finalize one decision among the set of decision alternative.
- d) It is difficult to decide objectives and goals. Therefore the decision maker reports to that decision where aspirations and desires meet. Example: Pricing a new product.

### ROLE OF MIS IN DECISION MAKING

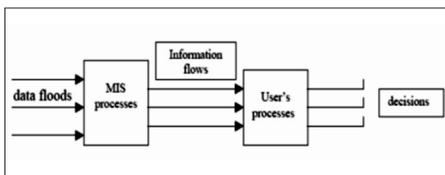
Decision - making is the process by which organizational members choose specific course of action out of several alternatives in response to opportunities and threats. The outcome of the decision making process either results in a good or a bad decision. A Good decision results in successful productivity of the organization and in the courses of actions that help an individual, group or organization to be effective, while a bad decision results in ineffective and inefficient choice of course of action thereby leading to poor or no productivity and overall loss of time, effort, finance and labor. Every organization grows, prospers or fails as a result of decisions made by its members. The success of decision-making is highly dependent partly on available information, and partly on the components of the process which are known as functions. For example,

if managerial objectives are absent or unclear, probably due to inadequate information, there is no basis for a search. Without the information, the search has no meaning because there will be no alternatives to compare search results, which will thereby yield an undesired result due to random choice of a particular course of action. According to Alabi the search could be through:

- 1) Undirected viewing: There is a general exposure to information where the viewer has no specific purpose in mind and is randomly searching for information from the entire information pool.
- 2) Conditioned viewing: There is a directed exposure to information. Yet it does not involve active search to a more or less clearly identified area or type of information.
- 3) Informal search: This is a relatively limited and unstructured effort to obtain specific information for a specific purpose. The information wanted is actively sought.
- 4) Formal search: This is a deliberate effort, usually following a pre-established plan, procedure or methodology to secure specific information relating to a specific issue. Simon (1984), a leading authority in management decision making considers that decision making comprises four principal phases:
  - 1) Intelligence- searching the environment for conditions that calls for decision making.
  - 2) Design- inventing, developing and analyzing possible courses of actions. This involves processes to understand the problem, to generate solutions and testing of solutions for feasibility.
  - 3) Choice- selecting an alternative or course of action from those variables.

- 4) Review- assessing and analyzing all the past choices.

Figure:B MIS Decision Making Process



For improvement in decision making using MIS, a relevant MIS strategy should be chosen and it should be ensured that the choice made is fully compatible with the system. Thus, time and money will be saved and the probability of selecting a wrong choice will decrease. Also, the selected MIS strategy should be compatible with the decisions made. That means there should be a common point between the decisions and the MIS strategy to be used by the organization.

**CONCLUSION**

Management Information Systems provides accurate, timely, relevant and complete information necessary to facilitate decision making in an organization. It helps in planning, control and operational functions to be carried out effectively and efficiently. It provides a wide range of decision alternatives for the decision makers, enabling them to make their choice depending on the system and the situation. It ensures that the choice results in more often, a positive outcome. These are the major reasons why MIS is chosen by renowned organizations for decision making and for management of information.

MIS with all of its advantages has a few challenges that need management involvement for smooth functioning of the organization when it comes to MIS. Decision making in such organizations would be faster and in line with the modern and efficient business practices. Business owners must learn to cope up with the ever changing trends in MIS and decision making, without which it

will be very challenging to make positive progress in decision making. Finally, it is vital to remember that improvement in decision making is fundamentally meant to ensure customer satisfaction while businesses continue to flourish in success. The MIS strategies should be adopted as per the requirement and should aim to achieve the business goals.

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