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ROLE OF MANAGEMENT INFORMATION SYSTEM FOR DECISION MAKING PROCESS IN THE ORGANIZATION

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ABSTRACT

Today's business environment is volatile, dynamic, turbulent and necessitates the demand for accurate, relevant, complete, timely and economical information needed to drive the decision-making process in order to accentuate organizational abilities to manage opportunities and threats. Information system is a professional and academic discipline concerned with the strategic, managerial and operational activities involved in the gathering, processing, storing, distributing and use of information and its associated technologies in society and organizations. Management Information System(MIS) is called as information system which is useful for decision making in an organization. The main emphasis of MIS is to analyze operational activities in the organization. MIS considers three primary resources i.e. people, technology and information and its purpose is to meet the general information need of all the managers in the organization. MIS ensures that an appropriate data is collected from the various sources, processed and send further to all the needy destinations. MIS provides information which is useful to manage organizations and institutions efficiently and effectively. MIS is commonly used to refer to the group of information management methods to support human decision making like decision support systems, expert systems and executive information systems. 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.

KEYWORDS

information system, MIS, MSS, DSS, ICT, decision making.

1. INTRODUCTION

Today due to increased organizational size, expanded operational scope, competitive influence and overall environmental vagaries, information needs of modern organizations have become quite enormous and challenging. Every organization needs to pay great attention to how information is gathered, stored, disseminated and utilized. Information system is organized combination of people, hardware, software, communication networks, data resources, policies and procedures that stores, retrieves, transforms and disseminates information in an organization. The purpose of information system is to improve the effectiveness and efficiency of the organization. MIS is a type of information system combine hardware, software and network products in an integrated solution and provides data to the managers in a format suitable for analysis, monitoring, decision-making and reporting. MIS is one of the major computer based information systems where Information and Communication Technology plays an important role in MIS. The system collects data, stores it in a database and makes it available to users over a secure network. It supports planning, control and operation functions of an organization by furnishing uniform information in the proper time frame to assist the decision makers. This system contains information about people, documents, technology, places and things within the organization and institution or the environment surrounding around it. This paper presents objectives of MIS, role of information and communication technology in MIS, MIS and decision making process and importance of MIS in the organization. [1][4]

2. OBJECTIVES OF MANAGEMENT INFORMATION SYSTEM

MIS is a system to convert data from internal and external sources into information and communicate that information in an appropriate form, to managers at all levels in all functions to enable them to make timely and effective decisions for planning, directing and controlling the activities for which they are responsible (Bee and Bee, 1999). MIS is concerned with the process of collecting, processing, storing and transmitting relevant information to support the management operations in any organizations. To take effective and rational decisions, timely and reliable information is essential and is procured through logical method of information collecting, processing and disseminating to decision makers. In today's world of ever increasing complexities of carrying out business, in order to survive and grow, every organization must have a properly planned, analyzed, designed and maintained MIS. MIS assist decision makers by providing the required information at various stages of decision making and help the organization to achieve its goals and objectives. Well-constructed and well-organized MIS can provide management with the knowledge it needs to reduce operating costs and increase profits. MIS can help management to increase efficiency by quickly providing critical information about procedures and operations. [2] [13]

In view of this, the followings objectives of MIS are set.

- To provide an overview of the information requirements of organizations.
- To analyze the role of management and its dependency on information.
- To discuss the role of information in the decision making process.
- To identify the need for information in day-to-day operations of an organization.
- To support the organization's strategic goals and decisions.
- To produce scheduled and demand reports.
- To serve as a strategic weapon to gain competitive advantages.

3. ROLE OF INFORMATION AND COMMUNICATION TECHNOLOGY IN MIS

In the last decade, there are significant advances in computer hardware and software, human-computer interfaces, communications and scientific tools and techniques. Information networks play a major role in controlling and directing the flow of huge amount of information among organizations. The power of technology has transformed the role of information in a business organization. M.I.S. is basically concerned with processing data into information. Data collection involves the use of Information Technology (IT) comprising computers and telecommunications networks (Email, Voice Mail, Internet, telephone, etc.). ICT plays an important role for storage, retrieval and transmission of message and become an essential component in the process of decision making in the organization to assist managers at all levels. MIS with ICT aimed at assisting managers and operating personnel, to produce timely, accurate information, well presented and up-to-date information required for efficient and effective process. Different systems are designed with the support of ICT like expert system, decision support system, executive decision support, information systems, enterprise resource planning etc. MIS combines raw data with information in expert system, ask the query and obtain result in the required format [4][5].

4. MIS AND DECISION MAKING PROCESS

In today's competitive world, managers have to assimilate large amount of data, convert that data into information, form conclusions and make decisions leading to the achievement of business objectives. MIS provide 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 is defined as a computer based Information System based on the database of the organization evolved for the purpose of providing information to the people in the organization (Bresfelean, 2009). MIS processes data into

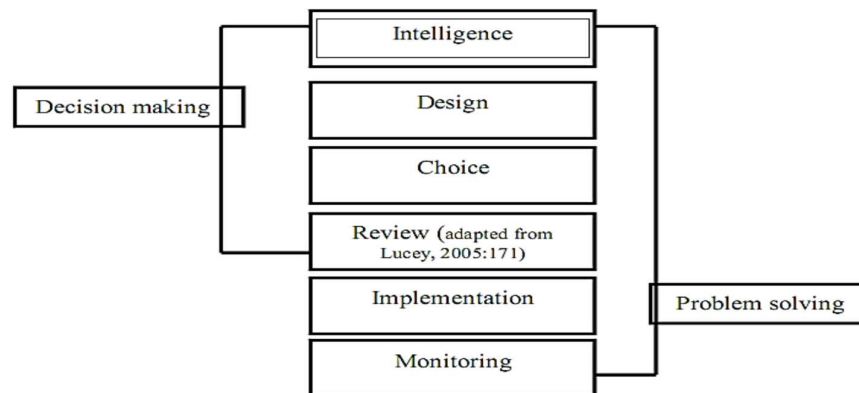
information, which is then communicated to various departments for appropriate decision making. MIS is basically concerned with the process of collecting, processing, storing and transmitting relevant information to support decision making in any organizations. It is also relevant for nonprogrammer decisions as it provides support by supplying information for the search, analysis, evaluation, choice and implementation process of decision making [8][10].

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. MIS is a system to convert data from internal and external sources into information and to communicate that information in an appropriate form to managers at all levels, in all functions to enable them make timely and effective decisions for planning, directing and controlling the activities for which they are responsible. 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. The effectiveness of any organization is dependent on the quality of decisions that informs its operation. The success of decision-making is highly dependent on available information and partly on the functions that are the components of the process. For effective decisions to evolve in any organization, therefore receiving information from and supplying information to people within the system are a necessity [13].

Simon (1984), a leading authority in management decision-making considers that decision making comprises four principal phases:

- Intelligence- Searching the environment for conditions calling for decision making.
- 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.
- Choice- Selecting an alternative or course of action from those variables.
- Review- Assessing past choices.

FIG. 1: PROCESS OF DECISION MAKING

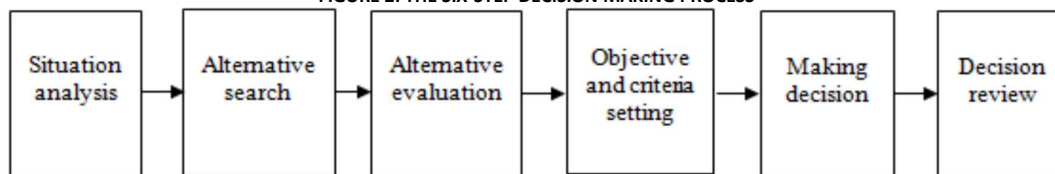


Simon has further classified decisions into two broad categories according to the extent that the process of decision-making can be pre-planned:

- **Programmed Decision:** These decisions are made using standard rules, procedures or quantitative methods. To make a programmed decision, the decision maker uses a performance program, a standard sequence of behavior that organizational members follow routinely whenever they encounter a particular type of problem or opportunity. For example, inventory control decisions, machine loading decisions, scheduling, etc. are routine and repetitive decisions and the organization typically develops specific ways and guidelines to handle them.
- **Non-programmed Decisions:** These type of decisions deal with unusual or exceptional situations. They are decisions made in response to novel problems and opportunities. This type of decision is associated with high degree of uncertainty, cannot be delegated to low levels, may involve things, but always involves people. The decisions like merger, acquisitions, launching of new product, personnel appointments etc. are non-programmed decisions.

MIS include interaction with other decision support systems, information inquiries, cross referencing of external information and potential data mining techniques. A typical MIS consist of six-step decision making process.

FIGURE 2: THE SIX-STEP DECISION MAKING PROCESS



Source: Simon, 1997

i) **INFORMATION ACCESS:** Managers need rapid access to information to make decisions about strategic, financial, marketing and operational issues. MIS simplifies and speeds up information retrieval by storing data in a central location that is accessible via a network and provides decisions that are quicker and more accurate.

ii) **DATA COLLECTION:** When decision is to be taken in groups and individuals, MIS assist for collaborative decisions. MIS enable all members in a project team to access the same essential data, even if they are working in different locations.

iii) **INTERPRETATION:** MIS help decision-makers to understand the implications of their decisions. The systems display raw data in a form of reports that enables decision-makers to quickly identify patterns and trends. Decision-makers can also use MIS to understand the potential effect of change.

iv) **PRESENTATION:** The reporting tools within MIS enable decision-makers to tailor reports to the information needs of other parties. If a decision requires approval by a senior executive, the decision-maker can create a brief executive summary for review. If managers want to share the detailed findings of a report with colleagues, they can create full reports and provide different levels of supplementary data.

At operational levels, decisions are structured with known decision rules and objectives. Sometimes the decisions at such level are the semi-structured type. Table shows decision types taken at different levels of management.

TABLE NO. 1: TYPES OF DECISION AT DIFFERENT LEVELS OF MANAGEMENT

Management Level	Decision Type	Information System Support
Strategic Management	Unstructured	Executive information system
Tactical/Middle Management	Semi-structured	Expert systems, decision support systems
Operational/Lower Management	Structured	Transaction processing, automatic decision-making or accounting models

Source: Renolds, 2003, pp 65

5. IMPORTANCE OF MIS IN THE ORGANIZATION

From the above, it is clear that MIS plays a vital role in the management, administration and operation of an organization. It simplifies and speeds up information retrieval by storing data in a central location that is accessible via a network. The information in MIS describes 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 the 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 [4].

1. MIS satisfies the diverse needs through variety of systems such as query system, analysis system, modeling system and decision support system.
2. MIS helps in strategic planning, management control, operational control and transaction processing. The MIS helps to the clerical personal in the transaction processing and answers the queries on the data pertaining to the transaction, the status of a particular record and reference on a variety of documents.
3. MIS helps the junior management personnel by providing the operational data for planning, scheduling and control and helps them further in decision-making.
4. MIS helps the middle management in short term planning, target setting and controlling the business functions.
5. MIS helps the top level management in goal setting, strategic planning and evolving the business plans and their implementation.
6. MIS plays the role of information generation, communication, problem identification and helps in the process of decision-making.
7. MIS revolutionized decision-making process through automated systems, through such systems, managers no longer rely on 24-hour service from workers, instead, machines are to be programmed to do things, such as routine decisions, in place of humans.

6. CONCLUSION

MIS is a critical component of the institution's overall risk management strategy and supports management's ability to perform reviews. MIS should be used to recognize, monitor, measure, limit and manage risks. In the age of liberalization and globalization, where information is doubling up every two or three years, a manager has to process a large voluminous data and has to take quick decision. Today organizations cannot grow without properly planned, designed, implemented and maintained MIS. 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. The use of ICT enables organization to have better operate in a global competitive environment and make effective decision making and improve the quality of decision making that is crucial factor for organization. Information resources have become of high demand in today's organizations and MIS is the only option for the satisfaction of such demands. To facilitate better flow of information, adequate MIS is the need of the hour.

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