

Comparative Study of Management Information System and Decision Support System

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Abstract - 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 of an organization. The data is distributed among the various departments in an organization.

MIS work in online mode with an average processing speed. Generally, it is used by low-level management. Decision support system is the powerful tool that assists corporate executives, administrators and other senior officials in making the decision regarding the problem. This paper focuses on understanding the concept of IS, DSS, MIS, the MIS model, Comparison of MIS and DSS, decision making system and majorly the role of MIS in decision making.

Keywords: MIS, DSS, Information System, Decision making system.

INTRODUCTION INFORMATION SYSTEM

There are three types of Information Systems 1. Transactional Processing Systems (TPS) 2. Management Information System (MIS) 3. Expert Systems (ES). MIS has several subsets such as Decision Support System and Executive Information System. MIS is a people-oriented field with an emphasis on service through technology. Management information are typically computer systems used for data managing to make searching, analyzing data and spring information easier. Information System, the Information and Decision System, the Computer- based information System. The MIS has more than one definition, some of which are given below.

1. The MIS is defined as a Computer based Information
2. The MIS is defined as a system which provides information support for decision making in the organization.
3. The MIS is defined as an integrated system of man and machine for providing the information to support the operations, the management and the decision making function in the organization

MANAGEMENT INFORMATION SYSTEM

Management information system (MIS) is one of the major computer based information systems. MIS has been defined in different ways but one of the most apt definitions is "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" (Waston, 1987).

The purpose of MIS is to meet the general information need of all the managers in the organization with the help of three resources like people, technology and information.

"A management information system refers to many ways in which computers help managers to make better decisions and increase efficiency of an organization's operation"

"A management information system is a business system that provides past, present, and projected information about a company and its environment. MIS may also use other sources of data, particularly data about the environment outside of the company itself." Management Information System can include software that helps in decision making, data resources, and hardware resources of a system, decision support systems, people management and project management applications, to enable the department run efficiently and effectively and with good productivity.

DECISION SUPPORT SYSTEM

Usually the DSS is used by all levels of people within a business organization. Top level management uses DSS for strategic decisions, middle management uses for tactical decision while first line supervisor's use deploys it for day-to-day operational decisions. 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. Decision Support System is used for taking a wide variety of decisions, but still the concept applies better to some types of decisions than to others. DSS represent a different approach to information system to support a variety of unstructured decision processes rather than finding and automating the structure. Programmed decisions are routine and repetitive decisions and Non-programmed decisions, in contrast, are typically one-shot decisions

DECISION MAKING SYSTEMS

In the 1950s, Herbert Simon and James March for the first time introduced a different decision making framework for understanding organizational behavior. Although they labored on the bureaucratic model by emphasizing on individual work in rational organizations and thus behaving rationally, their model added a new dimension: The idea that a human being's rationality is limited. By offering a more realistic alternative to Classical assumption of rational in decision-making, this model supported the behavioral view of individual and organizational functioning.

A decision support system (DSS) is an integrated set of computer tools allowing a decision maker to interact directly with computer to retrieve information useful in making semi structured and unstructured decisions (Power, 2002, Ezine, 2010, James, 1998). The Decision support system are able to help groups to make the decision .It should not be responsible for individual decision making .The Decision support system is easy to use .A user should not be required to be computer operator to generate reports .It should be convenient for the user to use DSS(Singh & Sharma, 2012).

Steps of Decision Making system

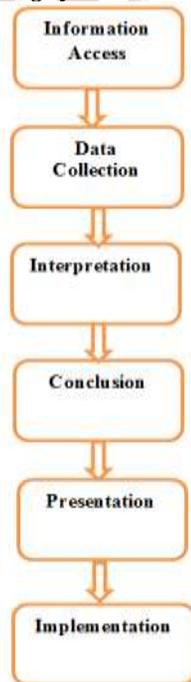


Fig 1. Decision Making system

Comparison of Decision Support System and Management Information System

MIS: MIS stands for Management information system.

DSS: DSS stands for Decision support system.

Level of support

- The management support system supports medium level of data.
- The decision support system supports huge volume of data.

Management Hierarchy

- The MIS is used by low level management
- The DSS is used middle level of management.

Amount of data

- MIS uses fixed amount of data.
- DSS uses flexible data design

Mode of processing

- Management information system works on online mode.
- Decision support system works on real time mode.

Volume of data

- In Management information system, the data volume is medium.
- In Decision support system The data volume is low.

Timeline of data

- The Management information system is associated with past and present time frame
- The time frame of DSS is present and future

Use of graphics

- The MIS uses very low support of graphics.
- The DSS uses large support of graphics.

The role of MIS in decision making process

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." MIS also provides support by supplying information for the investigation, the assessment and execution process of decision making. MIS helps managers in gathering the information and making a design in an organization to improve productivity and decision making. The MIS and its organizational subsystems contribute to decision making process in many basic ways. Nowadays, some of the organizations use MIS to assist managers for decision making. For example, to assist decision-makers in extracting synthesized information from a massive database such as the Current PublicTransport Record (CPTR) of Durban (CPTR), the Durban Unicity Council decided to make use of a PublicTransport Management Information System (PTMIS) developed by Stewart Scott. This system is for use byTransport planners and managers (Louw et al, 2001).

Power (2002) has stated that making decisions is an important part of working in 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 (MIS). Historically, the MIS was a manual process used to gather information and funnel it to individuals responsible for making decisions.

The more cautious and professional a person is, the better the person gets an assurance of positive prospects of in MIS with regards to decision making and other related areas of business. As a fundamental point, a good number of MIS used today can perform multiple tasks all at the same time. This potential to multitask increases efficiency in a company since several business operations can be conducted simultaneously.

CONCLUSION

It should not be responsible for individual decision making. The management information system focus only on fully structured task or routine for decision but decision support system focuses on structure as well as semi-structured data. Beside the above differences both MIS and DSS are core of an information system satisfying the requirement of different levels of management.

Its role in decision-making cannot be over emphasized because effective decision-making is ultimately a function of accurate, timely, relevant, complete and economical information, which MIS produces.

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