Mis. Vs. Dss in Decision Making

By K.V.S.N. Jawahar Babu & B.Muni Raja Sekhar

KMM Institute of Postgraduate Studies, Tirupati

Abstract: MIS means MANAGEMENT INFORMATION SYSTEM. The Primary purpose of MIS is to help an organization achieve its goals by providing managers with insight into the regular operations of the organization so that they can control, organize, and plan more effectively. One important role of MIS is to provide the right information to the right person in the right format at the right time. In short, an MIS provides managers with information, typically in reports, that supports effective decision making and provides feedback on daily operations. A decision support system or DSS is a computer based system intended for use by a particular manager or usually a group of managers at any organizational level in making a decision in the process of solving a semi structured decision.

Keywords: Decision Making Process, Decision Support System (DSS), DSS Characteristics.

Features of MIS.

GJMBR-A Classification: FOR Code: 150301, 150302 JEL Code: O30

Strictly as per the compliance and regulations of: 

© 2012, K.V.S.N. Jawahar Babu & B.Muni Raja Sekhar. This is a research/review paper, distributed under the terms of the Creative Commons Attribution-Noncommercial 3.0 Unported License http://creativecommons.org/licenses/by-nc/3.0/), permitting all non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.
Abstract - MIS means MANAGEMENT INFORMATION SYSTEM. The primary purpose of MIS is to help an organization achieve its goals by providing managers with insight into the regular operations of the organization so that they can control, organize, and plan more effectively. One important role of MIS is to provide the right information to the right person in the right format at the right time. In short, an MIS provides managers with information, typically in reports, that supports effective decision making and provides feedback on daily operations. A decision support system or DSS is a computer based system intended for use by a particular manager or usually a group of managers at any organizational level in making a decision in the process of solving a semi structured decision.

Keywords: Decision Making Process, Decision Support System (DSS), DSS Characteristics, Features of MIS.

I. Introduction

The Management Information System is a collection of men, tools, procedures and software to perform various business tasks at various levels in the organization. Many organizations have separate MIS departments which are involved in maintaining records, performing transactions, report generations and consolidation of the important information which will be supplied to the various levels of the management.

II. Features of Mis

1. In any organization managers will have varieties of task to manage. MIS is mainly designed to take care of the needs of the managers in the organization.
2. Organizations will have different departments like marketing, production, sales, inventory, maintenance etc. Each of these departments function individually and also in relationship with other departments. Information is available in abundance. MIS aids in integrating the information generated by various departments of the organizations.
3. MIS also helps in establishing mechanism to eliminate redundancies in data.
4. MIS as a system can be broken down into sub system; each sub system may be programmed. This results in easy access of data, accuracy of data and information. It helps in maintaining the consistency of data.

III. Decision Making Process

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. The model suggested that when an individual makes decision, he examines a limited set of possible alternatives rather than all available options. “He accepts satisfactory or good enough” choices, rather than insist on optimal choices. He makes choices that are good enough because he does not search until he finds perfect solution to a problem (Gordon, 1993). Simon divided kinds of decisions into two basic types: programmed and non programmed decisions.

a) Programmed decisions are routine and repetitive decisions, and the organization typically develops specific ways to handle them. For this kind of routine repetitive decisions, standard arrangement decisions are typically made according to established management guidelines.

b) Non-programmed decisions, in contrast, are typically one-shot decisions that are usually less structured than programmed decisions (Certo, 1997). Simon’s model of decision-making has three steps (Figure 1). www.ccsenet.org/ijbm International Journal of Business and Management Vol. 6, No. 7; July 2011 Published by Canadian Center of Science and Education 165.
After Simon, Huber (1980) expanded the model for decision making process and added two steps into Simon’s model (Figure 2).

After them, Gorry and Morton (1971) classified decisions by its structure into three levels; structured decision, in which the ingredients, or variables, that comprise a decision are known and they can be measured quantitatively. 

Unstructured decision is one that the ingredients, or variables, that comprise a decision can not be measured quantitatively.

Semi structured decision is in between structured and unstructured decisions. Usually most business decisions are semi structured. Then Gory and Morton continued on computer applications in terms of the degree of structure in the decision they are intended to make and the management level that they support (Gorry, Michael, 1971). Figure 3 shows the Gory and Morton grid.
Figure 3: The Gory and Morton grid (Gorry & Michael, 1971)

Figure 4: The six-step decision making process (Simon, 1997)
PHASE-I

- What are the key elements of the situation?
- What constrain effect the decision?
- What resources are available?

Situational Analysis

PHASE-II

- Is the problem stated clearly?
- Do group member understand what they will work on?
- By what criteria will decision-making be judged?

Objective Setting

PHASE-III

- Are those individual most involved in the problem also involved in the decision-making?
- Has complete information been sought? Are information holders involved in the decision-making?
- Is a diversity of means used to generate idea?
- Is all idea encouraged, regardless of their content?

Search for Alternative
Figure 5: The six-step decision making process in details (Simon, 1997)

The six-step decision making process increases the likelihood that a high quality, accepted decision will result.
A decision support system or DSS is a computer-based system intended for use by a particular manager or usually a group of managers at any organizational level in making a decision in the process of solving a semi-structured decision (Figure 7). The DSS produces output in the form of periodic or special report or the results of mathematical simulations (Raymond, 1990). It is difficult to pinpoint that are completely structured or unstructured. The vast majorities are semi structured. This means that the DSS is aimed at the area where most semi structured decision is needed to be made.

**Figure 6:** An MIS Model (Raymond, 1990)

**Figure 7:** The DSS focuses on semi structured problems (Raymond, 1999)

### V. DSS Characteristics

Decision support system has a number of characteristics, which include following:

- **DSS provide support for decision maker mainly in semi structured and unstructured situations** by bringing together human judgment and computerized information. Such problem can not be solved (can not be solved conveniently) by other computerized systems, such as MIS.
- **DSS attempts to improve the effectiveness of decision-making** (accuracy, timeliness, quality) rather than its efficiency (cost of making the decision, including the charges for computer time) (Davis & Olson, 1985). www.ccsenet.org/ijbm International Journal of Business and Management.
DSS provides support to individuals as well as to groups. Many organizational problems involve group decision-making. The less structured problem frequently requires the involvement of several individuals from different departments and organizational levels.

Advanced DSS are equipped by a knowledge component, which enables the efficient and effective solution of very difficult problems (Turban & Aronson, 1998).

A DSS can handle large amount of data for instance advanced database management package have allowed decision makers, to search database for information. A DSS can also solve problems where a small amount of data is required.

VI. The Role of The DSS in The Process of Decision Making

Previously it was mentioned that the MIS is best suited in identifying problems and helping managers understanding them to make suitable and correct decisions, but the main weakness of MIS is that it is not aimed at the specific need of the individual and group decision makers. Very often the MIS does not provide exactly the information that is needed to solve problems for individual and group decision making. DSS is tailored to the specific need of the individual and group managers. Therefore, the DSS can extend this support through the remaining steps (in objective and criteria setting, alternative search, alternative evaluation, making the decision and decision review) of the decision making. Finally DSS has more roles in decision-making and problem solving than MIS (Raymond, 1998). The other researches such as the following confirm this idea: Uma (2009) has stated that a Decision Support System 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.

VII. Discussion

Managers in all levels of organization hierarchy need precise and suitable data and information to make decisions that increase organizational performance. Such concept suggests an informational need of supervisory level is different from top level. At the same time the type of information also at each level is different. At lower level, supervisors need defined, clear, precise, quantifiable and internal organizational information but at the top level a manager needs undefined, future oriented, infrequent, summarized, relatively, non quantifiable and mostly external information. Such concept is illustrated in Figure 8.

Figure 8 : Information and Decision-Making (Certo, 1997)

In general, different kinds of data and information are suitable for decision-making in different levels of organizational hierarchy and require different information system to be placed. Such system could have explicit effect on each step of decision process in solving problems. The role of different information systems is depicted in Figure 9.

Figure 9 : Organization and Information System (Davis & Olson, 1985)
The perceived concepts, which are based on the role of MIS and DSS in the decision making process, especially with emphasize on MIS and DSS which provide information services for middle and higher level managers in the process of decision making are integrated in Figure 10.

Figure 10: Transferring data from EDP system to DBMS and managers' decision making process. In Figure 11 it could be noted that data from EDP system transfers to DBMS and helps managers to make programmed and non-programmed decisions. The flow of data after moving from EDP system to DBMS will move from MIS level to DSS and at the same time part of processed data will be restored in EDP system.

VIII. Conclusion

The paper entitled 'MIS Vs DSS' gives an impact on the important function of top management. It is also used to generate the reports with the help of advanced technology having maximum characteristics of good information by which the decisions are to be taken related with the functionality of management decisions. The MIS model developed specifically helps HR managers to keep the control on working of the staff at various levels. The system has been tested above module in Birla Corporation Ltd. The Reports generated are as per the format by which it will help top management to take decision concerned with human resource in attendance recording and capturing which is one of the basic needs of any organization.

References