

# Analysis of Management Information Systems Reports for Decision-Making

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**Abstract:** *This paper aims to highlight the roles of the Management Information System (MIS) such roles explained, analyzed and described in light of decision-making capability. The process of decision-making and its impact in management's senior level explained in the business organization with a stress on decision-making in automatic method. The challenges, limitations and difficulties are that discussed in MIS and the set of SIX proposed recommendations to increase the effectiveness of MIS in the process of decision-making in senior management level.*

**Index Terms:** *Decision-making, information systems, IS, management information system, MIS, TPS.*

## I. INTRODUCTION

The types of Information Systems (IS) as follows: Transactional Processing Systems (TPS), Management Information Systems (MIS), and Expert Systems [1]. However, for the purpose of this study, only Management Information Systems (MIS) will be examined. MIS encompasses a number of subsets including Decision Support Systems and Executive Information Systems [2]. In the context of decision support, the role played by MIS is best explained in the form of a subset known as Decision Support System (DSS). DSS entails a computer based system (an application program) with the capacity of performing analysis of organizational (or business) data. Then, the outcomes which are presented in an appropriate manner will assist in the business decision making process. DSS is essentially an informational application that relies on the already entered information in the provision of response to a given query [3].

DSS can be used when user needs to obtain comparative sales figures for one week/month and the subsequent estimated revenue figures using the suppositions of new product sales. It also can be used to generate consequences of diverse decision options, based on past experience [4]. At times, overlap can occur between the broad categories of IS. In this regard, with the application of an expert system or Artificial Intelligence (AI), DSS could provide graphical information. The employment of DSS can be seen among all types of individuals in business organization, for different purposes. For instance, for top level management, DSS is employed for strategic decisions, while for middle management; DSS is employed for tactical decision, whereas among first line supervisors, the application of DSS is for daily operational decisions [5].

Notably, in any business, the decision-making process is an integral aspect for both the organizations and people who ardently depend on these decisions in order to preserve their presence in the entrepreneurship domain that is marked by aggressive competitions [6]. In this regard, MIS has been an increasingly useful in the institutionalization as well as in the decision making process. Meanwhile, being a subset of MIS, DSS is a potent tool for intelligent decision making. Somehow, albeit the great reported benefits of MIS usage in decision making, it appears that the system also carries with it several surmountable damaging impacts to organizations. For this reason, among critiques, they propose the minimal usage of MIS, or the non-use if at all possible [7].

In order to comprehend the concept of MIS, it is important to define it. As explained by past scholars, MIS essentially contains three facets as follows: management, information, and systems. Relevantly in Kumar, the notion of management is described as the process that allows managers to plan, organize, introduce and control operations in their businesses. In essence, management will not exist without the presence of subjects/workers to be managed [8]. Meanwhile, information is basically associated with the analysed data, implying that business related information originates from the data analysed by means of business statutes, principles and theories proposed by diverse macroeconomists.

In regards to the notion of system, Kumar explained it as a group of merged elements to achieve a mutual objective. In essence, the systems of business comprise smaller systems or subsystems, and the primary purpose of these subsystems is to assure efficacy of the large systems. It should be noted that different organizations generally embrace different systems, and such differences are dictated by many aspects including the nature of organizational operations, business size, and so forth [9].

Hence, based on the above, the notion of Management Information Systems (MIS) can be described as a system that employs information to assure appropriate business management. In essence, the features of MIS all are functioning in tandem [10]. This is to assure the system is fully efficient. Hence, considering the interdependence of the features, failure in one part could cause failure to the entire system.

Without doubt, in the context of business, good management of information systems contributes to good decision and vice versa. For this reason, the present study will examine the roles of management systems in decision

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making [11]. As such, the study is initiated through the provision of a brief overview into the process of decision making in businesses while establishing the point in which it establishes link age with MIS. Then, this study will analyse and review the roles played by MIS in decision making improvement [12]. Next, the problematic areas linked to MIS and decision making are highlighted. This is followed by the provision of recommendations for the solution of the underpinning issues. In the last part of the study, a conclusion is presented to sum up the entire paper [13].

## II. DISCUSSION—ROLE OF MIS IN IMPROVING DECISION-MAKING

In the context of all businesses, decision making is a vital portion because most organizational operations involve management decisions as well as those made by key stakeholders. In this regard, adequate and appropriate decision is crucial to assure the smooth operation of the business. On the other hand, decisions are made according to the available information, and in order to generate good decision, good information system is required. Therefore, organization needs to assure that the management information system they employ is good. As should be noted, good MIS generates good decision, while bad MIS produces bad decision. Furthermore, the quality of managerial decision-making is dictated by the accessible information. It is therefore important for managers to nurture an environment which promotes the growth and viable propagation of quality information.

Prior to the identification of the MIS strategy for usage, the organization needs to be sure that it is choosing a strategy that is completely compatible with its presently employed system. Choosing the compatible MIS strategy will prevent the organization from making the erratic choices while also preventing the organization from wasting its financial resources. Furthermore, the strategy or tool of MIS employed by the organization needs to be in agreement with the decisions which are to be made. Hence, there needs to be a linking point between the decision to be made and the MIS to be employed.

Management Information Systems is inherently very complex and delicate. For this reason, its usage has to be with significant amount of caution. As such, organization needs to select the right individual to control the systems; the person to be hired needs to be professional and would practice caution when performing the task. Hiring such person assures positive prospects of in MIS in terms of decision making and other linked business areas.

MIS makes available a suitable platform for good decision making. Also, there needs to be an established system to acquire information in MIS. Otherwise, making decision would be a difficult process for organization. Without established systems, organizations would be forced to make baseless decision as they would have insufficient confirmed information. In addition, by means of its systematic tools, well-timed information and sufficient managerial policies and regulations, MIS provides a solid platform for the formation of solid decisions. Besides that, the statutes of MIS concerning businesses guide business owners during their critical business decision making. This prevents managers and key decision makers from going

beyond their boundaries or their business mandate. With MIS as guidance, businesses are consistently checked and balanced. As such, the considered decisions would be the justified ones. On the other hand, the decisions that are untested are abandoned.

The competency of MIS in guiding decision-making eases the progress and improvement of the company operations. Furthermore, programs of MIS are mostly equipped with the ability to furnish real-time updates regarding company or system occurrences. The immediate updates assist the managers in taking the appropriate actions at the right time particularly during the event of crises. By means of timely decision-making, the progress and improvement in company operations will be augmented.

For modern-day companies, minor lapse in decision making can cause significant losses. Nonetheless, in achieving better company securities, Management information systems are highly vital. In general, owner can easily program the management information systems to perform specified actions at specified times. In order to execute certain routine checks, managers can actually program the system. Routine checks assist in the improvement of a company as bugs or problems can be identified easily. Not only that, the programmability of the majority of MIS makes it time efficient and less costly. Hence, programmability of MIS allows business managers to program the systems to automatically find some deficiencies and resolve them even.

As MIS requires less time and resources, the manager or system operator can employ the unused time and resources to monitor or resolve problems for other important applications. Furthermore, consistent programming of MIS allows organization to make positive progress, considering that the use of MIS can allow easy channeling of time and resources into the correct business paths. A sufficient amount of employed MIS today can simultaneously execute multiple tasks, and this multitasking capacity increases the company's efficiency. In terms of decision making, the multitasking capacity assures speedy decision making, as opposed to the use of systems without the multitasking capacity.

Certain MIS allows multiple users to easily access similar content simultaneously. Such capability can potentiality increases the business operators' accountability. Somehow, a lot of organizations appear to have poor accountability due to the incompetency of those with the accountability of handling certain details. Accordingly, with the use of appropriate MIS which provides safeguarding through its "gate-keeping" keeping function, it assures the efficient decision making and organization's overall well-being.

Also, a lot of MIS include the function of record keeping or institutionalization of data bases, and this allows the easy storage of invaluable or confidential information. It should be noted that decision making usually requires the reading of certain past work, which implies the need for record-keeping. Contrariwise, databases are generally for furnishing future spaces of information retrieval. In the



context of MIS, its tool for record keeping and data-basing unquestionably guarantees that decisions are viably made while businesses being efficiently run.

MIS improves the decision making of managers by providing them with quick access to information. MIS allows the interaction with other systems of decision support, information inquiries, cross-referencing of external information, as well as prospective techniques of data mining. Using MIS, strategic goals can also be compared with practical decisions, and this provides managers with a sense of how their decisions match with the organizational strategy. In other words, management information systems greatly contribute to the attainment of practical information from organizations. Somehow, only a handful of organizations are seriously assuming this role, limiting the decision making improvement through viable information tailoring.

The recent years have witnessed the increase in automated Management Information Systems usage, and these systems have significantly revolutionized the process of decision-making in a positive manner. The automated MIS usage saves the companies from having to depend on 24-hour services from staffs because the systems can be programmed to perform tasks on behalf of human workers. Such systems provide great assistance to managers particularly in making technical decisions as the automated system can perform the interpretation and provide solution.

Still, it will not be wise to fully rely on the automated systems particularly when making decision that could adversely affect to the organization. In fact, it is not impossible for automated systems to be faulty at times, which would call for recurrent periodic monitoring. As prevention, managers and company owners must find balance between the use of human element during operation and the allocation of certain tasks to the system. When balance is achieved, Jahangir stated the human and the system could both reach their potential, while the organization could achieve its goals.

The mechanisms of MIS involve the systematic methods of operations for the purpose of assuring the orderly and well-planned business decisions. This also stimulates objectivity during decision making. Indeed, MIS's systematic operations improve businesses and the process of decision-making. Meanwhile, the principles, strategies and operation methods in MIS can be rationally employed by macroeconomists in order that they could differentiate the good decisions from the bad ones. Here, good decisions are encouraged and the bad ones are discouraged. This leads to the encouragement of decision positivity which directly will enhance the process of decision making.

A lot of scholars are in agreement to the notion that MIS appear to be more of a practical tool of business with testable operations methods. For this reason, the proposition and argumentations of MIS present tangible information usable for making validated decisions. Contrariwise, most of the presently available business tools appear to be hypothetical. Actually, the decisions made based on MIS have been found to have greater accurateness and viability as opposed to those made using other systems. This stimulates the improvement of business decisions. Also, the role played by MIS is integral in making available the

diverse streamlined options that allow decision-makers to make their desired choices. This way, the outcomes of whichever choice made by the decision makers would likely be positive. This is why MIS is preferred by decision makers.

### III. CONCLUSION

The positive role of MIS in decision making process has been evidenced. Still, there are a number of challenges that have been found to compromise the effectiveness of MIS as discussed below.

Considering that MIS is dynamic in nature, it can be difficult to sustain its principles, strategies, propositions or ideas, even. In different situations, different decisions are required. As such, some MISs appears to be inflexible, posing challenge to its theorists. Furthermore, significant amount of expertise is required in the institutionalization, programming, monitoring and assessment of MIS, and unfortunately, a lot of organizations are lacking in that department. Also, it is fairly expensive to run MIS programs for some organization. This is particularly true for small organizations as these organizations are generally not affluent financially. It should be noted that while MIS is more of a science-oriented field, business is art-oriented, and therefore, for some, it is rather challenging to find a middle ground between both. Besides that, majority of organizations have vague decision making system, and for this reason, even the right tools of MIS may not improve decision-making.

Considering the limitations discovered in this study, in addition to other underpinning issues discovered in the main discussion, this study proposed the following recommendations:

The monitoring of MIS should be increased as this will prevent dire consequences. Accordingly, managers and business owners need to identify the method of tailoring information in a manner that corresponds to diverse processes of decision making in many businesses. It is important that management encourages the effectuation of a reciprocally co-dependent and balanced MIS. Here, workers and automated systems are managed with due respect. For business organizations, it is important that they could identify a way to instill the knowledge regarding new MIS so that businesses would remain abreast with new inception.

It is important that a clear decision making system is embedded in businesses. This will produce a feasible working environment for MIS. Accordingly, having a centralized place where all decisions in businesses are channeled via business managers is a good start. This will assure the use of professional personnel who could competently run MIS and the decision making process as well.

The present study is expressively analytical in nature. Still, there should be more research carried out in this domain in order that the public know-how is increased. Not only that, it is important that owners of business acclimatize themselves to the fluctuating trends in MIS and decision



making because otherwise, making positive progress in decision making would be difficult. As a final point, it is crucial to understand that improvement in decision making is essentially for assuring customer satisfaction, and at the same time, the businesses remains successful. Hence, all strategies of MIS need to be fashioned in a manner that promotes the achievement of business goals.

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