

## Components of an Effective and Robust Management Information System: An Exploratory Study

<sup>1</sup>Priyanka Singwal, <sup>2</sup>Dr. Deepak Kaushal, <sup>3</sup>Darwin M Cacal,

<sup>1</sup>Asst. Professor, School of Management Studies, Graphic Era Hill University, Dehradun 248002,

<sup>2</sup>Associate Professor, Department of Management Studies, Graphic Era Deemed to be University, Dehradun,  
Uttarakhand, India, 248002

<sup>3</sup>Instructor/ Isabela State University, Philippines

### ABSTRACT

This paper is going to examine, several various components related to an effective and robust management information system. In the recent years, developments done in the society, people all over the world have come to recognise the importance of information and from here onwards, Management information system got up. MIS is basically involved with data's related to an organisation, and after processing such information into facts, they are then communicated and shared to different diverse users of various Departments in an organisation, for appropriate as well as powerful decision-making. The major purpose of this paper is to let us understand, their effectiveness to help executives of a company that will lead them to consider decisions that advances their organisational goals. Present paper is going to provide us with immense knowledge and make us realise, how Management Information System will lead towards to identify numerous non-performing areas and most important leads to make better communication and better knowledge of customers needs, for a robust management system. In combination, it also explores key elements that make up such systems and eventually thanks to the cloud, employees and customers both are able to access information like never before.

**Keywords:** Information, Management Information System, Development, Organisation, Communication.

### INTRODUCTION

With the advancements taking place in the Information and Communication Technology, it is becoming an easy tool for an organisation to collect data from numerous online systems that will help them to support accurate management decision-making, analyses of information and review reports (Holtgrewe, 2014). The Management and Information System can be referred, as a computer based-system of hardware and software that therefore, acts as a foundation for a corporation's operations (Thite, et.al, 2012). An MIS system gives an organisations and corporations with technology, that allows proper communication and data flow, assisting towards fixing problems and thus, providing an enterprise with an aggressive facet. The major objectives of an MIS, is to help an executive in conducting decisions that are further the organisation's strategies that will eventually put into effect the organisational structure and dynamics of the company that will lead to manage the corporation with more efficiently to gain an aggressive benefit. They are considered as an old management tool, and such tools are being used by people to conduct better management and scientific-decision making. Data and information are one of the most vital useful resources of Management Information Systems. For an effective and robust body our system requires air, water and clothes and we are also dependent upon information. Therefore, to make our life more interesting and acquire the feeling of being part of the social system, we need to understand and recognise our surroundings and for that we need information. With the involvement of such tools and techniques almost all employees can make educated judgements. In an organisation the primary goal of such systems are to provide the higher executives with remarks on their performances so that, the higher management can hold a watch at the complete business. It can also be defined as a set of procedures which, when performed offers facts to guide towards better decision making. Effective and robust information management system is not that easy. The paper draws together number of components for a successful MIS, with a wide range of business needs to meet complex organisational issues to address. Such tools and techniques should be mandatorily used throughout any organisation in their development, maintenance and use. These are not a new concept; it is as old as the hills. Excellent management information system can assist people to resolve greater problems, which

include enhancing productiveness, speeding up business enterprises decision making process, strengthening teamwork, by improving the organisations image in the real world and so on (Beheshti & Beheshti, 2010). At the end, this article will also focus to let us understand that their effectiveness can only be achieved through the maximisation use of modern computers and network communications generation to reinforce organisations information management. Major components like data resources, people resources, software and hardware resources as well as all sets information are undertaken for an effective and robust MIS to achieve the organisational goal. MIS plays a very important role to furnish relevant information with the inclusion of such components thereby, enhancing the overall quality of decision-making that adds to company's value (Mishra, et.al, 2015).

## **LITERATURE OF REVIEW**

In an organisation, the key focus of the management is to improve their Information management practices with an organised integration of hardware and software technology, information, data and processes across both the public and private organisations. The Management Information System or MIS can be referred, as a concept that is related to a man, system, marketing and methods for gathering information as well as records from both the internal and external sources therefore, processing such records for the purpose of facilitating the process of decision making of the business corporations (Ada & Ghaffarzadeh, 2015). Involvement of information and computer technology, has added on greater dimensions which are as follows-speed, accuracy, and accelerated volume of information that permit the consideration of more alternatives in decision-making procedure. Before, the introduction of computer technology the MIS used to be operational in organisations and these techniques were majorly existed to supply executives and managers with data's that would ensure them to plan and control their business operations. Management Information System can also be defined as an integrated set of components or entities that interact to attain a particular function, goal or objective (Sørensen, et.al, 2010). Technological revolutions in all sector of the economy are availing modern managers in an organisation, to have access to a large amount of selective records, data and information for some complicated tasks and decisions. In today's world in all sectors of economy, there is a huge amount of data and records, available to all managers and this had therefore, meant that such executives are increasingly getting more relied on management information system to get access to such exploding data. MIS systems help to collect information, data and records systematically and routinely that provides valuable information to support managerial function. A good MIS may be used not only for the storage of electronic and digital information alone but it should also be able to support the analysis required by management (Tang & Chaw, 2016). Such system utilizes computer hardware and software programmes, manual processes and numerous models for analysis. MIS is also able to satisfy multiple needs of an organisation across numerous functional departments (Law, et.al, 2010). In the recent years, the modern management system in every organisation is basically based on Management Information System, the complexity of Information management and the competitive nature of commercial enterprises towards handling the organisations operations with skills and foresight to add to the crisis. In a company, an effective and robust management process is executed through a variety of decisions taken at every step of planning, organising and staffing. There are different components for an effective and robust Management Information System which comprises are namely people, data, hardware and software, business processes to achieve organisational goals (Hendriks, 2012)-

**PEOPLE:** This is considered as one of the major component because they are usually those users who use the information system to record the day to day financial transaction of an organisation. Such personnel's are usually very qualified professionals in management like the accountants, human resource managers, etc. The management of an organisation usually has some support staff members who, ensure that the system is running properly in an organised manner.

**DATA:** For an effective MIS, the data recorded on a daily basis needs to be documented and properly recorded on a daily basis (Krishnan, et.al, 2010). The recorded data is then processed and then, it is converted into the

required management information for future use. If any kind of data is not immediately required, it is saved as an organisational file. Therefore, in this activity the data and information are retained, that can be used later in a prepared manner. Collected data are properly organised, analysed and manipulated by using various statistical as well as mathematical tools, operations research and other business models.

**BUSINESS PROCEDURES:** These are such processes which are considered as best practices that tend to instruct users of an organisation and every other component on how to operate the business operations effectively. In a corporation the business procedures are usually developed by people such as consultants and users.

**HARDWARE:** The computers, laptops, printers, internet and networking sources are all items that make up hardware components. Hardware's are considered as one of main components that provides the computing power and the ability to process data.

**SOFTWARE:** These are such programs which are run on the hardware. Therefore, the software programs are basically broken down into two fundamental categories specifically named as software programs and application software. System software are referred as operating system i.e. Ubuntu, Windows, Mac Operating systems and so on. The applications software program refers to some specialised software for undertaking organisational tasks along with a payroll program, banking system, point of sale device and hence, forth. Software is described as an important tool to carry out robust business operations. Most of the organisations use productivity tools such as Microsoft Excel, Microsoft word to perform specific tasks that suits their needs.

Management Information System (MIS) ought to be designed and developed primarily based on the records that managers want (Fountas, et.al, 2015). The above discussed components, not only accelerates the processing of data, storage and retrieval of records but, also additionally brings flexibility in a system, via introducing numerous alternatives that help to facilitate end-user tasks. Components need to be protected through implementing appropriate safety regulations and procedures that don't hinder the seamless go with the flow between its users. It becomes useful for an organisation towards minimising risks while making decisions. Nowadays, many business organisations are constructing their effective management information systems to manage their organisational operations. The MIS systems are developed relatively over a long period of time and these systems are not brought into operations overnight. Effective MIS will provide a management with relevant sources of information about every aspect of activities and also guide the management of an organisation towards finding out solutions of any mistakes (Léger, et.al, 2011). That is why; they are very much useful to carry out comparisons related to business organisation performance.

**Objective:** To explore the components of an effective and robust management information system

**Methodology:** This study is descriptive in nature in which the data were obtained from the 189 respondents which include organizations or businesses that are actively using or considering implementing an MIS. This could include businesses of various sizes and industries, government agencies, non-profit organizations, and educational institutions. A checklist question was used to analyze and interpret the data. In a checklist question, respondents choose "Yes" or "No" for all the questions.

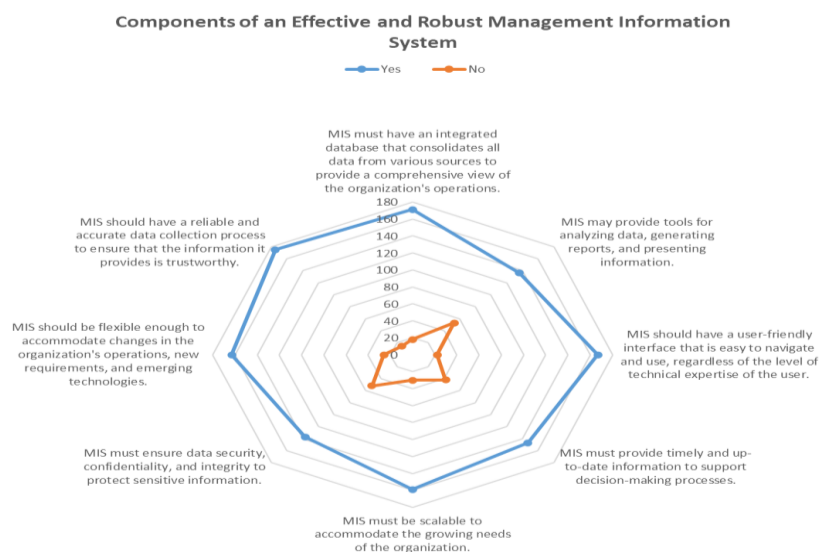
**Data Analysis and Interpretations:**

**Table 1 Components of an Effective and Robust Management Information System**

SL No.	Components of an Effective and Robust Management Information System	Yes	% Yes	No	% No	Total
1	MIS must have an integrated database that consolidates all data from various sources to provide a	171	90.48	18	9.52	189

	comprehensive view of the organization's operations.					
2	MIS may provide tools for analyzing data, generating reports, and presenting information.	136	71.96	53	28.04	189
3	MIS should have a user-friendly interface that is easy to navigate and use, regardless of the level of technical expertise of the user.	167	88.36	22	11.64	189
4	MIS must provide timely and up-to-date information to support decision-making processes.	147	77.78	42	22.22	189
5	MIS must be scalable to accommodate the growing needs of the organization.	159	84.13	30	15.87	189
6	MIS must ensure data security, confidentiality, and integrity to protect sensitive information.	137	72.49	52	27.51	189
7	MIS should be flexible enough to accommodate changes in the organization's operations, new requirements, and emerging technologies.	163	86.24	26	13.76	189
8	MIS should have a reliable and accurate data collection process to ensure that the information it provides is trustworthy.	175	92.59	14	7.41	189

Table 1 shows the study of role of happiness in individual work performance. It was found that around 92.5% respondents accept that MIS should have a reliable and accurate data collection process to ensure that the information it provides is trustworthy, must have an integrated database that consolidates all data from various sources to provide a comprehensive view of the organization's operations (90.4%), should have a user-friendly interface that is easy to navigate and use, regardless of the level of technical expertise of the user (88.3%), should be flexible enough to accommodate changes in the organization's operations, new requirements, and emerging technologies (86.2%), must be scalable to accommodate the growing needs of the organization (84.1), must provide timely and up-to-date information to support decision-making processes (77.7%), must ensure data security, confidentiality, and integrity to protect sensitive information (72.4%) & may provide tools for analyzing data, generating reports, and presenting information (71.9%).



**Figure 1 Components of an Effective and Robust Management Information System**

## **CONCLUSION**

To sum up, this paper illustrates the understanding of major components required for an effective and robust MIS. These days each and every business which is running in the competitive market is supporting the organisation to adapt appropriate techniques for the business to assent in competitive surroundings (Úbeda, et.al, 2015). The present study also concluded that development of an effective and robust management information system is a problem due to the cost factor and thus, it creates problems because within the change of time there is need for an up to date of the required management information system (Gorla, et.al, 2010). Therefore, it also resulted that these systems helps the organisation to manage all product related operations starting from both product data collection to the data management to data distribution (Porter & Heppelmann, 2015). All the organisational decision making nodes are thus, connected to a MIS. Management Information System ignores non-qualitative information, which is as worker morale, their attitude and motivation in favour of just thinking about the qualitative elements.

## **REFERENCES**

1. Ada, Ş., & Ghaffarzadeh, M. (2015). Decision making based on management information system and decision support system. *European Researcher*, (4), 260-269.
2. Beheshti, H. M., & Beheshti, C. M. (2010). Improving productivity and firm performance with enterprise resource planning. *Enterprise Information Systems*, 4(4), 445-472.
3. Fountas, S., Carli, G., Sørensen, C. G., Tsiropoulos, Z., Cavalaris, C., Vatsanidou, A., ... & Tisserye, B. (2015). Farm management information systems: Current situation and future perspectives. *Computers and electronics in agriculture*, 115, 40-50.
4. Gorla, N., Somers, T. M., & Wong, B. (2010). Organizational impact of system quality, information quality, and service quality. *The Journal of Strategic Information Systems*, 19(3), 207-228.
5. Hendriks, C. J. (2012). Integrated Financial Management Information Systems: Guidelines for effective implementation by the public sector of South Africa. *South African Journal of Information Management*, 14(1), 1-9.
6. Holtgrewe, U. (2014). New new technologies: the future and the present of work in information and communication technology. *New technology, work and employment*, 29(1), 9-24.
7. Krishnan, A., Nongkynrih, B., Yadav, K., Singh, S., & Gupta, V. (2010). Evaluation of computerized health management information system for primary health care in rural India. *BMC health services research*, 10(1), 1-13.
8. Law, C. C., Chen, C. C., & Wu, B. J. (2010). Managing the full ERP life cycle: Considerations of maintenance and support requirements and IT governance practice as integral elements of the formula for successful ERP adoption. *Computers in Industry*, 61(3), 297-308.
9. Léger, P. M., Charland, P., Feldstein, H. D., Robert, J., Babin, G., & Lyle, D. (2011). Business simulation training in information technology education: guidelines for new approaches in IT training. *Journal of Information Technology Education: Research*, 10(1), 39-53.
10. Mishra, L., Kendhe, R., & Bhalerao, J. (2015). Review on management information systems (MIS) and its role in decision making. *International Journal of Scientific and Research Publications*, 5(10), 1-5.
11. Porter, M. E., & Heppelmann, J. E. (2015). How smart, connected products are transforming companies. *Harvard business review*, 93(10), 96-114.
12. Sørensen, C. G., Fountas, S., Nash, E., Pesonen, L., Bochtis, D., Pedersen, S. M., ... & Blackmore, S. B. (2010). Conceptual model of a future farm management information system. *Computers and electronics in agriculture*, 72(1), 37-47.
13. Tang, C. M., & Chaw, L. Y. (2016). Digital Literacy: A Prerequisite for Effective Learning in a Blended Learning Environment? *Electronic Journal of E-learning*, 14(1), 54-65.

14. Thite, M. O. H. A. N., Kavanagh, M. J., & Johnson, R. D. (2012). Evolution of human resource management and human resource information systems. *Introduction to Human Resource Management*, 2-34.
15. Úbeda, R., Alsua, C., & Carrasco, N. (2015). Purchasing models and organizational performance: a study of key strategic tools. *Journal of Business Research*, 68(2), 177-188.