The Role of Management Information System: Review on the Importance of Data and Implementation in Organizational Process

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Abstract: Management Information System is important in the organization’s success. Management Information System in every organization should work according to the plan and vision of every organization. The purpose of this study is to underscore the importance of the Management Information System through a literature review and to determine the level of implementation in private universities in Pangasinan. A literature search and survey questionnaire were used in order to satisfy the requirement of the study. The result of the study shows that schools in Pangasinan are implementing the process and practice of Management Information System. The literature review shows the big importance of industries and organizations to maximize the utilization of the unit. It is recommended that all institutions should revisit and include the Management Information System unit as a priority unit for improvement for organizational effectiveness and innovation.

INTRODUCTION

In today's information technology world, Management Information System or MIS should be visible in every organization such as the institutions.

The world is not just a world of living and non-living matter. It is also a world of data. Data have been here in this world even before we became aware of them and started harnessing them. Now more than ever, we need to face up to the challenges posed by tons and tons of data[1]. But what are data in the first place?

The concept of data has been defined as the representation of facts, concepts or instructions in a formalized manner suitable for communication, interpretation, or processing by humans or by automatic means [2]. Data, or its singular form datum, refer to all things that are knowable, recordable and analyzable. These could be as simple as names of physical objects such as stones and insects to the extremely complicated epistemological theories about knowledge itself. They could be raw, untouched and pristine. They could also be refined, developed or progressive. They surround us and they are inside of us whether we are aware of them or not, and in this knowledge-crazy world that we have right now, they are shaping the existence of just about anything that we know, including and most importantly us, human beings [3], [4].

Purpose of the Study

The purpose of this study is to underscore the (1) importance of the Management Information System through a literature review in relation to data storage, data processing, data utilization, and data monitoring. (2) to determine the level of implementation in private universities in Pangasinan.

METHODOLOGY

A literature search and survey questionnaire were used in order to satisfy the requirement of the study. The research design of this study is descriptive. It gathers information based on the literature and questionnaire.

Sources of Data

Google Scholar and Mendeley's search result was the source of data. Respondents were also selected based on the qualification such as the MIS Director or the Coordinator of the institution where they received an invitation to
answer the online survey through Google forms. The average mean was used to compute the level of implementation.

RESULTS AND DISCUSSION
Importance of Management Information System

The researcher would like to explain how the importance and role of MIS in organizational development based on my opening statement. We cannot deny that organizational data are the very object of MIS in an organization. Without data, the system has nothing to manage even when there are people willing to manage them. In short, data are highly important in MIS. Take, for example, just one person. There must be data before and after his birth. There must be data even before his parents had met each other. There must be data about his mother and father before and after their marriage. There must be data when his parents conceive him. There must be data about his mother’s pregnancy of him to predict the possible context of his birth. There must be data about his birth and his subsequent growth as a person either entirely or partly. Even his death should have data. And these data about that particular person must be stored to keep track and have a trace of his existence in an organization. Unless data about him are stored, that person shall be completely forgotten at some future time reducing to nothing the importance of his very life in the enterprise. That person’s life is important and every bit of data about him is important, therefore data storage of his life is also important. Now, how many persons are there in the organization? What about the other things in the organization from the littlest to the biggest? There must be data about them. What about the things and people outside the organization but who has various influences on its existence? There must be data about them, too. We need to store data of everything in and around the organization, and the researcher believes that it is the first duty of MIS — data storage.

Secondly, MIS is important for the purposes of data processing. While storing data is very important, it is not an end in itself. It paves the way for retrieval and processing. Sometimes data stored is simply retrieved but most of the time retrieved data undergo processing. Data processing is the consolidation, evaluation, and analysis of stored data to produce what is called information. For example, all data about a person’s parents when processed become the person’s family background information, all data processed related to the person’s sickness and health interventions comprise his medical history, and so on and so forth. It is data processing that provides meaning to a rather mixed up and random collection of stored data. Now, when information is produced and disseminated to people who need it, that underscores the third importance of organizational MIS — data utilization.

Data utilization is my version of the usefulness of processed data. It must be made clear, however, that not all processed data are utilized, and if they are not utilized, they can hardly be considered as information. This clarifies that information is produced when processed data are utilized for meaningful and beneficial effects [5], [6]. Consider the following instances: the medical history of certain job applicants who are professionally qualified can help the organization to decide whether to hire them or not, the computed results of classroom tests and activities could inform school heads of the quality of academic work in an institution, the yearly dry spell during summer should prompt the government to help the agriculture sector, and the downward trend in the stock market may help investors to be more careful in their business decision-making. When data are converted to information and are utilized for clients’ consumption, that is another facet of the importance of MIS.

Lastly, MIS has updating procedures, and this is where data monitoring comes to the picture. This monitoring process of MIS presupposes the assumption that data can change over time and that trends do not last for long especially in this highly digital world where technological advancements follow each other at
close intervals [7]. The changes in data must be recorded, stored, processed and disseminated to provide valuable inputs in the process of decision-making. One good example is the El Nino phenomenon and its effects on population and water supply. It is not a secret that El Nino has been a yearly occurrence for a long time now in our country and it affects us nationally. One place that has been perennially suffering the worst effects of El Nino is Metro Manila. The hot climate aggravates existing problems brought about by the dense population and limited water supply in the metropolis. To deal with the problem, the MIS of the concerned agencies and sectors should keep track of all data, process the same into valuable information, disseminate them for appropriate utilization, monitor changes that occur, keep a record of these changes, analyze and interpret what they imply, and input everything to decision-makers for them to map out not just solutions in the short term but also in the long term. Data monitoring is, therefore, of paramount importance in MIS.

The researcher would like to mention again what the researcher said in the introduction. We need to face up to the challenges posed by tons and tons of data, not just within the organization but even from outside it. It has been said time and again that because of interconnectivity and digital technology, the world has become so small. Gone are the days when secrets remain secrets for a long time, when what happens in the metro takes a long time to reach the remotest barrio and vice versa, when mails travel at a snail pace, when only a few are knowledgeable, and the rest are uninformed. We have come to an era in which the social descriptive are knowledge explosion, information overload, domains and databases, apps, terabytes, and cloud computing to name a few.

The Internet and mobile technologies have practically transformed each of us into MIS personified. Yes, while it is true that each of us is a source of data and information, we also have to learn how to manage not just the devices in our hands but also the systems embedded in them. Data recording and storage have actually become relatively simple and easy due to this vast interconnectivity and massive digital technology. The hardware, the software, and the networks have combined together to collect huge amounts of data that cannot be managed simply except by similar hardware, software, and networks that are exclusively dedicated to managing them. It is, therefore, clear at this point that MIS is of prime importance in all aspects and levels of the organization especially in today’s highly computerized world. This is the reason why the world saw the birth of what is called Information and Communications Technology or ICT. In fact, the importance of ICT is seen as too crucial to be ignored that organizations ask for experts who will do the job of managing and governing data and information in the expansion and evolution of their businesses. It comes as no surprise then that academic institution designed courses and disciplines to professionalize ICT [8]–[10].

This emphasizes now the critical role of what Neumann coined as the peopleware—men and women who are directly and indirectly handling, managing, utilizing and governing data and information in an organization or groups of organizations [11], [12]. Both technology and processes are in place but the people in between must be highly trained and committed to doing the job of refining and fine-tuning the rough edges of MIS, of troubleshooting the loopholes and drawbacks of initial setups, and of conceiving proactive measures to address the challenges that lurk around in the foreseeable future. Other people in the enterprise who are not directly operating the MIS are also part of the peopleware. Their support and adherence to MIS and its procedures are essential elements for the organization to reach higher levels of success.

Level of Implementation

Three big institutions are invited to answer a simple survey questionnaire regarding the level of implementation on the process of Management Information Systems.
Based on the result of the level of implementation, most of the institution in Dagupan city highly implements the process in Management Information Systems.

**CONCLUSION AND RECOMMENDATION**

In conclusion, this discourse hopes to have substantially explained the importance and role of MIS in organizational development. Every organization should have the clear-cut process flow of information management which includes data storage, data processing, data utilization, and data monitoring. It must be clear to all that the process is a cycle that shows the interconnectedness of each of the steps in the process. Technology for MIS is already available and is continuously going through advances and improvements and all that an organization has to do is to set them up to facilitate MIS procedures. But the greatest emphasis on the importance and role of MIS in organizational development is on the peopleware. Every person in the organization is part of the peopleware, not just those who are directly running the MIS. From top management to the simplest rank, they should be connected and concerned to the MIS Office to bring the organization to its highest potentials.

**REFERENCES**


