

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 wishes to clarify the significance and role of information systems in organizational development in light of my introductory statement. We cannot deny that organizational data are the primary focus of management information systems in an organization. Without data, even when people are eager to handle them, the system has nothing to manage. In a nutshell, data are critical in MIS. Consider a single individual. There must be data both prior to and following his birth. There must be data dating back to before his parents met. There must be information on his mother and father prior to and following their marriage. When his parents conceive him, there must be data. There must be information concerning his mother's pregnancy in order to foresee the likely circumstances surrounding his birth. There must be information regarding his birth and subsequent development as a person, either completely or in part. Even his demise should be documented, and these details about that individual must be preserved in order to keep track of and trace his presence within an organization. Unless data on him is saved, that individual will be utterly forgotten at some point in the future, negating the significance of his own existence in the enterprise. Because that person's life is valuable and every piece of data about him is valuable, data storage for his life is likewise valuable. Now, how many employees does the organization have? What about the rest of the organization's assets, from the smallest to the largest? There must be information on them. What about the things and individuals that exist independently of the organization yet have a significant impact on its existence? They, too, must have data. We need to save data on everything that happens within and around the company, and the researcher believes that this is

the primary responsibility of management information systems - data storage.

Second, MIS is critical for data processing. While data storage is critical, it is not an end in itself. It establishes a foundation for retrieval and processing. Occasionally, data is merely retrieved; nevertheless, the majority of the time, retrieved data is processed. Data processing is the process of consolidating, evaluating, and analyzing stored data in order to generate what is referred to as information. For instance, when all data about a person's parents is processed, it becomes the person's family background information; when all data concerning a person's illness and health interventions is processed, it becomes his medical history; and so forth. Data processing is what gives sense to a somewhat disorganized and random collection of stored data. When information is created and communicated to those who require it, it demonstrates the third critical function of organizational MIS—data use [5].

The term "data usage" refers to my interpretation of the utility of processed data. It should be noted, however, that not all processed data are utilized, and those that are cannot be termed information. This demonstrates that information is generated when processed data are used to achieve meaningful and positive outcomes.[6], [7]. Take the following examples: The medical history of certain job applicants who are professionally qualified can assist an organization in determining whether to hire them or not, the computed results of classroom tests and activities can inform school heads about the academic quality of work in an institution, the annual summer drought should prompt the government to assist the agriculture sector, and the downward trend in the stock market should prompt the government to intervene. When data is transformed into information and made available to clients, another facet of the value of MIS is revealed [5].

Finally, MIS requires updating methods, which is where data monitoring comes into play. This MIS monitoring approach is predicated on the premise that data might change over time

and that trends do not persist long, even more so in today's highly digitized environment, where technical improvements occur in rapid succession.[8]. The changes in data must be recorded, stored, processed and disseminated to provide valuable inputs in the process of decision-making. To address the issue, the MIS of the relevant agencies and sectors should keep track of all data, process it into useful information, disseminate it for appropriate use, monitor changes as they occur, record them, analyze and interpret what they imply, and input everything to decision-makers so they can map out not just short-term solutions but also long-term solutions. Thus, data monitoring is critical in MIS [5].

The researcher wishes to reiterate what was stated in the introduction. We must confront the problems provided by mountains of data, both internal and external to the company. It has been repeatedly stated that the globe has gotten so small as a result of interconnectedness and digital technologies. Gone are the days when secrets remained secret for an extended period of time, when events in the metro took an extended period of time to reach the remotest barrio and vice versa, when mail traveled at a snail's pace, and when only a few were knowledgeable and the majority were ignorant. We have entered an era defined by knowledge explosion, information overload, domains and databases, applications, terabytes, and cloud computing, to name a few [5].

The Internet and mobile technologies have essentially transformed everyone of us into a personification of information technology. While it is true that each of us is a source of data and information, we also need to learn how to manage the gadgets in our hands, as well as the systems built in them. Data capture and storage have become very simple and straightforward as a result of this tremendous interconnectedness and digital technologies. The combination of

hardware, software, and networks has resulted in the accumulation of massive volumes of data that cannot be controlled simply except by equivalent hardware, software, and networks dedicated to their management. Thus, it is evident that MIS is critical in all facets and levels of the company, even more so in today's increasingly computerized environment. This is why the world witnessed the birth of Information and Communications Technology, or ICT. Indeed, the relevance of ICT is deemed too critical to ignore, and corporations seek specialists to manage and oversee data and information as their businesses expand and evolve. It's unsurprising then that academic institutions developed courses and specializations to help professionalize information technology.[9]–[11].

This highlights the crucial importance of what Neumann described as the peopleware—men and women who handle, manage, utilize, and administer data and information in an organization or collection of organizations—directly and indirectly.[12], [13]. While the technology and processes are in place, the people in between must be highly trained and committed to the task of refining and fine-tuning the rough edges of MIS, troubleshooting the loopholes and drawbacks of initial setups, and devising proactive measures to address the challenges that lurk in the near future. Other enterprise employees who are not directly involved in the operation of the MIS are also included in the peopleware. Their support and adherence to the MIS and its procedures are critical components of the organization's success[5].

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.

Table 1 Level of Implementation

MIS Process	AWM	Equivalent
Selection and Procurement of Hardware	4.32	Highly Implemented
Procurement of Software	4.21	Highly Implemented
Creating the Database	4.23	Highly Implemented
Training of Users	3.98	Highly Implemented
Creating Physical Infrastructure	4.02	Highly Implemented
Transition to the New System	4.26	Highly Implemented
TOTAL	4.17	Highly Implemented

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.

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