

The Role of Management Information Systems (MIS) in Decision Making

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Abstract – The purpose of this study is to analyze an information system that is necessary for logical decision-making, so it requires an understanding of the problem and knowledge of alternative solutions. This study report was carried out using a descriptive qualitative method by reviewing scientific articles taken from Google Scholar by taking notes. The results of the study, that more precise information results in better decisions. The quality of information depends on 3 (three) things, namely, the information must be accurate, timely, and relevant. The elements in decision-making that must be considered are the purpose of decision-making, identification of decision alternatives to solve problems, calculations of factors that cannot be known beforehand or are beyond human reach, and the means or tools used to evaluate or measure the result of a decision.

Keywords: Information Systems, Decision Making.

I. INTRODUCTION

Information is likened to the blood that flows in the body of an organization. Just as humans need blood flowing in their bodies, organizations also need this information. An organization that lacks or is not informed will not succeed. The source of information is data. Data is the plural form of the singular data-item. Data is a fact that describes an event and a real entity. Events are things that happen at a certain time. In the business world, events that often occur are changes in a value called a transaction. For example, a sale is a transaction that changes the value of goods into the value of money or the value of accounts receivable. So it can be concluded that information is data that is processed into a form that is more useful and more meaningful for its users. Data is a form that is still raw, can not tell much so that it needs to be processed further. The data is processed through a model to produce information. Data can be in the form of symbols such as letters or the alphabet, numbers, sound forms, signals, pictures. Processed data alone is not enough to be said as an information. To become an information, the processed data must be useful for the user. To be useful, information must be supported by three pillars, namely right to the person or relevant, timely, and the right value or accurate.

II. RESEARCH METHOD

The method used in this research is descriptive qualitative method. Data collection is done by listening to the material from the module and then reading with observations, the next technique is data collection by conducting a literature study from various articles so that it can be analyzed according to data classification which functions to group data to fit what has been designed.

III. RESULTS AND DISCUSSION

Result

Information is any form of communication that adds understanding and knowledge, which is useful for the recipient of the information. Information is like blood that flows in the body of an organization. The source of information is data, namely facts that describe real events and real

entities. Data is a raw form that cannot tell much, so it needs to be processed further. The data is processed through a model to produce information.

Discussion

1. Basic Concepts of the System

The system is a network of procedures that are interconnected, gathered and together to carry out an activity or to complete a certain goal. A system consists of a number of components that interact with each other, working together to form a single unit. System components or system elements can be a sub system or parts of the system. Each sub-system has the properties of the system to perform a particular function and affect the overall system process. A system must have one goal or goal. The goal of the system is to determine the input needed by the system and the output that will be produced by the system.

2. Information

Data that has been classified or processed or interpreted for use in the decision-making process is information. The processing system processes data into information or rather processes data from a useless form to be useful for the recipient. The value of information related to decisions. The value of information is described as most meaningful in the context of a decision. If there is no decision, then the information becomes unnecessary. Decisions can range from simple repetitive decisions to long-term strategic decisions.

The main function of information is to increase knowledge or reduce the uncertainty of information users. Information conveyed to users may be the result of data entered into and processing a decision model. Most of the information can not exactly interpret the benefits with a value for money, but can be interpreted the value of its effectiveness. The value of this information is based on 10 (ten) characteristics, namely :

- a. Easily obtained
This property shows the ease and speed of information can be obtained. Gain speed can be measured, for example 1 minute versus 24 hours. However, what is its value to users of information is difficult to measure.
- b. Spacious and complete
This property indicates the complete content of the information. This does not mean only about the volume, but also about the output of information. This trait points to a blur and is therefore difficult to measure.
- c. Accuracy
This property is related to the degree of freedom from error information output. In relation to large volumes of data there are usually two types of errors, namely recording errors and calculation errors.
- d. Compatibility
This property shows how well the information output corresponds to the user's request. The content of the information must have something to do with the problem at hand. All other outputs are useless, but expensive to prepare. This trait is difficult to measure.
- e. Punctuality

This property relates to the shorter time elapsed than the cycle to obtain information. Input, processing, and reporting of output to users are usually timely. In some ways, timeliness can be measured.

- f. Clarity
This property indicates the level of information output that is free from unclear terms. Correcting reports can be costly.
- g. Flexibility
This trait relates to the adaptability of information output not only to more than one decision, but also to more than one decision maker. This property is difficult to measure, but in many cases it can be assigned a measurable value.
- h. Provable
This trait indicates the ability of multiple users of information to examine the output of information and arrive at the same conclusion.
- i. No prejudice
This trait is related to the absence of a desire to change information in order to reach a previously considered conclusion.
- j. Can be measured
This property shows the nature of information generated from formal information systems.

The value of perfect information is that decision makers are allowed to choose the optimal decision in every case and not the decision that on average will be optimal and to avoid events that will result in a loss.

The quality of information depends on 3 (three) things, namely, the information must be accurate, timely and relevant.

- a. Accurate
Information must be free from errors and not biased or misleading. Accurate also means that information must clearly reflect the intent. Information must be accurate because from the source of information to the recipient of the information there may be a lot of interference (noise) that can change or damage the information.
- b. On time
Information that comes to the recipient should not be late. Information that is outdated will have no value anymore because information is the basis for decision making.
- c. Relevant
This information has benefits for the user. The relevance of information for one person to another is different, for example, information on the causes of damage to a production machine to a company accountant is less relevant and will be more relevant if it is addressed to the company's technical experts.

3. *Management Information System (MIS)*

Management Information System (MIS) is an information network needed by leaders in carrying out their duties (for the benefit of the organization), especially in making decisions in achieving organizational goals. MIS techniques to provide managers with information that enables them to plan and control operations. Computers have added one or two dimensions, such as speed, accuracy and increased volume of data, which allow the consideration of more alternatives in a decision, which in an

organization consists of a number of elements, people who have various roles in the organization , activities or tasks to be completed, place of work, work authority, and communication relationships that bind the organization. MIS is the application of information systems within the organization to support the information needed by all levels of management. The MIS pressure is on the system, not on its management, but in order for MIS to run effectively and efficiently, it needs to be managed as well as possible.

SIM characteristics:

- a. MIS is very dependent on the existence of the organization's data as a whole, and depends on the flow of information owned by the organization.
- b. MIS usually don't have the ability to analyze problems.
- c. MIS requires very careful and lengthy planning, while taking into account future organizational developments.
- d. MIS is usually oriented to data that has happened or data that is happening, not data that will happen.
- e. MIS is also oriented to data within the organization rather than data from outside the organization.
- f. MIS is usually inflexible because the forms of the reports that are produced have been prepared in advance.
- g. MIS assists managers in a structured manner at the operational level, control level, and planning for senior staff.
- h. MIS is designed to provide daily operational reports so that it can provide information to better control the operation.

4. *The Role of MIS in Decision Making*

One of the most important functions in leadership, namely decision making, a leader spends most of his time, attention, and thoughts on reviewing the decision-making process. The higher a person's position in the leadership of the organization, the decision-making becomes the main task that must be carried out. The behavior and way of the leader in the pattern of decision making greatly affect the behavior and attitudes of the staff.

Decision making is a result of problem solving, the answer to a question as a law of the situation, and is the selection of one alternative from the existing alternatives, as well as the termination of the thought process about the problem or problem at hand.

Decision making has two functions, namely: the starting point of all conscious and directed human activities, both individually and in groups, both institutionally and organizationally, and something futuristic, meaning that it has to do with the future, the future. effect or the effect lasts long enough).

The purpose of decision making, namely: a single goal, occurs when the resulting decision only concerns one problem. That is, once it is decided it will not have anything to do with other problems, and dual goals occur when the resulting decisions involve more than one problem, meaning that decisions taken at the same time solve two or more problems, which are contradictory or non-contradictory.

According to Syamsi (1995: 13) the elements in decision making that must be considered are :

- 1) The purpose of decision making, namely knowing in advance the goals to be achieved from the decision making
- 2) Identification of decision alternatives to solve the problem chosen to achieve these goals. Therefore, it is necessary to list the types of actions that allow elections to be held
- 3) Calculation of factors that cannot be known beforehand or are beyond human reach
- 4) The means or tools used to evaluate or measure the results of a decision making.

Decision making according to Terry (2002: 16) is based on the following five things :

a) Intuition (feeling)

Decision making based on intuition or feelings has a subjective nature so that it is easily influenced. Intuitive decision making has several advantages and disadvantages. The advantages include: the time used to make decisions is relatively short, for problems whose influence is limited, decision making will give satisfaction in general, the decision-making ability of the decision maker is very important and needs to be used properly. While the weaknesses include: the resulting decisions are relatively poor, it is difficult to find a comparison tool so that it is difficult to measure the truth and validity, other basics in decision making are often ignored.

b) Experience

Decision making based on experience has benefits for practical knowledge because based on experience someone can predict something and can calculate the pros and cons and the good and bad decisions that will be made. Because of experience, one can guess the problem even if just by looking at it one can find a way to solve it.

c) Facts

Decision making based on facts can provide sound, solid and good decisions. With facts, the level of trust in decision makers can be higher so that people can accept the decisions made willingly and gracefully.

d) Authority

Decision making based on authority is usually carried out by the leader against his subordinates or people of lower position. Decision making based on authority also has advantages and disadvantages. The advantages include: most of the recipients are subordinates regardless of the recipient voluntarily or involuntarily, decisions can last for a long period of time, have authenticity (authentic). Weaknesses include: can lead to routine nature, associate with dictatorial practices, often skip the problems that should be solved so that it can cause confusion.

e) Rational

In rational-based decision making, the resulting decisions are objective, logical, more transparent, consistent, to maximize results or values within certain constraints so that they can be said to be close to the truth or in accordance with what is desired. In making rational decisions, there are several things as follows :

- (1) clarity of the problem, no doubt and ambiguity of the problem;
- (2) goal orientation and unified understanding of the goals to be achieved;
- (3) alternative knowledge, all alternatives are known for their types and consequences;
- (4) clear preferences, alternatives can be sorted according to criteria;
- (5) maximum results, the selection of the best alternative is based on maximum economic results. Rational decision making applies fully under ideal circumstances.

5. Factors Affecting Decision Making

In the decision-making process, an organization cannot be separated from the factors that influence it. These factors include :

- a. Position or position

In the context of decision making, the position or position can be seen in terms of:
(a) the position of the position, as a decision maker, decision maker, or staff,
(b) improve the position, as a strategy, policy, regulation, organizational, or technical.

b. Problem

Problems or problems are obstacles to achieving goals, which are deviations from what is expected, planned, desired or must be resolved. Problems are divided into two types, namely structured problems and unstructured problems.

c. Situation

Situation is the sum total of factors in the state of the world that are related to each other, and which together exert an influence on us and what we want to do.

d. Condition

Conditions are all factors that together determine our power of motion, power to act or ability. Most of these factors are resources.

e. Destination

The goals to be achieved, both individual goals, unit goals (unity), organizational goals, and business goals in general have been certain or determined. The goals that have been determined in decision making are intermediate goals or objectives.

6. *Types of Decision Making*

The types of decisions can be made based on various points of view and broadly speaking there are three types of decisions, namely :

a. Decision based on decision level

In general, an institution has a management hierarchy. Classically, this hierarchy is divided into 3 levels, namely: top management, middle management and lower level management.

b. Decisions based on regularity

The decisions put forward by Simon (1995) are divided into 2, namely :

(1) Programmed decision making: decision making that is routine and repetitive in a way that has been determined to solve problems through: procedures (a series of related and sequential steps that must be followed by decision makers), rules (regulating provisions that must be done) and what policy makers should not do), policies (guidelines that define the parameters for making decisions),

(2) Non-programmed decision making: non-routine decision making and is used to solve unstructured problems.

c. Decisions based on the environment: these decisions are divided into 4 groups, namely :

(1) decision making under certain conditions,

(2) decision making in risky conditions,

(3) decision making in uncertain conditions,

(4) decision making in conflict conditions.

IV. CONCLUSION

Based on the discussion above, it can be concluded that an information system is absolutely necessary in order to meet the basic daily needs of all levels of society, both people with low economic and educational levels to people with high economic and educational levels. The higher the economic and educational level of a person, the higher the need for information. The implementation of the main tasks of the leader will be successful if it is supported by a good information system. Logical decision making requires an understanding of the problem and knowledge of alternative solutions. More precise information results in better decisions.

One of the most important functions in leadership is decision making. A leader most of the time, attention, and mind is used to review the decision-making process. The higher a person's position in the leadership of the organization, the decision-making becomes the main task that must be carried out. The behavior and way of the leader in decision-making patterns greatly influence the behavior and attitudes of his staff. Decision making is a result of problem solving, the answer to a question as a law of the situation, and is the selection of one alternative from the existing alternatives, as well as the termination of the thought process about the problem or problem at hand. The result of decision making is a decision.

REFERENCES

- Effendi, M. R., & Saputra, J. (2022). Design and Build an Employee Leave Application System. *Journal of Information Systems and Management (JISMA)*, 1(4), 42-53.
- Hermansyah, R., & Asbari, M. (2022). Edifying In The Industrial Revolution 4.0 With The Role Of Islamic Education. *Journal of Information Systems and Management (JISMA)*, 1(5), 7-11.
- Husein, Fakhiri. (2002). Management Information Systems.
Yogyakarta : Publishing Unit and YKPN AMP Printing.
- Indra, F., Juliana, J., Hubner, I., & Sitorus, N. B. (2022). Development Of Gastronomic Tourism Potential In Pontianak West Kalimantan. *Journal of Information Systems and Management (JISMA)*, 1(5), 28-42.
- Jasin, M. (2022). The Role of Social Media Marketing and Electronic Word of Mouth on Brand Image and Purchase Intention of SMEs Product. *Journal of Information Systems and Management (JISMA)*, 1(4), 54-62.
- Jasin, M. (2022). How The Role of online and viral marketing and competitiveness ability on business performance of SMEs. *Journal of Information Systems and Management (JISMA)*, 1(2), 28-35.
- Novitasari, D. (2022). Hospital Quality Service and Patient Satisfaction: How The Role of Service Excellent and Service Quality?. *Journal of Information Systems and Management (JISMA)*, 1(1), 29-36.
- Novitasari, D. (2022). SMEs E-commerce Buying Intention: How the Effect of Perceived Value, Service Quality, Online Customer Review, Digital Marketing, and Influencer Marketing. *Journal of Information Systems and Management (JISMA)*, 1(5), 61-69.
- Patmawati, S., Dewi, V. M., & Asbari, M. (2023). THE EFFECT OF SHORT-TERM AND LONG-TERM LEARNING IN QUALITY MANAGEMENT AND INNOVATION. *Journal of Information Systems and Management (JISMA)*, 2(1), 21-26.

Purwanto, A. (2022). WHAT IS THE ROLE OF CUSTOMER BEHAVIOR FOR ELECTRONIC E-COMMERCE AND MODERN MARKET VISIT INTENTION? *Journal of Information Systems and Management (JISMA)*, 1(6), 46-57.

Rochaety, Eti. (2008). *Education Management Information System*. Jakarta : Earth Script.

Subari, Tata. (2005). *Management Information System*. Yogyakarta : Publisher Andi.

Syamsi, Ibnu. (2000). *Information System Decision Making*. Jakarta : Earth Literacy.