ADREENA : Indonesian Journal of Technology, Research And Science
Volume 1 Number 1 June 2026 hal 21-23

Analysis of Computer-Based Management Information Systems in the Decision-Making Process

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ABSTRACT

A computer-based Management Information System implies that computers play a crucial role in a management information system. The success of an organization is closely related to its technical competence and its ability to adapt to both external and internal environments. Amid the rapid development of technology, the use of a Management Information System is the right choice for managing high-quality information resources. The role of management requires the dissemination and efficient use of resources to achieve objectives, thereby supporting management functions through the timely and accurate delivery of information. Therefore, a well-designed management information system is necessary to support the organization's goals.

Keywords: *Analysis, Computer-Based Information System*

1. INTRODUCTON

Information within a company is crucial to support its continued growth and development, making it an essential element for any business. Without sufficient information, over time, a company will face difficulties in controlling its resources, ultimately leading to an inability to compete effectively with its competitors. Furthermore, the existing information systems often fail to function properly. The main issue lies in the fact that these systems contain an excessive amount of irrelevant or meaningless information. Understanding the fundamental concepts of information is vital in designing an effective information system. To determine and make strategic decisions about the steps a company should take to achieve its objectives, it must possess accurate and reliable information sources for the decision-makers.

The emergence of computer-based systems tailored specifically for executives and decision- makers allows for the evaluation of their decisions. In addition, the development of hardware and software significantly influences the quality of information produced by the Management Information System (MIS). Events and tangible entities are core elements in information systems. Events are occurrences at specific points in time, and in the business world, common events include changes in value known as transactions. Tangible entities are real objects such as places, items, or individuals that genuinely exist and occur. Information technology refers to technology used to produce information, encompassing computer technology and communication technology, both of which process and disseminate financial and non-financial information.

In today's world, information systems have become a fundamental need for people across all sectors of society, much like clothing, food, and shelter. In some cases, information has even shaken the world in various aspects of human life. With the rapid advancement of information technology, more and more companies in Indonesia are adopting Management Information Systems (MIS), as they are increasingly aware of the significant benefits MIS offers in improving organizational performance. In earlier times, the decision-making process was still very simple. A computer-based Management Information System signifies that computers play a crucial role in a management information system.

2. RESEARCH METHOD

In this study, the author used library research, in which the data collected was obtained from various studies, texts, and books that are highly relevant to the main topic or problem formulation in accordance with the discussion of this article. The preparation of this article can be regarded as an effort to collect and process data related to the discussion.

3. RESULT

Management Information System

A data framework is a set of components that work together to record information, measure information, and present data to leaders for informed decision-making. The MIS strategy aims to provide data to managers, enabling them to plan and control tasks effectively. Computers have contributed several aspects, such as speed, accuracy, and the ability to handle larger volumes of information, which allow for better decision-making within an organization that consists of various components—individuals with different roles, activities or tasks to be completed, work environments, work authorities, and communication links that bind the organization together. MIS involves the use of information systems within organizations to provide the necessary data for all levels of management. The critical factor affecting MIS is the system itself, rather than the administration; however, for an MIS to be implemented successfully and efficiently, it must be managed properly. The stages of the information system can be illustrated as a pyramid structure: the lowest layer covers data for transaction processing, status checks, and so on; the next layer integrates data sources to support strategic planning and decision-making for management; and the top layer integrates data to support planning and strategy formulation by top-level executives.

4. DISCUSSION

Application of Technology in an Organization

The advancement of time has brought rapid innovation, making technological applications crucial in every aspect of the Executive Information System. From the education sector to the business world, each utilizes modern tools or equipment to support various activities. In complex interactions, every organization has its own variety of tools or technologies, as each is formed by transforming inputs into outputs and vice versa, with the help of different innovations. An innovation center is essentially a collection of various specialized services working together to serve customers. These innovations are generally applied to highly critical activities, sometimes disrupting customers who are beginning to adapt to changes. Since their emergence 50 years ago, computers have often been used as tools for information processing. By applying the IPO (Input- Process-Output) standard, users expect computers to be able to produce specific results from the various types of data provided.

5. CONCLUSION

In the decision-making process, the role of a computer-based management information system lies in determining the value of information related to a particular decision. The support provided by the executive information system in an organization can be described in three phases of the decision-making cycle: acquiring, planning, and choosing. Management Information System support generally includes both computer-based and non-computer-based

data. At the stage of understanding the relationship with MIS, there is an analytical process that involves reviewing information either in a predetermined way or using special strategies. Management information systems must perform both of these approaches. MIS executives themselves must analyze all available data and request judgments individually, as the current situation requires careful consideration. Both MIS and the organization must provide clear communication channels for identified issues so they can be escalated to higher levels for resolution.

Management involves making decisions for further planning based on existing information and developing ideas to solve certain problems. MIS support includes statistical software as well as other presentation software. It also incorporates several organized methodologies, controlling existing models. At the decision stage, the management information system is most effective when decision-makers are provided with structures that facilitate accurate choices. Once established, parts of the management information system become a repository of feedback information. MIS support at the decision stage involves selecting various types of decision models, conducting impact analysis, and evaluating effects. Decision-making relies on a comprehensive data set, database recovery capabilities, statistical programming, and other advanced analytical tools, such as essential modeling programs that integrate decision-making software.

Types of decisions can be classified from various perspectives, including:

1. **Decisions based on the level of decision-making** — generally, an organization has a management hierarchy.
2. **Decisions based on the environment**.

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