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Implementing a Web-enabled Security Management Information System: Opportunities and Challenges

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Abstract

Information systems are computer applications that support an organization's operations. They include the installation and maintenance of computers, software, and data. Management Information Systems focus on financial and personnel management. Sales Information Systems are designed to generate, analyze, disseminate, and retrieve information to support sales-related decisions. The collection, preparation, storage, and distribution of information to facilitate decision-making and monitoring in an enterprise. There are two types of information systems: manual information systems and computer-based information systems (CBIS). CBIS, or computerized web-based security service management information system, is a type of information system used in service companies. This system provides possibilities and opportunities for managing security services.

Keywords: *We would like to encourage you to list your keywords in this section*

1. Introduction

The Management Information System (MIS) stands as a pivotal subsystem within the realm of Computer-Based Information Systems (CBIS), forming one of five major components. Tailored to address the overarching informational needs of managers across the organization or within specific subdivisions, MIS is structured to cater to various managerial levels and functional domains. Its function encompasses the dissemination of information through reports and outputs derived from diverse mathematical model MISulations. These outputs are presented in formats ranging from tabular to graphical, ensuring accessibility and comprehension for users.

In the context of organizational information systems like MIS, behavioral influences play a critical role in shaping system performance. Recognizing this, managers and information professionals can devise programs aimed at harnessing behavioral dynamics to yield positive outcomes within the system. Within the framework of MIS, there exists a reflection of managerial attitudes favoring ubiquitous access to computing resources for problem-solving endeavors across the organization.

An effectively implemented MIS serves as a potent tool for managers and other stakeholders, both internal and external, aiding in the identification and comprehension of organizational challenges. When operating as intended, MIS facilitates problem-solving processes by providing relevant insights and data-driven perspectives.

Definition of Information Systems - According to Mc Leod, information systems are systems that have the ability to collect information from all sources and use various media to display information. Information system is a system within an organization that brings together daily transaction processing needs that support managerial organizational functions in the strategic activities of an organization to be able to provide certain external parties with the necessary reports. Information systems are systems within an organization that meet daily transaction processing needs, support and assist operational activities, are

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managerial in nature of an organization, and help facilitate the provision of necessary reports.

A system is a group of integrated elements that have a common purpose and work together to achieve a goal. The organization consists of a number of human resources, materials, machines, money and information, these resources work together to achieve a certain goal determined by the owner or management. According to Hartono (2013: 20), Management Information System is a system that is an organized set of a number of parts/components that work together or move to produce information for use in managing the company.

Information systems are data streams, transactions and activities of an enterprise which focus on quality, development time, flexibility, cost and maintenance of software. and software maintenance. Information Technology (IT) is a standard infrastructure policy such as hardware and networking networks. IT focuses more on capability, responsiveness, and price/performance, while Information Management (IM) focuses more on the use, quality, and integration of information. Therefore, the SI, IT and MI required by management is called "Management Information System (SIM)", which has the following components: hardware, software, network data, human resources and procedures. Management Information System (SIM) according to Davis (1995) suggests that information systems, in addition to carrying out all the transactions required by an organization, also provide information and information support for management and decision-making functions.

Some examples of information systems are: Aircraft reservation system; Automobile credit sales processing system; Biometric system; POS (Point of Sale) system; Telemetric system; Smart card-based system; System installed in public places to provide information such as hotels, tourist attractions, shops; Web-based academic service system; EDI system; E-government or Internet-based government service information system.

The nature of information systems does not have to be complex and can use a computer. While the capabilities of information systems: To store very large amounts of information in a small but easily accessed area, To make very large amounts of information around the world available quickly and inexpensively, To increase the effectiveness and efficiency of people working in groups in one or more locations, To display information in a way that stimulates the human mind, To automate semi-automated business processes and tasks that are done manually, To make typing and editing faster, To do the above things much less expensively than if they were done manually.

2. Reseach Methodology

Descriptive qualitative research methods using a case study approach were used in the research conducted by the author. In this research, the criteria of its effectiveness are measured after revealing only the facts found about the object of study. According to Moleong (2012), qualitative research is a research that aims to understand the phenomenon of what the object of study is experiencing, including how it behaves, perceives, motivates, and acts, in a holistic way and through descriptions in the form of words and speech, in a special natural setting, and through the use of various natural ways. The case study approach was used to research the marketing function of the company.

3. Result and Discussion

There are many alternative technologies to help organizations achieve security and control, but organizational disciplines are required to use these technologies effectively, e.g., Information Systems Investment Challenges; Strategic Business Challenges; Globalizing Challenges; Information Technology Infrastructure Challenges; Responsibility and Oversight Challenges: Ethical and Security.

The contemporary approach to information systems consists of the technical approach, which includes computer science, focusing on access to data storage; quantitative methods, focusing on management practices; operations research, focusing on selected parameters; and an emphasis on mathematical normative models in information systems science and physical technology and form capabilities in systems. Computer science emphasizes theories of computability, computational methods, and efficient methods of data storage and access. The creation of decision and management models is the focus of management science.

Behavioral science includes sociologists who study the relation between individuals, psychologists who study the relation with decision making patterns, and economists who study the relation with production processes. A purely technical approach cannot adequately address issues of strategic business integration, design, implementation, deployment, and management.

Socio-technical systems approaches such as Management Information Systems combine the theoretical level of computer science, management science & operations research with a practical orientation through the creation of systems and applications. It also emphasizes behavioral issues raised by sociology, economics, and psychology.

Socio-technological systems perspective helps to avoid a purely technological approach to information systems. It emphasizes the need to optimize overall system performance, both technically and behaviorally. In other words, technology must be adapted to the needs of the organization and the individual, and the design of the technology must be adapted to the needs of the organization and the individual.

New roles for management information systems in organizations, including: initiating and designing strategic information systems; planning, designing, and controlling infrastructure; integrating the Internet and e-commerce into the business; managing systems integration, including Internet, intranets, and extranets; working with the executive level in running the business; managing outsourcing; proactively using business and technology knowledge to explore innovative IT ideas; creating business alliances with vendors and IS departments in other organizations; providing new computing environments; in addition to traditional functions: managing system security, development and maintenance, computer operations.

The support of management information system for decision making in an organization can be described according to the three stages of the decision making process, namely, understanding, designing, and selecting. MIS support usually involves processing, computer and non-computer files.

At the stage of understanding, the relationship with the MIS is in the process of investigation, which involves the examination of data either in a predetermined way or in a special way. The license must provide both methods. The information system itself, in relation to situations that clearly require attention, must examine all data and submit requests for examination. Channels for communicating clearly known problems to higher levels of the organization so that they can be addressed should be provided by both the MIS and the organization. At this stage, it is also necessary to determine the capabilities. Supporting the MIS requires a database of community, competitive, and internal data, as well as methods for tracking and finding problems.

In the design phase, the relevance of the MIS is the creation of decision models that can be processed on the basis of existing data and can initiate alternative solutions. The

models should help analyze alternatives. MIS support consists of statistical software as well as other modeling software. These include structured approaches, model manipulation, and database retrieval systems.

In the selection phase, MIS is most effective when the results of the design are presented in a form that helps to make decisions. Once a selection has been made, the role of MIS changes to collecting data for feedback and later evaluation. MIS support at the selection stage involves the selection of different decision models, sensitivity analysis, and determination of the selection procedure. MIS support for decision making consists of a complete database.

Essentially, the role of MIS is in the process of understanding, which involves examining the environment for conditions that require decisions. Understanding here has the same meaning as problem recognition. Then comes the design process and the selection process. It is often said that computers make decisions, but this is a misleading statement. It does not know where the role of computers is and how a decision making process is carried out. Decisions can only be made by humans.

Problem discovery software can be used to support MIS in the discovery phase. The activities performed in this phase are a search or screening of the state of the organization's environment, both internally and externally, for the existence of opportunities and problems.

Opportunities for profit, opportunities for community risk reduction, and opportunities for service are among the types of opportunities or problems found in the discovery phase. Then there are problems. These include problems affecting demand for goods/services, problems affecting performance, and also risk problems.

Database elements consisting of community database, environment database, competitive environment database, and internal organization database are required for the opportunity or problem identification information system. Processing and searching requires the ability of MIS to provide a means to retrieve data directly (online), including continuous structured searching, special structured searching (ad hoc), special unstructured searching, and special unstructured searching.

Results in the MIS include results which go directly to the design phase software, results which show the design of the decision, results which show the decision selection steps to follow, results which show a possible solution or possibility, but no indicators of future actions.

Businesses today have the opportunity to create reliable websites and strategies that can support e-commerce and e-business. More profoundly, revenues, liabilities, reputation, brand impression - even the company's ability to survive.

An information technology system plan is required to develop a new information system. Making strategic planning of information technology systems is the first step in planning information technology systems. A literature review on information systems and strategic planning of information technology systems was conducted in the early stages of research. The next stage is to collect data and information according to the research needs. The next stage is business analysis and information technology system analysis. The business analysis conducted is Porter's 5 competitive forces model analysis, SWOT (Strengths Weaknesses Opportunities Threats) analysis, value chain analysis. The analysis of information technology systems carried out is the analysis of Information System Strategic

McFarlan model and gap analysis. The final part of the analysis is completed with strategy recommendations for the development of information technology systems. Comparing the state of XYZ's Information Technology System and its two competitors, THF and MAF, in terms of technical and specifications does not differ much.

There are many benefits to both management and the organization as a whole in using this information management system. Information management systems can improve the

accuracy of data. To support the actions you take, data is an important resource. Accurate data is needed in an organization because it is related to strategic decisions. Management information system is a tool that provides accurate data the company needs. The system makes management tasks more effective and efficient by automatically processing incoming data. And with the support of Internet technology, you can also retrieve the necessary data in the system in real time.

This system also provides information services that can be used as a basis for planning, monitoring, and directing the management of the company. The information data generated can then be used by other departments or divisions in need.

Healthy relationships within an organization can be established through proper information sharing among departments. In addition, the information system also helps management to easily delegate tasks to other parties. Without the need for face-to-face meetings, coordination between departments can be accomplished quickly.

Of course, the performance of the company's human resources is affected when information data is available accurately and quickly. It is inevitable that the people who use this system will have to adapt their work system to technological changes. With the quality of human resources, of course, it will affect the progress of your business development in the future.

If the management information system has been in operation in your company, there will be a minimum number of errors due to human error. Productivity of existing human resources increases with the absence of mistakes. At the same time, this condition reduces the operating costs incurred by the company. With MIS, your company can easily do a year-to-year analysis of its performance. All data history and changes are stored in the system.

There are several management information systems that can be applied to your business, such as Enterprise Resource Planning (ERP). This module is widely used by large companies. However, even small businesses can implement ERP systems. ERP systems usually function to manage management and conduct integrated supervision between units within the company.

Supply chain management, which integrates data such as raw material supply management from suppliers, manufacturers, retailers to end users, is very useful for management. Transaction processing system (TPS) is a management information system that is useful for the processing of large amounts of data or large and routine transactions. This program is commonly used in payroll and inventory management. By integrating computer servers for each user in the company, an office automation system (OAS) is useful for facilitating communication between departments in a company. An example is the use of e-mail for daily office activities.

Knowledge Work System (KWS) integrates new knowledge into the organization/company. Informatic Management System (IMS) is used to support a range of tasks in the organization. In addition, IMS can also be used to analyze decision making. This system can also unify several information functions with computerized programs such as e-procurement. This decision support system (DSS) helps managers make decisions by monitoring the environment within the company. An example of this management information system is like an electronic link.

Expert System (ES) and Artificial Intelligence (AI) basically use artificial intelligence, which is useful for analyzing problem solving using expert knowledge programmed into it. Group Decision Support System (GDSS) and Computer-Supported Collaborative Work System (CSCWS) seek problem solutions by collecting knowledge in a group, not individually. They usually take the form of questionnaires, polls, and scenarios. Executive Support System (ESS) This system helps managers interact with the corporate environment using graphics and other communication tools.

The case study about MIS, Implementing information systems in this institution was problematic from the start. A lot of people inside the institution as well as people from the outside were of the opinion: "If the planning for the use of information systems is really like this, then it is better to postpone it and let it return to the old system. This is also because there is no added value, but rather reduced value in the institution".

All the old systems have been running well and there have been no complaints; if there is something to address, it is better to improve it immediately rather than overhaul it. Access and let the employees be creative according to their pleasure. If the employee is happy, he will automatically love the database design he has created.

In the end, everyone in the service department will be practicing or at least creating tables, queries, and reports according to how the user wants to work. The effect is that everyone in the customer department will master the application, and the effort is cheap and easy.

What impact does this have on the information systems department? Obviously, it helps that each department already likes its own database design, which means less rejection, and if they want to create an information system, MS. Access will be compatible with other database software or programming languages.

Each department will certainly be less dependent on the information systems department if it has successfully created its own database according to its own procedures. For example, if a table is added or an error occurs, they can handle it themselves, unlike if everything is centralized by the Information Systems Department. If something happens in a particular department, that department will be heavily dependent on the information systems department to solve the problem. In this example, the information systems department is still considered an out-source, even though it is still within the institution.

It can be verified that the database and procedures in one department match the database and procedures in the other if there are at least two departments whose databases are ready and following their procedures. It should also be observed how the issues of levels and control of authority and the flow of information between the two departments are dealt with.

4. Conclusion

For modern management accounting systems, information technology is an opportunity. Firstly, information technology will be applied to automate management accounting functions like reporting and data gathering. Different forms of IT are integrated into production facilities, where the resulting data is automatically saved. This, of course, speeds up the production of reports. Second, today's information technology enables a more complex data base, allowing the management accounting system to display non-financial information, such as information about products, consumers, and production processes. This information makes it easier for managers to monitor and analyze their operations. Third, information technology makes it possible to create situational plans. The use of information technology to simulate and present alternative outcomes allows modern management accounting systems to present information to help make informed choices. Fourth, information technology enables modern management accounting systems to perform the role of presenting strategic cost information. Information technology presents an interesting challenge to management accountants because of these capabilities. The rapid development of information technology should motivate management accountants to keep abreast of new developments in information technology so that they can adapt quickly and make the best use of technology to benefit the organizations in which they work.

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