

THE ROLE OF MANAGEMENT INFORMATION SYSTEMS IN DECISION-MAKING

4.1 INTRODUCTION You can make valid decisions if you have high-quality information.

Management information systems can help you make valid decisions by providing accurate and up-to-date information and performing analytic functions. You have to make sure the management information system you choose can work with the information formats available in your company and has the features you need. Suitable management information systems can structure the basic data available from your company operations and records into reports to present you with guidance for your decisions.

When you base your decisions on data available from management information systems, they reflect information that comes from the operations of your company. Management information systems take data generated by the working level and organize it into useful formats. Management information systems typically contain sales figures, expenses, investments and workforce data. If you need to know how much profit your company has made each year for the past five years to make a decision, management information systems can provide accurate reports giving you that information.

The capability to run scenarios is a key decision-making tool. Some management information systems have this feature built in, while others can provide the information required for running scenarios on other applications, such as spreadsheets. Your decision is influenced by what happens if you decide a certain way. What-if scenarios show you how different variables change when you make a decision. You can enter reduced staff levels or increased promotion budgets and see what happens to revenue, expenses and profit for different levels of cuts or increases. Management information systems play a critical role in making realistic scenarios possible.

Any decisions you make result in changes in the projected company results and may require modifications to your business strategy and overall goals. Management information systems either have trend analysis built in or can provide information that lets you carry out such an analysis. Typical business strategies include projections for all fundamental operating results. A trend analysis allows you to show what these results would be in the current situation and how they will

change once you have implemented the decisions you have taken. The new values form the basis of your strategic approach going forward.

While you make your decisions with specific goals in mind and have the documentation from management information systems and trend analysis to support your expectations, you have to track company results to make sure they develop as planned. Management information systems give you the data you need to determine whether your decisions have had the desired effect, or whether you have to take corrective action to reach your goals. If specific results are not on track, you can use management information systems to evaluate the situation and decide to take additional measures if necessary.

4.2 About Management Information Systems: Management information systems (MIS) create the link between information-gathering and decision-making. Most management information systems provide enormous data processing and reporting power, and most offer more features and components than the average small business owner needs. For a small organization, the right system provides added value and fits the needs of the company.

Management information systems consist of the physical hardware and software plus the processes required to effectively manage the flow of information in an organization. MIS offerings have existed since the 1960s, when large mainframe computer systems began automating processes at major corporations. The information that MIS creates provides management with critical, decision-making data. Most MIS systems require an entire department to manage the system's software, database management and hardware and programming requirements. MIS systems impact all levels of an organization.

At the center of any MIS system sits the database management system (DBMS) and the tools required to report, retrieve and edit the information. The tools found in an MIS allow users to query, retrieve, export and manipulate data found in the DBMS. Often these tools let users export data to other areas of the management information system or to external applications such as spreadsheets and other database applications. Most MIS applications control the day-to-day functions of a business, such as payroll, accounts receivable, accounts payable and purchasing.

When the main software of an MIS is enterprise resource planning (ERP) software, many of the features integrate internally through various modules of the ERP. Companies that do not have an ERP system typically integrate the management information system into existing legacy systems and applications.

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According to the Comptroller of the Currency of the U.S. Treasury, the goals of any MIS are to enhance communication among employees, deliver complex material throughout the organization, provide an objective system for recording and aggregating information, reduce expenses related to labor-intensive manual activities and support the organization's strategic goals and vision.

Management information systems not only provide detailed reports of the activities within an organization, they also function well as management by objective (MBO) tools. MBO allows a company's management and staff to define a set of objectives for the staff to perform. These objectives must follow the S.M.A.R.T. philosophy: specific, measurable, agreed upon, realistic and time-specific. MIS aids a company in achieving its management by objectives goals because the system provides reports that measure key data. This key data gets used to track the performance of the staff's objectives.

Good management information systems architecture allows a company to react more quickly and efficiently to changes in the market. Slow, difficult-to-use systems that do not allow users to create specialized reports typically do not provide critical information in time to make decisions. A fast, nimble MIS architecture that runs in real time and gives up-to-date pertinent information allows a company to respond more quickly to critical events

4.3 HOW IS A MANAGEMENT INFORMATION SYSTEM USEFUL IN COMPANIES? Management information systems give decision-makers the data they need to fulfill their responsibilities. Such systems provide background, current data and trend analysis so the manager has data available on all aspects of the business. Managers using management information systems can improve business performance since they have detailed information on their business environment and their decisions reflect the company position in the marketplace.

Managers have to be informed about their business in general and about their area of responsibility in particular. If the president calls and wants to know how much sales have increased in each of the last four years, the sales manager must provide the information. Management information systems give the manager access to key data about his department and about the company in general. If the manager needs

reference information for a bid or for regulatory purposes, management information systems are a good source.

Decisions are only as valid as the information on which they are based. Management information systems improve manager decision-making, because they provide information that is accurate, timely, relevant and complete. Self-checking and cross-checking features in management information systems reduce errors, and IT professionals design the systems to offer a complete picture of a situation or highlight that specific information is missing. Companies that use management information systems ensure that all managers work from the same set of data and make their decisions based on identical information.

A key part of management's responsibilities is preparing forecasts for strategic planning and budgets. Management information systems contain past data for fundamental company functions such as sales, production and customer service. They include information on revenue, expenses and investments, broken down into separate components. A manager can look for trends by asking the systems to project past performance patterns into the future. Management information systems have sophisticated mathematical analysis tools that can evaluate relationships and calculate probable future trends. Managers can base accurate forecasts on such information.

Sometimes, the information and trends display an evolving situation that the company wants to change. Management information systems can evaluate different possibilities and let managers examine scenarios. What-if scenarios are a powerful tool that helps managers decide on the best strategy for the company. Management information systems calculate what happens based on their collection of data on how the company operations performed in the past. Managers can see what happens if they increase promotional budgets or cut staff. With this knowledge they can develop the optimal strategy for the company.

4.4 IMPORTANCE OF THE MANAGEMENT INFORMATION SYSTEM

Management Information Systems (MIS) not only include software systems, but the entire set of business processes and resources that are used to pull together information from functional or tactical systems. Data is then presented in a user-friendly and timely manner so that mid and upper-level managers can use it to take the right actions. The entire system is designed so that the company will meet its strategic and tactical goals.

Organizations have multiple functional systems. These usually include sales systems, call center systems, financial systems, inventory systems, logistic systems and more. MIS combines information from multiple systems. This helps management staffers better understand their own departments' contributions. In many cases, the combination of data, such as sales figures combined with available inventory, help the manager take the appropriate action in order to meet the customer's needs.

The primary function of MIS is to help a manager take an action, answer a question or ask the right question. The questions or actions should directly relate to tactical or strategic goals. A sales manager who uses projections from the financial systems to compare with actual sales from the sales system can better gauge whether goals will be met. If the target is not going to be met, then the manager and his group can review their past actions and make necessary changes in order to increase sales and meet goals.

Related Reading: Importance of Information Systems in an Organization

MIS is not necessarily a specific combination of functional systems, but instead is created based upon the business need. CRM (Customer Relationship Management) systems combine data that relates directly to the customer experience. ERP (Enterprise Resource Systems) combine data used in the entire sales process. Decision Support Systems or Data Warehouse often combine summary data from multiple systems in order to show executives a snapshot view of the entire organization.

Prior to starting an MIS project, organizations need to carefully review the transactional systems, the business processes and the needs of management within an organization. As an MIS project grows, so does the cost of implementing a solution, managing the information processes and monitoring daily activities. The result of an MIS project must provide value back to the organization in order to be worth the cost.

Many managers mistakenly believe that, for MIS to be effective, all data from all systems must be combined. The value of MIS is based upon how much it can help managers manage. If this means bringing just the data needed from several systems and ignoring the rest for now, the end result still has worth, which is the ultimate goal of MIS.

4.2 FEATURES OF: Many companies use some form of an information management system, or IMS. Some smaller companies do this through a database

found in most office software products. Others purchase external IMS and integrate these systems with currently used software. The type of information management system a company chooses depends on how much value the system can bring to the company.

The chief feature of an information management system is its ability to store data and make that data easy to retrieve by the system's users. The type of database used determines how the information management system responds to requests or queries for information. Systems that use a relational database store the data in separate tables instead of one large table. Once the data gets stored, database administrators connect relevant tables of data to each other through the use of keys. These keys identify the relationship between data in one table and data in another table. Relational databases provide a quicker response to queries and store more information than hierarchical databases. Hierarchical databases always access data starting at the top of the database and moves down. It does not look at the relationship between different pieces of information.

The next most important feature of an information management system comes in the form of reports. An information management system is only as good as the reports it generates. The ability to produce information that helps in the decision-making process is a key attribute for this kind of system. Most IMS provide multiple report templates while others offer the ability to create specific reports and save these reports as a template for others to use.

An information management system that allows open access to its system architecture lets a company comply more easily with external regulations and internal requirements. Open access means the company can more easily integrate the IMS with existing systems. This ability reduces the need for outside service people to perform internal service changes. Open access also reduces maintenance expenses because internal resources can manage the maintenance of the system.

Information management systems typically integrate with a company's existing systems. How well these varied systems integrate often creates many challenges for internal and external resources. A good IMS provides ease of integration with legacy systems, thus allowing a company to maintain the equipment investments it has already made.

Because not all companies require the full offering of some information management systems, scalability becomes a key purchase consideration. Smaller businesses might require a scaled-down version of an IMS now, but within a few

years require additional features and larger database management capabilities. Purchasing a scalable system gives a company room to grow without losing its initial investment.