

# THE EFFECTIVENESS OF MANAGEMENT INFORMATION SYSTEM IN PHARMACEUTICAL SECTOR



**SARANYA SASIDHARAN**

D B Pampa College, Parumala, Kerala, INDIA  
ORCID: 0000-0002-6987-7009

**MONISHA DEVARAJAN**

D B Pampa College, Parumala, Kerala, INDIA  
ORCID: 0000-0001-9753-863X

## ABSTRACT

The pharmaceutical industry is one of the quickest developing areas of the economy and is well – known as the information serious industry. The reception of Management Information System (MIS) in medical care, including drugs, isn't less significant than in some other association. The advancement of fitting, coordinated and adaptable Information framework in the pharmaceutical industry of creating nations has not been anything but difficult to accomplish and is probably going to stay slippery on account of proceeded with divided subsidizing of wellbeing programs and the record keeping. India is currently one among the main five emerging pharmaceutical markets worldwide. The Indian pharmaceutical sector is profoundly information based and data based which is developing consistently. In the administration of contemporary association, dynamic is one of the most significant administrative capacities. To this end, suitable, right and precise data is needed to be conveyed in an opportune way for legitimate administrative thought. In the current time a considerable lot of the pharmaceutical organizations are confronting serious issues for record saving for the assortment of information for dynamic reason. So as to achieve this, proficient and viable Management Information System (MIS) turns into a fundamental part for the association. In this paper, the analyst examines the cause of Pharmaceutical Management Information System (PMIS) in India and the working example of PMIS. It likewise attempts to understand both the upsides and downsides in PMIS framework.

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## **INTRODUCTION**

India is now one of the top five emerging pharmaceutical markets globally. The Indian pharmaceutical sector is highly knowledge-based and information based which is growing steadily. In the management of a contemporary organization, decision making is one of the most important managerial functions. To this end, appropriate, correct, and accurate information is required to be delivered in a timely manner for proper managerial consideration. In the present era, many pharmaceutical organizations are facing severe problems for record-keeping for the collection of data for decision-making purposes. In order to accomplish this, an efficient and effective Management Information System (MIS) becomes a vital part of the organization. In the management of contemporary organizations, decision – making is one of the most important managerial function. To this end, appropriate, correct, and accurate information is required to be delivered promptly for proper managerial consideration. In order to accomplish this, an efficient and effective MIS becomes a vital part of the organization. In addition to facilitating decision–making, organizations adopt a sophisticated and comprehensive Management Information System to provide managers with a broad range of information to achieve multiple performances. In contrast, the management practice, including information system management, also affects the MIS organization. Any inefficiency or ineffectiveness issues within management then cause the MIS of that organization to be inefficient or ineffective. The pharmaceutical industry is one of the fastest-growing sectors of the economy and is well – known as the knowledge-intensive industry. The adoption of the Management Information System (MIS) in healthcare, including pharmaceuticals, is not less important than in any other organization. The development of an appropriate, integrated, and scalable Information system in the pharmaceutical sector of developing countries has not been easy to achieve and is likely to remain elusive in the case of continued fragmented funding of health programs and record keeping. The effectiveness of the organization is dependent on the quality of decisions that informs its operations. If the decisions are right, it translates into positive organizational outcomes as the organizations will execute the available information properly, which will determine the success and failure of the organization in its workings in the future.

## **REVIEW OF EXISTING LITERATURE**

The Indian pharmaceutical sector is highly knowledge-based and information based which is growing steadily. The research literature is still evolving. Therefore, this paper aims to address the gap of understanding of the subject and thus add to the foundations of knowledge on the topic.

## **OBJECTIVES**

1. To understand the concept and working pattern of PMIS
2. To exhibit the pros and cons of PMIS system
3. To showcase the role of management information systems in business

## **RESEARCH METHODOLOGY**

The study uses the descriptive research method to collect data from secondary data sources from various journals, internet sources, and newspapers.



## DISCUSSION

### THE CONCEPT OF MIS

Information is a set of classified and interpreted data used in decision making, and it has also been defined as “some tangible or intangible entity which serves to reduce uncertainty about future state or events”. There are different levels of decision making, for which information can be described as:

**People:** These are the users who use information systems to record day-to-day business transactions.

**Source:** This is the place from where the data or information will be collected.

**Data:** It is the recorded day to day business transactions.

**Software:** These are programs that run on the hardware. The software is broken down into two major categories, namely system software, and applications software.

**Hardware:** It is made up of computers, printers, networking devices, etc. The hardware provides the computing power for processing data. It also provides networking and printing capabilities. The hardware speeds up the processing of data into information.

1. Inferences and Predictions are drawn from data
2. Value and Choices
3. Action, which involves a course of action.

The management information system has the purpose of meeting the general information needs of all the managers in an organization or in some subunits of the organization. A subunit can be based on functional areas or can be viewed at management levels.

Considering the definition for Management Information System (MIS), one of the popular definitions describes Management Information System (MIS) as "an organizational method of providing past, present and projected information related to internal operations and external intelligence. It supports the planning, control and operation functions of an organization by furnishing uniform information in the proper time frame to assist the decision-makers". The information in Management Information System (MIS) describes the firm or one of its major systems in terms of what has happened in the past, what is happening now, and what is likely to happen in the future. The information is provided in the form of reports and outputs of mathematical simulations. There are two types of reports, namely, periodic and special reports. All managers use the information output as they make decisions to solve the firm's problems.

A Management Information System (MIS) has also been defined as "an integrated user-machine system for providing information to support operations, management, and decision-making functions in an organization. The system utilizes computers, manual procedures, models for analysis, planning, control and decision making, and a database". All these definitions give a concise understanding of the Management Information System as a whole.

Management Information System (MIS) plays three vital roles for business organizations:

1. Supports the business processes and operations of an organization.
2. Supports decision making by the employees of an organization.



3. Supports the strategies of an organization for competitive advantage.

## THE WORKING PATTERN OF PMIS

### Installing management information system

The installation of a Management Information System requires the following steps:

1. **Preliminaries:** The introduction of the Management Information System (MIS) requires a proper study of business objectives, plans, policies, etc.... It will enable in deciding the type of data required, its sources, and the levels at which required. The organizational structure should be able to supply the required information. The organizational levels, authorities, responsibilities, etc., should be studied for this purpose. The success of the MIS will depend upon the support of top-level management. The management should be able to supply the requisite finances.
2. **Planning:** The information needs of top, middle and lower levels of management should be studied so that the system is planned accordingly. The functions of each level of management should also be studied. The questions like, What data is needed? When is it needed? Who needs it, and in What form is it needed? It should be studied to make the system effective.
3. **Implementation:** Management Information System (MIS) can effectively be applied only when every person in the organization is involved in it. The persons should also be given training for implementing this system. Information System manuals should be prepared to devise a procedure for it. The manual and mechanical devices necessary for processing data should also be selected. Standard proformas, etc., should also be decided for collecting information. The main emphasis should be on the involvement of all persons in the organization.
4. **Review:** The review of the system is essential. The problems and difficulties faced in the system and additional requirements should be pointed out. The MIS review will enable to spot the weak spots, and corrective action will make the system more effective. It should be determined whether the information supplied was sufficient or not? Was the information relevant and critical? Was the frequency of reporting justified? The answers to these questions will help in making changes in the system. Without a proper review, the system will cease to be effective and useful after some time. It should continuously be reviewed with the change in the situation in the business.

MIS must be designed in an organization in such a way as the nervous system works in a human body. The foremost task of the MIS is to provide information to the management, but the scope of MIS covers several functions to be performed simultaneously;

1. MIS has to aim at identifying the management's informational needs.
2. MIS has to aim at satisfying the informational needs of management.
3. MIS has to help the management in processing information for the decision-making process.
4. MIS has to aim at providing regular formal information gathered from routine commercial data.
5. MIS has to be flexible enough to help management to incorporate informal and unstructured information into the process of decision-making.



6. MIS may grow up in an informal or unplanned way, which are not designed but can be helpful to the management in the decision-making process.

## **THE PROS AND CONS IN PMIS SYSTEM**

### **ADVANTAGES OF MIS**

1. Facilitates planning: MIS improves the quality of plans by providing relevant information for sound decision making. Due to the increase in organizations' size and complexity, managers have lost personal contact with the scene of operations.
2. Minimizes information overload: MIS changes the larger amount of data into a summary form and thereby avoids the confusion which may arise when managers are flooded with detailed facts.
3. Encourages Decentralization: Decentralization of authority is possible when there is a system for monitoring operations at lower levels. MIS is successfully used for measuring performance and making necessary changes in the organizational plans and procedures.
4. Coordination: MIS facilitates the integration of specialized activities by keeping each department aware of other departments' problem and requirements. It connects all decision centers in the organization.
5. Easy Control: MIS serves as a link between managerial planning and control. It improves the ability of management to evaluate and improve performance. The used computers have increased the data processing and storage capabilities and reduced cost. This will help the management to evaluate and improve performance.
6. MIS assembles, processes, stores, retrieves, evaluates, and disseminates the information.
7. Improves quality of an organization or an information content by providing relevant information for sound decision making.
8. MIS changes a large amount of data into a summarized form and thereby avoids confusion.

### **DISADVANTAGES OF MIS**

1. Cost of Equipment: For a big company to successfully incorporate a Management Information system, there is a need to purchase devices that the employees and management executives will be using to interact with the system. These devices include servers, tablets, laptops, and desktop computers. In addition, the company needs to invest in a good network that will connect these devices in order for the system to work effectively.
2. Training of the workforce: This can also become a problem when applying Management Information Systems in a company. Without a proper understanding of how the system works, it can be hard to reap the full benefits of using it. This, therefore, makes it necessary for the company to ensure that employees and their managers are well trained on how to use the system. This can be an expensive and time-consuming exercise.
3. The systems are expensive to purchase: Owing to the unique needs of each organization, Management Information Systems have to be customized for each company. This means that there has to be brainstorming sessions where the vendors sit with management officials seeking to understand the needs before they can develop the system. As a result, the cost of the system goes up, thus taking it out of reach for small and medium companies.
4. Many companies end up purchasing systems that lack the features they need most: As mentioned earlier, each company has its own unique needs when it comes to Management Information Systems. When you purchase a system that is not meant for your company, you will have better access to data that does not help improve your operations. As a result, you will not be able to get the best return on investment.



5. There is also a need for trained personnel to keep the system in good working order at all times: Like any other system, management information systems need proper maintenance in order for them to produce the best results. This means that you will need to add specialized personnel for system maintenance in your company. Without these people, using the system will be a challenge since errors will go unresolved, and this will result in inefficiencies in the operations.
6. Management Information Systems are heavily affected by large changes in the company: This means that before you make any change in the way you run the company, there will be a need to consider the impact of the changes on the information system. Sometimes, it becomes impossible to make some changes without changing the Management Information Systems; hence having the system in place ends up being a limitation. However, most small changes should easily be incorporated into a good MIS.
7. It is highly sensitive, which requires constant monitoring.
8. Budgeting of Management Information System (MIS) is extremely difficult.
9. Quality of outputs governed by quality of inputs.
10. Lack of flexibility to update itself.
11. Effectiveness decreases due to frequent changes in top management.
12. Too difficult to adapt.

## **ROLE OF MANAGEMENT INFORMATION SYSTEMS IN BUSINESS**

The main role of MIS is to report on business operations with the purpose of supporting decision making. This is to ensure that the organization is managed in a better and more efficient way so that it can be able to achieve full potential thus gain a competitive advantage. Let us look at some of the other roles played by Management Information Systems in an organization.

### **1. To provide information readily to company decision-makers:**

Regardless of whether it is a marketing, financial or operational issue, managers need quick access to information so that they can make good decisions that will have a positive impact on the company's performance. Management Information Systems enhance this by strategically storing vast amounts of information about the company in a central location that can be easily accessed by managers over a network. This means that managers from different departments have access to the same information hence they will be able to make decisions that collectively help solve the company's problems in the quickest way.

### **2. Management Information Systems also help in data collection:**

Data from everyday operations in the company is collected and brought together with data from sources outside the organization. This enables a healthy and functional relationship between distributors, retail outlets and any other members of the supply chain. It also helps keep good track of performance since production and sales numbers will be recorded and stored in a central database that can be accessed by all members of the MIS. Access to this information also helps ensure that problems are detected early and decisions are made quickly using the latest information.

### **3. To promote collaboration in the workplace:**

In any large company, there are many situations that call for input from several individuals or departments before decisions can be made. Without an efficient communication channel,



these decisions can take a very long time. Even with good communication channels, if the different stakeholders don't have access to all the available data, the process would hit a number of snags before it's complete. Management Information Systems ensure that all the members of the decision-making group have access to all the data that's required to make the decision even if they are working from different physical locations.

**4. To run possible scenarios in different business environments:**

Before making a decision that will affect the overall standing of the business, a lot of precaution must be taken. There is a need to check and verify that the company will not suffer after making a decision. Management Information Systems enable executives to run what-if scenarios so that they can see how some of the important metrics in the business will be affected by a given decision. The data is presented in easy-to-understand reports and graphs that make interpretation easy.

**5. Management Information systems give accurate projections of the company's standing in the short and long term:**

Most of the decisions made by top executives in companies have an effect on the company strategies. As a result, some of them may need some modifications done on the company goals or strategies. Most Management Information Systems come with trend analysis features that will enable you to project the performance of a business with the current configuration and how they will be affected once you have implemented any changes that you are considering. The Management Information Systems that don't have the trend analysis feature will still provide you with enough information to accurately carry out the analysis using external tools.

**6. Management Information Systems help track the implementation of particular decision in a company:**

Before making a decision, executives use these systems to make projections of the expectations from the particular decision. If they decide to go ahead with the changes, there will be a need to keep monitoring the performance to see if you are on track to achieving the desired results. Management Information Systems give detailed reports and recommendations so that the evaluation of the goals moves smoothly and effectively. You get data that shows if your decisions have had the desired effect. If not, you will be able to take the necessary corrective measures early so that you can get back on track.

**7. To improve on the company's reporting:**

One of the reasons why Management Information Systems are favored by large companies is the effectiveness of the reporting features. The decisions can be made quickly because the information is presented in an easy-to-understand format. The fact that the system is accessible by people from different parts of the organization makes it an effective reporting and communication tool. Findings can be shared among colleagues with all the necessary supplementary data. It is also possible to create brief executive summaries that sum up the whole situation for review by senior company executives in situations that need their approval.



## CONCLUSION

Management Information System provides accurate, timely, relevant, and complete information necessary to facilitate decision making in an organization. It helps in planning, control, and operational functions to be carried out effectively and efficiently. It provides a wide range of decision alternatives for the decision-makers, enabling them to make their choice depending on the system and situation. These are the major reasons why MIS is chosen by renowned organizations for decision making, record keeping, and management of information.

By its very nature, MIS is designed to meet the unique needs of pharmaceutical organizations. However, basic information needs or requirements are similar in all organizations regardless of size. The complexity of the operations and/or activities, together with institution size, point to the need for MIS of varying degrees of complexity to support the decision-making processes. Management Information System provides management with the information necessary to guide operations, support timely decision-making, record accurate information, and help management monitor progress toward reaching its goals and objectives. At the time of development of a pharmaceutical information system, the developer requires to have a significant commitment of resources and a clear idea of benefits that will acquire from the system.

To conclude the study, it was very useful to get the knowledge of Management Information System as well as whole aspects of the pharmaceutical sector, how Management Information System influence the entire sector and deals with the challenges that need to be overcome and opportunities that they possess for the growth and development of Management Information System strategies that should be adopted as per the requirements and should aim to achieve organizational goal.





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