**VISION INSTITUTE OF MANAGEMENT**

**MANAGEMENT INFORMATION SYSTEM**

**BBA 3rd YEAR/6th SEM**

**UNIT 1(MANAGEMENT INFORMATION SYSTEM)**

**What is MIS? Introduction & Definition**

## **What is MIS?**

**MIS** is the use of information technology, people, and business processes to record, store and process data to produce information that decision makers can use to make day to day decisions. The full form of MIS is **Management Information Systems**. The purpose of MIS is to extract data from varied sources and derive insights that drive business growth.

**The need for MIS:**

The following are some of the justifications for having an MIS system

* **Decision makers need information to make effective decisions-** Management Information Systems (MIS) make this possible.
* **MIS systems facilitate communication within and outside the organization** – employees within the organization are able to easily access the required information for the day to day operations. Facilitates such as Short Message Service (SMS) & Email make it possible to communicate with customers and suppliers from within the MIS system that an organization is using.
* **Record keeping**– management information systems record all business transactions of an organization and provide a reference point for the transactions.

## **Components of MIS:**

The major components of a typical MIS long-form (Management Information System) are:

* **People** – people who use the information system
* **Data** – the data that the information system records
* **Business Procedures** – procedures put in place on how to record, store and analyze data
* **Hardware** – these include servers, workstations, networking equipment, printers, etc.
* **Software** – these are programs used to handle the data. These include programs such as spreadsheet programs, database software, etc.

## **Types of Information Systems**

The type of information system that a user uses depends on their level in an organization. The following diagram shows the three major levels of users in an organization and the type of information system that they use.

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**Transaction Processing Systems (TPS)-**

This type of information system is used to record the day to day transactions of a business. An example of a Transaction Processing System is a Point of Sale (POS) system. A POS system is used to record the daily sales.

**Management Information Systems (MIS)-**

Management Information Systems abbreviated as MIS, are used to guide tactic managers to make semi-structured decisions. The output from the transaction processing system is used as input to the MIS system.

**Decision Support Systems (DSS)-**

Decision support systems are used by top level managers to make semi-structured decisions. The output from the Management Information System is used as input to the decision support system. DSS systems also get data input from external sources such as current market forces, competition, etc.

## **Manual Information Systems VS Computerized Information Systems (MIS)**

Data is the bloodstream of any business entity. Everyone in an organization needs information to make decisions. An information system is an organized way of recording, storing data, and retrieving information.

**Manual Information System:**

A manual information system does not use any computerized devices. The recording, storing and retrieving of data is done manually by the people, who are responsible for the information system.

The following are the major components of a manual information system

* **People –**people are the recipients of information system
* **Business Procedures –**these are measures put in place that define the rules for processing data, storing it, analysing it and producing information
* **Data –**these are the recorded day to day transactions
* **Filing system –**this is an organized way of storing information
* **Reports –**the reports are generated after manually analysing the data from the filing system and compiling it.

The following diagram illustrates how a typical manual information system works-



## **Advantages and Dis-advantages of a manual information system**

**Advantages:**

The following are the advantages of manual information systems

* **Cost effective –**it is cheaper compared to a computerized system because there is no need to purchase expensive equipment such as servers, workstations, printers, etc.
* **Flexible –**evolving business requirements can easily be implemented into the business procedures and implemented immediately

**Disadvantages:**

The following are some of the disadvantages of a manual information system.

* **Time consuming –**all data entries need to be verified before filing, this is a time consuming task when done by humans. Retrieving data from the filing system also takes a considerable amount of time
* **Prone to error –**the accuracy of the data when verified and validated by human beings is more prone to errors compared to verification and validation done by computerized systems.
* **Lack of security –**the security of manual systems is implemented by restricting access to the file room. Experience shows unauthorized people can easily gain access to the filing room
* **Duplication of data –**most departments in an organization need to have access to the same data. In a manual system, it is common to duplicate this data to make it easy to accessible to all authorized users. The challenge comes in when the same data needs to be updated
* **Data inconsistency –**due to the duplication of data, it is very common to update data in one file and not update the other files. This leads to data inconsistency
* **Lack of backups –**if the file get lost or mishandled, the chances of recovering the data are almost zero.

**Computerized information system**

Computerized systems were developed to address the challenges of manual information systems. The major difference between a manual and computerized information system is a computerized system uses a combination of software and hardware to record, store, analyse and retrieve information.

## **Advantages and Disadvantages of a computerized information system (MIS)**

The following are some of the disadvantages of a computerized information system-

**Advantages:**

The following are the advantages of computerized information systems

* **Fast data processing and information retrieval –**this is one of the biggest advantages of a computerized information system. It processes data and retrieves information at a faster rate. This leads to improved client/customer service
* **Improved data accuracy –**easy to implement data validation and verification checks in a computerized system compared to a manual system.
* **Improved security –**in addition to restricting access to the database server, the computerized information system can implement other security controls such as user’s authentication, biometric authentication systems, access rights control, etc.
* **Reduced data duplication –**database systems are designed in such a way that minimized duplication of data. This means updating data in one department automatically makes it available to the other departments
* **Improved backup systems –**with modern day technology, backups can be stored in the cloud which makes it easy to recover the data if something happened to the hardware and software used to store the data
* **Easy access to information –**most business executives need to travel and still be able to make a decision based on the information. The web and[Mobile](https://www.guru99.com/mobile-testing.html)technologies make accessing data from anywhere possible.

**Disadvantages:**

* **It is expensive to set up and configure –**the organization has to buy hardware and the required software to run the information system. In addition to that, business procedures will need to be revised, and the staff will need to be trained on how to use the computerized information system.
* **Heavy reliance on technology –**if something happens to the hardware or software that makes it stop functioning, then the information cannot be accessed until the required hardware or software has been replaced.
* **Risk of fraud –**if proper controls and checks are not in place, an intruder can post unauthorized transactions such as an invoice for goods that were never delivered, etc.

**Role of MIS in Business Organization**

Simply MIS stand For **Management Information System**. For Simply Understanding Management Information System (MIS) we can divide in to three Word and Understand Part by part

1. **Management: - “**Management is function to do the work at the Right time, by the right Person, For the Right Job.”
2. **Information: - “**Information is the Collection of Organized data which plays a Vital Role for decision making.”
3. **System: - “**System Consist for a set of elements which Provides a Framework to convert Unorganized (Data) into Organized Information.”

Management information system refers to such system which provides accurate information to the entire level of management for decision making process. For right job at the right time, by the right person

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**Management information system (MIS**) has become Very Necessary due to Emergence of high complexity in Business Organization. It is all to know that without information no Organization can take even one step properly regarding the decision making process. Because it is matter of fact that in an organization decision plays an essential role for the achievement of its objectives and we know that every decision is based upon information. If gathered information are irrelevant than decision will also incorrect and Organization may face big loss & lots of Difficulties in Surviving as well.

* **Helps in Decision making:**Management Information System (MIS) plays a significant Role in Decision making Process of any Organization. Because in Any organization decision is made on the basis of relevant Information and relevant information can only be Retrieving from the MSI.
* **Helps in Coordination among the Department:**Management information System is also help in establishing a sound Relationship among the every persons of department to department through proper exchanging of Information’s.
* **Helps in Finding out Problems:**As we know that MIS provides relevant information about the every aspect of activities. Hence, If any mistake is made by the management then Management Information Systems (MIS) Information helps in Finding out the Solution of that Problem.
* **Helps in Comparison of Business Performance:**MIS store all Past Data and information in its Database. That why management information system is very useful to compare Business organization Performance. With the help of Management information system (MIS) Organization can analyse his Performance means whatever they do last year or Previous Years and whatever business performance in this year and also measures organization Development and Growth.

# MIS: A Tool for Management Process

The process of management requires a lot of data and information for execution of the plan. This requirement arises on account of the fact in each step of management, a variety of decisions are taken to correct the course of development. The decisions or actions are prompted due to the feedback given by the control system incorporated in the management system. The control of overall performance is made possible by way of Budget Summarizes and reports. The summary showing sales, costs, profit and return on investment throws light on the direction the organization is moving to. The exception reports identify the weaknesses tin the system of management.

If effective management system is to be assured, it has to rest on business information. The management performance improves if the business risk and uncertainties are handled effectively. If the information provided is adequate, one can deal with these factors squarely. The information support improves the lack of knowledge, enriches experience and improves analytical abilities leading to better business judgment.  So, if efficient information support is to be provided, it calls for a system with the goals of generating management information. A good MIS must furnish information to the managers to expand their knowledge base.  He must know the adverse trends in business, the shortfalls and failures in the management process.

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* **Record keeping:** management information systems record all business transactions of an organization and provide a reference point for the transactions.

# Impact of MIS

The impact of MIS on the functions is in its management.  With a good MIS support, the management of marketing, finance, production and personnel becomes more efficient, the tracking and monitoring the functional targets becomes easy. The functional managers are informed about the progress, achievements and shortfalls in the activity and the targets. The manager is kept alert by providing certain information indicating the probable trends in the various aspects of business. This helps in forecasting and long-term perspective planning.  The manager” attention is brought to a situation which is exceptional in nature, inducing him to take an action or a decision in the matter. A disciplined information reporting system creates a structured database and a knowledge base for all the people in the organization. The information is available in such a form that it can be used straight away or by blending and analysis, saving the manager’s valuable time.

The MIS creates another impact in the organization which relates to the understanding of the business itself. The MIS begins with the definition of a data entity and its attributes. It uses a dictionary of data, entity and attributes, respectively, designed for information generation in the organization. Since all the information systems use the dictionary, there is common understanding of terms and terminology in the organization bringing clarity in the communication and a similar understanding of an event in the organization.

The MIS calls for a systemization of the business operations for an effective system design. This leads to streamlining of the operations which complicate the system design.  It improves the administration of the business by bringing a discipline in its operations everybody is required to follow and use systems and procedures. This process brings a high degree of professionalism in the business operations.

Since the goals and objective of the MIS are the products of business goals and objectives, it helps indirectly to pull the entire organization in one direction towards the corporate goals and objectives by providing the relevant information to the people in the organization.

A well designed system with a focus on the manager makes an impact on the managerial efficiency.  The fund of information motivates an enlightened manager to use a variety of tools of the management. It helps him to resort to such exercises as experimentation and modeling. The use of computers enables him to use the tools and techniques which are impossible to use manually. The ready-made packages make this task simpler. The impact is on the managerial ability to perform. It improves the decision making ability considerably.

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Since, the MIS work on the basic system such as transaction processing and database, the drudgery of the clerical work is transferred to the computerized system, relieving the human mind for better work. It will be observed that lot of manpower is engaged in this activity in the organization. Seventy (70) percent of the time is spent in recording, searching, processing and communicating. This MIS has a direct impact on this overhead. It creates information –based working culture in the organization.

### **Importance of MIS**

It goes without saying that all managerial functions are performed through decision-making; for taking rational decision, timely and reliable information is essential and is procured through a logical and well-structured method of information collecting, processing and disseminating to decision makers. Such a method in the field of management is widely known as MIS. In today’s world of ever increasing complexities of business as well as business organization, in order to service and grow , must have a properly planned, analysed, designed and maintained MIS so that it provides timely, reliable and useful information to enable the management to take speedy and rational decisions.

MIS has assumed all the more important role in today’s environment because a manager has to take decisions under two main challenges:

First, because of the liberalization and globalization, in which organizations are required to compete not locally but globally, a manager has to take quick decisions, otherwise his business will be taken away by his competitors. This has further enhanced the necessity for such a system.

Second, in this information age wherein information is doubling up every two or three years, a manager has to process a large voluminous data; failing which he may end up taking a strong decision that may prove to be very costly to the company.

In such a situation managers must be equipped with some tools or a system, which can assist them in their challenging role of decision-making. It is because of the above cited reasons, that today MIS is considered to be of permanent importance, sometimes regarded as the name centre of an organization. Such system assist decision makers in organizations by providing information at various stages of decision making and thus greatly help the organizations to achieve their predetermined goals and objectives.

On the other hand, the MIS which is not adequately planned for analyzed, designed, implemented or is poorly maintained may provide developed inaccurate, irrelevant or obsolete information which may prove fatal for the organization. In other words, organizations today just cannot survive and grow without properly planned, designed, implemented and maintained MIS. It has been well understood that MIS enables even small organizations to more than offset the economies of scale enjoyed by their bigger competitors and thus helps in providing a competitive edge over other organizations.

# MIS & Computers

Translating the real concept of the MIS into reality is technically, an infeasible proposition unless computers are used. The MIS relies its ability to store, process, retrieve and communicate with no serious limitations.

The variety of the hardware having distinct capabilities make it possible to design the MIS for a specific situation. For example, if the organization needs a large database and very little processing, a computer system is available for such a requirement. Suppose the organization has multiple business locations at long distances and if the need is to bring the data at one place, process, and then send the information to various locations, it is possible to have a computer system with a distributed data processing capability.  If the distance is too long, then the computer system can be hooked through a satellite communication system.

The ability of the hardware to store data and process it at a very fast rate helps to deal with the data volumes, its storage and access effectively. The ability of the computer to sort and merge helps to organize the data in particular manner and process it for complex lengthy computations.  Since the computer is capable of digital, graphic word, image, voice and text processing, it is exploited to generate information and present it in the form which is easy to understand for the information user.

The software, an integral part of a computer system, further enhances the hardware capability. The software is available to handle the procedural and nonprocedural data processing. For example, if you want to use a formula to calculate a certain result, an efficient language is available to handle the situation. If you are not required to use a formula but have to resort every time to a new procedure, the nonprocedural languages are available.

The advancement in computer and the communication technology has made the distance, speed, volume and complex computing an easy task. Hence, designing the MIS for a specific need and simultaneously designing a flexible and open system becomes possible, thereby saving a lot of drudgery of development and maintenance of the system. The concept of user friendly systems and the end user computing is possible, making information processing a personalized function. However, the application of the management principles and practices in today’s complex business world is possible only when the MIS is based on a computer system support.

# MIS & the User

#### **1. Data Base Administrator:**

Centralized control of the Data base is exerted by a person or group of persons under the supervision of a high level administrator.

This person or group is referred to as the data base administrator (DBA).

They are the users who are most familiar with the data base and are responsible for creating, modifying and maintaining its three levels.

The DBA is the custodian of the data and controls the data base structure. The DBA administers the three levels of the data base and in consultation with the overall user community, sets up the definition of the global view or conceptual level of the data base.

The DBA further specifies the external view of the various users and applications and is responsible for the definition and implementation of the internal level, including the storage structure and access method to be used for the optimum performance of the DBMS.

Changes to any of the three levels necessitated by changes or growth in the organisation and/or emerging technology are under the control of the DBA. Mapping between the internal and the conceptual levels, as well as between the conceptual and external levels, are also defined by the DBA.

Ensuring that appropriate measures are in place to maintain the integrity of the data base and that the data base is not accessible to un-authorised users is another responsibility. The DBA is responsible for granting permission to the users of the database and stores the profile of each user in the data base.

This profile describes the permissible activities of a user on that portion of the data base accessible to the user via one or more user views. The user profile can be used by the data base system to verify that a particular user can perform a given operation on the data base

The DBA is also responsible for defining procedures to recover the data base from failures due to human, natural, or hardware causes with minimal loss of data. This recovery procedure should enable the organisation to continue to function and the intact portion of the data base should continue to be available.

#### **2. On Line Users:**

There are users who may communicate with the data base directly via an online terminal or indirectly via a user interface and application program. These users are aware of the presence of the data base system and may have acquired a certain amount of expertise in the limited interaction they are permitted with the data base through the intermediary of the application program.

The more sophisticated of these users may also use a data manipulation language to manipulate the data base directly. On line users can also be naive users requiring additional help, such as menus.

#### **3. Naive Users:**

Users who need not be aware of the presence of the data base system or any other system supporting their usage are considered naive users. A user of an automatic teller machine falls in this category. The user is instructed through each step of a transaction, he responds by pressing a coded key or entering a numeric value.

The operations that can be performed by this class of users are very limited and affect a precise portion of the data base; in the case of the user of the automatic teller machine, only one or more of her or his own accounts.

Other such naive users are end users of the data base who work through a menu oriented application program where the type and range of response is always indicated to the user. Thus, a very competent data base designer could be allowed to use a particular data base system only as a naive user.

#### **4. Application Programmers:**

Professional programmers who are responsible for developing application programs or user interfaces utilised by the naive and on line users fall into this category. The application program could be written in a general purpose programming language such as Assembler, C, COBOL, FORTRAN, Pascal or PL/1 and include the commands required to manipulate the data base.