MANAGEMENT INFORMATION SYSTEM

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Management Information System is a computer based information system which is basically concerned with processing data into information which is then communicated to the various departments in an organization to support the operations, the management and the decision making function in the organization.

To the managers, Management Information System is an implementation of the organizational systems and procedures. To a programmer it is nothing but file structures and file processing. However, it involves much more complexity.

The three components of MIS provide a more complete and focused definition, where **System** suggests integration and holistic view, **Information** stands for processed data, and **Management** is the ultimate user, the decision makers.

- Management information system can thus be analyzed as follows –
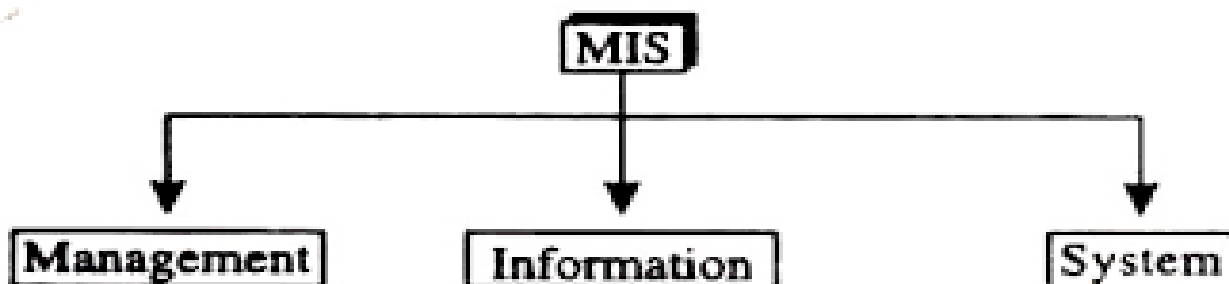
Fig. 1.1. Components of Management Information System

Management

Management covers the planning, control, and administration of the operations of a concern. The top management handles planning; the middle management concentrates on controlling; and the lower management is concerned with actual administration.

Management – An Art..!

▸ To make the things done with proper resource at correct cost, place and schedule

▸ To direct resources (human or material) in order to achieve certain goals

Elements of Management

Planning	→	Organizing	→	Directing	→	Coordinating	→	Controlling

Levels of Management?

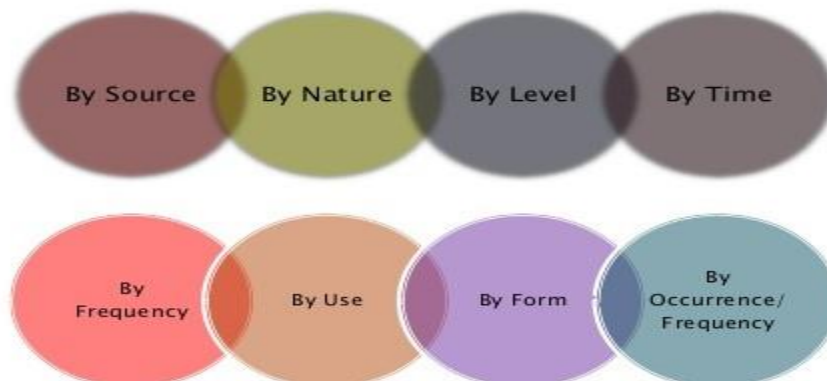| Top	• Strategic
Middle	• Tactics
Operational	• Operations

Information Flow

Communication

Information

Information, in MIS, means the processed data that helps the management in planning, controlling and operations. Data means all the facts arising out of the operations of the concern. Data is processed i.e. recorded, summarized, compared and finally presented to the management in the form of MIS report.

What is information?

- Data are facts, events, and transactions which have been recorded. They are basically the raw inputs which further get processed to become information.

- When facts are filtered through one or more processes (human or system), and are ready to give certain kind of details… they are the **information**.

- Processed data when presented in some useful and meaningful form, it is actually the information we are looking at.

| Appropriate Data | Accurate Information | Relevant Decision |

Classification of Information

| By Source | By Nature | By Level | By Time |

| By Frequency | By Use | By Form | By Occurrence/ Frequency |

Difference between data & information?

Data	Information
Raw facts	Processed facts
Dead stored facts	Live presented facts
Inactive (only exists in the backend)	Active (being processed data for knowledge base)
Technology oriented	Business oriented

Why do we require information?

▸ To ensure effective & efficient decision making leading to prosperity of the organization.

Information Needs by Level of Organisation

No	Characteristic	Top Management	Middle Management	Operating Management
1.	Planning Focus	Heavy	Moderate	Minimum
2.	Control Focus	Moderate	Heavy	Heavy
3.	Time Frame	Long term	Short Term	Day to Day
4.	Nature of Activity	Unstructured	Moderately Structured	Highly Structured
5.	Level of Complexity	Many Open variables, complex	Better defined variables	Straight forward
6.	Result of Activity	Mission, Goals, Objectives	Action Plan	End products and services

Attributes of Information

No	Attributes	Significance
1.	Accuracy	Must be true and Correct and must accurately describe the item or event.
2.	Timeliness	Available when it is needed and without excessive delay.
3.	Relevance	Pertains to the situation in hand.
4.	Completeness	Provides user with all the details needed to understand the solution.
5.	Frequency	Prepared/Presented to users and Up-to-date
6.	Time Horizon	Past-Present-Future activities and events
7.	Scope	Coverage of area of interest-Broad or narrow
8.	Origin	May originate from sources within or outside organisation.
9.	Form of Preparation	Tables of numbers or graphic displays of information are the most common written or printed forms or verbal presentation.

System

Data is processed into information with the help of a system. A system is made up of inputs, processing, output and feedback or control.

Thus MIS means a system for processing data in order to give proper information to the management for performing its functions.

What is System?

- System is a functional unit, which involves set of procedures/functions to produce certain outputs by processing data/information given as input.

Input → Process → Output

What is Management Information

▸ Useful information for management decisions

▸ Comprises processed data (information), necessary for making management decisions and generally gives output in the form of tables, matrix, reports, dashboards, graphs, trends, etc for logical and analytical comparisons.

▸ Viz. Market trend reports, sales report, IT application usage reports, Management dashboards, business information reports, research reports, etc.

Components of Information System

- Input
- Processor
- Output
- People
- Hardware(physical devices)
- Software (information processing instructions)
- Data
- Network (communication channels)

Definition of MIS

- **Management information system**, or **MIS**, broadly refers to a computer based **system** that provides **managers** with the tools to organize, evaluate and efficiently **manage** departments within an organization
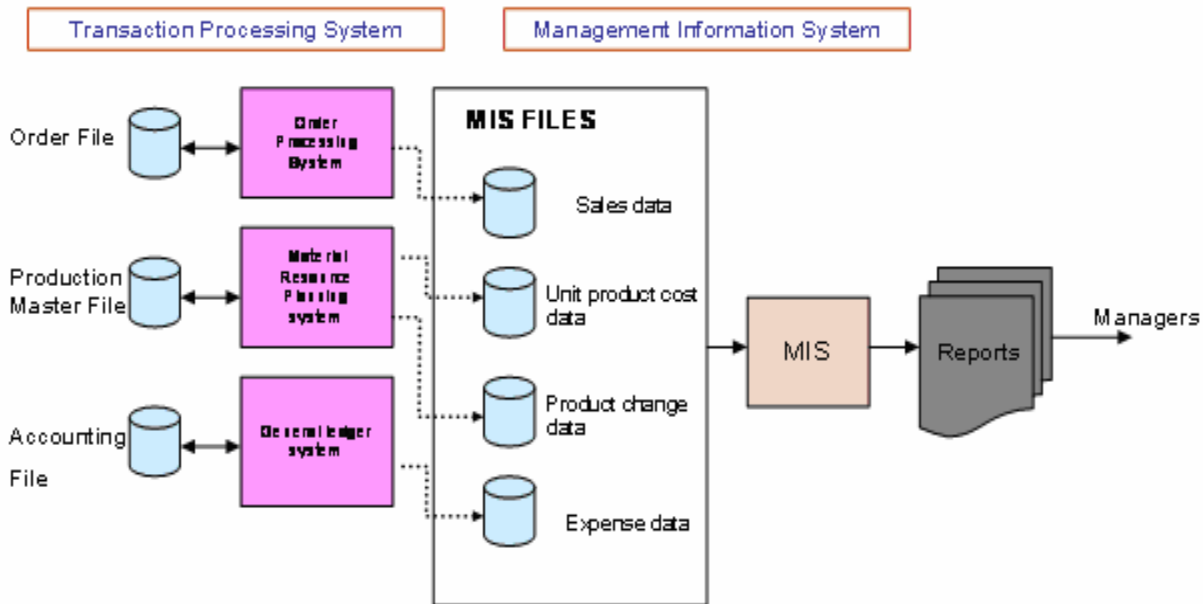
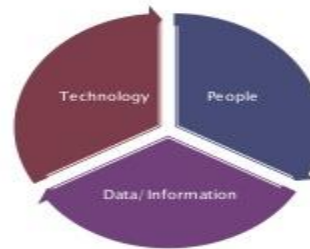   - Subhalakshmi Joshi

What is MIS?

- **Management Information System**

- MIS is basically a software tool which gives a holistic report of processed information based on which management can take certain crucial decision on which strategy and tactics could be figured out

- MIS provides information that is needed to manage organizations efficiently and effectively

- MIS is any organized approach for obtaining relevant and timely information on which managerial decisions are based

- MIS facilitates the decision making process and enable the organizational planning, control, and operational functions to be carried out effectively

- MIS is a study of how individuals, groups, and organizations evaluate, design, implement, manage, and utilize systems to generate information to improve efficiency and effectiveness of decision making, including systems termed decision support systems, expert systems, and executive information systems.

Transaction Processing System | Management Information System

MIS FILES

Order File → Order Processing System
Production Master File → Material Resource Planning system
Accounting File → General ledger system

Sales data
Unit product cost data
Product change data
Expense data

MIS → Reports → Managers

What is MIS?

Right Information
To Right Person
At Right Place
At Right Time
In the Right Form
At Right Cost

Technology — People — Data/Information

Role of MIS?

- **Effective decision making based upon:**
  - Quality analysis
  - Cost & budget analysis
  - Risk analysis
  - Market analysis
  - Inventory analysis
  - SWOT analysis
  - Stakeholder analysis
  - Feedback analysis
  - Behavior analysis
- **Report & Dashboard preparation**
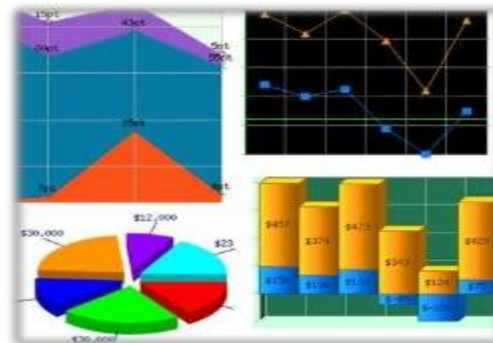
Why MIS ?

- Manager makes decisions all the time.
- There is an overload of information.
- All information is not useful.
- Anything which helps manager improve his decision-making will obviously lead to better result.
- MIS is a system, where data is the input, which is processed to provide output in the form of information reports, summaries, etc . Which aid the manager's decision-making process.

Objectives of MIS

The goals of an MIS are to implement the organizational structure and dynamics of the enterprise for the purpose of managing the organization in a better way and capturing the potential of the information system for competitive advantage.

Following are the basic objectives of an MIS −

- **Capturing Data** − Capturing contextual data, or operational information that will contribute in decision making from various internal and external sources of organization.

- **Processing Data** − The captured data is processed into information needed for planning, organizing, coordinating, directing and controlling functionalities at strategic, tactical and operational level. Processing data means −

    o making calculations with the data

    o sorting data

    o classifying data and

    o summarizing data

- **Information Storage** − Information or processed data need to be stored for future use.

- **Information Retrieval** − The system should be able to retrieve this information from the storage as and when required by various users.

- **Information Propagation** − Information or the finished product of the MIS should be circulated to its users periodically using the organizational network.

Characteristics of MIS

Following are the characteristics of an MIS −

- It should be based on a long-term planning.

- It should provide a holistic view of the dynamics and the structure of the organization.

- It should work as a complete and comprehensive system covering all interconnecting sub-systems within the organization.

- It should be planned in a top-down way, as the decision makers or the management should actively take part and provide clear direction at the development stage of the MIS.

- It should be based on need of strategic, operational and tactical information of managers of an organization.

- It should also take care of exceptional situations by reporting such situations.

- It should be able to make forecasts and estimates, and generate advanced information, thus providing a competitive advantage. Decision makers can take actions on the basis of such predictions.

- It should create linkage between all sub-systems within the organization, so that the decision makers can take the right decision based on an integrated view.

- It should allow easy flow of information through various sub-systems, thus avoiding redundancy and duplicity of data. It should simplify the operations with as much practicability as possible.

- Although the MIS is an integrated, complete system, it should be made in such a flexible way that it could be easily split into smaller sub-systems as and when required.
- A central database is the backbone of a well-built MIS.

Characteristics of Computerized MIS

Following are the characteristics of a well-designed computerized MIS −

- It should be able to process data accurately and with high speed, using various techniques like operations research, simulation, heuristics, etc.
- It should be able to collect, organize, manipulate, and update large amount of raw data of both related and unrelated nature, coming from various internal and external sources at different periods of time.
- It should provide real time information on ongoing events without any delay.
- It should support various output formats and follow latest rules and regulations in practice.
- It should provide organized and relevant information for all levels of management: strategic, operational, and tactical.
- It should aim at extreme flexibility in data storage and retrieval.

Nature and Scope of MIS

The following diagram shows the nature and scope of MIS −
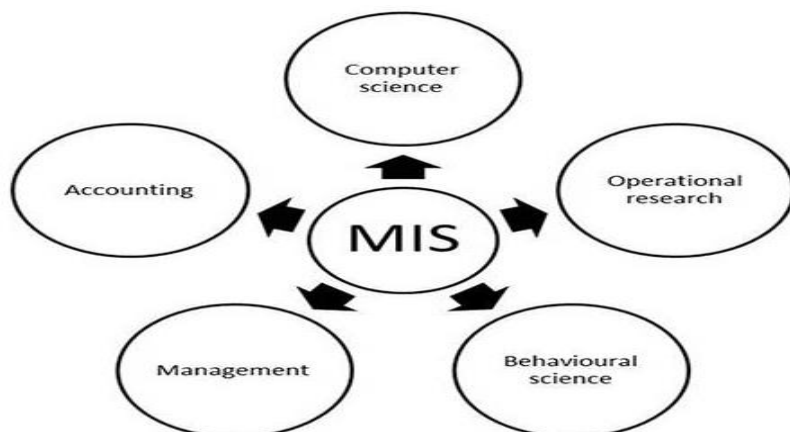
Financial And Accounting Information System (FAIS) Or Accounting Information System {MIS Related To Finance And Accounts}

Financial and accounting information systems is a system that provides information related to the accounting and financial activities in an organization. It includes budgeting, accounts receivable, inventory control, payroll system capital budgeting etc.

FAIS is a computer-based system, which an organization uses to take important financial decisions. An FAIS will collect, process, analyze and store financial data of a company. and when called upon it will retrieve and report such data to its users, namely accountants, consultants, financial officers CFO, auditors, government tax authorities etc.

There are three basic objectives of an FAIS, which are

- It helps an organization fulfill its statutory obligations of preparing and publishing certain accounting statements and information

- It analyses financial data and provides reliable and accurate financial information to the users of the AIS

- Protects a firms accounting data from breach or theft (which can be a significant problem)

Components of Financial Accounting Information System

An FAIS, like most computer systems, consists of six basic components. Let us take a look.

- *People*: These are the users of the AIS. Internal users include accountants and other financial officers o the company. Then there are also users outside the organization, that can be given access to the AIS. Some such external users are auditors, consultants, tax authorities etc.

- *Procedures*: These are the procedures the system follows to collect and process data. The database for such a process can be internal (like employee names, sales figures) or external databases (like customer orders, tax slabs etc). The feeding of the data can be both manual as well as automated.

- *Data*: An AIS mainly deals with all kinds of financial and commercial data. Any data that is pertinent to the accounting of the firm will be input data for an AIS. Care must be taken that the data entered is accurate and complete. Examples of such data include invoices, orders, payroll, bills etc.

- *Software*: AIS software performs all the functions of storing, processing, analyzing, retrieving financial data of a company. The software can be generalized software that is available in the market (Tally, Oracle etc) or can be specialized software created specifically for a particular company and it's accounting needs. Some of this software has an inbuilt internal control and audit options. They even help in tax management.

- *Hardware*: Like any other information system, AIS will also require some hardware components. these can include computers, laptops, servers, printers, scanners, secondary storage hardware etc.

Various functions of Fais are explained briefly:-{FAIS with its Subsystems}

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┌──────────────────────┐
│ Strategic Business   │
│ Plan                 │
└──────────────────────┘
           │
           ▼
┌──────────────────────┐
│ Strategic Financial  │
│ Plan                 │
└──────────────────────┘
           │
           ▼
┌──────────────────────┐
│ Strategic Information│
│ Plan                 │
└──────────────────────┘
           │
           ▼
┌──────────────────────┐
│ Financial and        │─────────────────┐
│ Accounting           │                 │
│ Information Systems   │                 │
└──────────────────────┘                 │
                                          ▼
                          ┌────────────────────────────┐
                          │ Ledger                     │
                          │ Assets Management          │
                          │ Order Entry                │
                          │ Accounts Receivable        │
                          │ Accounts Payable           │
    ┌──────────────────┐  │ Inventory Control          │
    │ External Database│─▶│ Payroll                    │
    └──────────────────┘  │ Cash Management            │
    ┌──────────────────┐  │ Capital Management         │
    │ Internal Database│─▶│ Investment Management      │
    └──────────────────┘  │ Long Range Farecasting     │
                          │ Business Intelligence      │
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Conclusion

- Through the *Management Information System*, the information can be used as a strategic weapon to counter the threats to business, make businesses more competitive, and bring about the organizational transformation through integration. MIS provides support to managers as they work to achieve corporate goals and enables managers to compare results to established company goals and identify problem areas and opportunities for improvement.

Reference:-

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https://www.slideshare.net/mobile/sikandersaini77