UNIT- V

An overview of Management Information System: Definition & Characteristics, Components of MIS, Frame Work tor Understanding MIS : Information requirements & Levels of Management, Simon's Model of d vision-Making, Structured Vs Un-structured decisions, Formal Vs. Informal systems.

Developing Information Systems: Analysis & Design of Information Systems: Implementation & Evaluation, Pitfalls in MIS Development.

Unit - V

14

MANAGEMENT INFORMATION SYSTEM (MIS)

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Objectives

1. Definition
2. MIS Functions
3. Characteristics of MIS
4. Components of MIS
5. Simon's Model of Decision Making
6. Types Information System
7. Pitfalls in MIS Development

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1. Definition

To study the information needs of Organization's management in an organized manner at each level in the making operational, tactical and strategic decisions. Basic objective of this study is to design and implement procedures, processes and routines that provide suitably detailed reports in an accurate consistent and timely manner. This study in an organization is Management Information System.

In a management information system, modern, computerized systems continuously gather relevant data, both from inside and outside an organization. This data is then processed, integrated, and stored in a centralized database where it is constantly updated and made available to all who have the authority to access it, in a form that suits their purpose.

Therefore Management information system is a set of systems which helps management at different levels to take better decisions by providing the necessary information to managers. Management information system is not a monolithic entity but a collection of systems which provide the user with a monolithic feel as far as information delivery, transmission and storage is concerned.

The different subsystems working at the background have different objectives but work in concert with each other to satisfy the overall requirement of managers

for good quality information. Management information systems can be installed by either procuring off the self systems or by commissioning a completely customized solution. Sometimes, management information systems can be a mix of both, i.e., an 'off the self system but customized as per the need of the organization.

Managers are the key people in an organization who ultimately determine the destiny of the organization. They set the agenda and goals of the organization, plan for achieving the goals, implement those plans and monitor the situation regularly to ensure that deviations from the laid down plan is controlled. This set of activity ensures the smooth functioning of the organization and helps it attain its objectives. Hence, these managers are vital for a successful organization. The managers in turn conduct these activities collectively management functions. They decide on all such issues that have relevance to the goals and objectives of the organization. The decisions range from routine decisions taken regularly to strategic decisions, which are sometimes taken once in the lifetime of an organization. The decisions differ in the following degrees,

1. Complexity
2. Information requirement for taking the decision
3. Relevance
4. Effect on the organization
5. Degree of structured behavior of the decision-making process.

The different types of decisions require different type of information as without information one cannot decide.

2. MIS Functions

The broad functions of MIS are as given below:

1. **To improve decision-making:** MIS helps management by providing background information on a variety of issues and helps to improve the decision-making quality of management. The fast and accurate information supplied by MIS is leveraged by the managers to take quicker and better decisions thereby improving the decision-making quality and adding to the bottom line of the company.
2. **To improve efficiency:** MIS helps managers to conduct their tasks with greater ease and with better efficiency. This reflects in better productivity for the company.
3. **To provide connectivity:** MIS provides managers with better connectivity with the rest of the organization.
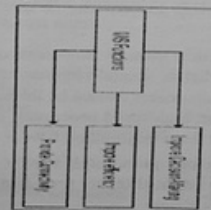
Characteristics of MIS

For information to be useful to the decision maker, it must have certain characteristics and meet certain criteria. Management information being a specialized information system conforms to certain characteristics. These characteristics are generic in nature. These characteristics remain more or less the same even when the technology around such management information system changes:

Some of the characteristics are discussed as follows:

i. Understandable:

Since information is already in a summarized form, it must be understood by the receiver so that he will interpret it correctly. He must be able to decode any abbreviations, shorthand notations or any other acronyms contained in the information.

ii. Relevant:

Information is good only if it is relevant. This means that it should be pertinent and meaningful to the decision maker and should be in his area of responsibility.

iii. Complete:

It should contain all the facts that are necessary for the decision maker to satisfactorily solve the problem at hand using such information. Nothing important should be left out. Although information cannot always be complete, every reasonable effort should be made to obtain it.

iv. Available:

Information may be useless if it is not readily accessible ' in the desired form, when it is needed. Advances in technology have made information more accessible today than ever before.

v. Reliable:

The information should be counted on to be trustworthy. It should be accurate, consistent with facts and verifiable. Inadequate or incorrect information generally leads to decisions of poor quality. For example, sales figures that have not been adjusted for returns and refunds are not reliable.

vi. Concise:

Too much information is a big burden on management and cannot be processed in time and accurately due to "bounded rationality". Bounded rationality determines the limits of the thinking process which cannot sort out and process large amounts of information. Accordingly, information should be to the point and just enough – no more, no less.

vii. Timely:

Information must be delivered at the right time and the right place to the right person. Premature information can become obsolete or be forgotten by the time it is actually needed.

Similarly, some crucial decisions can be delayed because proper and necessary information is not available in time, resulting in missed opportunities. Accordingly the time gap between collection of data and the presentation of the proper information to the decision maker must be reduced as much as possible.

viii. Cost-effective:

The information is not desirable if the solution is more costly than the problem. The cost of gathering data and processing it into information must be weighed against the benefits derived from using such information.

Management oriented

One important feature of MIS is that MIS is designed top-down. This means that the system is designed around the need felt by the management at different levels for information. The focus of the system is to satisfy the information needs of management.

Management directed

Since MIS is 'for the' management it is imperative that it also should have a very strong 'by the' management initiative. Management is involved in the designing process of MiS and also in its continuous review and up gradation to develop a good qualitative system. The system is structured as per directions factored by management. This helps in minimizing the gap between expectations of management form the system and the actual system.

Integrated

MIS is an integrated system. It is integrated with all operational and functional activities of management. This is an important characteristic and- requirement for a system to qualify as MIS. The reason for having an integrated system is that information in the managerial context for decision-making may be required from different areas from within the organization. If MIS remains a collection of isolated systems and each satisfying a small objective, then the integrated information need of managers will not be fulfiller. In order to provide a complete picture of the scenario, complete information is needed which only an integrated system can provide.

Common data flows

Through MIS the data being stored into the system, retrieved from the system, disseminated within the system or processed by the system can be handled in an integrated manner. The integrated approach towards data management will result in avoiding duplication of data, data redundancy and will help to simplify operations.

Strategic planning

MIS cannot be designed overnight. It requires very high degree of planning which goes into creating an effective organization. The reason for this kind of planning is to ensure that the MIS being built not only satisfies the information need of the managers today but can also serve the organization for the next five to ten years with modifications. Sometimes when the planning part is done away with, systems

tend to perform well in the present but they tend to become obsolete with time. Planning helps to avoid this problem.

Bias towards centralization

MIS is required to give 'one version of the truth', i.e., it must supply the correct version of the latest information. There is a requirement for the data repository to be centralized. Centralized data management helps MIS to exercise version control as well as provide an integrated common view of data to the managers.

MIS Characteristics

- Management Oriented/directed
- Business Driven
- Integrated
- Common Data Flows
- Heavy Planning Element
- Subsystem Concept
- Flexibility & Ease of Use
- Database
- Distributed Systems
- Information as a Resource

4. Components of Management Information System

Primary Components MIS are:

- Hardware.
- Software.
- Data (information for decision making).
- Procedures (design development and documentation).
- People (individuals, groups, or organizations).

1. Hardware:

The term hardware refers to machinery. This category includes the computer itself, which is often referred to as the central processing unit (CPU), and all of its support equipments. Among the support equipments are input and output devices, storage devices and communications devices.

2. Software:

The term software refers to computer programs and the manuals (if any) that support them. Computer programs are machine-readable instructions that direct the circuitry within the hardware parts of the CBIS to function in ways that produce useful information from data. Programs are generally stored on some input / output medium, often a disk or tape.

3. Data:

Data are facts that are used by programs to produce useful information. Like programs, data are generally stored in machine-readable form on disk or tape until the computer needs them.

4. Procedures:

Procedures are the policies that govern the operation of a computer system. "Procedures are to people what software is to hardware" is a common analogy that is used to illustrate the role of procedures in a Computer Based Information System.

5. People:

Every Computer Based Information System needs people if it is to be useful. Often the most over-looked element of the CBIS are the people, probably the component that most influence the success or failure of information systems.

Few other may also be considered as components of MIS are

Feedback

It is the reaction of people using the system. Feedback is now a days becoming very essential for every organization because of cut thought completion. Every organization wants feedback from their employees as well as from the users. Thus it may also be considered as a new component of MIS

Storage

Storage now a days not only means the storage of product but it has now included the storage of Data essential to organization. Therefore storage of data as well as products could also be considered as a part various Components of MIS.

Information Needs for the Different Levels of Management

Even though the broad objectives of management as an entity may be same, like increasing shareholder value, it is by no means a monolithic entity. As has already been discussed, there are different levels of management and each performs its specific purpose. The top level deals with strategy, the middle level with tactical issues and the bottom level with operational issues. The top level that deals with strategy will be taking strategic decisions, middle level will take tactical decisions and entry level will take operational decisions. Now in order to take such decisions, contextual information will need to be provided.

A manager at the top level who is deciding on the location of a new factory of the organization has strategic consideration like the labor costs of the location, proximity of the location to the market and long-term growth prospects in mind. He/she is not bothered about the shop floor level operational details like the reason for absence of a worker. He/she will have a strategic view and would need only such information that helps him to take correct decisions. Information is only a resource to him if it can help him to improve the quality of his strategic decision-making. Similarly for other tiers, information is only a resource if one can derive value from it.

Information Needs of Different Levels of Management

Levels of Management	Problems handled/ decisions made	Type of information required
Top level Middle level	Unstructured problems. Decisions are based on situations not/rarely handled in the past. Decision-making variable not clearly defined. Semi structured/structured problems. Decisions on regular issues.	Strategic information from within the organization and outside. Information about likely scenarios. Information that can be analyzed in different ways. Exception reports Regular summarized reports.
Operational level	Decisions on tactical issues. Structured problems Structured decision-making Decision-making on the basis of set rules	Information that can be drilled deeper for insight. Information to help find out exceptions so that they can be reported to top management Operational information Rule based information, guidelines, handbook level information

Information, as required at different levels of manage-ment can be classified as operational, tactical and strategic.

1. Operational information:

Operational information relates to the day-to-day operations of the organisation and thus, is useful in ex-ercising control over the operations that are repetitive in nature. Since such activities are controlled at lower levels of management, operational information is needed by the lower management.

For example, the information regarding the cash position on day-to-day basis is monitored and controlled at the lower levels of manage-ment. Similarly, in marketing function, daily and weekly sales in-formation is used by lower level manager to monitor the perform-ance of the sales force.

It may be noted that operational informa-tion pertains to activities that are easily measurable by specific standards. The operational information mainly relates to current and historical performance, and is based primarily on internal sources of data. The predictive element in operational information is quite low and if at all it is there, it has a short term horizon.

2. Tactical information:

Tactical information helps middle level man-agers allocating resources and establishing controls to implement the top level plans of the organisation. For example, information regarding the alternative sources of funds and their uses in the short run, opportunities for deployment of surplus funds in short-term securities, etc. may be required at the middle levels of man-agement.

The tactical information is generally predictive, focusing on short-term trends. It may be partly current and partly histori-cal, and may come from internal as well as external sources.

3. Strategic information:

While the operational information is needed to find out how the given activity can be performed better, strategic information is needed for making choices among the busi-ness options.

The strategic information helps in identifying and evaluating these options so that a manager makes informed choices which are different from the competitors and the limita-tions of what the rivals are doing or planning to do. Such choices are made by leaders only.

Strategic information is used by man-agers to define goals and priorities, initiate new programmes and develop policies for acquisition and use of corporate resources. For example, information regarding the long-term needs of funds for on-going and future projects of the company may be used by top level managers in taking decision regarding going public or approaching financial institutions for term loan.

Strategic infor-mation is predictive in nature, relies heavily on external sources of data, has a long-term perspective, and is mostly in summary form. It may sometimes include 'what if' scenarios. However, the strategic information is not only external information.

For long, it was believed that strategic information are basically information regarding the external environment. However, it is now well rec-ognised that the internal factors are equally responsible for suc-cess or failures of strategies and thus, internal information is also required for strategic decision making.

Figure 1 represents the types of information required at different levels of managerial hierarchy.
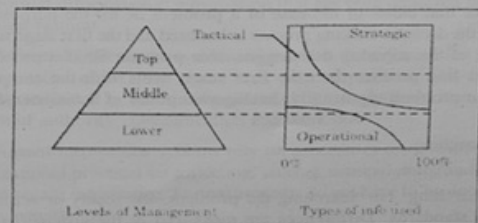

Figure 1 Types of information and levels of management

It may be remembered that each type of information has its role to play in managerial effectiveness. Each type of information is needed with varying degree by the managers at all levels. Thus, a part of operational information may be used even by the chief executive of-ficer of a company.

The difference lies in the proportion of each type of information in the total information needs of managers at different levels of managerial hierarchy.

5. Simon's Model of Decision Making

Herbert Simon made key contributions to enhance our understanding of the decision-making process. In fact, he pioneered the field of decision support systems. According to (Simon 1960) and his later work with (Newell 1972), decision-making is a process with distinct stages. He suggested for the first time the decision-making model of human beings. His model of decision-making has three stages:

1. **Intelligence** which deals with the problem identification and the data collection on the problem.

2. **Design** which deals with the generation of alternative solutions to the problem at hand.

3. **Choice** which is selecting the 'best' solution from amongst the alternative solutions using some criterion.

The figure given below depicts Simon's decision-making model clearly.

Intelligence Phase:

This is the first step towards the decision-making process. In this step the decision-maker identifies/detects the problem or opportunity. A problem in the managerial context is detecting anything that is not according to the plan, rule or standard. An example of problem is the detection of sudden very high attrition for the present month by a HR manager among workers. Opportunity seeking on the other hand is the identification of a promising circumstance that might lead to better results. An example of identification of opportunity is-a marketing manager gets to know that two of his competitors will shut down operations (demand being constant) for some reason in the next three months, this means that he will be able to sell more in the market.

Thus, we see that either in the case of a problem or for the purpose of opportunity seeking the decision-making process is initiated and the first stage is the clear understanding of the stimulus that triggers this process. So if a problem/opportunity triggers this process then the first stage deals with the complete understanding of the problem/opportunity. Intelligence phase of decision-making process involves:

a.   Problem Searching

b.   Problem Formulation

Problem Searching: For searching the problem, the reality or actual is compared to some standards. Differences are measured & the differences are evaluated to determine whether there is any problem or not.

Problem Formulation: When the problem is identified, there is always a risk of solving the wrong problem. In problem formulation, establishing relations with some problem solved earlier or an analogy proves quite useful.

The intelligence phase consists of finding, identifying, and formulating the problem or situation that calls for a decision. This has been called *deciding what to decide*. The intelligence stage may involve, for example, comparing the current status of a project or process with its plan. The end result of the intelligence phase is a decision statement.

The name of this phase, "intelligence," can be confusing. Intelligence as we usually use the term informally, is talking about decision making, it is what we use after we know a decision must be made. Simon borrowed the term from its military meaning, which involves the gathering of information without necessarily knowing what it will lead to in terms of decisions to be made. In business decision making, we must often collect a great deal of information before we realize that a decision is called for.

Design Phase:

Design is the process of designing solution outlines for the problem. Alternative solutions are designed to solve the same problem. Each alternative solution is evaluated after gathering data about the solution. The evaluation is done on the basis of criteria to identify the positive and negative aspects of each solution. Quantitative tools and models are used to arrive at these solutions. At this stage the solutions are only outlines of actual solutions and are meant for analysis of their suitability alone. A lot of creativity and innovation is required to design solutions.

The design phase is where we develop alternatives. This phase may involve a great deal of research into the available options. During the design phase we should also state our objectives for the decision we are to make.
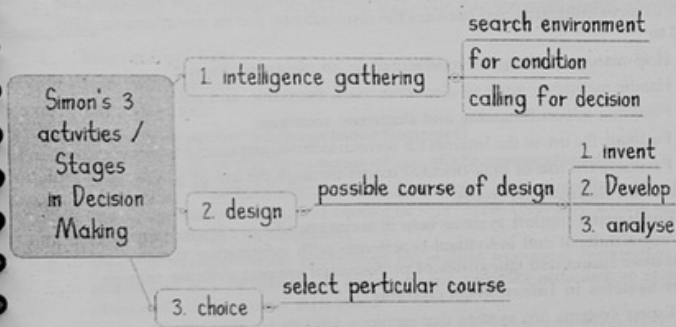
Choice Phase:

It is the stage in which the possible solutions are compared against one another to find out the most suitable solution. The 'best' solution may be identified using quantitative tools like decision tree analysis or qualitative tools like the six thinking hats technique, force field analysis, etc.

This is not as easy as it sounds because each solution presents a scenario and the problem itself may have multiple objectives making the choice process a very difficult one. Also uncertainty about the outcomes and scenarios make the choice of a single solution difficult.

In the choice phase, we evaluate the alternatives that we developed in the design phase and choose one of them. The end product of this phase is a decision that we can carry out.

Interrelation of Simon's Model to the **Scientific Method** and to the Systems Development Life Cycle (SDLC)

SIMON'S MODEL	SCIENTIFIC APPROACH	SDLC
Intelligence	Define Problem	System Investigation
Design	Develop Alternatives	System Analysis
Choice	Select Solution / Design Solution	System Design
Implementation	Implement Solution	Implementation
Review		Maintenance

Simon's 3 activities / Stages in Decision Making

1. intelligence gathering → search environment for condition calling for decision

2. design → possible course of design → 1. invent / 2. Develop / 3. analyse

3. choice → select perticular course

Structured V/s Unstructured Decision

Decisions can vary from structured to unstructured.

They can be differentiated in that structured decisions have a well defined methodology for finding a solution and have the data to reach a decisions. They are usually straight forward and made on a regular basis.

An example of a structured decision in my company is whether or not to withdraw funds from an international account depending on the current exchange rate.

Unstructured decision rely on knowledge and/or expertise and often require data and models to solve.

An example of an unstructured decision in my company is what types of new content should be created and what market should be targeted.

Structured. "Structured," means having processes in place to handle a situation. The implication is that structured problems are recurring ones. Because they recur, we put processes and procedures in place to handle them. The hiring process is a good example. The process is in place. What you have to do to bring in an additional resource is well defined. While justifying the additional head count may require some work and persuasion, the process to follow is defined.

Note that structure creates a box within which we begin to think. The box allows us to quickly and confidently make decisions and implement them. Knowing that the process you've used is a well-known and approved process creates a bit of justification for the decision. (Murninghan, Mowen, 2002)

Unstructured. "Unstructured" means "decision processes that have not been encountered in quite the same form and for which no predetermined and explicit set of ordered responses exists in the organization". (Mintzberg, et al., 1976, 246) This means that the company does not have a process in place to handle this. If a process is not in place to help the decision-maker through making a decision, she is more susceptible to censure post-decision. She is less confident in knowing she has considered all of the options and variables. She is hesitant to start the process because of her lack of confidence and fear of repercussions of making a bad decision. She would enter into the decision-making process knowing that she was going to learn as she went and have to repeat steps as she learns.

There are a number of mitigating tactics to help with unstructured decisions. Rarely is a situation completely unique. A more robust decision-making process may be required, but can the company assist with guidelines to help the process? As an example, one company has a number of "rules of thumb" that are not necessarily universally true, but are preferences built over time. One of these rules is "buy" verses "make". In the absence of an obvious, right choice, this eases the decision-making process by reducing the variables to be considered.

Formal V/s Infromal Information System

Formal Information System:

Formal information is information that has been collected and presented in an organized fashion.

A formal information system is based on the organisation represented by the organization chart. The chart is a map of position and their authority relationship, indicated by boxes and connected by straight lines. it is concerned with the pattern of authority, communication and work flow.

Formal information systems rely on procedures (established and accepted by organizational practice) for collecting, storing, manipulating, and accessing data in order to obtain information. Formal systems do not have to be computerized, but today they usually are.

6. Informal Information System:

Informal information systems also exist within an organization (interpersonal networking, water cooler gossip, etc.). The informal information system is employee based system design to meet personnel and vocational needs and to help in the solution of work-related problems. it also funnels information upward through indirect channels. In this way, it is considered to be a useful system because it works within the framework of the business and its stated policies.

Types of Information Systems

Organizations employ several types of information systems. These include:

1. Transaction Processing Systems (TPS)
2. Management Reporting Systems (MRS)
3. Decision Support Systems (DSS)
4. Executive Information Systems (ESS)
5. Office Information Systems (OIS)
6. Professional Support Systems

1 Transaction Processing Systems

Transaction processing systems today generally work in on-line mode by immediately processing a firm's business transactions. A Transaction is an elementary activity conducted during business operations.

TPS may work either in batch mode, processing accumulated transactions at a single time later on, or in on-line mode, processing incoming transactions immediately. Today, most TPS work in the on-line mode.

2 Management Reporting Systems

The objective of management reporting systems is to provide routine information to managers. Managers receive performance reports within their specific areas of responsibility. Generally, these reports provide internal information rather than spanning corporate boundaries. They report on the past and the present, rather than projecting the future.

In order to prevent information overloads, managers may resort to using demand or exception reports. Demand reports are requested when needed. Exception reports are produced only when preestablished out-of-bounds conditions occur and contain only the information regarding these conditions.

3 Decision Support Systems

Figure 2.11 explains the structure of a decision support system. Decision support systems directly support a decision-making session. These systems facilitate a dialog between the user, who is considering alternative problem solutions, and the system that provides built-in models and access to databases. The DSS databases are often extracts from the general databases of the enterprise or from external databases.

4 Executive Information Systems

Executive information systems support top managers with conveniently displayed summarized information, customized for them. They make a variety of internal and external information readily available in a highly summarized and convenient form. EIS are used to:

- Monitor the performance of the organization
- Assess the business environment
- Develop strategic directions for the company's future

5 Office Information Systems

The main objective of OIS is to facilitate communication between the members of an organization and between the organization and its environment. OIS are used to:

- Help manage documents represented in an electronic format
- Handle messages, such as electronic mail, facsimile, and voice mail
- Facilitate teleconferencing and electronic meetings
- Facilitate the use of the Internet for communication and access to information
- Facilitate the use of task-oriented teams through the use of groupware

6 Professional Support Systems

Professional support systems help in tasks specific to various professions. As both organizational and individual experience with information systems grow, more and more specialized categories of professional support systems emerge.

7 Expert Systems in Information Systems

Expert systems are system that employs knowledge about its application domain and uses an inferencing (reason) procedure to solve problems that would otherwise require human competence or expertise. The essential component of the knowledge base is heuristics - informal, judgemental elements of knowledge within the expert system's domain, such as oil exploration or stock valuation. The knowledge base is developed by working with domain specialists. It is further enhanced as the system is used.

Information Systems Supporting Managers

A variety of information systems support managers as they play their interpersonal, informational, and decisional roles. The three management-oriented types of systems (management reporting systems, decision support systems, and executive information systems) provide different kinds of support to the three levels of management:

1. Strategic
2. Tactical
3. Operational

The fundamental functions of management include:

1. **Planning** establishing goals and selecting the actions needed to achieve them over a specific period of time.

2. **Controlling** measuring performance against the planned objectives and initiating corrective action, if needed.

3. **Leadership** including the people in the organization to contribute to its goals.

4. **Organizing** establishing and staffing an organizational structure for performing business activities.

Mintzberg classified all managerial activities into ten roles falling into three categories:

1. Interpersonal Role

2. Informational Role

3. Decisional Role

Information Systems for Management Support:

The objectives of the three levels of corporate management are:

1. **Operations Management:** performed by supervisors of smaller work units concerned with planning and control of short-term (typically, a week or six months) budgets and schedules.

2. **Tactical Management:** performed by middle managers responsible for acquisition and allocation of resources for projects according to tactical plans, set out for one or two years.

3. **Strategic Management:** Carried out by top corporate executives and corporate boards responsible for setting and monitoring long-term directions for the firm for three or more years into the future.

7. Pitfalls in MIS Development

Management Pitfalls:

1. **Poor Existing Management System :** Organization does not have a reliable management system. Even excellent MIS cannot make up poor management system. In fact, the existing management systems are the base for Developing MIS. Whatever Shortcomings are associated with the basic management system ; the same shortcomings can be expected in the developed MIS.

2. **Poor Definition of Business :** In absence of such basic information, MIS development cannot be effective because we have stated in the beginning of the next that MIS borrows its objectives from the mission statement and future strategies of business.

3. **Poor Organization of MIS :** MIS has been neglected in the organization of any business firm. If we analyze organization chart of the business firms,

the majority will not have an independent MIS department. Usually MIS functions are performed the accounting department.

4. **Inadequate Resources :** Due to poor management, an MIS project may be starved of resources. For successful completion of the project, the outlays should be provided separately and once allocated for development of MIS, funds should not be diverted to another users.

- Organization has not defined its mission clearly

- Organization's objectives have not been specified

- Management lacks interest in MIS development process & relies solely on MIS development's specification.

- Communication gap exists between MIS development team and the management

- MIS development team is incompetent

Some other are the fundamental weaknesses of the MIS development :

(a) **No Management System to Build Upon** : The MIS must be built on top of a management system that includes the organizational arrangements, the structure and procedures for adequate planning and control, the clear establishment of objectives, and all the other manifestations of good organization and management. The lack managerial and operational application is serious because it implies that the process not being performed well. if we can say that the information is the raw material of decision making, and if information is not generated, disseminated and used for management, then no system-manual or computer-is going to solve the problem.

(b) **What business are we in?** : Not having the crispy stated mission and purpose for the company is a common weakness. Since if it is not terrible clear what business we are in, each major challenge the company must face is a completely new challenge and must be analyzed from the ground up. If there was a mission statement, some of these problem could be dealt with routinely as opposed to their being major crises.

(c) **Company Objectives** : written objective are also often missing in the company. A firm without objectives is much like a company without a statement of mission and purpose.

(d) **Managerial Participation:** This is the most fundamental weakness or the major reason for the failure of MIS as management does not take sufficient participation in the development and implementation of MIS in the organization.

Questions

Very Short Questions:

1. What is MIS ?
2. What do you mean by Pitfalls ?
3. What is Information ?
4. What is decision making ?

Short Questions:

1. What are levels of Management ?
2. What are levels of Information ?
3. What is Simois Model ?
4. Define Formal system.
5. Define Informal system.

Long Question :

1. What are the important characteristic of useful and effective information ?
2. What are the most important reasons for failure of MIS ?
3. Which kind of information is being used by Top level Managers use ?
4. System is an important factor of MIS. Give names of various types of systems ?
5. Which are the popular approach fo development of MIS ?
6. How Management is linked to information ?

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