# MANAGEMENT INFORMATION SYSTEMS

## UNIT-1

**Section-A**

1. **Write a short note about management information system (MIS).**

DEFINITION:

Management information system is a system consisting of people, machines, procedures, databases and data models, as its elements. The system gathers data from the internal and external sources of an organisation.

MEANING:

Management information system is an acronym of three words, viz., Management, information, system .in order to fully understand the term MIS, let us try to understand these three words.

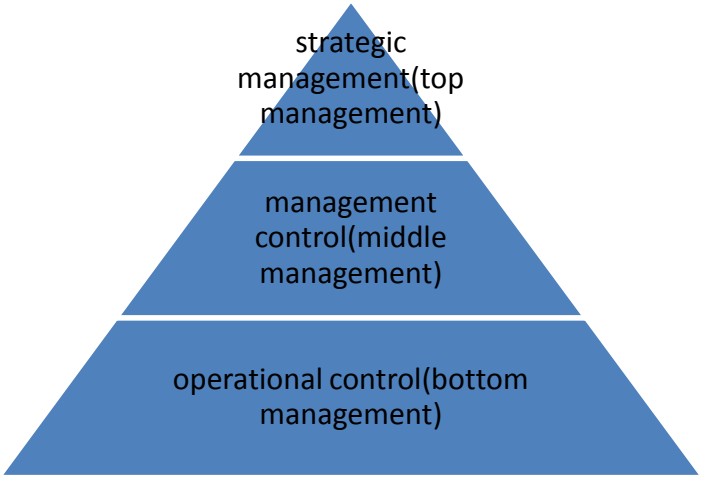
Management:

Management is the art of getting things done through and with the people in formally organised groups.

Managerial function:

- Planning
- Organising
- Staffing
- Directing and
- Controlling

Management hierarchy:




Information:

Information is data that is processed and is presented in a form which assists decision-making.it may contain an element of surprise, reduce uncertainty or provoke a manager to initiate an action.

Data usually take the form of historical records. In contrast to information, raw data may not be able to surprise us, may not be organised and may not add anything to our knowledge.

DATA-------→PROCESSING-------→INFORMATION

System:

The term system is the most loosely held term in management literature because of its use in different contexts. However, a system may be defined as a set of elements which are joined together to achieve a common objective. The elements are interrelated and interdependent.

The set of elements for a system may be understood us input, process and output. A system has one are multiple inputs; these inputs are processed through a transformation process to convert these input into outputs. The three elements of a system are

INPUT------→PROCESS--------→OUTPUT

2. **What are the various functions of information systems?**

One of the mostly widely used bases for organising activities in almost every organisation is the business function. Business activities are grouped around functions such as production, marketing, finance and personnel etc... Resulting in the respective department or an area of the business organisation. These departments or functional areas are commonly known as the functional areas of business.

There is no standard classification of such sub-system in an organisation, but a typical set of functions in a manufacturing organisation includes:

- Production
- Marketing
- Finance and accounting
- Materials and
- Personnel systems

Production:

- Production planning and control
- Engineering standards
- Quality control
- R & D etc

Marketing:

- Sales order
- Forecasting
- Sales analysis
- Billing
- Distribution
- Stock availability
- Sales quota control
- Pricing
- Product promotion

Finance and accounting:

- Financial planning
- Budgeting
- Cost accounting
- Asset accounting
- Accounts receivable
- Payroll
- Accounts payable, etc...

Materials:

- Material planning
- Bill of material
- Cost estimate
- Warehousing planning etc...

Personnel:

- Employee recruitment
- Employee selection
- Employee development
- Employee transfers
- Employee retirements etc...

3. **Discuss about information system resources.**

In information system includes four major resources, hardware, software, people and data. Let's briefly discuss some basic concepts and examples of how these resources contributes to the information processing activities of information system.

- Hardware---- it includes all physical devices
- Software-----it includes all set of information processing instructions.
- People -------people are required for the operation of all information systems. These people resources include specialists and end users.

- Data-----data is more than the raw material of information systems. The concepts of data resources have been broadened by managers and information system professionals.

**4. List out the different types of information.**

Information could be classified on the basis of the purpose for which it is utilised, into three main categories:

- Strategic information-----it is required by the managers at the strategic level of management for the formulation of organisational strategies.
- Tactical information -----information in this category is used in short term planning and is of use at management control level.
- Operational information-----it applies to short periods which may vary from an hour to a few days.

**5. Discuss about need for in information system.**

- Meeting global challenges
- Capturing opportunities in marketplace
- Supporting corporate strategy
- Linking departments whose functions are different
- Enhancing worker productivity
- Increase in quality of goods and services

**Section-B**

**1. List and explain the classification of information system.**

The discipline of MIS is in its evolutionary stage. MIS is a concept, which is a matter of degree rather than an absolute one. The classifications of information system are

- Transaction processing system.
- Management information system.
- Decision support system.
- Executive support system.
- Office automation system.
- Business expert system.

Transaction processing system:

It represents the automation of the fundamental, routine process used to support business operations. It does not provide any information to the user for his/her decision making. Previously Transaction processing system was known as MIS. Prior to computers, data processing was performed manually or with simple machines.

(INPUT) DATA--------→PROCESSING--------→DATA (OUTPUT)

Management information system:

MIS is an information system which process data and converts it into information. A MIS uses TPS for its data inputs. The information generated by the information system may be used for control of operations, strategic and long range planning, short range planning, management control and other managerial problem solving.

It has some functional business areas. They are

- Marketing
- Production
- Human resources
- Finance
- Accounting etc...

TPS------→DATA------→INPUT------→PROCESSING-------→OUTPUT-------→INFORMATION

Decision support system:

The Decision support system (DSS) is an information system application that assist decision making. Decision support systems tend to be designed primarily to serve management control level and strategic planning level managers.

The data in the database typically is a combination of master files (internal corporate data) and from external sources.

Database←----------→model base

↘user interface ↙

↕

User

Executive support system:

Executive support system (ESS) is an extension of the management information system which is a special kind of DSS. An ESS is specially tailored for the use of chief executive of an organisation to support his decision making.

An ESS is designed to cater to the information needs of a chief executive keeping in view not only his requirements but also taking into account his personality and style of functioning etc.,

Office automation system:

Office automation refers to the application of computer and communication technology to office functions. Office automation systems are meant to improve the productivity of managers at various level of management by providing secretarial assistance and better communication facilities. Office automation systems are the combination of hardware, software and people in information systems, that process office transactions and support office activities at all levels of the organisation.

These systems include a wide range of support facilities, which include word processing, electronic filing, electronic mail, message switching, data storage, data and voice communication etc...

In the first category, the following is a list of activities.

- Typing
- Mailing
- Scheduling of meetings and conferences
- Calendar keeping and
- Retrieving documents

In the secondary category,

- Conferencing
- Production of information
- Controlling performance

Business expert system:

Business expert system (BES) is a knowledge based information system that uses its knowledge about a specific, complex application area to act as an expert. This system is one of the knowledge based information system.

Expert system provides decision support to managers in the form of advice from an expert in a specific problem area. Expert systems find application in diverse areas, ranging from medical, engineering and business.

Knowledge base←----------→inference engine

↘user interface ↙

**2. Discuss about cost benefit analysis.**

Every legitimate solution will have some advantages is benefits and some disadvantages or costs. These advantages and disadvantages are identified when each alternative solution is evaluated. This process is typically called cost/benefit analysis.

Examples: ↑ in sales or profits.
↓ in operating costs.
↓ in required investment

Selecting the best solution:

Once all alternative solutions have been evaluated the process of selections the best solution can begin. Alternative solutions can be compared to each other because they have been evaluated using the same criteria. It is possible that to decide to select the best solution to the problem.

Implementing a solution:

Once a solution has been selected it must be implemented. An implementation plan may be developed. An implementation plan specifies the activities, resources and timing needed for proper implementation.

Post implementation review:

The final step of the system approach recognized that an implemented solution can fail to solve the problem for which it was developed. The results of implementing a solution should be monitored and evaluated. This is called a post implementation review process.

Global business strategies:

MNC is a firm that operates across products, markets, nations and cultures. It consists of the parent company and a group of subsidiaries. They are geographically disresed and each one may have its own unique goals, policies and procedures.

Multinational strategies:

It was a type of "hands off" strategy in which the parent allowed the subsidiaries to develop their own products and practise. The information flows are primarily from the subsidiaries to the parent in the form of financial reports.

Global strategy and international strategy is also comes under cost/benefit analysis.

**3. Components /resources of information system.**

An information system depends on the resources of people, hardware, software, data and networks to perform input, processing, output, storage and control activities that convert data resources into information.

IS consists of 5 major resources:

**People resources**:

People are the essential ingredient for the successful operation of all information systems. This people resource includes:

- **End users** are also called users or clients are people who use an information system or the information it produces. They can be customers, salespersons, engineers etc... Most of us are **IS** end users.

- **IS SPECIALISTS** are people who develop and operate information system. They include system analysis, software developers, system operators and other managerial, technical and clerical IS personnel.

**Hardware resources:**

It includes all physical devices and materials used in information processing. Examples of hardware in computer based information system are:

- **Computer system** which consists of central processing units containing microprocessors and a variety of interconnected peripheral devices. Example: handheld, laptop, midrange computer systems and large mainframe computer systems.
- **Computer peripherals** which are devices such as a keyboard or electronic mouse for input of data and commands a video screen or printer for output of information and magnetic or optical disks for storage of data resources.

**Software resources:**

It includes all set of information processing instructions. It includes not only the set of operating instructions called programs. Examples are

- **System software** such as an operating system program which controls and supports the operations of computer system.
- **Application software** which are programs that direct processing for a particular use of computers by end users. Example sales analysis program, a payroll program and a word processing system.

**Data resources:**

Data resources of information systems are typically organised, stored and accessed by a variety of data resources mgt technologies into:

- Database that hold processed and organised data.
- Knowledge bases the hold knowledge in variety of forms such as facts, rules, and case.

**Network resources:**

Telecommunications technologies and networks like the internet, intranets and extranets. The concept of network resources emphasizes that communications technologies and networks are a fundamentals resource component of all information systems. Network resources include:

- **Communications media** is includes twisted pairs wire, coaxial and fiber optic cables and microwave, cellular and satellite wireless technologies.
- **Network infrastructure** this generic category emphasizes that many hardware, software and data technologies are needed to support the operation and use of a communication networks.

**4. Write about the fundamentals and dimensions of information system.**

It shows the 3 major roles of the business applications of information systems. Example: consider a retail store as a good example of how these three fundamental roles can be implemented by a business.

- Support business processes and operations
- Support business decision making
- Support strategies for competitive advantage

**Support business processes and operations:**

As a consumer you have to deal regularly with the information systems that support the business processes and operations at the many retail stores where you shop. Example: most retail stores now use computer based information systems help them record customer purchase, keep track of inventory, pay employees, buy new merchandise and evaluate sales trends.

**Support business decision making:**

IS also help store managers and other business professionals make better decisions and attempt to gain a competitive advantage.

**Support strategies for competitive advantage:**

Gaining a strategic advantage over competitors requires innovative use of information technology.

**DIMENSIONS:**

The major dimensions of information systems are:

1. Organisation: IS are integral parts of organisations. The key elements of an organisation are its:
    - People
    - Structure
    - Business processes
    - Politics
    - Culture
2. Management: management's job is to make sense out of many situations faced by organisations, make decisions and formulated action plans to solve organisational problems.
3. Technology: information technology is one of many tools managers use to cope with change in various resources of technology involved in IS are:
    - Computer hardware
    - Computer software
    - Data management technology
    - Networking and telecommunication technology

# UNIT -2

## Section-A

1. **Discuss about the marketing information system (MKIS).**

The role of MKIS is to assess the marketing managers information needs then develop the framework for collecting information and distribute the information gathered to the end users in time. The marketing information system is generally carried out marketing need analysis, planning, and implementation and control functions of marketing managers.

The needed information is developed through internal company records, marketing intelligence activities, marketing research and marketing decision support analysis.

Different parts of MKIS:

- accounting information system
- marketing , sales and customer services
    - sales force automation
    - saves company labours hours and telephone expenses
    - capture customer data
    - response time to customer inquiries

market research and intelligence information system

- customer research
- market research
- competitor intelligence
    - Competitor's products.
    - " Operating strengths and weaknesses.
    - " Customer service level and customer policies.
    - " New product line.

**2. Discuss manufacturing information system.**

Manufacturing information system is a complete set of tool for managing the flow of manufacturing production data throughout the enterprise. This IS was designed to provide tools for both IT and operations personnel who would deliver services to anyone in the plant.

Manufacturing consists of many different disciplinary areas including product engineering, facility design and scheduling, fabrications, and quality control management. Each of them can be dramatically improved by using information systems.

A manufacturing system takes material, equipment, data management and information systems technology as the input and uses manufacturing and information processes to generate better final product as output. The manufacturing designed around the transaction process of raw materials into usable components or materials. These systems are value added processes such as materials processing or support systems such as scheduling.

**3. Discuss business information system.**

Business information system in marketing, manufacturing, and human resources with a special emphasis on computer integrated manufacturing. It describes the most widely used types of accounting information systems as well as information needed for the effective financial management of a firm.

Functional Business information systems:

- Marketing
- Production/operations
- Accounting
- Finance
- Human resource management

**4. Discuss accounting information system.**

Accounting information system is the part of organisations information system. The information system processes a mixture of quantitative and qualitative data but the accounting information system focuses almost entirely on processing quantitative data. The

accounting system and information system must work together in an effective and efficient way.

Accounting information system provide efficient delivery of information needed to perform necessary accounting work and to assist in delivery of accurate and informative data to users especially those who are not familiar with the accounting and financial reporting areas itself. A high value of data processing characterizes these applications. Data processing consists of 4 major tasks- data gathering, data manipulation, data storage, and document preparation.

**Section-B**

1. **List and explain in detailed about transaction processing system?**

Transaction processing system:

Transaction processing systems are information system that process data resulting from the occurrence of business transactions. Transactions are events that occur as part of doing business such as sales, purchase, deposits, withdrawals, refunds and payments.

For example:

The data generated whenever the business sells something to a customer on credit.

Data about the customer, product, salesperson, and store and so on must be captured and processed. This in turn causes additional transactions such as credit checks, customer billing, inventory changes, and increases in accounts receivable balances, which generate even more data. Thus, transaction processing activities are needed to capture and process such data, or the operations of a business world grind to a halt. Therefore, transaction processing systems play a vital role in supporting the operations of an organisation.

The Transaction processing cycle:

Transaction processing systems capture and process data describing business transactions. Transaction processing system has five stages of cycle. They are

- Data entry activities
- Transaction processing activities
- File and database processing

- Document and report generation
- Inquiry processing activities

The data entry process:

- The input activity in transaction processing systems involves a data process. In this process data is captured or collected by recording, coding and editing activities.
- Data may be converted to a form that can be entered into a computer system.
- It has always been a problem getting data into computers accurately and quickly enough to match their awesome processing speeds.
- These methods are more efficient and reliable and are known as source data automation.

Traditional data entry:

- Traditional methods of data entry typically rely on the end users of an information system to capture data on source document such as purchase order, payroll time sheets and sales order forms. The source documents are subjected to one of the following additional data entry activities.
- The data is converted into a machine – readable medium, such as magnetic tape or magnetic disks. Typically this means using such devices as key to tape machine and key to disk system.
- The data from source documents could alternatively be directly entered into a computer system using a direct input device without the use of machine readable media.

Source of data automation:

- The use of automated methods of data entry is known as source data automation several methods have been developed to accomplish this automation though very few completely automate the data entry process.

- They are all based on trying to reduce or eliminate many of the activities, people and data media required by traditional data entry methods.

Batch processing:

Transaction processing system process data two basic ways:

- Batch processing where transaction data is accumulated over a period of time and processed periodically.
- Real time processing where data is processed immediately after a transaction occurs.

Transactions processing systems still make heavy use to batch processing.

Batch processing activities:

In a batch processing system transaction data is accumulated over a period of time and processed periodically. Batch processing usually involves.

- Gathering source documents originated by business transactions such a sales orders and invoices into groups called batches.
- Recording transactions data on an input medium such as magnetic disk or magnetic tape.
- Sorting the transactions in a transaction file in the same sequence as the records in a sequential master file.
- Processing transaction data and creating an updated master file and a variety of documents and reports.

Real time processing:

- It process transaction data immediately after they are generated and can provide immediate output to end users.
- Data is fed directly into the computer system from online terminals without being stores and it is always stored online in direct access files.
- Files and database are always upto date since they are updated whenever date is originated regardless of its frequency.

- Real time processing depends as telecommunications networks of online terminals and computers.

Conclusion:

Transaction processing systems are operations information systems that process data resulting from business transactions. They involve the basic activities of data entry, transaction processing, file and database etc.

**2. Discuss about financial information system.**

Financial information system is a sub system of organisational management information system. This sub system supports the decision making process of financial functions at the level of an organisation.

A brief description of each of the financial decisions that a financial manager has to take is given below.

- Capital budgeting decision----in this decision funds are allocated to long term asset which would yield benefits in the future. Example: funds allocated for land, building, machinery, etc...
- Financial decision----the financial manager has to decide about the proportion of equity and debt capital.
- Dividend decision-----this decision relates to the dividend policy of the organisation. A decision whether the organisation should distribute all profits or retain them or distribute a portion and retain the balance has to be taken by the financial managers.
- Current asset management-----in order to safeguard the org against liquidity or insolvency current assets of the organisation are also required to be efficiently managed.

**3. Discuss about human resources information system.**

This functional information system supports the functions of human resource management of an organisation. The function involves:

**Manpower planning:**

It is about deciding the present and future needs of manpower in the organisation.

**Staffing:**

This function includes recruitment, selection and placement of employees. Recruitment refers to attracting qualified and competent people for different jobs.

**Training and development:**

The need to train and develop the employees is felt due to

- A gap between the job requirements and competence of the employee.
- The need to develop lower level managers to assume higher level responsibility when required.

**Performance evaluation:**

This task is concerned with evaluating employee performance at work in terms of pre determined standards and norms. Evaluation or performance appraisal includes the formulation of performance appraisal plans, development of appraisal techniques and programmes etc...

**Separation activities:**

The employee employer relations may come to an end due to the resignation of an employee, layoff, death or retirement. HRM besides the above mentioned functions is also responsible for the wages and salary administration, sustaining and maintaining the work force in the organisation and maintaining of healthy and peaceful labour management relations. It contains 3 function flow of human resource information system.

- Transaction data-----is a basis for various types of output information or analysis. The data includes employee number, name, qualification, experience, joining data etc... Categories and grades of posting and daily performance etc...
- Environmental data----includes data about the availability of personnel, trends in the labour force, competition, market offering to the employees, government and labour laws etc...
- Organisational plans------also provide an important input in human resource information system, on the basis of which future planning for recruitment, job assignment, etc...

4. **Discuss accounting information system.**

Accounting information system is the part of organisations information system. The information system processes a mixture of quantitative and qualitative data but the accounting information system focuses almost entirely on processing quantitative data. The accounting system and information system must work together in an effective and efficient way.

Accounting information system provide efficient delivery of information needed to perform necessary accounting work and to assist in delivery of accurate and informative data to users especially those who are not familiar with the accounting and financial reporting areas itself. A high value of data processing characterizes these applications. Data processing consists of 4 major tasks- data gathering, data manipulation, data storage, and document preparation.

Characteristics of accounting information system:

- Performs necessary task
- Adheres to relatively standardized procedures
- Handles detailed data
- Has a primarily historical focus
- Provides minimal problem solving information

Sources of accounting information system:

- Procedures manual
- Management accounts / balance sheets
- Financial data
- Accounting policies
- Tax details
- Working capital

Types of accounting information system:

- **General ledger system**: this module helps organisations leverage the GL processing speeds available streamline accounting processes and reduce the period end close cycle.
- **Asset management:** this module help streamline tracking, depreciation and maintenance scheduling of asset improve productivity with easier access to critical information derive maximum tax benefits and minimize risk of loss or damage to capital assets. It maintains an inventory of the company's long term assets.
- **Order entry system:** it captures and manages different kinds of data relating to a transaction such as number of units sold customer billing.
- **Account receivable and payable system:** this module helps organisations bill customers automatically from any sales channel, streamline accounts receivables processing and automate the invoicing process.
- **Inventory control system:** it captures processes and manages all issues related to the company's inventory such as items in inventory, inventory cost, lost items and damages items.
- **Payroll system: it captures** and processes data related to salaries including taxes, other deductions, benefits, overtime and other related data.
- **Cash management:** this module helps organisations forecast cash flows in any currency and in multiple time periods, streamline the reconciliation process, monitor exceptions and fraud and manage the cash cycle efficiently with control.

# UNIT -3

## Section-A

1. **Discuss about components of DSS?**

Following are the components of the DSS:

**Data management sub system**: Data management sub system includes a database that contains relevant data for the situation and is managed by software called Database management system (DBMS).

Data management sub system is composed of the following elements:

- DSS database
- Database management system
- Data directory
- Query facility

**Model management sub system**: this is a software packages that includes financial, statistical, management science or quantitative models that provide the systems analytical capabilities and appropriate software management

Model management sub system is composed of the following elements:

- Model
- Model base management system
- Modelling language
- Model directory
- Model execution, integration and command processor.

**User interface sub system**: the user communicates with and commands the DSS through the sub system. The user is considered part of the system.

**Knowledge base management sub system**: this sub system can support any of the other sub systems or act as an independent component.

1. Discuss the role of DSS in business?

The roles of DSS are as follows:

- **What if analysis**: in what if analysis an end user makes changes to variables or relationships among variables and observes the resulting changes in the values of other variable.
- **Goal oriented**: it is a process of determining the input values required to achieve a certain goal.
- **Risk analysis**: risk is important factor which affects the business enterprises. It can be classified as low, medium and high risk. A DSS is particularly useful in medium risk and high risk environments.
- **Model building**: DSS allows decision markets to identify the most appropriate model for solving the problems.
- **Graphical analysis**: this helps managers to quickly digest larger volumes of data and visualize the impact of various courses of action. They recommend the use of graph when:
    - Seeking a quick summary of data.
    - Forecasting activities
    - Detecting trends overtime
    - Composing points and patterns at different variables.

**2. What are the applications can be used in DSS?**

Application of a DSS can be classified into following three categories:

- **Independent problems**- the independent problems are "Standalone problems" whose solutions are independent of other problems. The goal is to find the best solution to the given problem.
- **Interrelated problem**- in interrelated problems solutions are interrelated by each other to find the most effective solution to the group of interrelated problem. These types of problems usually require team effort.
- **Organisational problems**- in Organisational problems all departments within an organisation are included. Such problem required team effort. TQM is a good example of an organisational effort because for it to be effective it requires a joint effort from all departments units in the organisation.

**3. What are all the capabilities of executive support system (ESS)?**

An effective ESS should have the following capabilities:

- Support for defining an overall vision: one of the key roles of senior executive is to provide a broad vision for the entire organisation.
- Support for strategic planning: EIS also support strategic planning. It is also planning the acquisition of new equipment, analyzing merger possibilities and making difficult decisions concerning downsizing and the sale of assets if required by unfavourable economic conditions.
- Support for strategic organizing and staffing: top level executive are concerned with organisational structure .overall direction for staffing decisions and effective communication with labour unions are also major decision areas for top level executives.
- Support for strategic control: another type of executive decision relates to strategic control, which involves monitoring and managing the overall operation of the organisation.
- Support for crisis management: even with careful strategic planning a crisis can occur. Major disasters, include hurricane, tornadoes, floods, earthquakes, fires and terrorist activities can totally shut down major parts of organisation.

**4.Discuss about advantages and disadvantages of EIS?**

Advantages:

- Ability to analyze trends
- Augmentation of managers leadership capabilities
- Enhanced personal thinking and decision making
- Contribution to strategic control flexibility
- Ease access to existing information
- Instruments of change
- Better reporting system
- Better understanding of enterprise operations.

Disadvantages:

- Functions are limited cannot perform complex calculations.
- Hard to quantify benefits and to justify implementation of an EIS.
- Executives may encounter information overload.
- System may become slow, large, and hard to manage.
- Difficult to keep current data.
- May lead to less reliable and insecure data.
- Small companies may encounter excessive costs for implementation.

**Section-B**

**1. What do you mean decision support systems (DSS)? What are the characteristics of decision support systems?**

Meaning:

The term DSS refers to a class of systems, which supports the process of making decisions. The Emphasis is on "support" rather than on automation of decision. DSS allow the decision maker to retrieve data and test alternative solutions during the process of problem solving.

Definition:

According to Scott Morton, "DSS as interactive computer based systems, which help decision makers utilize data and model to solve unstructured problems".

Examples of DSS:

- Group DSS
- Computer support Co-operative work
- Logistics systems
- Financial planning system

**Characteristics of decision support systems**:

- **Provide rapid access to information:** some DSS provides fast the dashboard of a car or truck are used to see how the vehicle is running.

- **Handle large amount of data from different sources:** advanced database management systems and data warehouses have allowed decision makers to search for information with a DSS even when some data resides in different databases on different computer systems or network.
- **Provide report and presentation flexibility:** managers can get the information they want presented in a format that suits their needs. Produce text, tables, line drawings, pie charts, trend lines, and more.
- **Support drill down analysis:** a manager can get more levels of detail when needed by drilling down through data.
- **Perform complex, sophisticated analysis and comparisons using advanced software packages:** marketing research surveys.

2**. Discuss about classification of DSS and steps in constructing a DSS?**

Classification of DSS:

- **File drawer systems:** these allow immediate access to data item. They are basically online mechanized versions of manual filing systems.
- **Data analysis systems:** these allow the manipulation of data by means of either analysis operations tailored to the task or setting or general analysis operations.
- **Analysis information systems:** these provide access to a series of data base and small models.
- **Accounting models:** these calculate the consequences of planned actions on the basis of accounting definitions. They typically generate estimates of income, balance sheets, etc., based on variation in input values to the definitional formulas.
- **Representational models:** these estimate the consequences of action on the basis of models that represents some non-definitional characteristics of the systems such as probabilities of occurrence.
- **Optimization models:** these provide guidelines for action by generating the optimal solution consistent with a series of constraints.
- **Suggestion models:** these compute a specific suggested decision for a fairly structured and repetitive decision.

Steps in constructing a DSS:

- Choosing the project or problem to be solved.
- Selecting hardware and software.
- Data acquisition and management.
- Model subsystem acquisition and management.
- Dialogue subsystem and its management.
- Knowledge component.
- Packaging.
- Testing, evaluation and improvement.
- User training.
- Documentation and maintenance.
- Adaptation.

**3. Discuss about advantages and disadvantages of DSS?**

**Advantages:**

- **Improving personal efficiency:** many DSS do not do anything. A person could not do himself or herself. People prepared budgets for centuries before spreadsheet software came in to use. DSS help them do it faster and with less change of error.
- **Improving problem solving:** a DSS can make it possible for a person or a group to solve problem faster or better, than they could without it.
- **Facilitating communications:** after found that DSS facilitating interpersonal communication in several ways. In addition technology developments that have occurred since his or her research have opened up for DSS to provide this benefit.
- **Promoting learning or training:** using a DSS can also help people learned more about using computers and about software package that are in the DSS although this is seldom a specific objective of developing the DSS it can be valuable by project.
- **Increasing organisational control:** some DSS can also control information about an individual's decision to his or her managers.

**Disadvantages:**

- **Limited storage capability:** due to its small memories and limited storage capabilities, DSS has definite computational constraints.
- **Slow:** it is slow compared to the speed of large mainframes.
- **Limited information sharing:** most DSSs are designed for individual use but they can be designed so that several computers can be linked for limited information sharing.
- **Difficult:** it is difficult to know interdependencies of functions provided by system.
- **Require extensive knowledge:** there are applications that require extensive knowledge of specific problem domain or technical knowledge.
- **Translation problems:** users have to deal with several databases and model each with different data models and resulting translation problems.
- **Confliction:** users may have to work on several decision scenarios at same time. As a consequence they have to keep track of what they done for each of them.

**4. Discuss about executive information system (EIS) and its characteristics**.

**Meaning:**

ESI are information systems that combine many of the features of MIS and DSS. When they were first developed their focus was on meeting the strategic information needs of top management. In some cases and EIS also called executive support system.

**Definition:**

According to Matthews and Shoe Bridge, "EIS is a computer based information delivery and communication system designed to support the needs of top executives".

**Characteristics of EIS:**

The main characteristics of EIS are as follows:

- **Drill down capabilities**: This capacity of an EIS allows the executives look for details on any specific information. Each level of detail that is accessed by the user may involve submenus if the system is menu driven.

- **Designed with management critical success factors in mind**: every organisation has certain critical factors that are important for achieving the organisational goals.
- **Status access, trend analysis, and exception reporting**: this feature allows executives to access the current executives to examine. The timing and relevance of information is very important.
- **Personalized analysis**: This capability of an EIS allows executives to use built in functions to analyze problematic situations.
- **Navigation of information**: This feature allows the executives to access large amounts of data in a quick and efficient manner.

**5. Discuss about EIS critical success factors.**

- **A committed and informed executive sponsor**: a top level executive, preferable the CEO should serve as the executive sponser of the EIS by encouraging its implementation.
- **An operating sponsor**: the executive sponcer will most likely be too busy to devote much time to implementation.
- **An appropriate information services staff**: information specialist should be available who understand not only the information technology but also how the executive will use the system.
- **Appropriate information technology**`: EIS implements should not get carried away and incorporate unnecessary hardware and software.
- **Data management**: it is not sufficient to simply display the data or information. the executive should have some idea of how current the data is.the analysis can be accomplished by drill down by following up with data managers or both.
- **A clear link to business objectives**: most successful EIS are designed to solve specific problems or meet needs that can be addressed with information technology.
- **Management of organisational resistance**: when an executive resists the EIS efforts should be taken to gain support. A good strategy is to identify a single problem that the executive faces and then quickly implement an EIS using prototyping to address that problem.

- **Management of the spread and evolution of the system**: experience has shown that when upper level management begins receiving information from the EIS lower level managers want to receive the same output.

# UNIT-4

## Section - A

1. **Write the objectives of IS for strategic advantage.**

The several strategic uses of information technologies for electronic business and commerce and how they give competitive advantage to a business. Business process re-engineering frequently involves the strategic use of business technologies.

The cross functional E-business systems and how they can provide significant business value to a company and its customers and business partners.

- Enterprise resource planning (ERP)
- Customer relationship management (CRM)
- Supply chain management (SCM)

2. **Discuss about strategic uses of information technology?**

Lower costs:

- Use IT to substantially reduce the cost of business process.
- Use IT to lower the costs of customer's suppliers.

Differentiate:

- Develop new its feature to differentiate products and services.
- Use IT features to reduce the differentiate advantages of competitors.

Innovate:

- Create new product and services that include IT components.
- Develop unique new markets or market niches with the help of IT.

Promote growth:

- Use IT to manage regional and global business expansion.

- Use IT to diversify and integrate into other products and services.

3. **What is business process and elements of business process?**

The business process is defined as a set of activities performed across the organisation creating an output of value to the customer. every process has a customer who may be internal and external to the organisation. The basic elements of the processes are motivation to perform certain activities. the data is used in the process to generate the information which would be checked, processed and stored.

The process is executed through the basic steps such as receiving the input measuring the input, analysing the document, performing, processing accessing data producing the results and communicating them.

Elements are:

- Motivation to perform
- Data gathering processing and storing
- Information processing
- Checking, validating and control
- Decision making
- Communication

4. **How to identifying E-Business and E-Commerce strategies**.

E-business and E-commerce applications and internet technologies can be used strategically for competitive advantage as this text will repeatedly demonstrate.

- Cost and efficiency improvement
- Performance improvement in business effectiveness
- Global market penetration
- Product and service transformation

**Section - B**

1. **Discuss about Virtual Company (VC) strategy**.

VC typically use an organisational structure called a network structure since most virtual companies are inter linked by the internet, intranets, and extranets.

People and corporations are forming VC as the best way to implement key business strategies that promise to ensure success in today's turbulent business climate.

Strategies for VC:

- Share infrastructure and risk
- Link complementary core competencies
- Increase facilities and market coverage
- Migrate from selling products to selling solutions.

2. **Discuss about competitive strategic concepts.**

The strategic role of information systems involves using information technology to develop products, services and capabilities that give a company major advantages over the competitive forces it facts in the global marketplace.

The competitive environment of an industry:

- Rivalry of competitors within industry
- Threat of new entrants
- ,, ,, substitutes
- The bargaining power of customers and
- ,, ,, ,, ,, suppliers

**Cost leadership strategy:**

Becoming a low cost producer of products and services in the industry.

**Differentiation strategy:**

Developing ways to differentiate a firms products and services from its competitors.

**Innovation strategy:**

Finding a new ways of doing business. this may involves the development of unique products and services or entry into unique markets or market niches.

**Alliance strategy:**

Establishing new business linkages and alliances with customers, suppliers, competitors and other companies.

3. **Write the objectives of IS for strategic advantage and strategic uses of information technology?**

The several strategic uses of information technologies for electronic business and commerce and how they give competitive advantage to a business. Business process re-engineering frequently involves the strategic use of business technologies.

The cross functional E-business systems and how they can provide significant business value to a company and its customers and business partners.

- Enterprise resource planning (ERP)
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Lower costs:

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Innovate:

- Create new product and services that include IT components.
- Develop unique new markets or market niches with the help of IT.

Promote growth:

- Use IT to manage regional and global business expansion.
- Use IT to diversify and integrate into other products and services.

# UNIT – 5

## Section - A

1. **Explain computer aided planning (CAP) tools.**

The planning process can be quite difficult and time consuming. That's what gives organisations the "we don't have time to plan" excuse for using a formal planning process. So vendors have developed CAP tools to help ease the burden of planning.

This process results in an enterprise model of the business. An enterprise model defines the structures and relationship of business processes and data elements as well as other planning structures. Developing an enterprise model for a business is a starting point for the strategic data planning process. Data administration personnel use enterprise modelling to help them develop a variety of data models for the organisation.

2. **Explain the benefits of strategic IS planning**.

The process of strategic information systems planning can help an organisation achieve significant advantages. Business firms have found that strategic planning helps achieve benefits such as the following:

- Pinpoints ways to achieve competitive advantage by using information systems as a strategic weapon.
- Stimulates the creative use of information systems technology and encourages innovation in applying it to the needs of the organisation.
- Redeploys financial and human resources to the most important and strategic information systems projects for the business.
- Establishes priority and timeframes for the development of information systems in the future.

3. **Explain cross functional enterprise system**.

Integration of the enterprise has emerged as critical issues for organisations in all business sectors striving to maintain competitive advantage. Integration is the key to success. it is the key to unlocking information and making it available to any user, anywhere, anytime.

4. **Explain about enterprise resource planning (ERP).**

Operating system, the equivalent of the windows operating systems for back office operations. ERP is a cross functional enterprise system that serves as a framework to integrated and automate many of the business processes that must be accomplished within the manufacturing, logistics, distribution, accounting finance and human resources functions of a business. Companies are finding major business values in installing ERP software in two ways:

- ERP creates a framework for integration and improving their back office systems that result in major improvements in customer service, production and distribution efficiency.
- ERP provides vital cross functional information quickly on business performance to managers to significantly improve their ability to make better decisions across the enterprise.

5. **Explain the information resource management (IRM).**

IRM has become a popular way to emphasize a major change in the management and mission of the information systems function in many organisations. managing the information system resources of an organisation is a vital concepts in today's business environment, because of three major developments that are affecting how corporate management views the information systems function.

**Section-B**

1. **Explain dimensions of the information resource management (IRM).**

IRM has become a popular way to emphasize a major change in the management and mission of the information systems function in many organisations. Managing the information system resources of an organisation is a vital concept in today's business environment, because of three major developments that are affecting how corporate management views the information systems function.

**Five dimensions of IRM:**

IRM is a response to these pressures.

- Resource management

- Technology management
- Distributed management
- Functional management
- Strategic management.

**Resource management:**

IRM views data, information, and computer hardware, software and personnel as valuable resources that should be effectively and efficiently managed for the benefit of the entire organisation. If plant and equipment, money, and people are considered valuable organisational resources so should its data, information, and other information system resources.

**Technology management:**

IRM emphasizes that all technologies that process and deliver data and information must be managed as an integrated system of organisational resources. Such technology includes telecommunications and office system as well as computer based information processing. These "island of technology" are bridged by IRM and become a primary responsibility of the executive in charge of all information services, sometimes called the chief information officer (CIO) of the organisation.

**Functional management:**

The IRM concept stresses that the management of an organisation must apply common managerial functions and techniques to the management of information resources. Managers must be managerial techniques just as they do with other major resources and activities of the business.

**Strategic management:**

Finally the IRM concepts stresses that the information services function in the firm must be more than a provider of computer services. It must also make major contributes to the profitability and strategic objectives of the firm. Information resources management focuses on developing and managing information system that significantly improve operational efficiency promote innovative products and services and build a strategic information resources base that can enhance the competitiveness of the organisation.

2. **Explain about customer relationship management (CRM).**

**Meaning:**

The concept of customer relationship management as a cooperative and collaborative process has tended to be more common. Its purpose is mutual value creation on the part of the marketer and customer.

**Definition:**

According to white whale, customer relationship management which is sometimes referred to as relationship or marketing or one to one marketing is defined by as: the integration is a process, culture and systems to recognize, differentiate, service and develop an organisations most valuable customers.

**Processes in CRM:**

The key processes under CRM are as follows:

- Marketing: this process involves decision regarding which customers to target, how to target customers, and what products to offer, how to price products and how to manage the actual campaigns targeting customers.
- Sell: it focus on making an actual sale to a customer. The sell process includes providing the sale force the information they need to make a sale and then executing the actual sale.
- Order management: the process of managing customer orders as they flow through an enterprise is important for the customer to track his order and for the enterprise to plan and executives order fulfilment.
- Call/services center: it is often the primary point of contact between a company and its customer. Is center helps customer place orders, suggest products, solves problems, and provides information on order status.

**Advantages of CRM:**

- Provide better customer service
- Increase customer revenue
- Discover new customer
- Help sales staff close deals faster

- Simplify marketing and sales processes

**Disadvantages of CRM:**

- Record loss
- Overhead
- Training

**4. Explain about E-governance.**

E-governance is a form of e-business in governance comprising of processes and structures involved in deliverance of electronic services to the public, viz, citizens.

**Objectives of e-governance:**

- Build services around citizens choice
- Make government more accessible
- facilitate social inclusion
- provide information responsibly
- reduce government spending
- deliver online services

**Domains of e-governance:**

- improving government processes
    - cutting process costs
    - managing process performance
    - making strategic connection in government
    - creating empowerment
- connecting citizens
    - talking to citizens
    - listening to citizens
    - improving public services
- building external interactions with and within civil society
    - working better with business
    - developing communities
    - building partnerships

# MANAGEMENT INFORMATION SYSTEMS

M.B.A. (Ag.) 1st Yr 2nd Sem
Subject: Management Information Systems(ABM-514)
Instructor: Dr. Anupama Verma
IABM, College of Agriculture, Jabalpur

The term Management Information System (MIS) is of relatively recent origin and is widely adopted following the accelerated use of computers in the early 1960's. The Management Information System to business what is the nervous system is to the human body. It is described as "informational blood stream" of an organisation. It encompasses a wide range of subject matters like management theory, communication theory, human processing of data and information technology. Often the concept of Management Information System is splintered and confused by' touting new ideas like decision support system, management reporting system, office information system, transaction processing systems, office automation, information resource management and database management system as replacements for Management Information System. However, a brood interpretation of the concept of Management Information System includes all the above.

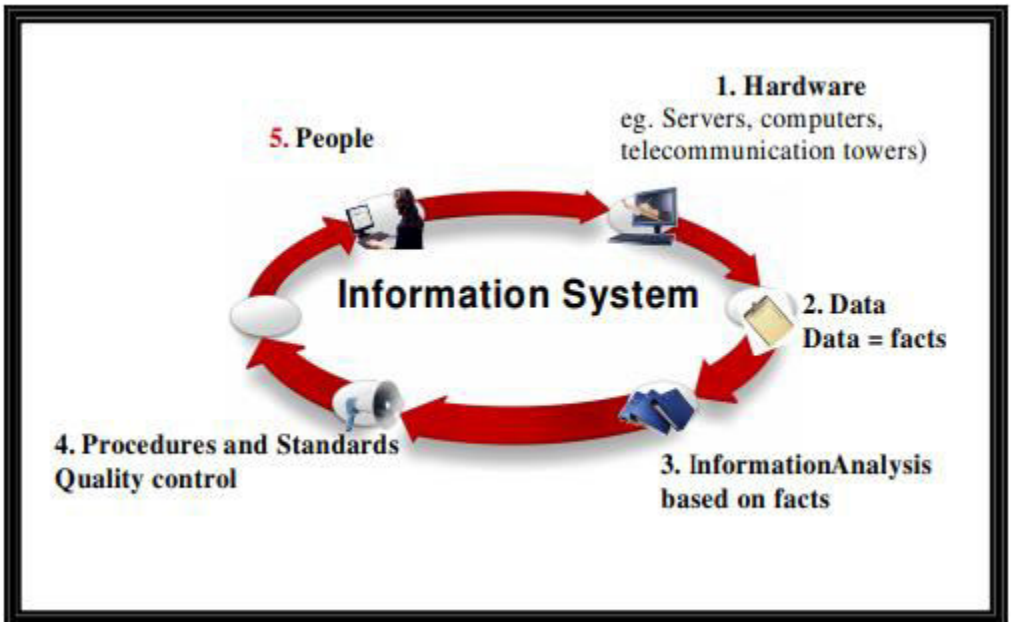
Management Information System has something significantly to do with two important management functions (or elements of management) studied in Unit 1, namely, planning and controlling. The basis for Management Information System is that computers, in addition to data processing, can serve as fine tools to improve the planning and control of operations by providing better information for decision making. As library and information professionals, we provide information support for research, education, planning, business, decision making and so on and so forth. By and large, libraries are providing information from public domain published information and to a limited extend public domain semi-published information. The critical requirements in a decision making situation in business is the classified and unpublished information as well as the crucial dynamic internally generated information. Each business enterprise will design and maintain its own Management Information System for the purpose and library and information professionals with their techniques and tools can play vital role in this endeavour. However, the purpose of this 'unit is to seek answer to the

## DEFINITION AND MEANING OF MANAGEMENT INFORMATION SYSTEM

There are numerous definitions of Management Information System. Yet the fundamental concept remains essentially the same. Management Information System can be defined as a collection of data processing equipment, procedures, software and people that integrates the sub-systems of the organisation and provides information for decision making on planning and control operations. In other words, Management Information System is an integrated user-

machine system that monitors and retrieves data from the environment, captures data from transactions and operations within the firm, filters, organises and selects data and presents them as information to managers, and also provides the means for managers to generate information as desired. In simple terms Management Information System is any organised approach for obtaining relevant and timely information on which to base management decisions.

Historically, accounting systems provide information for planning and control in business. Managers have always had sources of information. But Management Information System, with computerised processing of data provides a comprehensive system of information. Management Information System is a powerful method for aiding managers in operations analysis for solving problems and making decisions.




SCOPE, OBJECTIVES AND PURPOSES OF MANAGEMENT INFORMATION SYSTEM

The scope and purposes of Management Information System can be better understood if we examine each word in the term. Firstly, management comprises the activities of managers and Management Information System is necessary to facilitate the decisions, managers have to take. Further, management has become system oriented and more sophisticated in management techniques. Secondly, information (as distinguished from data) is the essential raw material for making decisions. The job of Management Information System is to turn data into information. Information is planned for and made available to managers as needed, Thirdly, organization is a system with a high degree of synergism. A system of information ties planning and control by managers to operational systems of Implementation.

In general, the Management Information System is the means for connecting the managers with operating systems by exchange of information. The specific purpose of a Management Information System is to provide information for decision making on planning, organizing and controlling the major activities of the organization and initiating action with the intention of achieving synergistic benefits.

The main objectives of Management Information System are facilitating the decision making, planning and control processes, objective performance appraisal of different units and' individuals, the economic and efficient production of reports and serving as means for giving direction and action to manager's communication. It is important to note that Management Information System is meant for supplying and not generating information for managers. It is expected to provide processed information to the decision makers. The output of Management Information System is usually in the form of information reports. Such processed information is also disseminated to members of the organisation, the public and external stake holders like customers, distributors, competitors, suppliers, labour unions, stock- and bond-holders, financial institutions, trade associations, governments, special interest groups at large and regulating agencies.

CHARACTERISTICS OF MANAGEMENT INFORMATION SYSTEM

It is important to note here that Management Information System captures data and information from the environment as well as the transactions and operations of the system. Data have to be obtained both from the internal environment like internal operations (marketing, production, finance and other functional areas) as well as from the external environment like competitors, unions, labour force, government policies, legal considerations, suppliers, customers, society, market etc. The internal information is generated from the operations of the organisation at various management levels in the various functional areas. The information gets processed within an organisation as it travels from the clerical level to the top levels of management. That is, the internal information always pertains to the various operational units of the organisation and gets summarised and processed as it gets from lower level to the top level. Only summarised internal information is consumed at the top level and other internal information is consumed by lower and middle level managers. The external information which is from the environment affects the performance of the organisation from outside.

Two basic approaches possible to Management Information System in any organisation are:

i) Organisational functional sub-systems like marketing, production, materials, personnel and finance.

ii) Processing activity sub-system at four different levels:

a) Transaction processing (Clerical staff)

b) Operational control (Junior level managers)

c) Management control (Middle level managers)

d) Strategic planning (Top level managers)

The major processing functions in Management Information System are:

Processing of business transaction

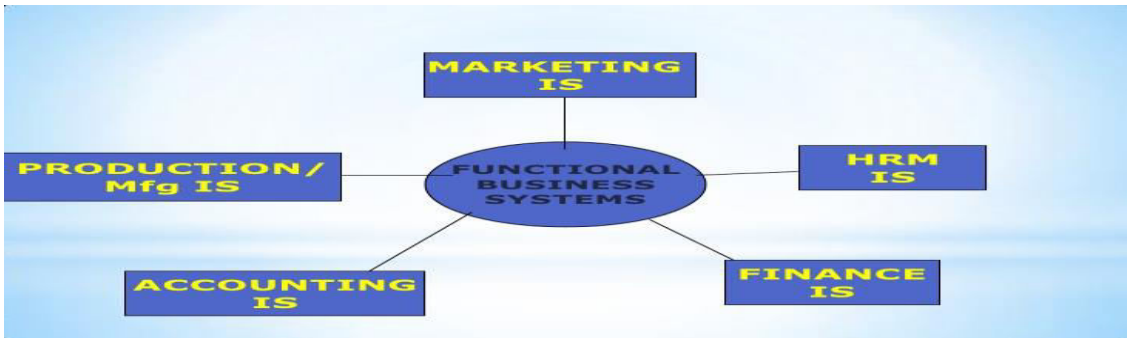
Updating of master files

Generation of information reports

Processing of interactive enquiries

Providing interaction analytical support

Information systems could be of two different types, i.e., structured and unstructured. Formalisation and publicisation of information lead to structuredness in information processing activity. Information systems could also be characterised as formal and informal. Formal systems follow the hierarchical structure of the organisation, whereas systems where unauthorised people pass on public or private information from one level to another level are called informal systems. MIS can also be classified according to function and time frame (i.e., for historical, control and planning purposes). As discussed in the "Communicating" function of managers in Unit 1, much information flowing in an organisation is informal. Any formalised information system operates within the context of the informal information channel or interpersonal networking called "grapevine".




Seven important characteristics or attributes of quality information from an effective Management Information System are timeliness, accuracy, precision, completeness, conciseness, relevance and appropriateness of form.

It may also be noted that an organisation can have information sub systems like accounting information system, office management system, marketing system, human resource information system, etc. The physical components of MIS are hardware, software, database, personnel and procedures. A database (i) which avoids data redundancy and inconsistency, (ii) which is programme and data independent, (iii) which provides flexible access to shared data, (iv) which ensures centralised control of data and v) which provides data privacy, security and confidentiality against fraud, theft, system errors, maliciousness, accidents, disasters, computer crime and abuse, etc. The essential functions carried out in the transaction processing are data capture, validation, classification, sorting, retrieval, calculation and summarisation.

In order to achieve its set objectives Management Information System has to have many desirable characteristics apart from the attributes of quality information mentioned above. First of all, an MIS has to be management oriented as well as management directed. It must posses attributes like accessibility, comprehensiveness, accuracy, appropriateness, timeliness, clarity, flexibility, verifiability, freedom from bias and qualifiability. It has to be highly selective and capture only relevant data and information. It must integrate all functions, departments and levels of management in the organisation so as to ensure both synergistic effects as well as the impact of one function on the other. It must systematically synthesize the information requirements of each manager based on his position, responsibilities and scope for decision making. Management Information System must differentiate the kind of information required for planning, decision making and controlling purposes. MIS is designed for job positions rather than for individuals keeping in mind the job responsibilities and for needs of different levels of management in different functional areas. It must be highly responsive to changes caused by organizational and experimental changes. It Must have some flexibility, ease to use, adaptability and an in-built contingency nature. Further, Management Information must consider the full effect of a decision in advance by supplying the required data. The information provided should have degrees of details just needed for the level of management, minimum need for further analysis and interpretation, uniform presentation and identified significant past relationship and forecasted future relationship. Management Information System should be integrated by way of a database with single point data entry and updating and no data redundancy.

BENEFITS OF MANAGEMENT INFORMATION SYSTEM

An efficient Management Information System has many advantages. Some of them are given below:

- Management Information System quickly provides all sorts of information required for decision making at different levels of management.
- In the process of capturing data forms, one may find gaps, incomplete and incorrect data. The same are likely to be rectified or completed or filled in the process.
- Management Information System makes decision making easy, accurate and less risky.

- Information flow from either direction is ensured and encouraged in the rank and file of managers.
- Continuous monitoring and updating of information become imperative.
- Greatly helps long range planning with accurate forecasting trend analyses and preplanning information in budget preparation. Even operations planning and tactical planning are provided with information inputs by MIS. Plan modelling (consisting of premising, identification and comparison of alternative courses of action) is greatly aided by MTS.
- MIS plays a crucial role in controlling managerial operations, monitoring performance and decentralised decision making through performance report, break-even analysis, financial ratios, etc. It calculates variations between budgeted and actual results, triggers revised forecasts and acts as an early warning systems for monitoring activities. In other words, MIS provides for control of information which was not previously available and for information sharing across departments.
- MIS helps planning additional new facilities.
- By and large, MIS helps libraries in determining efficiency, effectiveness, competitiveness and performance, and facilitates collection of data, training and development of staff.

## 3.6 PROBLEMS AND PITFALLS IN DEVELOPING MIS

An effective MIS requires continuous, consistent, long-range planning with involvement and commitment from the management as an institutionalised planning process involving everybody concerned. There is a need for an information steering committee and it may take more than one iteration to establish the process firmly. It has to undergo an application development cycle consisting of analysis, synthesis and implementation phases. Systems feasibility (consisting of technical, economic and operational feasibilities) is a most important starting point of MIS development. In other words, the development process should take into account the rationale, definition and characteristics, economics, design, specification; schedule, implementation plan, implementation status and review.

Some of the usual pitfalls and problems in developing and running effective Information System are mentioned below along with -some ways of increasing effectiveness:

Emphasis on Clerical System: Just taking over an existing clerical system and modifying it without upgrading or changing it does not help. The clerical system has to be upgraded to a management system. On the other hand, computers have been put to work on those things that are best understood and easily structured and which require little management involvement.

Communication gap between Computer Technologist and Manager/ User: Ensuring maximum cooperation and coordination between computer personnel and managers is necessary. A greater

degree of interaction and involvement between the systems function and the management function is required.

Lack of a Master Plan: A systematic long range plan/planned approach is necessary for establishing an effective Management Information System. Increased focus on the area of problems definition is required in the systems analysis. The dramatic changes in business strategy together with changes in the top management personnel and organisation structure call for a through plan.

Subordition of MIS Function to EDP Accounting System: Management Information System's function should be made an independent function so that it reports directly to top management.

Lack of Managerial Participation: This involvement and support of top management as well as participation of all managers in the design of their own management information system are necessary. If top management tends to depend upon its informally designed private information systems, development of structured, formalised and a public management information systems becomes difficult. Many top managers wrongly feel that good strategic decisions are made more by intuition than by a quantitative analysis of the available data.

Overlooking Human Acceptance: Users of Management Information System should be involved right at the early stages of design. Their cooperation by demonstrating how Management Information System will positively affect their job is a must.

Lack of Resources and Trained Personnel: Lack of trained personnel consisting of system analysts, system designers, programmers and chief information officers who are business trained and/or have a basic business prospective is a handicap.

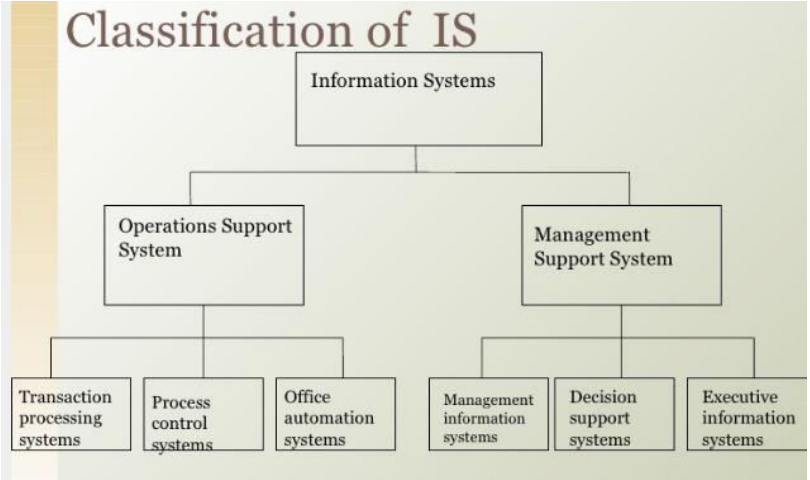
Voluminous and Unstructured Voluminous and Unstructured Nature of Data: Sometimes the volume of data itself can be a hurdle unless careful sifting is done. On the other hand, it may also be difficult to locate and retrieve relevant data. Often, the data required by top management is unstructured, non-programmed, future oriented. inexact and external and hence difficult to capture.

Limited Use of Management Science and or Techniques: Some of the ways of increasing the effective of Management Information System include motivating managers to participate and get involved in Management Information System, establishing consistent performance and work criteria for Management Information System, maintaining simplicity and ease of use, training systems analysts and careful consideration of basic computer feasibility criteria like volume and repetitive nature of transactions, degree of mathematical processing, quick turnaround time, accuracy and validity of data, common source documents and well understood processing logic.

Enormous Time, Effort and Resources Required: MIS budget includes data processing costs, hardware costs, personnel costs, supplies, services, etc.

TYPES OF INFORMATION SYSTEM

New information systems based on Internet technology, data warehousing concepts (very large databases of operational data), or Web-enabled inter-organizational systems affix to earlier, more familiar types of systems commonly discussed in the IT literature and found in most organizations. These include transaction processing systems (TPS), management information systems (MIS), decision support systems (DSS), office automation systems (OAS), and expert systems (ES). As per the encyclopedia Britannica "Information systems consist of three layers: operational support, support of knowledge work, and management support".




• Transaction Processing Systems: Transaction processing systems handle routine information items, more often than not manipulating data in some constructive way as it enters or leaves the firm's databases. An order entry program is an example of a TPS. Reasons for TP are recording, classification, sorting, calculation, summarization, storage and exhibit of results. • Management Information Systems: Management Information systems make available a focused vision of information flow as it develops during the course of business activities. This information is constructive in managing the business. We will discuss all the aspects of MIS in the coming heads in an elaborate manner.

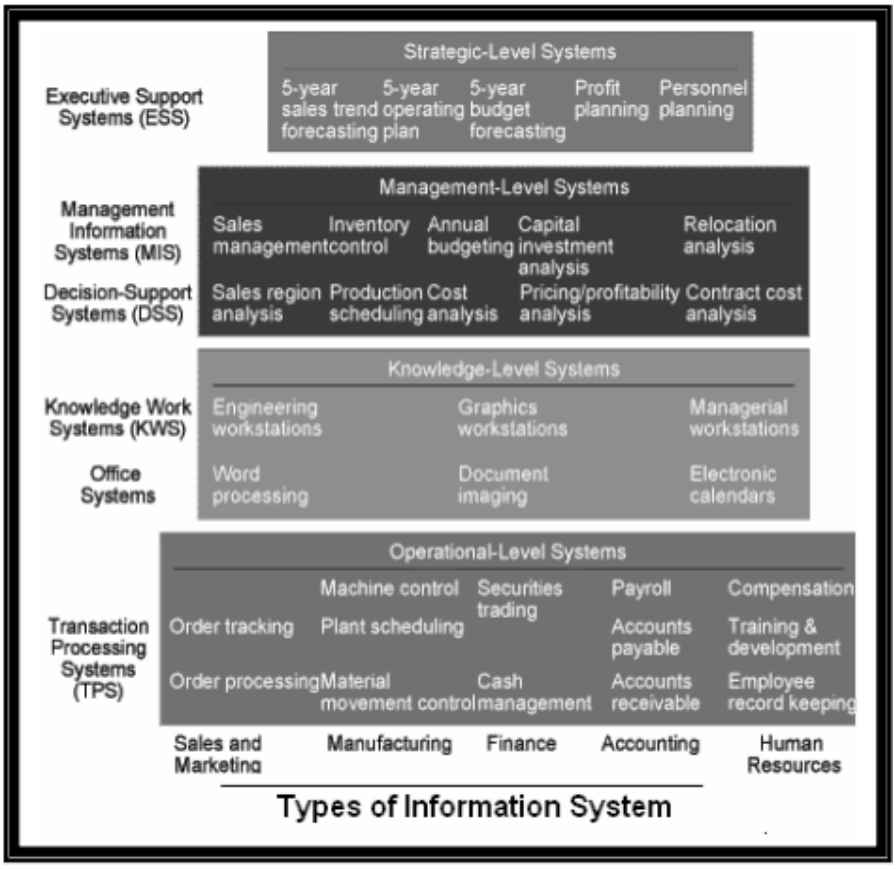
• Decision Support Systems: Decision Support systems are methodical models used to progress managerial or professional decision making by bringing significant data to a manager's notice. In many cases, these systems use the identical data as management information systems, but DSS purify the data to make it more functional to managers. It support with exceptional and nonrecurring decisions, which are moderately unstructured. Mainly what factors to reflect on and what information are needed.

• Office Automation Systems: Office automation systems endow with electronic mail, word processing, electronic filing, scheduling, calendaring, and other kinds of support to office workers. First introduced with personal computers, these "groupware" applications became essential with the extensive use of personal digital assistants. It combines word processing,

telecommunications and data processing to computerize office information, draws on stored data as a result of data processing and comprise handling of correspondence, reports and documents.

• Knowledge Work Systems (KWS): Information systems that give support to knowledge workers in the creation and integration of new knowledge in the Management Information System organization. Knowledge work systems (KWS) and office systems provide the information needs at the knowledge level of the organization. Knowledge work systems aid knowledge workers, whereas office systems primarily aid data workers (even though they are also used expansively by knowledge workers).

• Executive Support Systems (ESS): Information systems at the organization's strategic level designed to address no custom decision making through advanced graphics and communications.




Why the Information systems are used?

Usually, there are two approaches in the use of information systems. These two approaches are both originated from the use of computers and IT in the organization's activities. Proponents of these approaches seek to exploit ways of using information systems, computer and communication technology.

First Approach: This approach is focused exclusively on the inherent capabilities of computer and communication technology and how it can be used to improve efficiency. So there is emphasis on improving system performance through process efficiency and reliability of performance, not the specific use of the capabilities of computer and communications technology.

Second approach: This approach focuses on the organization's strengths and opportunities and assessing how the use of information technology the situation. This approach takes into account the enabling technology. In other words, Instead of having a technology-driven approach, Followed by the development of information technology systems. This approach is better because the computer and communications technology is important but how the computer can assist the organization to be important.

There are generally three types of systems:

1 - Operating Systems

2 - Information Systems

3 - Systems Management

Information systems that In this section, we will describe them, Interface between operating systems and management who actually made it through the operation of the organization's managers can be notified.

Information system means the collection, storage, processing, dissemination and use ofinformation.Types of Information Systems:

• Transaction Processing Systems (TPS)

• Management Information System (MIS)

• Decision Support System (DSS)

• Executive Support Systems (EIS)

• Strategic Information System(SIS)

• Accounting Information System (AIS)

The following brief description of each of the systems we mentioned

Executive support system:

Executive support system (ESS) is an extension of the management information system which is a special kind of DSS. An ESS is specially tailored for the use of chief executive of an organization to support his decision making.

An ESS is designed to cater to the information needs of a chief executive keeping in view not only his requirements but also taking into account his personality and style of functioning etc.,

Office automation system:

Office automation refers to the application of computer and communication technology to office functions. Office automation systems are meant to improve the productivity of managers at various level of management by providing secretarial assistance and better communication facilities. Office automation systems are the combination of hardware, software and people in information systems, that process office transactions and support office activities at all levels of the organization.

These systems include a wide range of support facilities, which include word processing, electronic filing, electronic mail, message switching, data storage, data and voice communication etc...

In the first category, the following is a list of activities. Typing Mailing Scheduling of meetings and conferences Calendar keeping and retrieving documents

In the secondary category, Conferencing Production of information controlling performance

Business expert system:

Business expert system (BES) is a knowledge based information system that uses its knowledge about a specific, complex application area to act as an expert. This system is one of the knowledge based information system.

Expert system provides decision support to managers in the form of advice from an expert in a specific problem area. Expert systems find application in diverse areas, ranging from medical, engineering and business.

Knowledge base←----------→inference engine ↘user interface ↙

2. Discuss about cost benefit analysis.

Every legitimate solution will have some advantages is benefits and some disadvantages or costs. These advantages and disadvantages are identified when each alternative solution is evaluated. This process is typically called cost/benefit analysis.

Examples: ↑ in sales or profits.

↓ in operating costs.

↓ in required investment

Selecting the best solution:

Once all alternative solutions have been evaluated the process of selections the best solution can begin. Alternative solutions can be compared to each other because they have been evaluated using the same criteria. It is possible that to decide to select the best solution to the problem.

Implementing a solution:

Once a solution has been selected it must be implemented. An implementation plan may be developed. An implementation plan specifies the activities, resources and timing needed for proper implementation.

Post implementation review:

The final step of the system approach recognized that an implemented solution can fail to solve the problem for which it was developed. The results of implementing a solution should be monitored and evaluated. This is called a post implementation review process.

Global business strategies:

MNC is a firm that operates across products, markets, nations and cultures. It consists of the parent company and a group of subsidiaries. They are geographically distressed and each one may have its own unique goals, policies and procedures.

Multinational strategies:

It was a type of "hands off" strategy in which the parent allowed the subsidiaries to develop their own products and practice. The information flows are primarily from the subsidiaries to the parent in the form of financial reports.

Global strategy and international strategy is also comes under cost/benefit analysis.

3. Components /resources of information system.

An information system depends on the resources of people, hardware, software, data and networks to perform input, processing, output, storage and control activities that convert data resources into information.

**IS consists of 5 major resources:**

People resources:

People are the essential ingredient for the successful operation of all information systems. This people resource includes: End users are also called users or clients are people who use an

information system or the information it produces. They can be customers, salespersons, engineers etc... Most of us are IS end users.

IS SPECIALISTS are people who develop and operate information system. They include system analysis, software developers, system operators and other managerial, technical and clerical IS personnel.

**Hardware resources:**

It includes all physical devices and materials used in information processing. Examples of hardware in computer based information system are: Computer system which consists of central processing units containing microprocessors and a variety of interconnected peripheral devices. Example: handheld, laptop, midrange computer systems and large mainframe computer systems. Computer peripherals which are devices such as a keyboard or electronic mouse for input of data and commands a video screen or printer for output of information and magnetic or optical disks for storage of data resources.

**Software resources:**

It includes all set of information processing instructions. It includes not only the set of operating instructions called programs. Examples are System software such as an operating system program which controls and supports the operations of computer system. Application software which are programs that direct processing for a particular use of computers by end users. Example sales analysis program, a payroll program and a word processing system.

**Data resources:**

Data resources of information systems are typically organized, stored and accessed by a variety of data resources mgt technologies into: Database that hold processed and organised data. Knowledge bases the hold knowledge in variety of forms such as facts, rules, and case.

**Network resources:**

Telecommunications technologies and networks like the internet, intranets and extranets. The concept of network resources emphasizes that communications technologies and networks are a fundamentals resource component of all information systems. Network resources include: Communications media is includes twisted pairs wire, coaxial and fiber optic cables and microwave, cellular and satellite wireless technologies. Network infrastructure this generic category emphasizes that many hardware, software and data technologies are needed to support the operation and use of a communication networks.

**4. Write about the fundamentals and dimensions of information system.**

It shows the 3 major roles of the business applications of information systems. Example: consider a retail store as a good example of how these three fundamental roles can be implemented by a business.

- Support business processes and operations
- Support business decision making
- Support strategies for competitive advantage

Support business processes and operations:

As a consumer you have to deal regularly with the information systems that support the business processes and operations at the many retail stores where you shop. Example: most retail stores now use computer based information systems help them record customer purchase, keep track of inventory, pay employees, buy new merchandise and evaluate sales trends.

Support business decision making:

IS also help store managers and other business professionals make better decisions and attempt to gain a competitive advantage.

Support strategies for competitive advantage:

Gaining a strategic advantage over competitors requires innovative use of information technology.

DIMENSIONS:

The major dimensions of information systems are:

1. Organization: IS are integral parts of organizations. The key elements of an organization are its: People Structure Business processes Politics Culture

2. Management: management's job is to make sense out of many situations faced by organizations, make decisions and formulated action plans to solve organizational problems.

3. Technology: information technology is one of many tools managers use to cope with change in various resources of technology involved in IS are: Computer hardware Computer software Data management technology Networking and telecommunication technology

Unit II

1. The Transaction processing cycle:

Transaction processing systems capture and process data describing business transactions. Transaction processing system has five stages of cycle. They are Data entry activities Transaction processing activities File and database processing

Document and report generation Inquiry processing activities

The data entry process: The input activity in transaction processing systems involves a data process. In this process data is captured or collected by recording, coding and editing activities. Data may be converted to a form that can be entered into a computer system. It has always been a problem getting data into computers accurately and quickly enough to match their awesome processing speeds. These methods are more efficient and reliable and are known as source data automation.

Traditional data entry: Traditional methods of data entry typically rely on the end users of an information system to capture data on source document such as purchase order, payroll time sheets and sales order forms. The source documents are subjected to one of the following additional data entry activities. The data is converted into a machine – readable medium, such as magnetic tape or magnetic disks. Typically this means using such devices as key to tape machine and key to disk system. The data from source documents could alternatively be directly entered into a computer system using a direct input device without the use of machine readable media.

Source of data automation:

 The use of automated methods of data entry is known as source data automation several methods have been developed to accomplish this automation though very few completely automate the data entry process.

They are all based on trying to reduce or eliminate many of the activities, people and data media required by traditional data entry methods.

Batch processing:

Transaction processing system process data two basic ways: Batch processing where transaction data is accumulated over a period of time and processed periodically. Real time processing where data is processed immediately after a transaction occurs.

Transactions processing systems still make heavy use to batch processing.

Batch processing activities:

In a batch processing system transaction data is accumulated over a period of time and processed periodically. Batch processing usually involves. Gathering source documents originated by business transactions such a sales orders and invoices into groups called batches. Recording transactions data on an input medium such as magnetic disk or magnetic tape. Sorting the transactions in a transaction file in the same sequence as the records in a sequential master file.

Processing transaction data and creating an updated master file and a variety of documents and reports.

Real time processing: It process transaction data immediately after they are generated and can provide immediate output to end users. Data is fed directly into the computer system from online terminals without being stores and it is always stored online in direct access files. Files and database are always upto date since they are updated whenever date is originated regardless of its frequency.

Real time processing depends as telecommunications networks of online terminals and computers.

Conclusion:

Transaction processing systems are operations information systems that process data resulting from business transactions. They involve the basic activities of data entry, transaction processing, file and database etc.

2. Discuss about financial information system.

Financial information system is a sub system of organizational management information system. This sub system supports the decision making process of financial functions at the level of an organization.

A brief description of each of the financial decisions that a financial manager has to take is given below. Capital budgeting decision----in this decision funds are allocated to long term asset which would yield benefits in the future. Example: funds allocated for land, building, machinery, etc... Financial decision----the financial manager has to decide about the proportion of equity and debt capital. Dividend decision-----this decision relates to the dividend policy of the organization. A decision whether the organisation should distribute all profits or retain them or distribute a portion and retain the balance has to be taken by the financial managers. Current asset management-----in order to safeguard the org against liquidity or insolvency current assets of the organization are also required to be efficiently managed.

3. Discuss about human resources information system.

This functional information system supports the functions of human resource management of an organisation. The function involves:

Manpower planning:

It is about deciding the present and future needs of manpower in the organisation.

Staffing:

This function includes recruitment, selection and placement of employees. Recruitment refers to attracting qualified and competent people for different jobs.

Training and development:

The need to train and develop the employees is felt due to A gap between the job requirements and competence of the employee. The need to develop lower level managers to assume higher level responsibility when required.

Performance evaluation:

This task is concerned with evaluating employee performance at work in terms of pre determined standards and norms. Evaluation or performance appraisal includes the formulation of performance appraisal plans, development of appraisal techniques and programmes etc...

Separation activities:

The employee employer relations may come to an end due to the resignation of an employee, layoff, death or retirement. HRM besides the above mentioned functions is also responsible for the wages and salary administration, sustaining and maintaining the work force in the organisation and maintaining of healthy and peaceful labour management relations. It contains 3 function flow of human resource information system. Transaction data-----is a basis for various types of output information or analysis. The data includes employee number, name, qualification, experience, joining data etc... Categories and grades of posting and daily performance etc... Environmental data----includes data about the availability of personnel, trends in the labour force, competition, market offering to the employees, government and labour laws etc... Organisational plans------also provide an important input in human resource information system, on the basis of which future planning for recruitment, job assignment, etc...

4. Discuss accounting information system.

Accounting information system is the part of organisations information system. The information system processes a mixture of quantitative and qualitative data but the accounting information system focuses almost entirely on processing quantitative data. The accounting system and information system must work together in an effective and efficient way.

Accounting information system provide efficient delivery of information needed to perform necessary accounting work and to assist in delivery of accurate and informative data to users especially those who are not familiar with the accounting and financial reporting areas itself. A high value of data processing characterizes these applications. Data processing consists of 4 major tasks- data gathering, data manipulation, data storage, and document preparation.

Characteristics of accounting information system: Performs necessary task Adheres to relatively standardized procedures Handles detailed data Has a primarily historical focus Provides minimal problem solving information

Sources of accounting information system: Procedures manual Management accounts / balance sheets Financial data Accounting policies Tax details Working capital.

1. Write a short note about management information system (MIS).

DEFINITION:

Management information system is a system consisting of people, machines, procedures, databases and data models, as its elements. The system gathers data from the internal and external sources of an organisation.

MEANING:

Management information system is an acronym of three words, viz., Management, information, system .in order to fully understand the term MIS, let us try to understand these three words.

Management:

Management is the art of getting things done through and with the people in formally organised groups.

Managerial function: Planning Organising Staffing Directing and Controlling

Management hierarchy:

Information:

Information is data that is processed and is presented in a form which assists decision-making.it may contain an element of surprise, reduce uncertainty or provoke a manager to initiate an action.

Data usually take the form of historical records. In contrast to information, raw data may not be able to surprise us, may not be organised and may not add anything to our knowledge.

DATA-------→PROCESSING-------→INFORMATION

System:

The term system is the most loosely held term in management literature because of its use in different contexts. However, a system may be defined as a set of elements which are joined together to achieve a common objective. The elements are interrelated and interdependent.

The set of elements for a system may be understood us input, process and output. A system has one are multiple inputs; these inputs are processed through a transformation process to convert these input into outputs. The three elements of a system are

INPUT------→PROCESS--------→OUTPUT

strategic management(top management)

management control(middle management)

operational control(bottom management)

2. What are the various functions of information systems?

One of the mostly widely used bases for organising activities in almost every organisation is the business function. Business activities are grouped around functions such as production, marketing, finance and personnel etc... Resulting in the respective department or an area of the business organisation. These departments or functional areas are commonly known as the functional areas of business.

There is no standard classification of such sub-system in an organisation, but a typical set of functions in a manufacturing organisation includes: Production Marketing Finance and accounting Materials and Personnel systems

Production: Production planning and control Engineering standards Quality control R & D etc

Marketing: Sales order Forecasting Sales analysis Billing Distribution Stock availability Sales quota control Pricing Product promotion

Finance and accounting: Financial planning Budgeting Cost accounting Asset accounting Accounts receivable Payroll Accounts payable, etc...

Materials: Material planning Bill of material Cost estimate Warehousing planning etc...

Personnel: Employee recruitment Employee selection Employee development Employee transfers Employee retirements etc...

3. Discuss about information system resources.

In information system includes four major resources, hardware, software, people and data. Let's briefly discuss some basic concepts and examples of how these resources contributes to the information processing activities of information system. Hardware---- it includes all physical devices Software-----it includes all set of information processing instructions. People ------- people are required for the operation of all information systems. These people resources include specialists and end users.

Data-----data is more than the raw material of information systems. The concepts of data resources have been broadened by managers and information system professionals.

4. List out the different types of information.

Information could be classified on the basis of the purpose for which it is utilised, into three main categories:

 Strategic information-----it is required by the managers at the strategic level of management for the formulation of organisational strategies.

 Tactical information -----information in this category is used in short term planning and is of use at management control level.

 Operational information-----it applies to short periods which may vary from an hour to a few days.

5. Discuss about need for in information system. Meeting global challenges Capturing opportunities in marketplace Supporting corporate strategy Linking departments whose functions are different Enhancing worker productivity Increase in quality of goods and services

Section-B

1. List and explain the classification of information system.

The discipline of MIS is in its evolutionary stage. MIS is a concept, which is a matter of degree rather than an absolute one. The classifications of information system are Transaction processing system. Management information system. Decision support system. Executive support system. Office automation system. Business expert system.

Transaction processing system:

It represents the automation of the fundamental, routine process used to support business operations. It does not provide any information to the user for his/her decision making. Previously Transaction processing system was known as MIS. Prior to computers, data processing was performed manually or with simple machines.

(INPUT) DATA--------→PROCESSING--------→DATA (OUTPUT)

Management information system:

MIS is an information system which process data and converts it into information. A MIS uses TPS for its data inputs. The information generated by the information system may be used for control of operations, strategic and long range planning, short range planning, management control and other managerial problem solving.

It has some functional business areas. They are Marketing Production Human resources Finance Accounting etc...

TPS------→DATA------→INPUT------→PROCESSING-------→OUTPUT-------
→INFORMATION

Decision support system:

The Decision support system (DSS) is an information system application that assist decision making. Decision support systems tend to be designed primarily to serve management control level and strategic planning level managers.

The data in the database typically is a combination of master files (internal corporate data) and from external sources.

Database←----------→model base

↘user interface ↙

↕

User

Executive support system:

Executive support system (ESS) is an extension of the management information system which is a special kind of DSS. An ESS is specially tailored for the use of chief executive of an organisation to support his decision making.

An ESS is designed to cater to the information needs of a chief executive keeping in view not only his requirements but also taking into account his personality and style of functioning etc.,

Office automation system:

Office automation refers to the application of computer and communication technology to office functions. Office automation systems are meant to improve the productivity of managers at various level of management by providing secretarial assistance and better communication facilities. Office automation systems are the combination of hardware, software and people in information systems, that process office transactions and support office activities at all levels of the organisation.

These systems include a wide range of support facilities, which include word processing, electronic filing, electronic mail, message switching, data storage, data and voice communication etc...

In the first category, the following is a list of activities. Typing Mailing Scheduling of meetings and conferences Calendar keeping and Retrieving documents

In the secondary category, Conferencing Production of information Controlling performance

Business expert system:

Business expert system (BES) is a knowledge based information system that uses its knowledge about a specific, complex application area to act as an expert. This system is one of the knowledge based information system.

Expert system provides decision support to managers in the form of advice from an expert in a specific problem area. Expert systems find application in diverse areas, ranging from medical, engineering and business.

Knowledge base←----------→inference engine

↘user interface ↙

2. Discuss about cost benefit analysis.

Every legitimate solution will have some advantages is benefits and some disadvantages or costs. These advantages and disadvantages are identified when each alternative solution is evaluated. This process is typically called cost/benefit analysis.

Examples: ↑ in sales or profits.

↓ in operating costs.

↓ in required investment

Selecting the best solution:

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4. Write about the fundamentals and dimensions of information system.

It shows the 3 major roles of the business applications of information systems. Example: consider a retail store as a good example of how these three fundamental roles can be implemented by a business.

- Support business processes and operations
- Support business decision making
- Support strategies for competitive advantage

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now use computer based information systems help them record customer purchase, keep track of inventory, pay employees, buy new merchandise and evaluate sales trends.

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3. Technology: information technology is one of many tools managers use to cope with change in various resources of technology involved in IS are: Computer hardware Computer software Data management technology Networking and telecommunication technology

1. Discuss about the marketing information system (MKIS).

The role of MKIS is to assess the marketing managers information needs then develop the framework for collecting information and distribute the information gathered to the end users in time. The marketing information system is generally carried out marketing need analysis, planning, and implementation and control functions of marketing managers.

The needed information is developed through internal company records, marketing intelligence activities, marketing research and marketing decision support analysis.

Different parts of MKIS: accounting information system marketing , sales and customer services sales force automation saves company labours hours and telephone expenses capture customer data response time to customer inquiries

market research and intelligence information system customer research market research competitor intelligence Competitor's products. " Operating strengths and weaknesses. " Customer service level and customer policies. " New product line.


2. Discuss manufacturing information system.

Manufacturing information system is a complete set of tool for managing the flow of manufacturing production data throughout the enterprise. This IS was designed to provide tools for both IT and operations personnel who would deliver services to anyone in the plant.

Manufacturing consists of many different disciplinary areas including product engineering, facility design and scheduling, fabrications, and quality control management. Each of them can be dramatically improved by using information systems.

A manufacturing system takes material, equipment, data management and information systems technology as the input and uses manufacturing and information processes to generate better final product as output. The manufacturing designed around the transaction process of raw materials into usable components or materials. These systems are value added processes such as materials processing or support systems such as scheduling.

3. Discuss business information system.

Business information system in marketing, manufacturing, and human resources with a special emphasis on computer integrated manufacturing. It describes the most widely used types of accounting information systems as well as information needed for the effective financial management of a firm.

Functional Business information systems: Marketing Production/operations Accounting Finance Human resource management

4. Discuss accounting information system.

Accounting information system is the part of organisations information system. The information system processes a mixture of quantitative and qualitative data but the accounting information system focuses almost entirely on processing quantitative data. The

accounting system and information system must work together in an effective and efficient way.

Accounting information system provide efficient delivery of information needed to perform necessary accounting work and to assist in delivery of accurate and informative data to users especially those who are not familiar with the accounting and financial reporting areas itself. A high value of data processing characterizes these applications. Data processing consists of 4 major tasks- data gathering, data manipulation, data storage, and document preparation.

1. List and explain in detailed about transaction processing system?

Transaction processing system:

Transaction processing systems are information system that process data resulting from the occurrence of business transactions. Transactions are events that occur as part of doing business such as sales, purchase, deposits, withdrawals, refunds and payments.

For example:

The data generated whenever the business sells something to a customer on credit.

Data about the customer, product, salesperson, and store and so on must be captured and processed. This in turn causes additional transactions such as credit checks, customer billing, inventory changes, and increases in accounts receivable balances, which generate even more data. Thus, transaction processing activities are needed to capture and process such data, or the operations of a business world grind to a halt. Therefore, transaction processing systems play a vital role in supporting the operations of an organisation.

The Transaction processing cycle:

Transaction processing systems capture and process data describing business transactions. Transaction processing system has five stages of cycle. They are Data entry activities Transaction processing activities File and database processing

Document and report generation Inquiry processing activities

The data entry process: The input activity in transaction processing systems involves a data process. In this process data is captured or collected by recording, coding and editing activities. Data may be converted to a form that can be entered into a computer system. It has always been a problem getting data into computers accurately and quickly enough to match their awesome processing speeds. These methods are more efficient and reliable and are known as source data automation.

Traditional data entry: Traditional methods of data entry typically rely on the end users of an information system to capture data on source document such as purchase order, payroll time sheets and sales order forms. The source documents are subjected to one of the following additional data entry activities. The data is converted into a machine – readable medium, such as magnetic tape or magnetic disks. Typically this means using such devices as key to tape machine

and key to disk system. The data from source documents could alternatively be directly entered into a computer system using a direct input device without the use of machine readable media.

Source of data automation:

 The use of automated methods of data entry is known as source data automation several methods have been developed to accomplish this automation though very few completely automate the data entry process.

They are all based on trying to reduce or eliminate many of the activities, people and data media required by traditional data entry methods.

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Transaction processing system process data two basic ways: Batch processing where transaction data is accumulated over a period of time and processed periodically. Real time processing where data is processed immediately after a transaction occurs.

Transactions processing systems still make heavy use to batch processing.

Batch processing activities:

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Real time processing depends as telecommunications networks of online terminals and computers.

Conclusion:

Transaction processing systems are operations information systems that process data resulting from business transactions. They involve the basic activities of data entry, transaction processing, file and database etc.

2. Discuss about financial information system.

Financial information system is a sub system of organisational management information system. This sub system supports the decision making process of financial functions at the level of an organisation.

A brief description of each of the financial decisions that a financial manager has to take is given below. Capital budgeting decision----in this decision funds are allocated to long term asset which would yield benefits in the future. Example: funds allocated for land, building, machinery, etc... Financial decision----the financial manager has to decide about the proportion of equity and debt capital. Dividend decision-----this decision relates to the dividend policy of the organisation. A decision whether the organisation should distribute all profits or retain them or distribute a portion and retain the balance has to be taken by the financial managers. Current asset management-----in order to safeguard the org against liquidity or insolvency current assets of the organisation are also required to be efficiently managed.

3. Discuss about human resources information system.

This functional information system supports the functions of human resource management of an organisation. The function involves:

Manpower planning:

It is about deciding the present and future needs of manpower in the organisation.

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This function includes recruitment, selection and placement of employees. Recruitment refers to attracting qualified and competent people for different jobs.

Training and development:

The need to train and develop the employees is felt due to A gap between the job requirements and competence of the employee. The need to develop lower level managers to assume higher level responsibility when required.

Performance evaluation:

This task is concerned with evaluating employee performance at work in terms of pre determined standards and norms. Evaluation or performance appraisal includes the formulation of performance appraisal plans, development of appraisal techniques and programmes etc...

Separation activities:

The employee employer relations may come to an end due to the resignation of an employee, layoff, death or retirement. HRM besides the above mentioned functions is also responsible for

the wages and salary administration, sustaining and maintaining the work force in the organisation and maintaining of healthy and peaceful labour management relations. It contains 3 function flow of human resource information system. Transaction data-----is a basis for various types of output information or analysis. The data includes employee number, name, qualification, experience, joining data etc... Categories and grades of posting and daily performance etc... Environmental data----includes data about the availability of personnel, trends in the labour force, competition, market offering to the employees, government and labour laws etc... Organisational plans------also provide an important input in human resource information system, on the basis of which future planning for recruitment, job assignment, etc...

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Characteristics of accounting information system: Performs necessary task Adheres to relatively standardized procedures Handles detailed data Has a primarily historical focus Provides minimal problem solving information

Sources of accounting information system: Procedures manual Management accounts / balance sheets Financial data Accounting policies Tax details Working capital

Types of accounting information system:

 General ledger system: this module helps organisations leverage the GL processing speeds available streamline accounting processes and reduce the period end close cycle.

 Asset management: this module help streamline tracking, depreciation and maintenance scheduling of asset improve productivity with easier access to critical information derive maximum tax benefits and minimize risk of loss or damage to capital assets. It maintains an inventory of the company's long term assets.

 Order entry system: it captures and manages different kinds of data relating to a transaction such as number of units sold customer billing.

 Account receivable and payable system: this module helps organisations bill customers automatically from any sales channel, streamline accounts receivables processing and automate the invoicing process.

 Inventory control system: it captures processes and manages all issues related to the company's inventory such as items in inventory, inventory cost, lost items and damages items.

 Payroll system: it captures and processes data related to salaries including taxes, other deductions, benefits, overtime and other related data.

 Cash management: this module helps organisations forecast cash flows in any currency and in multiple time periods, streamline the reconciliation process, monitor exceptions and fraud and manage the cash cycle efficiently with control.

3. What are all the capabilities of executive support system (ESS)?

An effective ESS should have the following capabilities: Support for defining an overall vision: one of the key roles of senior executive is to provide a broad vision for the entire organisation. Support for strategic planning: EIS also support strategic planning. It is also planning the acquisition of new equipment, analyzing merger possibilities and making difficult decisions concerning downsizing and the sale of assets if required by unfavourable economic conditions. Support for strategic organizing and staffing: top level executive are concerned with organisational structure .overall direction for staffing decisions and effective communication with labour unions are also major decision areas for top level executives. Support for strategic control: another type of executive decision relates to strategic control, which involves monitoring and managing the overall operation of the organisation. Support for crisis management: even with careful strategic planning a crisis can occur. Major disasters, include hurricane, tornadoes, floods, earthquakes, fires and terrorist activities can totally shut down major parts of organisation.

4. Discuss about advantages and disadvantages of EIS?

Advantages: Ability to analyze trends Augmentation of managers leadership capabilities Enhanced personal thinking and decision making Contribution to strategic control flexibility Ease access to existing information Instruments of change Better reporting system Better understanding of enterprise operations.

Disadvantages:

Functions are limited cannot perform complex calculations. Hard to quantify benefits and to justify implementation of an EIS. Executives may encounter information overload. System may become slow, large, and hard to manage. Difficult to keep current data. May lead to less reliable and insecure data. Small companies may encounter excessive costs for implementation.

1. What do you mean decision support systems (DSS)? What are the characteristics of decision support systems?

Meaning:

The term DSS refers to a class of systems, which supports the process of making decisions. The Emphasis is on “support” rather than on automation of decision. DSS allow the decision maker to retrieve data and test alternative solutions during the process of problem solving.

Definition:

According to Scott Morton, “DSS as interactive computer based systems, which help decision makers utilize data and model to solve unstructured problems”.

Examples of DSS: Group DSS Computer support Co-operative work Logistics systems Financial planning system

Characteristics of decision support systems: Provide rapid access to information: some DSS provides fast the dashboard of a car or truck are used to see how the vehicle is running.

Handle large amount of data from different sources: advanced database management systems and data warehouses have allowed decision makers to search for information with a DSS even when some data resides in different databases on different computer systems or network. Provide report and presentation flexibility: managers can get the information they want presented in a format that suits their needs. Produce text, tables, line drawings, pie charts, trend lines, and more. Support drill down analysis: a manager can get more levels of detail when needed by drilling down through data. Perform complex, sophisticated analysis and comparisons using advanced software packages: marketing research surveys.

4. Discuss about executive information system (EIS) and its characteristics.

Meaning:

ESI are information systems that combine many of the features of MIS and DSS. When they were first developed their focus was on meeting the strategic information needs of top management. In some cases and EIS also called executive support system.

Definition:

According to Matthews and Shoe Bridge, “EIS is a computer based information delivery and communication system designed to support the needs of top executives”.

Characteristics of EIS:

The main characteristics of EIS are as follows: Drill down capabilities: This capacity of an EIS allows the executives look for details on any specific information. Each level of detail that is accessed by the user may involve submenus if the system is menu driven.

Designed with management critical success factors in mind: every organisation has certain critical factors that are important for achieving the organisational goals. Status access, trend analysis, and exception reporting: this feature allows executives to access the current executives to examine. The timing and relevance of information is very important. Personalized analysis: This capability of an EIS allows executives to use built in functions to analyze problematic situations. Navigation of information: This feature allows the executives to access large amounts of data in a quick and efficient manner.

5. Discuss about EIS critical success factors. A committed and informed executive sponsor: a top level executive, preferable the CEO should serve as the executive sponser of the EIS by encouraging its implementation. An operating sponsor: the executive sponcer will most likely be too busy to devote much time to implementation. An appropriate information services staff: information specialist should be available who understand not only the information technology but also how the executive will use the system. Appropriate information technology`: EIS implements should not get carried away and incorporate unnecessary hardware and software. Data management: it is not sufficient to simply display the data or information. the executive should have some idea of how current the data is.the analysis can be accomplished by drill down by following up with data managers or both. A clear link to business objectives: most successful EIS are designed to solve specific problems or meet needs that can be addressed with information technology. Management of organisational resistance: when an executive resists the EIS efforts should be taken to gain support. A good strategy is to identify a single problem that the executive faces and then quickly implement an EIS using prototyping to address that problem.

Management of the spread and evolution of the system: experience has shown that when upper level management begins receiving information from the EIS lower level managers want to receive the same output.

1. Write the objectives of IS for strategic advantage.

The several strategic uses of information technologies for electronic business and commerce and how they give competitive advantage to a business. Business process re-engineering frequently involves the strategic use of business technologies.

The cross functional E-business systems and how they can provide significant business value to a company and its customers and business partners. Enterprise resource planning (ERP) Customer relationship management (CRM) Supply chain management (SCM)

2. Discuss about strategic uses of information technology?

Lower costs: Use IT to substantially reduce the cost of business process. Use IT to lower the costs of customer's suppliers.

Differentiate: Develop new its feature to differentiate products and services. Use IT features to reduce the differentiate advantages of competitors.

Innovate: Create new product and services that include IT components. Develop unique new markets or market niches with the help of IT.

Promote growth: Use IT to manage regional and global business expansion.

Use IT to diversify and integrate into other products and services.

3. What is business process and elements of business process?

The business process is defined as a set of activities performed across the organisation creating an output of value to the customer. every process has a customer who may be internal and external to the organisation. The basic elements of the processes are motivation to perform certain activities. the data is used in the process to generate the information which would be checked, processed and stored.

The process is executed through the basic steps such as receiving the input measuring the input, analysing the document, performing, processing accessing data producing the results and communicating them.

Elements are: Motivation to perform Data gathering processing and storing Information processing Checking, validating and control Decision making Communication

4. How to identifying E-Business and E-Commerce strategies.

E-business and E-commerce applications and internet technologies can be used strategically for competitive advantage as this text will repeatedly demonstrate.

Cost and efficiency improvement Performance improvement in business effectiveness Global market penetration Product and service transformation

1. Discuss about Virtual Company (VC) strategy.

VC typically use an organisational structure called a network structure since most virtual companies are inter linked by the internet, intranets, and extranets.

People and corporations are forming VC as the best way to implement key business strategies that promise to ensure success in today's turbulent business climate.

Strategies for VC: Share infrastructure and risk Link complementary core competencies Increase facilities and market coverage Migrate from selling products to selling solutions.

2. Discuss about competitive strategic concepts.

The strategic role of information systems involves using information technology to develop products, services and capabilities that give a company major advantages over the competitive forces it facts in the global marketplace.

The competitive environment of an industry: Rivalry of competitors within industry Threat of new entrants ,, ,, substitutes The bargaining power of customers and ,, ,, ,, ,, suppliers

Cost leadership strategy:

Becoming a low cost producer of products and services in the industry.

Differentiation strategy:

Developing ways to differentiate a firms products and services from its competitors.

Innovation strategy:

Finding a new ways of doing business. this may involves the development of unique products and services or entry into unique markets or market niches.

Alliance strategy:

Establishing new business linkages and alliances with customers, suppliers, competitors and other companies.

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1. Explain computer aided planning (CAP) tools.

The planning process can be quite difficult and time consuming. That's what gives organisations the "we don't have time to plan" excuse for using a formal planning process. So vendors have developed CAP tools to help ease the burden of planning.

This process results in an enterprise model of the business. An enterprise model defines the structures and relationship of business processes and data elements as well as other planning structures. Developing an enterprise model for a business is a starting point for the strategic data planning process. Data administration personnel use enterprise modelling to help them develop a variety of data models for the organisation.

2. Explain the benefits of strategic IS planning.

The process of strategic information systems planning can help an organisation achieve significant advantages. Business firms have found that strategic planning helps achieve benefits such as the following: Pinpoints ways to achieve competitive advantage by using information systems as a strategic weapon. Stimulates the creative use of information systems technology and encourages innovation in applying it to the needs of the organisation. Redeploys financial and human resources to the most important and strategic information systems projects for the business. Establishes priority and timeframes for the development of information systems in the future.

3. Explain cross functional enterprise system.

Integration of the enterprise has emerged as critical issues for organisations in all business sectors striving to maintain competitive advantage. Integration is the key to success. it is the key to unlocking information and making it available to any user, anywhere, anytime.

4. Explain about enterprise resource planning (ERP).

Operating system, the equivalent of the windows operating systems for back office operations. ERP is a cross functional enterprise system that serves as a framework to integrated and automate many of the business processes that must be accomplished within the manufacturing, logistics, distribution, accounting finance and human resources functions of a business. Companies are finding major business values in installing ERP software in two ways: ERP creates a framework for integration and improving their back office systems that result in major improvements in customer service, production and distribution efficiency. ERP provides vital cross functional information quickly on business performance to managers to significantly improve their ability to make better decisions across the enterprise.

5. Explain the information resource management (IRM).

IRM has become a popular way to emphasize a major change in the management and mission of the information systems function in many organisations. managing the information system resources of an organisation is a vital concepts in today's business environment, because of three major developments that are affecting how corporate management views the information systems function.

1. Explain dimensions of the information resource management (IRM).

IRM has become a popular way to emphasize a major change in the management and mission of the information systems function in many organisations. Managing the information system resources of an organisation is a vital concept in today's business environment, because of three major developments that are affecting how corporate management views the information systems function.

Five dimensions of IRM:

IRM is a response to these pressures. Resource management

Technology management Distributed management Functional management Strategic management.

Resource management:

IRM views data, information, and computer hardware, software and personnel as valuable resources that should be effectively and efficiently managed for the benefit of the entire organisation. If plant and equipment, money, and people are considered valuable organisational resources so should its data, information, and other information system resources.

Technology management:

IRM emphasizes that all technologies that process and deliver data and information must be managed as an integrated system of organisational resources. Such technology includes telecommunications and office system as well as computer based information processing. These "island of technology" are bridged by IRM and become a primary responsibility of the executive in charge of all information services, sometimes called the chief information officer (CIO) of the organisation.

Functional management:

The IRM concept stresses that the management of an organisation must apply common managerial functions and techniques to the management of information resources. Managers must be managerial techniques just as they do with other major resources and activities of the business.

Strategic management:

Finally the IRM concepts stresses that the information services function in the firm must be more than a provider of computer services. It must also make major contributes to the profitability and strategic objectives of the firm. Information resources management focuses on developing and managing information system that significantly improve operational efficiency promote innovative products and services and build a strategic information resources base that can enhance the competitiveness of the organisation.

4. Explain about E-governance.

E-governance is a form of e-business in governance comprising of processes and structures involved in deliverance of electronic services to the public, viz, citizens.

Objectives of e-governance: Build services around citizens choice Make government more accessible facilitate social inclusion provide information responsibly reduce government spending deliver online services

Domains of e-governance: improving government processes cutting process costs managing process performance making strategic connection in government creating empowerment connecting citizens talking to citizens listening to citizens improving public services building external interactions with and within civil society working better with business developing communities building partnerships

Management Information System Topics:» Definition of Management

Information System

» Purpose of Management Information System

» Advantages of Management Information System

» Objectives of Management Information System

» Characteristics Management Information System

» Models/ types of Management Information Systems

» Management Information System Planning, Controlling and Limitations

Definition of Management Information System

Management Information System can be defined as a formal method of collecting timely information in a presentable form. in order to facilitate effective decision making and

implementation, in order to carry out organizational operations for the purpose of achieving the organizational goal. A management information system is a system design to provide selected decision –orientation information needed by management plan, control and evaluate the activities of the corporation.
It is designed within the frame work that emphasizes profit, planning, performance planning and control at all levels. It complements the ultimate integration of required business information sub system both financial within the company.

A marketing information system consist of people, equipment and procedures together, sort, analyze, evaluate and distribute the needed timely and accurate information and marketing decision makers.

An information system can be any organized combination of people, hardware, software, communication network and data resources that collects, transforms and disseminates information in an organization.

Purpose of Management Information System

Information processing is a major social activity. A significant part of an individual's working and personal time is spent in recording, searching for, and absorbing information, as much as 80% of a typical executive's time is spent on processing and communication information.

Their duties involve the production and use of information outputs documents, reports, analysis, plans, etc. The system provides information on past, present, and project future and on relevant events inside and outside the organization in the society. It may be define as planned and integrated system for gathering relevant data, converting it in to right time. The main purpose of management information system is to provide the right and correct information to the right people at right time.

Another important purpose of management information system is that it is needed by all business organization because of increased complexity and rate of change of today's business environment foe example marketing manager needs information about sales performance and trends financial manager needs information on returns, production manager needs information analyzing resources requirement and workers productivity and personnel manager needs information analyzing resources requirements and workers productivity and personnel manager needs information concerning

employee compensation and professional development. thus effective managers with the specific marketing, financial, production and personnel information, and products they require to support their decision making responsibilities.

Management information system concept is a vital to effective computer use in business of two or major reason:

1- It serves as a system framework for organizing business computer applications. business application of computer should be viewed as interrelated and integrated computer based information system and not as independent data processing job.

2- It emphasized the management orientation of electronics information processing in business the primary goal of computer based information should be the processing of data generated by business operations.

Advantages of Management Information System

1. Management information system helps the managers to make planning and control decision.

2. Facilitated planning- management information system improves the quality of plants by providing relevant information for sound decision making due to increase in size and complexity of organization managers have lost personal contact with the scenes of operations.

3. Minimize information overload- management information system changes the larger amount of data into summarized form and thereby avoids the confusion which may arise when manager are flooded with detailed facts.

4. Bring coordination-management information system facilities integration of specialized activities by keeping each department aware of the problem and requirement of their department. it connect all decision centers in the organization.

5. Make control easier-it serves as a link between managerial planning and control. It improves the ability of management to evaluate and improve performance. The use of computers has increased the data processing and storage capability and reduces the cost.

6. Management information system assembles, processes, stores,evaluate, and disseminate the information.

7. It insure that appropriate data is collected from the various sources,processed, and sent further to all the needy destinations.

8. Management information system helps in strategic planning, management control, operational control and transaction processing.

9. It helps the clerical personnel in the transaction processing and answer their queries on the data pertaining to the transaction the status of a particular record and reference on a variety of documents.

Objectives of Management Information System

1. Management information system main objective is to attain the transaction processing of data of an organization effectively.Transaction processing is applied in conversion and analysis of raw data.

2. Management information system is the management of marketing, fiancé, production, and the personnel becomes better trained which result in his efficiency.

3. Management information system is in making the forecasting and long term prospective planning more effective.

4. It tries to create a structured database in knowledge base for all the people in the organization.

Characteristics of Management Information System

Management information system and top management - management information system is a comprehensive and coordinated set of information subsystems which are rationally integrated and which transform data information in a variety of a ways to enhance productivity in conformity with the manager's style and characteristics on the basis of established quality.

1. Management oriented - the system is designed from top to bottom. This does not mean that the system will be geared to providing information directly to top management rather it means that the system development starts from an appraisal of management needs and overall business objectives it is possible that top management is the focus of the system such as their needs cornerstone on which the system is built for example- a marketing information system basic sales order processing the shipment of goods to the customers and the billing of the goods are fundamental operation control activities. however if the system is designed properly this transaction information can be traced by salesman, sales territory, size of order, geography and product line furthermore if designed with strategic management needs in mind external competition market and economic data can be created to give a picture of how well the company's product are faring in their marketing environment and to serve as a basic of new product or marketplace introduction the initial application can be geared to the operational and management control areas but in such a way as not preclude its integration into a strategic planning subsystem for upper management.

2. Management directed - because of the management information system it is imperative that management actively directs the system development efforts to determine what information is necessary to improve its control of operation it is rare to find an management information system where the manager himself or a high level representative of his department isnot spending a good deal of time in system design it it not a non time involvement for continued review and participation are necessary to ensure that the implemented system meets the specification of the system that designed therefore management is responsible for setting system specification and it

must play a major role in subsequent trade off decision that inevitably occur in system development. An important element of effective system planning is the process for determining the priority of application development. Management must control this process if a management information system is the objectives. A company without a formal application approval cycle and a management steering to determine priorities will never develop an management information system.

3. Integrated - integration is significant because of the ability to produce more meaningful management information for example in order to develop an effective production scheduling system we must balance such factors as:

A. Set up cost.
B. Work force.
C. Overtime rates.
D. Production capacity.
E. Capital requirement
D. Customer service.

4. Common data flows - Because of the integration concept of management information system there is an opportunity to avoid duplication and redundancy in data gathering storage and dissemination for example customer orders are the basic for billing the customer for goods ordered setting up the accounts receivable initiating production activity sales analysis sales forecasting and so on it is prudent to capture this data closest to the source where the event occur and use it throughout the functional area it is also prudent to capture it once and thus avoid the duplicate entry of sources data into several system.

5. Heavy planning elements - Management information system do not occur overnight they take from three to five years and longer to get established firmly within a company a heavy planning element must be present in management information system development the management information system designer must have the future objectives and needs of the company firmly in mind. the designer must avoid the possibility of system obsolescence before the system planning is an essential ingredient to successful management information system the management information system provides meaningful direction towards which one strives.

6. Sub-system concept - In tackling a project as broad and complex in scope as a management information system, one just avoid losing sight both the forest and the trees. Even though the system is viewed as a single entity, it must be broken down into digestible sub-system that can be implemented one at a time. The breakdown of management information system into meaningful subsystems set the stage for prioritized

implementation. The subsystem analysis is essential for applying boundaries to the problem, thus enabling the designer to focus on manageable entities that can be assigned and computerized by selected system and programming team.

7. Flexibility and ease of use - Despite a careful analysis of the future management information needs it is impossible to predict what is desire there to five year hence. This is true in most

industries and especially in industries with rapid change patterns, it is naïve to think that if anyone possesses the omniscience to predict the future with this as a premise, the next best thing an management information system developer can do is to built in the flexibility to incorporate as many manufacture nuances as possible.

8. Data base - The data is the mortar that holds the functional system together each system requires access to a master file or data covering inventory, personnel, vendors, customers, general ledger, work in progress and so on. If the data is stored efficiently and with common usages in mind one master file can provide the data needed by any of the functional system. It seems logical to gather data once, properly validate it and place it on a central storage medium that can be accessed by any system. However it is not unusual to find a company with multiple data files, one serving one functional system and another serving another system.

9. Distributed data processing - The majority of the companies implementing management information system have a geographic network of sale office, distribution channel, manufacturing plants, division, subdivision and so on some of these entities are operated in a completely independent fashion and therefore may not be part of the integrated management information system more often than not, the remote site to have the connection with each other and with a host of operation in order to create a effective management information system with geographical boundaries some form of distributed data processing is necessary. Distributed data processing can be thought of as the delivery system, placing information in the hands of those who need it when they need it.

10. Information as a resource - Providing the entire organization must be a concept that information is a valuable resource particularly in the management control and strategic planning areas must be properly managed. This is a subtle but important change in thinking. It was a common in the past to view the data processing.

Models/ Types of Management Information Systems

1. Accounting management information systems - All levels of accounting managers share all accounting reports.

2. Financial management

information systems - It provide financial information to all financial managers within an organization include the chief financial officer. The chief financial officer. The chief financial officer analyzes historical and current financial activity.

3. Manufacturing management information systems - More than any functional area great advance in technology have impacted operations, as a result manufacturing operations have changed. For instance, inventories are provided just in time so that great amounts of money are not spent for warehousing huge inventories in some instance raw material are even proceeds on rail load cars waiting to be sent directly to the factory thus there is no need for warehousing.

4. Marketing management information system - A marketing management information system support managerial activity in the area of product development, distribution, pricing decision, promotional effectiveness and sales forecasting more than any other functional area.

5. Human resource management information system - It concern with activity related workers, managers and other individual employed by an organization because the personnel function relates to all other areas in business the human resource management information system playa a valuable role in ensuring organization system include work-force analysis and planning, hiring, training, and job assignment.

6. Structure of management information system - The management information system has been described in terms of support for decision making management activity and organization functions.

7. Conceptual structure - The conceptual structure of a management information system is defined as a federation of functional subsystem each of which is divided into four major information processing components transaction processing, operational control information system support, managerial control information system, managerial control information system and strategic planning information system which has some unique data files which are used by only that sub system.

8. Physical structure - The physical structure of a management information system would be identical to the conceptual structure of all applications consisting of completely separate programs used by only one function but this is frequently not the case substantial information can be achieved from

1 - Integrated processing

2 - Use of common modules

Integrated processing is achieved by designing several related applications as a single system in order to simplify the interconnection and reduce the duplication of input. A good example is an order entry system. The recording of an order initiates a sequence of processing.
Each step using new data but also most of the data from prior processing. In other words, an integrated order entry system crosses functional boundaries. Management Information System Planning, Controlling and Limitations

Planning - The top level management is mainly concerned with strategic planning for example the strategic planning activities of top management involve future interaction between the organization and its external environment.

Computational support for planning:

1. An analysis of historical data to obtain relationship useful for projection.

2. Various projection and forecasting techniques to estimate future value.

4. Computations internal to the plan and computation required for outputs.

5. Output of the results in a meaningful planning format.

Financial planning computation

Models that involve financial plan need to provide for various computation and analyses commonly required for measuring or evaluating profitability example are depreciation computation rate of return analysis and break even analysis. Depreciation is a significant computation in most financial planning it affect profit computation because it is an expense and it effect cash flow because of its impact on taxes. There are several methods for computing deprecation all of which should be available to the planner. These methods are straight line double declining balance sum of the year digits and production or use basis.

Controlling - At the middle level management, information is management control. Middle level managers such as departmental heads are concerned with the current and future performance of their units. Therefore they need aggregate information on the sales, profit etc. of their units such information is available from both within the organization as well as outside the organization, for example, financial data for budgets and ratio analysis are available from the company's records. However market data can be collected through special surveys and reports from outside the organization. Top level managers also require management control information. But these information must be more detailed narrower in scope and more accurate than information required for strategic planning. It should also generate at more frequent because the time horizon of decision is shorter.

At the supervisory level of management operational control is exercised production scheduling, cost and credit control, etc. are examples of operational control. Therefore a detailed report on a daily and weekly basis is required, inventory report, operating cost, production rate, etc are examples of such information. Such information available from with in the organization. The control feedback loop is basic to system design. The computer can improve the control process in several ways:

1. The standard can be complex. Computational simplifications are not necessary.

2. The computation of deviation and identification of cause can be more sophisticated.

3. Reporting with computers can use irregular time interval which is very difficult with manual processing and can be done more frequently.

Limitation

1. Aggression - The people may hit back at the system and may even sabotage it by using equipment incorrectly by putting incomplete information into the system or buy actual destruction of hardware or software.

2. Projection - It is a psychological mechanism of blaming difficulties on someone or something else. When employees blame the management information system for problems caused by human error or other factors unrelated to the system, projection is taking place.

3. Avoidance - It occurs when individuals defend themselves by withdrawing from or avoiding a frustrating situation. Managers may avoid the system by ignoring its output, in favour of their own information sources.

Management Information System Planning –

Management information systemgeneral business planning initiates from the following concepts:

1. Mission of the corporate.

2. Objectives and goals for the corporate in all key performance areas.These are in line with the mission of the corporate.

3. Strategic planning for general approach on how to achieve long term objectives.

4. Operational planning for specific guideline on how to transverse short term milestones

Types of Information Systems - Components and Classification of Information Systems

An information system is integrated and co-ordinate network of components, which combine together to convert data into information.

Components of information systems

An information system is essentially made up of five components hardware, software, database, network and people. These five components integrate to perform input, process, output, feedback and control. Hardware consists of input/output device, processor, operating system and media devices. Software consists of various programs and procedures. Database consists of data organized in the required structure. Network consists of hubs, communication media and network devices. People consist of device operators, network administrators and system specialist.

Information processing consists of input; data process, data storage, output and control. During input stage data instructions are fed to the systems which during process stage are worked upon by software programs and other queries. During output stage, data is presented in structured format and reports.

Classification of Information System

In any given organization information system can be classified based on the usage of the information. Therefore, an information system in an organization can be divided into operations support system and management support system.

Operations support system

In an organization, data input is done by the end user which is processed to generate information products i.e. reports, which are utilized by internal and or external users. Such a system is called operation support system.

The purpose of the operation support system is to facilitate business transaction, control production, support internal as well as external communication and update organization central database. The operation support system is further divided into a transaction-processing system, processing control system and enterprise collaboration system.

Transaction Processing System (TPS)

In manufacturing organization, there are several types of transaction across department. Typical organizational departments are Sales, Account, Finance, Plant, Engineering, Human Resource and Marketing. Across which following transaction may occur sales order, sales return, cash receipts, credit sales; credit slips, material accounting, inventory management, depreciation accounting, etc.

These transactions can be categorized into batch transaction processing, single transaction processing and real time transaction processing.

Process Control System

In a manufacturing organization, certain decisions are made by a computer system without any manual intervention. In this type of system, critical information is fed to the system on a real-

time basis thereby enabling process control. This kind of systems is referred as process control systems.

Enterprise Collaboration System

In recent times, there is more stress on team effort or collaboration across different functional teams. A system which enables collaborative effort by improving communication and sharing of data is referred to as an enterprise collaboration system.

Management Support System

Managers require precise information in a specific format to undertake an organizational decision. A system which facilitates an efficient decision making process for managers is called management support system. Management support systems are essentially categorized as management information system, decision support system, expert system and accounting information system.

Management information system provides information to manager facilitating the routine decision-making process. Decision support system provides information to manager facilitating specific issue related solution.

Further Classification

An information system can be categorized based upon activity into strategic planning system, tactical information system and operational information system.

Information Systems vs Information Technology

Introduction

It is often observed that term information system and information technology are used interchangeably. In a literal sense, information technology is a subset of information systems. Information systems consist of people, processes, machines and information technology. The great advancement in information systems is due to development in information technology and introduction of computers.

Information System

An information system can be defined as set of coordinated network of components, which act together towards producing, distributing and or processing information. An important characteristic of computer-based information systems information is precision, which may not apply to other types.

In any given organization information system can be classified based on the usage of the information. Therefore, information systems in business can be divided into operations support system and management support system.

Information Technology

Everyday knowingly or unknowingly, everyone is utilizing information technology. It has grown rapidly and covers many areas of our day to day life like movies, mobile phones, the internet, etc.

Information technology can be broadly defined as integration of computer with telecommunication equipment for storing, retrieving, manipulating and storage of data. According to Information Technology Association of America, information technology is defined as "the study, design, development, application, implementation, support or management of computer-based information systems." Information technology greatly enhances the performance of economy; it provides edge in solving social issues as well as making information system affordable and user friendly. Information technology has brought big change in our daily life be it education, life at home, work place, communication and even in function of government.

Comparison of Information System and Information Technology

Information system and information technology are similar in many ways but at the same time they are different. Following are some aspects about information system as well as information technology.

Origin: Information systems have been in existence since pre-mechanical era in form of books, drawings, etc. However, the origin of information technology is mostly associated with invention of computers.

Development: Information systems have undergone great deal of evolution, i.e. from manual record keeping to the current cloud storage system. Similarly, information technology is seeing constant changes with evermore faster processor and constantly shrinking size of storage devices.

Business Application: Businesses have been using information systems for example in form of manual books of accounts to modern TALLY. The mode of communication has also gone under big change, for example, from a letter to email. Information technology has helped drive efficiency across organization with improved productivity and precision manufacturing.

Transaction Processing Systems (TPS)

Processing system hasthe task of the organization's events that are recorded. The MIS, records and stores information about the queue and Chiefs organization collects, processes and provides them in the form of documents, reports, or information systems and decision support information.

Management Information System (MIS) MIS is the most popular information systems. MIS receives internal data from the operation processing system and summarized in the form of meaningful and useful as management reporting. To be used when performing administrative tasks such as controlling and decision making. The aim of Management Information Systems is to enhance the presentation and reduce speculation in resolving problems at different organizational levels.

Decision Support System (DSS)

Decision Support System is defined as a computer-based system to be used by a manager or group of managers at any organizational level decision process for problem solving DSS, helps decision makers with putting together human judgment and computerized information to solve .A DSS can help the decision maker, but they are never replaced.

Executive Support Systems (EIS)

Which is a special type of DSS can help the decision-making high levels .Accurate picture of the performance of the system and shows a summary of the activities of competitors. The system is easy to work with, because they provide information in a way that can be easily downloaded (as a graphic and charts).In summary, the purpose of the EIS is to support the management of the information supplied in accordance with operational managers.

Accounting Information System (AIS)

AIS System describes the data that collect organization’s activities and convert the data into information. Gives the available information to internal and external organization’s users. The AIS is a system that provides information for various units.

(SIS) Strategic Information System

SIS is one of the most important information systems applications, organization, management, politics, the military, business and strategic information is provided for supplying to achieve its strategic objectives. Mainly in terms of strategic information systems are complex, challenging, unpredictable, and chaotic critical applications.

The benefits of using information systems

Three kinds of information systems have the potential to provide benefits to the organization(Young, 1983)

(1) Improve Productivity

(2) Improve the Effectiveness

(3) Competitive Advantage

Productivity improvement:

Productivity improvement occurs when the work can be done more or less the same source. In Organizations, improve productivity happen when improve work processes occur. For example, For example, when an employee may be replaced with new methods of processing 25 Orders to 50 Orders, His labor productivity is 2 fold. Information systems can be faster, easier and more effective to do things that are improving productivity in this way.

Effectiveness:

Effectiveness of ability of an individual or an organization to do things that should be done. Manager predicts the conditions that may be problematic terms before it causes problems arise; effective manager who joined the Badly problems that had prevented them. Information systems, which provide information to help managers evaluate the situation and choose the best options and thereby improve the effectiveness of that.

Competitive advantage:

The organization that has improved the efficiency and effectiveness of the use of information systems to be able to have the potential to transform the way organizations compete.

What does Transaction Process System (TPS) mean?

A transaction process system (TPS) is an information processing system for business transactions involving the collection, modification and retrieval of all transaction data. Characteristics of a TPS include performance, reliability and consistency.TPS is also known as transaction processing or real-time processing. A transaction process system and transaction processing are often contrasted with a batch process system and batch processing, where many requests are all executed at one time. The former requires the interaction of a user, whereas batch processing does not require user involvement. In batch processing the results of each transaction are not immediately available. Additionally, there is a delay while the many requests are being organized, stored and eventually executed. In transaction processing there is no delay and the results of each transaction are immediately available. During the delay time for batch processing,

errors can occur. Although errors can occur in transaction processing, they are infrequent and tolerated, but do not warrant shutting down the entire system.

To achieve performance, reliability and consistency, data must be readily accessible in a data warehouse, backup procedures must be in place and the recovery process must be in place to deal with system failure, human failure, computer viruses, software applications or natural disasters.

TPS is an information system that is used to process day to day transactions such as purchases, expenses, sales, receipts, payments, etc. TPS may provide us with meaningful routine reports such as profit & loss a/c and balance sheet, etc.TPS basically manipulates data from business transactions. The users of TPS generally are not in a position to make typical management decisions. A TPS captures data, processes it and makes available such data in the form of reports to be utilized by the management.TPS is the oldest known information system used for business applications. However, TPS has progressed a lot since then, majorly due to availability of the Internet. A TPS may be defined as an Information system that collects, stores, retrieves day to day transactions of the organization. TPS generally may be used in Railway Reservation Systems, Accounting Systems, Banking Systems, etc. Global economy is a major reason for the advancement of TPS.

Qualifiers for TPS

Atomicity: A transaction must be completed in full and not in parts. A transaction must take place in entirety.

Consistency: Data integrity or consistency should be well maintained. Cash should not go negative in the books, this is a requirement of the management so the system should be such that it does not accepts any cash payment related transaction when the cash is not available.

Isolation: The transactions must be executed simultaneously but individual privacy should not be disturbed. Debit and credit should occur simultaneously without affecting each other.

Durability: Transaction which is not confirmed should not be recorded and transactions which are completed should be edited only with prior approval.

Attributes of TPS:

ACCESS CONTROL: TPS generally has features by which only authorized users are allowed to access the system. Thus, any unauthorized user cannot make changes to the system or access the system. This access control feature leads to security of the TPS.

EQUIVALENCE: TPS provide similar format to its users for data entry thus users efficiency gets increased and the overall system effectiveness is also improved.

HIGH VOLOUME RAPID PROCESSING: A pre requirement is that TPS must be able to process huge transactions within very less time and that too efficiently. We know the number of

transactions occurring in railway system and the quickness required. A TPS must be such that it may handle large number of transactions without any failure.

RELIABLITY: A TPS should be such that it is available day and night.TPS should be such that we can believe it is secured and error free.

Components of TPS:

Inputs: Source documents such as Customer orders, invoices, purchase orders, etc. serves as Inputs to the TPS system.

Processing: Once the inputs are provided, they are further processed to get an output.

Storage: Ledgers serves as a source of storage.

Output: Any document generated is termed as output.

These were the fundamentals behind the Transaction Processing System. It is a very helpful, reliable & secured system of processing transactions at an ease.

**Discuss about human resources information system.**

This functional information system supports the functions of human resource management of an organisation. The function involves:

Manpower planning:

It is about deciding the present and future needs of manpower in the organisation.

Staffing:

This function includes recruitment, selection and placement of employees. Recruitment refers to attracting qualified and competent people for different jobs.

Training and development:

The need to train and develop the employees is felt due to A gap between the job requirements and competence of the employee. The need to develop lower level managers to assume higher level responsibility when required.

Performance evaluation:

This task is concerned with evaluating employee performance at work in terms of pre determined standards and norms. Evaluation or performance appraisal includes the formulation of performance appraisal plans, development of appraisal techniques and programmes etc...

Separation activities:

The employee employer relations may come to an end due to the resignation of an employee, layoff, death or retirement. HRM besides the above mentioned functions is also responsible for the wages and salary administration, sustaining and maintaining the work force in the organisation and maintaining of healthy and peaceful labour management relations. It contains 3 function flow of human resource information system. Transaction data-----is a basis for various types of output information or analysis. The data includes employee number, name, qualification, experience, joining data etc... Categories and grades of posting and daily performance etc... Environmental data----includes data about the availability of personnel, trends in the labour force, competition, market offering to the employees, government and labour laws etc... Organisational plans------also provide an important input in human resource information system, on the basis of which future planning for recruitment, job assignment, etc...

4. Discuss accounting information system.

Accounting information system is the part of organisations information system. The information system processes a mixture of quantitative and qualitative data but the accounting information system focuses almost entirely on processing quantitative data. The accounting system and information system must work together in an effective and efficient way.

Accounting information system provide efficient delivery of information needed to perform necessary accounting work and to assist in delivery of accurate and informative data to users especially those who are not familiar with the accounting and financial reporting areas itself. A high value of data processing characterizes these applications. Data processing consists of 4 major tasks- data gathering, data manipulation, data storage, and document preparation.

Characteristics of accounting information system: Performs necessary task Adheres to relatively standardized procedures Handles detailed data Has a primarily historical focus Provides minimal problem solving information

Sources of accounting information system: Procedures manual Management accounts / balance sheets Financial data Accounting policies Tax details Working capital

Types of accounting information system:

 General ledger system: this module helps organisations leverage the GL processing speeds available streamline accounting processes and reduce the period end close cycle.

 Asset management: this module help streamline tracking, depreciation and maintenance scheduling of asset improve productivity with easier access to critical information derive maximum tax benefits and minimize risk of loss or damage to capital assets. It maintains an inventory of the company's long term assets.

 Order entry system: it captures and manages different kinds of data relating to a transaction such as number of units sold customer billing.

 Account receivable and payable system: this module helps organisations bill customers automatically from any sales channel, streamline accounts receivables processing and automate the invoicing process.

 Inventory control system: it captures processes and manages all issues related to the company's inventory such as items in inventory, inventory cost, lost items and damages items.

 Payroll system: it captures and processes data related to salaries including taxes, other deductions, benefits, overtime and other related data.

 Cash management: this module helps organisations forecast cash flows in any currency and in multiple time periods, streamline the reconciliation process, monitor exceptions and fraud and manage the cash cycle efficiently with control.

MCQs

1. An …..is a set of processes and procedures that transform data into information and knowledge.

A) information system

B) Knowledge system

C) Database system

D) Computer system

Answer: A

2. A system is called …… when the inputs, process and the outputs are known with certainty.

A) Probablistics

B) Deterministic

C) Open

D) Close

Answer: B

3. Which of the following steps is/are the implementation plans involved in MIS?

i) Preparing organizational plans ii) Planning of work flow iii) Training of personnel

iv) Development of software v) Acquiring computer hardware

A) i, ii and iii only

B) i, ii, iii and iv only

C) i, ii, iv and v only

D) All i, ii, iii, iv and v

Answer: D

4. Which of the following is included in the Office automation systems?

i) Word processing ii) Electronic mail iii) Voice mail iv) Electronic calendaring

v) Audio conferencing

A) i, ii, iii and v only

B) i, ii, iii and iv only

C) i, ii, iv and v only

D) All i, ii, iii, iv and v

Answer: D

5. In a typical ……. network, application processing is shared between clients and one more servers.

A) client server computing

B) cloud computing

C) mobile computing

D) data computing

Answer: A

6. The …. is defined as a set of activities performed across the organization creating as output of value to the customer.

A) development process

B) business process

C) quality process

D) customer focus

Answer: B

7. Which of the following is NOT an objective of MIS?

A) Facilitate the decisions-making process

B) Provide requisite information at each level of management

C) Support decision-making

D) recruit people for system

Answer: D

8. In MIS system design, the sources of information may be categorized as … and ..

A) internal, external

B) personal, organizational

C) useful, unuseful

D) constructive, destructive

Answer: A

9. What among the following are the primary characteristics that information must process?

i) Relevance

ii) Availability

iii) Timeliness

iv) Accuracy

Answer: A

10. Which of the following models are developed on the principles of business management, accounting and econometrics'?

A) Behavioral model

B) Management science models

C) Operations research models

D) Policy making models

Answer: B

11-The information of MIS comes from the

a. Internal source

b. External source

c. Both internal and external source

d. None of the above

(Ans: c)

12-The back bone of any organization is

a. information

b. employee

c. management

d. capital

(Ans: a)

13-AI is the short form of

a. Artificial information

b. Artificial intelligence

c. Artificial integration

d. None of the above

(Ans: b)

14-The advantage(s) of transistors are they

a. Are portable

b. Are more reliable

c. Consume less power

d. All of the above

(Ans: d)

15-The flow of information through MIS is

a. need dependent

b. organization dependent

c. information dependent

d. management dependent

(Ans: a)

16-The basic component(s) of DSS is (are)

a. Database

b. Model base

c. DSS software system

d. All of the above

(Ans: d)

17-GDSS is the short form of

a. Group Decision Support System

b. Group Discussion Support System

c. Group Decision Service System

d. Group Discussion Support Source

(Ans: a)

18-Decision trees could be represented in different ways such as

a. Bottom to top

b. Left to right

c. Top to bottom

d. All of the above

(Ans: d)

19-The types of data transmission modes are

a. Half duplex. , Duplex. , Singlex

b. Half duplex. , Duplex. , Simplex

c. Half duplex. , Duplex. , Half Singlex

d. Singlex, duplex, half triplex

(Ans: b)

20-The elements of control will consist of

a. Authority, Direction, Management

b. Authority, Direction, Information

c. Authority, Application, Management

d. Authority, Application, Information

(Ans: a)

21-Internal information for MIS may come from any one of the following department.

a. Customers care department

b. HR department

c. Marketing department

d. Production department

(Ans: a)

22-Audit gives details about _____ to Account Payable System

a. Account balance

b. Transaction

c. Expenditure

d. All of the above

(Ans: a)

23-One byte is made of

a. Four bits

b. Eight bits

c. Twelve bits

d. Sixteen bits

(Ans: b)

24-MIS normally found in a manufacturing organization will not be suitable in the _____.

a. Service sector

b. Banking sector

c. Agriculture sector

d. All of the above

(Ans: a)

25.___details are given by Management to Marketing Service System.

a. Customer

b. Employee

c. Supplier

d. None of the above

(Ans: c)

26)The most creative and challanging phase of system life cycle is ..

A.Feasibility study

B.Maintenance

C.Design

D. None of the above

Ans: C

27)SDLC stands for ...

A. Software design life cycle

B. Software development life cycle

C. System design life cycle

D. System development life cycle

Ans: B. Software development life cycle

28)System Development process is also called as ..

A. System Development Life Cycle

B. System Life Cycle

C. Both A and B

D. System Process Cycle

29)The first step in the System Development Life Cycle is...

A. Analysis

B. Design

C. Problem/Opportunity Identification

D. Development and Documentation

Ans: C. Problem /Opportunity Identification

30)The most rapidly growing application for computer assisted decision making is called

A. simulation

B. attribute

C. validation

D. entity

Ans:  A. simulation

31) The effectiveness of marketing information system depends to a larger extent of ..... from market place to the firm.

A. marketing

B. advertising

C. feedback

D.promoting

Ans: C.feedback

32)Expand TPS

Transfer point of sales

B. Technology processing systems

C. Transaction processing systems

D. None of the above

Ans: C Transaction processing systems

33)Accounting, finance, marketing, and human resources are known as:

A. Executive information systems

B. Functional business areas

C. Geographic information system

D. Local information system

34)EDI stands for:

A. Electronic Data Interchange

B. Electrical Data Interchange

C. Work flow Automation Software

D. Enhanced Data Interchange

Ans: A. Electronic Data Interchange

35) The ..... provides a manager with the information needed to make decisions regarding, the firm's operational activities.

A. ElS

B.ES

C.MIS

D.EDI

Ans: C.MIS

36) A combination of a MIS and DSS called ..... which helps top managers make decisions

A.GIS

B.EIS

C.EPI

D.CAM

Ans: Executive information system (EIS)

37) The first phase of IT planning is called Strategic planning.

A. Tactical

B. Project

C. Organisational

D. Strategic

Ans: D. Strategic