# 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.
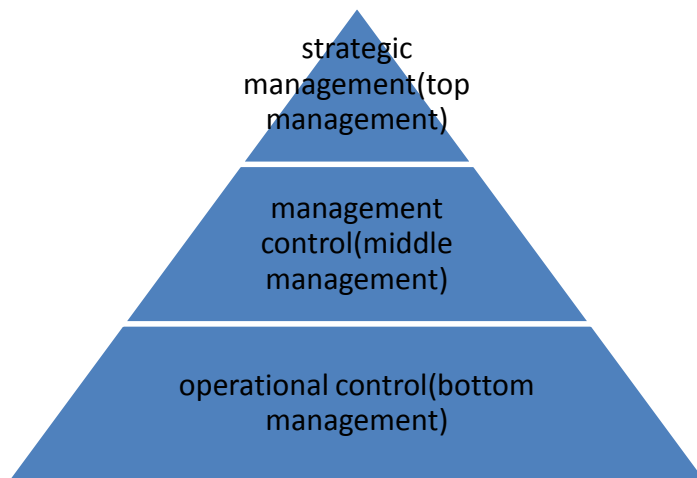
Management:

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.

<u>Transaction processing system:</u>

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

<u>Decision support system:</u>

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.

<u>Implementing a solution:</u>

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.

<u>Post implementation review:</u>

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.

<u>Global business strategies:</u>

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.

<u>Multinational strategies:</u>

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.

**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)
- Customer relationship management (CRM)
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Lower costs:

- Use IT to substantially reduce the cost of business process.
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Innovate:

- Create new product and services that include IT components.
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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