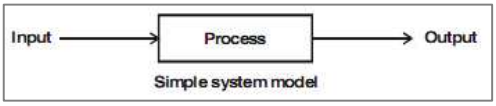
CHAP 1 - INFORMATION SYSTEM CONCEPTS

- Introduction
- Definition of a system
- Nature and types of system
- Information
- Information System and its role in Management
- Types of Information Systems at different levels

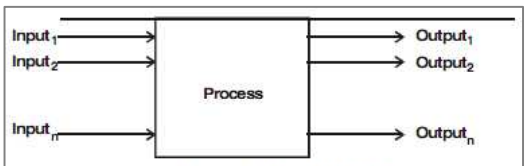
DEFINITION OF A SYSTEM

RTP Define a System and Computer Based System. Give some examples

- Set of interrelated & interacting elements - operate collectively - common goal
- Example: Human body, Computer System, Business Enterprise
- Systems can be:
  1. Abstract system: Orderly arrangement of interdependent ideas. E.g. Theology - arrangement of ideas about God.
  2. Physical system: Set of physical elements interacting and operating together to accomplish common goal. E.g. Motor car - arrangement of physical parts. General model of a physical system comprise of ***IPO*** or **I**nput ---> **P**rocess ---> **O**utput



Simple system model



System with many inputs and outputs

Components of a System OR System Environment

RTP Distinguish between Sub-System and Supra System

All systems function within some sort of environment. What constitutes the system?

Interfaces	• Inter-connections and interactions between sub-systems. • Interfaces occur at the boundary and take the form of inputs and outputs.
Sub-system	• Part of a larger system - a system is made up of sub-systems.
Boundary	• Defines & delineates a system from its environment or delineates a sub-system within a system. • The system is inside the boundary; the environment is outside the boundary.
Environment	• Collection of elements that surround a system. • Systems function within the environment and interact with it.
Supra-system	• Entity formed by a system / sub-system and its related systems / sub-systems. • E.g. Organisation (Supra-system) -> Functional areas (sub-system).

Decomposition or Identification of Sub-systems

May-03 Write short notes on Decomposition or Identification of Sub-systems

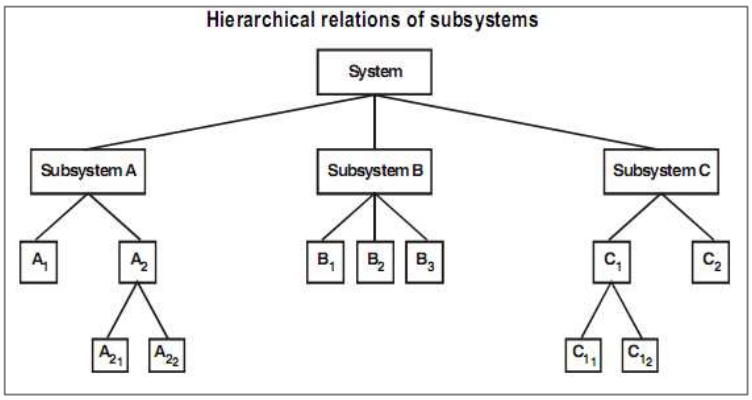
Decomposition:

1. A complex system is decomposed into smaller subsystems of manageable sizes
2. Resulting sub-systems form hierarchical structures
3. Boundaries and interfaces are defined
4. Thus, sum of the subsystems forms the entire system

Need/Use: (1) to analyze an existing system and (2) to design and implement a new system.

Example (Approach to decomposition):

1. Information system divided into sub-system – Accounting, payroll, purchasing, production, inventory etc.
2. Additionally, each sub-system is divided further into sub-systems. E.g. Accounting further decomposed: General Ledger, A/C receivables etc.
3. If the task is to design and program a new system, the sub-systems (major applications) defined in (2) might be further subdivided into smaller sub-systems or modules



Characteristics of a business system

All systems have some common characteristics. These are as follows:

1. Pre-determined objectives
2. Interrelated and interdependent subsystems
3. Sub-system works with other sub-systems (a.k.a *interaction)*
4. Work done by individual subsystems is integrated to achieve the central goal
5. Success of a system dependant on sub-system

NATURE AND TYPES OF SYSTEM

The word system is used to refer to development of a systematic and theoretical framework to convert an input into a desirable format of output for further use. The reasons for using computer in business area are as follows:

1. Handling huge volume of data
2. Storing data for indefinite period
3. Quick and accurate data-processing (*IPO*)
4. Quick retrieval of information on query
5. Quick and efficient transportation of data/information to distant places
6. Using software tools for quick decision making

Systems can be Manual or Automated. Thus, the systems can be broadly categorized into:

- **Manual system** – where data collection, manipulation, maintenance and final reporting are carried out absolutely by human efforts.
- **Automated systems** – where computers or microprocessors are used to carry out all the tasks mentioned above. It depends on manual intervention in a small way. It involves a close man-machine interaction.

Computer-based business system

Use of IT in business functions delivers better ***cost-performance ratio*** compared to that of traditional labour intensive manual systems. Major areas of computer-based applications are:

Major areas:	Goal is …
Finance and accounting	• To ensure financial viability, plan & monitor budgets. • Helps forecasting revenues, optimum use of funds. • Sub-application areas include financial accounting, G/L, AR/AP, BS, Cash management etc.
Marketing and sales	• To maximize sales and ensure customer satisfaction. • Others- new customers, advertising, order processing, after-sales service etc.
Production or manufacturing	• To optimally deploy man, machine and material to maximize production or service. • Others- overhead cost control and waste control, product quality, machinery maintenance, CAD (Computer Aided Design), CAM (Computer Aided Manufacturing)
Inventory / Stores management	• To maintain optimal level stock of raw materials, component tools and equipment. • Minimize inventory holding cost and the risk of production stoppage due to stock shortage. E.g. EOQ, ABC
HRM	• To have Right people at right place. • Look after Recruitment, salary, training, promotion, administration.

Open system and Closed system

May-07,08 Distinguish between Closed and Open systems

All systems work in a specific environment and based on how they perform within an environment, systems can be categorized in two broad classes:

Open System –
- Interacts freely with its environment and its elements by taking input and returning output
- Changes itself to match with change(s) of/in environment
- E.g. Information systems are open systems because they accept inputs from environment and sends outputs to environment.

Closed system –
- Does not interact with the environment
- Does not change with the change in environment, remain insulated
- Relatively shorter life-cycle because it decays faster for not having any input/interaction from environment
- E.g. Physical system such as 'Throw-away' type sealed digital watch

Organisations are considered to be **relatively open** systems-
- Continuously interact with the external environment. Act as input-output systems.
- Sometime act as relatively closed system to preserve their identity and autonomy. They may ignore many opportunities so as to maintain their core-competence.

Deterministic and Probabilistic system

RTP Distinguish between Deterministic and Probabilistic system

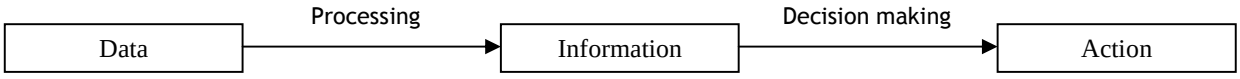
Deterministic system
- It operates in a predictable manner
- Interaction among the parts is known with certainty
- Future state/action can be predicted without error
- E.g. a correct computer program

Probabilistic system
- Relates to probable behaviour
- Future state/action cannot be predicted without error
- E.g. Inventory system

INFORMATION

May-06 What is meant by Information?
RTP Are Data and Information synonymous?

- Information is data that have been put into a meaningful and useful context.
- The term "data" and 'information' are often used interchangeably. Data : Information :: RM : FG
- Raw material i.e. data determines quality of output i.e. information. This phenomenon is called Garbage in garbage out (GIGO)



Important characteristics of Information

May-06 Describe the important characteristics of information which makes it very useful to the business organization.

The important attributes of useful and effective information are as follows:

Purpose	To inform, evaluate, organize. Help plan, control, solve problems, and make decisions
Rate	Rate of transmission /reception of information
Mode	Visual, verbal or in written form.
Format	Use of tables, charts, graphs and diagrams. Summary vs. Entire report. Proper classification. Simple & relevant; Uncluttered
Availability	Useless if not available at the time of need
Decay	Value of information usually decays with time and usage. Refresh/update regularly.
Reliability	Information is reliable if it leads to correct decision repeatedly
Cost Benefit analysis	Benefits must justify the cost incurred in procuring information. Costs are easy to measure. Benefits are difficult to quantify. Hence, classify all the managerial statements into categories: • Absolutely essential- Can't be discontinued whatever be the cost • Necessary- Can be discontinued in exceptional circumstances • Normal- Can be discontinued if costs are high • Extra- Prepare if benefits outweigh costs
Frequency	Frequency with which information is transmitted or received affects its value
Validity	Closeness of info. to the purpose which it is meant to serve

Quality	Quality refers to the correctness of information. Should be free from errors, personal bias. Errors due to: • Incorrect data measurement and calculation methods • Failure to follow processing procedure • Loss or non-processing of data
Completeness	Better decision making
Transparency	Should give true picture
Value of information	Difference between the value of the change in decision behaviour caused by the information and the cost of procuring the new information.

INFORMATION SYSTEM AND ITS ROLE IN MANAGEMENT

RTP Explain the significance of information / information system in Management process/Business process

An information system is an arrangement of a number of elements that provides effective information for decision-making and / or control of some operations of an organization. It reduces uncertainty. Some of important implications of information system in business are as follows:

- Decision-making to achieve goal
- Right decision at the right time
- Knowledge used in unusual situations
- Solving critical problems
- Edge in the competitive environment
- Formulate a strategy of action or operation

Factors on which Information requirements of executives depend (May-97,01; Nov-98)

1. Operational function	2. Type of decision making	3. Level of management activity

1. Operational function: The grouping of several functional units on the basis of related activities into a sub-systems is termed as operational function.

- E.g. In a business enterprise, marketing is an operational function. Grouping of functional units like market research, advertising, sales analysis and so on.
- Operational functions differ in respect of content and characteristics of information required by them.

Nov-01, RTP Distinguish between Programmed and Non-programmed decisions.
May-08, 09 What is a programmed and a non-programmed decision? Distinguish the difference between the two through an example.

2. Type of decision making: Organisational decisions can be categorised as (1) programmed (2) non-programmed ones.

	Programmed decisions	Non-programmed decisions
1)	Structured decisions	Non-structured decisions
2)	Decisions made on problems and situations by reference to a *pre-determined set of precedents, procedures, techniques and rules*	Decisions made on situations and problems which are *novel and non-repetitive* and about which not much knowledge and information are available
3)	*Well-structured in advance* and are time-tested for their validity.	No pre-determined guidelines, standard operating procedures,
4)	Not much *judgment* and discretion is needed	Requires managerial intelligence, experience, judgment and vision
5)	Decision making is *simplified*	No simple or single best way of making decisions
6)	Tend to be *consistent* over situations & time	Decisions tend to be unique or unusual
7)	E.g. Ordering inventories when the level drops to 100 units or fewer in a retail shop.	E.g. Determining the best training for a new employee joining the organization.

3. Level of management activity: Different levels of management activities in management planning and control hierarchy are–Strategic level, tactical level and operational level.

Nov-04 Write short notes on Strategic and Tactical decisions
Nov-02 Differentiate among Strategic, Tactical and Operational categories of Information required for different levels of Managerial decision-making.
Nov-03 Describe briefly three levels of Management. Mention at least two pieces of information-one internal and one external- required at every one of the levels of Management. (Refer Sugg.)

Strategic Level or Top level:

- Concerned with developing of organisation mission, objectives and strategies.
- Strategic decisions made at Top level
- Relates to problems critical to the survival and success
- Involves analysis and judgement
- Comparable to non-programmed decisions – available information incomplete

Tactical Level or middle level:

- Taken at middle of managerial hierarchy
- Managers plan, organise, lead and control the activities of other managers
- Sometimes referred as Operational decisions – Relatively structured
- A single strategic decision calls for a series of implementable tactical decisions
- More specific and functional
- Information easily available - less uncertainty and complexity
- Decision variables can be forecasted and quantified - impact is relatively localised and short-range

Supervisory or operational Level:

- Lowest level in managerial hierarchy.
- Managers coordinate the work of non-managerial workers
- Ensure that specific tasks are carried out, routine office work

Types of Information

Information, broadly, can be divided into two different types:

Internal information:

- Information as generated from the operations of the organization (internal) at various functional areas
- Gets processed and summarized from junior to top most level of management.

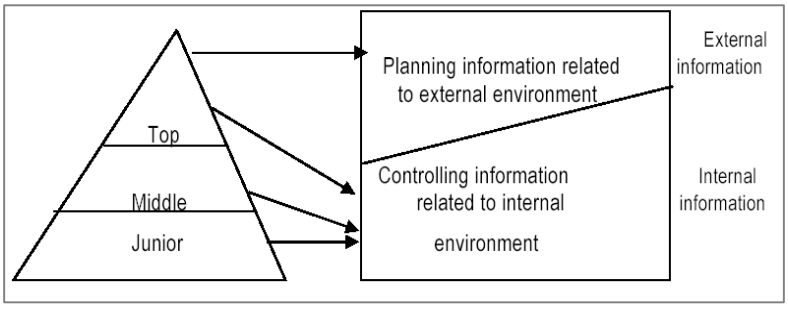
- Middle & Jr. level management uses it
- E.g. production figures, sales figures, information about personnel, accounts, material etc.

External information:

- As collected from the external environment of the business organization
- Affects the organizational performance from outside the organization.
- E.g. Govt. policies, competition, economic status etc.

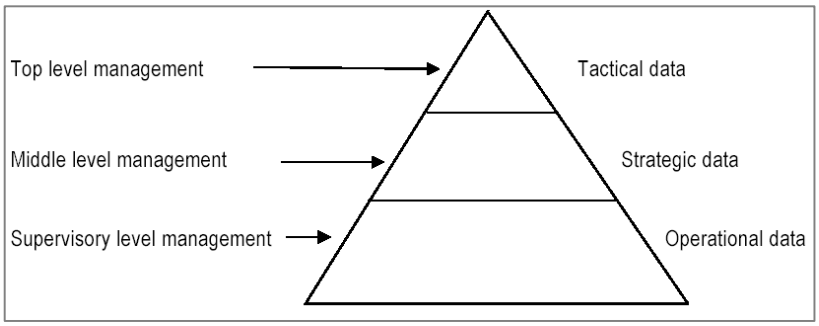
- Top management uses it
- Not structured

Access to internal and external information by different levels of management



TYPES OF INFORMATION SYSTEMS AT DIFFERENT LEVELS

Different decision-making systems that exist at different levels of organization.



Nov-01,02, RTP What are the different types of Information Systems? Explain briefly.

1. TPS
2. MIS
3. DSS
4. EIS

Transaction Processing System (TPS)

Nov-09 Briefly describe the components of transaction processing system – (Old syllabus – NA)

- Records and manipulate transaction data into usable information. It involves the following activities:
    - Capturing data to organize in files or databases
    - Processing of files / databases
    - Generating information reports
    - Processing of queries
- Operations oriented- People who participate in TPS do not take any management decision.
- E.g. selling of a product to a customer will give rise to the need of further information like customer billing, inventory status and increase in account receivable balance.
- TPS may follow periodic data preparation and batch processing (as in payroll application) or on-line processing (as in inventory control application)

Management information systems (MIS)

- Support operational control, management control and decision making, and problem solving
- Uses resources such as hardware, software, personnel, procedure, supplies
- Designed to provide accurate, relevant and timely information to managers at different levels
- Identify recurring issues and information needed to address them. Helps develop reports regularly
- Use results of TPS, etc.

Decision Support Systems (DSS)

Executive Information System (EIS)

Management information systems (MIS)

May-98, Nov-98	Explain the concept of MIS in terms of its three elements.
Nov-96	What is MIS?
RTP	Define MIS. What is its importance in business?

- Management:
  - ✓ Determine objectives
  - ✓ Make plans
  - ✓ Organise resources
  - ✓ Exercise Control over functions
  - ✓ Monitor results
- Information: Sets of facts, figures and symbols processed for the current decision-making situation
- System: Set of related components, activities, process and human beings interacting together so as to accomplish some common objective

Characteristics of an effective MIS

May-96,99	State and explain the Characteristics of an effective MIS
Nov-06	State the factors to be considered for designing an effective Management Information System.

Management oriented:
- MIS development should start with the appraisal of management needs and business objectives
- MIS is needed at all management levels

Management directed:
- Management should actively direct the system's development efforts at all times
- E.g. system design, system implementation, specifications

Integrated:
- All the functional and operational information sub-system should be tied together into one entity
- Helps generate more meaningful & comprehensive information

Common data flows:
- Use common *IPO* procedures and media
- Eliminates duplication of work
- Simplifies operations

Common database:
- Database is the "superfile" which consolidates and integrates data records formerly stored in separate data files
- Accessed by several information sub-systems
- Eliminates duplication in data storage, updating, deletion and protection

Computerised:
- Use of computers increases the effectiveness, speed, accuracy and consistency of the system
- Handle a wide variety of applications, reduction in clerical staff

Planning:
- MIS development needs 3 or more years
- Consider future objectives and requirements of firm's information
- Avoid the possibility of system obsolescence before the system gets into operation

Sub-system concept:
- MIS must be broken down into digestible sub-systems which can be implemented one at a time by developing a phasing plan

Misconceptions or Myths about MIS:

- MIS is about use of computers- MIS may or may not be computer based; computer is just a tool
- More data means more information for managers-It is not the quantity of data, but its relevance, which is important. Unorganised mass of data creates confusion.
- Accuracy in reporting is very important- True for operating level. It is untrue for higher management as they are concerned with broad decisions. Higher levels of accuracy involve higher cost.

Pre-requisites of an effective MIS

May-05, Nov-03 Describe the main pre-requisites of a Management Information System, which makes it an effective tool.
May-99, Nov-99,96 What are the pre-requisites of an effective MIS?

1. Database:-
- "Superfile"
- Subdivided into the major information sub-sets
- Improves accessibility & reduces redundancy
- Its important characteristics are:
    - Each subsystem utilises same data i.e. common data source
    - Reduces duplication of efforts
    - User–oriented
    - Available to authorised persons only
    - Controlled by a separate authority, known as Data Base Management System (DBMS)

2. **Qualified system and management staff**:
- Two categories of officers viz. (1) Systems and Computer experts and (2) Management experts.
- Difficult to attract & retain suitable experts

3. **Support of Top Management** :
- Support essential because-
    - Otherwise subordinate managers become lethargic
    - Resources involved is large

4. **Control and maintenance of MIS**:
- Control implies system operation works as per design; no shortcuts
- Maintenance implies identifying areas of improvements. Formal methods for changing and documenting changes.

5. **Evaluation of MIS**:

- Capable of meeting the information requirements in future as well. It requires MIS evaluation taking appropriate timely action. Evaluation should consider-
    - Whether enough flexibility exists
    - Users' and the designers' views
    - Appropriate action steps

Constraints in operating a MIS:

Nov-98, May-02 Discuss various constraints that come in the way of operating an effective M.I.S. How these constraints could be avoided/remedied?

1. Non-availability of experts:

- Constraints- Shortage of experts who can diagnose the objectives of the organisation and provide a direction
- Remedy- Grooming internal staff after proper selection and training

2. High turnover of experts in MIS:

- Constraints- Due to pay / promotion issues, behaviour
- Remedy- Better working conditions, pay

3. Non- cooperation from staff:

- Constraints- Non-cooperation
- Remedy- Educating and explaining system's utility; active involvement during development / implementation

4. Sub-system selection:

- Constraints- Selecting sub-system of MIS
- Remedy- Need and importance of the MIS function should be guiding criteria

5. Non-standardised approach:

- Constraints- Approach adopted for designing and implementing MIS is a non-standardised one
- Remedy- Gradual standardisation

6. Difficulty in quantifying the benefits:

- Constraints- Not comparable with cost until then, raises question amongst managers
- Remedy- Managers be educated

Effects of using Computer for MIS:

Nov-96, **May-03**	Discuss the effect of applying computer technology to MIS
Nov-98	Explain briefly the effects of using Computers for MIS
May-98,Nov-03	Discuss the impact of Computers and MIS on different levels of Management

1. **Speeds up processing and retrieval of data-**
   - Modern business situation- complexity, competition, risk-reward
   - Demands quick information for decision making
   - Computation and storage capabilities

2. **Increases the effectiveness of MIS-**
   - Timely, accurate and desired information for the purpose of decision making

3. **Expands scope of MIS-**
   - Applications previously not feasible under manual systems now developed
   - E.g. Online real-time system

4. **Widens scope of analysis-**
   - Helps provide multiple types of information accurately and in no time to decision makers
   - E.g. Daily detailed sales reports helps analyze weaknesses and take timely action

5. **Handles increased complexity of system design and operation-**
   - System design has become complex because of multitudes of variables
   - Computer software helps develop MIS programs

6. **Integrates different information sub-system-**
   - MIS is group of information sub-system- production, finance, marketing etc.
   - Common database helps integrate all and thus, support operational & management control, strategic planning

7. **More comprehensive information**

Limitations of MIS

May-06	Discuss the limitations of the Management Information system

1. **Quality of the outputs** – depends on the quantity of input and processes (e.g. GIGO)
2. **Considers Quantitative factors-** Ignores morale, attitude
3. **Less useful for making non-programmed decisions.**
4. **Lacks requisite flexibility** – to quickly update itself with the changing needs
5. **Can't provide tailor** made information packages
6. **Not a substitute for effective management -** Just a managerial tool for decision making / problem solving
7. **Effectiveness reduced if information hoarded / withheld.**
8. **Effectiveness reduced if frequent changes** in top management, organizational structure & operational team

Decision support systems (DSS)

Nov-02 Short Notes on DSS
RTP What is DSS? Outline its features.

A DSS is a system that provides tools to managers, to assist them in solving semi-structured and unstructured problems, in a personalized manner

- Customized tools to solve computationally or clerically intensive problems
- Useful to higher-level managers
- More flexible and adaptable to changing decision-making requirements than traditional management reporting system

DSS vs. PDS

DSS- A DSS supports the human decision-making process, rather than providing a means to replace it.
PDS- Systems that replace human decision making rather than support it are sometimes called *programmed decision systems (PDS)*. These systems are used to make routine, structured decisions, such as approving loans or credit etc.
Difference- In PDS, the focus is on doing something more efficiently. On the other hand; in DSS, the focus is on helping decision makers become more effective.

DSS GOALS AND APPLICATIONS

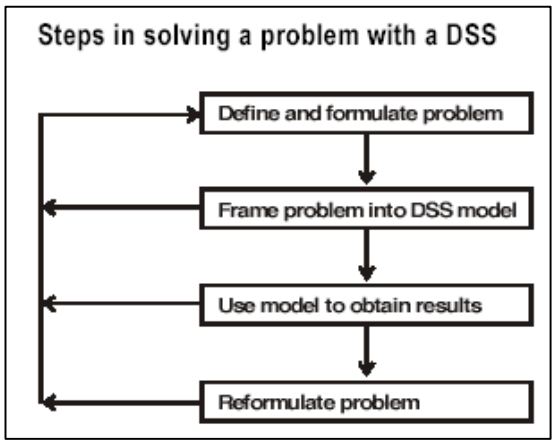
May-05 A decision support system supports the human decision-making process rather than providing a means to replace it". Justify the above statement by stating the characteristics of decision support system.
Nov-08 What is Decision Support System?. Briefly explain three characteristics of Decision Support System.
RTP What is DSS? Outline its features

DSS are characterised by three properties:

1. **Ease of Learning and Use:**
   - Used by non-computer professionals
   - Useful diagnostics, help features, and undo commands
   - User-oriented interfaces such as grids, graphics, non-procedural fourth – generation languages (4GL), natural English, easily read documentation and graphical user interfaces (GUI)
   - Interactive display devices – fast, real-time response helps maintain chain of thought
     - Interactive systems - enable users to base each new request on the responses supplied earlier.
     - Non-interactive systems – slow turnaround forcing managers to batch together a large number of potentially useful requests.

2. **Ability to adapt to changing needs of decision makers**
   - Management reporting systems (MRS) – generated pre-defined pre-formatted reports. Change in requirement implies re-programming and documentation; Time consuming
   - DSS – Provides flexibility; enable users to model their own information needs. Adaptable to changing information needs – output formats, spontaneous queries involving formulas, functions, sorts, graphs, formal models etc.

3. **Support Semi-structured and Unstructured decision-making**
   - Structured decisions- easily made from a given set of inputs, programmed fairly easily
   - Unstructured decisions and semistructured decisions- decisions for which information obtained from a computer system is only a portion of the total knowledge needed to make the decision.



FOUR COMPONENTS OF A DSS

May-08 Briefly discuss four basic components of Decision Support System.

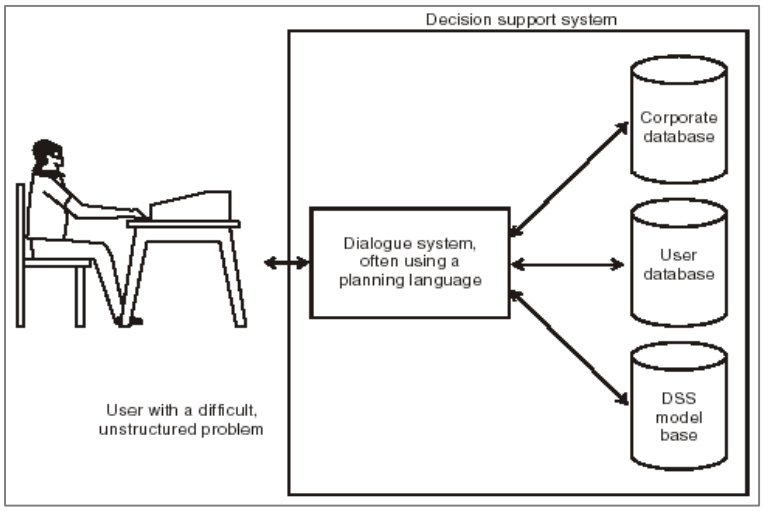
User- Manager dealing with unstructured or semi-structured problem.
Need not be technical expert. Requires understanding of problem. Because a special planning language that performs the communication function within the DSS is often nonprocedural, meaning that the user can concentrate on what should be accomplished rather than on how the computer should perform each step.

Databases- DSS includes one or more databases. Databases contain both routine and non-routine data from both internal and external sources

Planning languages (-PL-)- Two types are:

- General-purpose PL- Used to perform routine tasks like budgeting, forecasting. E.g. via-Spreadsheets
- Special-purpose PL- Limited in scope but they usually do certain jobs better than the general-purpose PL. E.g. statistical languages, such as SAS, SPSS

Model base- Brain of DSS because it performs quantitative analysis, data manipulations, computations, mathematical functions. Helps in decision making.



Tools of DSS

May-06 Describe various software tools used in Decision support system

Software tools for DSS-

Software categories	Examples	Description
1. Model Based s/w	MS Excel (spreadsheets)	Support model building, formulas, and *what-if* analysis based on assumptions.
2. Display-Based s/w	MS Powerpoint	Graphics display of output generated - pie charts, bar charts, graphs.
3. Statistical s/w	SAS, SPSS	Supports market researchers, operations research analysts using statistical analysis functions and "number crunching"
4. Data-based s/w	Oracle, MS Access	Database query, report generation, and simple analysis.

Need for Integrated tools- A single software package generates, manipulates, and statistically analyses data. E.g. MS Excel- database query or modeling, database storage, output in graphics format etc.

Examples of DSS in accounting

May-07 "Decision support systems are widely used as part of an Organisation's Accounting Information system". Give examples to support this statement.

- **General Decision Support System**- User works interactively with the computer to develop a hierarchical model of the decision problem.
- **Capital Budgeting System**- E.g. NPV, IRR decisions to evaluate investment alternatives
- **Cost Accounting System**- E.g. Healthcare industry requires controlling costs of supplies, machinery, staff etc.
- **Budget Variance Analysis System**- E.g. Division wise monthly variance reports

Executive Information Systems (EIS)

May-01, Nov-03, May-96 Short Notes on EIS

EIS– is a DSS that is designed to meet the special needs of top-level managers.
"EIS" and "ESS" (executive support system) used inter changeably. But ESS > EIS. ESS includes additional capabilities such as e-mail.

Executive: Top level manager who exerts a strong influence on decisions.

Executive Roles and Decision Making:

Most executive decisions fall into one of three classes-
1. **Strategic Planning:** Relates to general, long-range direction of the organisation. By CEO.
2. **Tactical Planning**: Relates to how, when, where, and what of issues involved with carrying out the strategic plan.
3. **Fire Fighting**: Relates to major problems that must be solved at an executive level. E.g. big lawsuit, strike etc.

Also, executives need a certain degree of control to ensure that these activities are carried out properly.
Control: Exercise general control over the organisation. Periodically review & compare against plans.

Executive Decision-Making Environment

May-04 Explain three broad categories of the planning information requirements of executives.

The three main sources for executive information are as follows:
1. Environmental information- Govt, economy, technology,
2. Competitive information- demand data
3. Internal information- budget, policies

Nov-04 Successful executives take decisions relying more on intuition than on any quantitative analytical decision technique. Mention five characteristics of the types of information that are responsible for this phenomenon in executive decision-making.

Often, executives rely on their own intuition, gut feelings and past experience rather than on sophisticated analytical skills. Five characteristics of the types of information those are responsible for this phenomenon are-

1. **Informal source**: Rely heavily on informal sources- team lunch, TV, media, social events, informal chats
2. **Low level of detail**: Decisions are made by observing broad trends. Macro-view / big picture.
3. **Lack of structure**: Many decisions are relatively unstructured.
4. **High degree of uncertainty**: Lack of precedent. Possible results are not scientifically predictable from actions.
5. **Future orientation**: Strategic-planning decisions needed to shape future events. Must adapt to change.

EIS Roles and Characteristics

EIS provide executives with access to financial data, marketing and sales information, HR information, manufacturing data, and competitive/ strategic information. Business EIS includes facilities such as e-mail, word processing, spreadsheet, news feeds etc.

May-01, Nov-03,05 What is an EIS?

- Tool that provides direct on-line access to relevant information (i.e. timely, accurate & actionable) in a useful and navigable format.
- Requires limited time, limited keyboarding skills, and little direct experience with computers
- Helps identify broad issues and locate root cause

Executive Information Systems differ from traditional information systems in the following ways:

Nov-02 In what ways does an Executive Information System differ from the Traditional Information System?
May-01 Features / characteristics of EIS.

1. Tailored to executive's information needs
2. Can access data on both specific & general issues
3. Can access both internal and external data
4. Easy to use; needs no assistance
5. Provide extensive on-line analysis tools
6. Screen-based - All EISs are delivered through terminals using easy-to-use software
7. Information presented in pictorial or graphical format
8. Information is presented in summary format with facility to 'drill down' to details
9. Ability to manipulate data, to project 'what if' outcomes
10. External information that can be 'superimposed' onto the company's information
11. Requires large amounts of capacity and processing power

Purpose of EIS

May-96 What purpose does EIS serve?
Nov-05 Mention the purposes of an EIS.
RTP Discuss the importance of an EIS, taking into perspective the recent business scenario. (RTP)

1. **Primary purpose**- Support managerial learning, work processes etc. Helps in better decision making.
2. **Secondary purpose**- Allow timely access to information. Helps compile report on strategic issues & allows continuous learning cycle
3. **Other**- Direct management attention to specific areas. Misaligned reporting systems are counter-productive.

Contents of EIS

Nov-07 Briefly explain the principles to guide the design of measures and indicators to be included in EIS.

A practical set of principles to guide the design of measures and indicators to be included in an EIS is presented below-

- **Easy to understand and collect**- EIS measures must be easy to understand and data easy to collect
- **Reflect organization's objective**- Based on a balanced view of the organization's objective in the areas of productivity, quality, customer service etc.
- **Reflect everyone's contribution**- in a fair and consistent manner. Unbiased.
- **Team-work and friendly competition**- Promote it
- **Joint-ownership**- Must encourage management and staff to share ownership of goals
- **Availability & Confidentiality-** EIS Information must be available to everyone. Confidential info excluded.
- **Evolve**- with changing needs

Commercially Available EIS Products

E.g. Express EIS

APPENDIX

Self -examination questions (Study Material)

1) Define in following terms :
   (i) System (iii) Boundary
   (ii) Subsystem (iv) System environment
2) Differentiate between the following :
   (i) Deterministic and probabilistic systems
   (ii) Open and closed systems
   (iii) Sub-system and supra-system
3) Explain the concept of decomposition with the help of an example.
4) What is 'information'? What are the attributes of information ?
5) Explain various types of information systems at various levels of management.
6) What is decision support system ?
7) Explain, in brief, various characteristics of a decision support system.
8) What are the four basic components of a DSS? Explain them.
9) Explain four categories of software tools available for Decision support systems.
10) 'Decision support systems are widely used as part of an organisation's AIS'. Give examples to support this statement.
11) What is an Executive Information System?
12) What role do executives play in decision making?
13) Discuss the characteristics of the information used in decision making?
14) What purposes are served by an EIS?
15) Outline various principles to be followed while designing an EIS.