

Course Title: Management Information System for Teachers and Managers

Course Code: CED 123

Course Outline

1. Management
2. Data and information: characteristic, value of information
3. Information as an aid to decision making: Intelligent stage, decision stage, choice stage and review stage
4. Concept Of System: component of a system, system boundaries, system and subsystem, output and input, subsystem interface, interface problems, system and environment
5. Information system as a subsystem
6. System approach in problems solving
7. Role and structure of information system in an organization
8. Introduction to information technology and management information system (MIS)
9. Types, functions and characteristics of MIS
10. Component of MIS: Human Resources, software, hardware, files and data bases
11. Levels of MIS
12. MIS development process
13. Needs of MIS development process and the challenges
14. Information system requirements: Information system analysis and design, technology for information system, system test planning.
15. Managing data resources
16. Management requirements
17. Decision support system (DSS): Data driven DSS, Model driven DSS, Knowledge driven DSS
18. Operational information system
19. Cognitive and behavioural aspect of MIS
20. Organizational planning and control of information system

Management

MANAGEMENT is a systematic process of planning organization, starting, leading and controlling, it is a state of activities directed at an organization resource to achieve organization goal efficiency and effectively. The basic managerial functions are: PLANNING, ORGANISATION, LEADING CONTROLLING.

These activities are undertaken by managers to combine all the resources (Human efficiency and effectively to work towards achieving the goals of the organisation

Qualities Of Management

1. It is purposeful
2. It is goal-oriented
3. It is associated with group effort
4. It can ensure better life
5. It is tangible, wherever there is management, there is a purpose.
6. It deals with the achievement of something expressed as a goal or objective
7. It exists because it is an effective means of getting the necessary work accomplished.
8. Managers focus their attention and effort on bringing about successful action.
9. They know where and when to start, what to do with keeping things moving and how to follow a goal-oriented approach.
10. Every organization entails the existence of a group of things to achieve goals
11. A manager can do much to improve the work environment, simulate people to perform better, achieve progress, bring hope and accomplish better things in life

Information as an aid to decision making intelligent age, decision, choice stages and review

- **Intelligent stage:** It consists of discovery identifying and understanding the problems occurring in an organisation.

Feasibility study; finding out the problem

You can ask:

1. Why is there a problem?
 2. Where is the problem?
 3. What effect is it having on the firm?
- In the intelligence stage, decision makers identify the problem opportunities that require a decision they gather relevant information to understand the nature of the problem and establish objectives. This stage involves research, gathering data analysing the data to gain insight into the situation, Decision makers seek to understand the content the scope and implication of the decision.
 - **DECISION STAGE:** Decision makers evaluate alternative cause of actions based on the information gathered from the intelligence stage, they assess visibility, cost, benefits, risks of each alternative. They use analytical tools or techniques to organise and analyse the information facilitating systematic evaluation of alternative. This stage involves listing PROS and CONS of each option to make and inform decision
 - **CHOICE STAGE:** involve choosing among solution alternative. In the choice stage, decision maker final selection among the available alternative based on their evaluation in the decision stage. They consider factors such as tools used in analytical, organisation and stake holders' preference. Decision makers use information, gathered in the previous stage to justify the choice

or their choices and ensure alignment with organisational goals. This stage involves making a commitment

- **REVIEW:** In the review stage, decision makers evaluate the outcome and consequence of the cause of action. They monitor performance

SYSTEM

is a set of interrelated elements (subsystems) or parts working together to achieve a common goal. It is a set of things associated to form a complex unit

COMPONENT OF SYSTEMS:

1. **SUB-SYSTEM:** a subsystem is a smaller system that is part of a larger system. It operates within a context of a larger system and performs specific functions or task that contribute to the objectives of the system

CHARACTERISTICS OF SUB-SYSTEMS

- a. Autonomy subsystem has a degree of autonomy in their operations. Autonomy enables subsystems to adapt to changing conditions handles local decision making and manage resources efficiency.
 - b. Interdependence: subsystem is interdependent and interconnected with each other and with a broader system. They exchange inputs, output and information with other subsystem and with the environment to coordinate their activities, (a shared of objectives or common goals).
 - c. Integration: subsystem is integrated into the larger system through interfaces, connections and interactions that facilitates communication and coordination.
 - d. Modularity: subsystems are modular in nature. It allows for flexibility scalability and reusability system design and development.
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2. **BOUNDARIES:** these are the limits that identify its components, processes and interrelationships when it interfaces with another system. System interfaces are the point of interaction or communication between different components subsystems or systems

3. **ENVIRONMENT**: it refers to the external context in which subsystem operates. It supplies inputs to the system; it receives output from the system and influences the system behaviour and performance. The environment can include physical, social, economic, technological and regulatory factors
4. **INPUT AND OUTPUT**: : **Input** is the resources, data or information that enter the system from external environment to initiate its operation. Input can take various forms depending on the nature of the system inputs are essential for system to function. **Output** represents the value created by the system and are derived to the external environment or other systems. Outputs can take different forms depending on the system purpose such as goods services, report and decision.
5. **CONTROL MECHANISM**: control regulates, processes procedure that govern and manages the system procedures (operations). Control ensures that the system function within defined parameters. It includes rules, protocols, policies or automated system etc.

TYPES OF SYSTEM

- a. Sub-system and super system
- b. Open and close system
 - i. **Open and close system**: interact with their environment, adapt themselves to the changes in the environment so as to continue to their existence. A close system is a self-contained system. It does not exchange or adapt to changes with their environment
 - ii. **Conceptual and empirical system**: conceptual system deals with theoretical structures which major may not have any counterpart in the world. The are composed of ideals. These are systems of classification or explanation. Empirical are concretes operational

system made up of peoples, machines, materials, energy and others such systems also fall under this category of system

- iii. **Permanent and temporary system:** system enduring for a long time, span in relation to the operations of humans in the system are called permanent system. temporary systems are designed of time and then to dissolve. They are important for the accomplishment of specific task.

INFORMATION SYSTEM AS A SUBSYSTEM

An information system (IS) can be defined as a set of interrelated components that collect, process, store and distribute information to support decision making and control in an organization. Information system are combination of hardware and software and telecommunications networks that people build and used to collect, create and distribute useful data typically in organizational setting.

COMPONENT OF MIS

There are five major components of a Management Information System.

- **Hardware:** is the tangible, physical portion of an information system. The part that you can touch e.g. are computer, keyboard, disk drive, and flash drive.
- **Software:** set of programs that a computer use to execute a command
- **Data:** raw facts
- **People:** instruction givers
- **Processes:** step by step procedure taken to ensure that a goal is achieved

TYPES OF INFORMATION SYSTEM

- a. Different managers, operational unit and functional areas have different information needs. That is why organisation often tailor information system to meet a particular need. Different information systems are design to support people at the operational unit or top (upper) management level

- b. Transaction: most of an organizations daily activity are recorded and process by the transaction processing system which received input and convert them into output intended for the various users.
- c. Structure: is made up of input, output and function. They input function include, capturing data on a source document, entering the system, check error and data validation. Output produces result. Here, we also produce paper results.
- d. Storages function: every system has a data base
- e. Processing function: activity for TIPS (Transaction processing system)

ACTIVITIES FOR TRANSACTION PROCESSING SYSTEM (TPS)

First, data are collected and entered into the computer via any input system. The system then processes data in one of the following ways:

- Batch processing: the firm collect data from transaction as they occur, placing them in groups or batches, the system then processes the batches periodically.
- Online processing: data are processed as soon as transaction occurs.
- Hybrid system: (a combination of both batch and online processing) collect data as they occur but process them at specified intervals

MANAGEMENT INFORMATION SYSTEM

- ❖ **A management information system: (MIS)** extracts data from a data base to compiles, reports such as sales analyses, inventory-level report and financial statements to help managers make routine decisions. The type and form of the report depend on the information needed by a particular manager.
- ❖ **Decision support system (DSS):** DSS assists managers in making semi-structured or unstructured decisions by providing analytical tools, simulations and access to relevant data. They help in evaluation alternative and accessing potential outcomes.
- ❖ **Executive support system (ESS):** ESS are designed to provide senior executive, (top level managers) with strategic information for long-term

planning and decision making. They often present summarized data and key performance indicators in a user-friendly format

System approach in problem solving

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