

COURSE. : **III B. COM (CA)**
SEMESTER. : 5
SUBJECT. : MANAGEMENT INFORMATION SYSTEM
PREPARED BY : DR. S. Kalavathi
PHONE NO. :9842579433
UNIT. : 2

SYLLABUS. : System Concepts - Elements of a System - Characteristics of system - Types of system - Categories of Information system - System development life cycle - System Enhancement.

INTRODUCTION

1. Identify the characteristics of the system.
2. One can analyze, categorize and confirm them in order to develop a computerize system with the help of elements discussed and explained which lay down foundation for structure of built up system.
3. Types of system help you to categorize the structure of your system in appropriate format. What is system? The word system is derived from the Greek word “systema” which means the organized relationship among the functioning units.

However the word system always comes with an adjective, whenever we talk about a system such as educational system, political system, accounting system etc. But if we carefully analyze these systems we can find that there are some features common to all the systems. These are the characteristics of the system which help us to understand the working definition of the word system.

Definition A system is an orderly grouping of independent components linked together according to plan to achieve a specific objective.

1.2 CHARACTERISTICS OF SYSTEM

The characteristics of the system are

1. Basic components
2. Interaction and structure
3. Goal
4. Behavior

5. Life cycle System Concepts & Environmen

SYSTEM BASIC COMPONENTS

- I. Educational system Students, teachers, books, computers.
- II. Computer system Monitor, CPU, keyboard.
- III. 2. Interaction and structure An important feature of the system is the basic components must interact among themselves. It is not only collection or grouping of elements. If an organization is considered as a system then purchase department must interact with stores and production department, production with PPC and so on.
- IV. Also they are interdependent on each other. If we consider, computer as a system then if some information is keyed it gets processed by arithmetic or logic unit or both and the final result is displayed on the screen. So this interrelation activity of the components makes the system dynamic. Such a relationship among the components which define the boundary between the system and environment is called as the structure of the system.

Goal In order to achieve the goal of the system we should first understand the meaning

I. Central objective II. Integration III. Synergistic effect

I. Central Objective : Central objective means the common goal, because without common goal system will start moving in all directions. As a result coordination among all the parts (Components) will be lost.

II. Integration: It is combined work of all the components in order to achieve the goal of the system. There must be coordination among all parts of the system So in order to have such coordination the system must work as a 'whole', integrating all its activities to achieve the desired result

III. Synergistic effect: From the integration concept it is clear that the system has to be viewed as 'whole' rather than just as sum of its parts. This integrating effect is called as synergistic effect.

4. Behavior: Behavior is the way the system reacts to its surrounding environment. Behavior is determined by the procedures designed to make sure that components behave in ways that will allow system to achieve common goal.

For example: If we touch an object which is hot, the nervous system makes our body to withdraw immediately from the hot source. So heat is input from environment, reaction is the behavior and instruction in the nervous system (how to react) is the procedure. Procedure describes what ought to be done and behavior describes what is actually done.

5. Life cycle: Every system has life cycle and according to human life it has birth that is evolution, life, aging, repairs and finally the end of the existence of the system (death).

So finally we can define system as follows

Definition:

- i. System is integrated collection of the components which satisfy functions necessary to achieve the system goals and which have relationship to one another that defines structure of the system.
- ii. A system is a set of elements forming an activity or scheme seeking

ELEMENTS OF THE SYSTEM

All the characteristics of the system are determined by the system elements, their properties and relationships.

The system elements are

1. Input
2. Processor
3. Output These elements are common to all systems.

These are the elements by which all systems are described. They are set in a fixed position which helps the system analyst to design & work with system more easily.

1. Input : It is defined as energizing or start up component on which system operates. It may be raw material, data, physical source, knowledge or any energy to decide the nature of output.

2. Processor : It is defined as the activity that makes possible the transformation of input to output. When data is processed through computer it is processed through logical steps. However these steps are required to be instructed in series to the computer.

3. Output : It is end result of the operation. In other words it is the purpose or the main objective for which the system is designed. Though output is largely dependent on input, its nature or format may vary vastly from the input. For example: If data keyed is in numerical form it may display output which

SOFTWARE DEVELOPMENT LIFE CYCLE

2.1 INTRODUCTION

Definition: System development life cycle (SDLC) SDLC is well defined process by which the system can be conceived, developed & implemented. It can be performed in two stages. Each stage involves three steps.

Two phases are **1.System Analysis 2.System Design /**

SYSTEM ANALYSIS System analysis means identification, identification & critically examining the system & its parts(subsystem) for the purpose of achieving the goals(objective) set for the system as a whole, through modifications, changed interrelationships of components, deleting or merging & separating of components. It may involve upgrading of system as a whole. System Analysis is important because

1. It helps to understand complex structures.
2. It specifies functional requirements of the subsystems to the total system.
3. It helps in understanding & comparing functional impacts of subsystem to the total system.
4. It provides inter-compatibility & unity of purpose of subsystems
5. Finally it helps in placing each subsystem in its proper perspective (place) so that system as a whole can effectively achieve the central objective with minimum resources.

System Analysis: In order to analyze the system properly it is performed in three steps, I Problem identification II Feasibility study & cost benefit analysis III System requirement analysis

2.3.1 Problem identification: Problem identification is the most difficult but important task in system analysis .Because, if the problem is not properly identified it may lead to wastage of time & energy in later stage. For problem identification the focus is on three aspects.

1. Source (cause) of the problem
2. Type of the problem
3. Nature of the problem

1.Source (cause) of the problem : The root cause of the problem may be internal or external. Sources listed in different environments Internal Environment External Environment 1) Company Management

- 1) Customer
- 2) Employs of different department
- 2) Consultancy services 3) Internal auditors
- 3) External auditors
- 4) Financial services 4) Government policies

2. Types of the problem: The normally encountered problems in the system are related to the

I Reliability of the system.

II Validity

III Accuracy

IV Economy

V Timeliness

VI Capacity

VII Throughput

I Reliability: This problem arises, if for the same procedures the system gives different results or it may not work properly all the time.

II Validity: Reports show misleading information or results.

III Accuracy: Reports display many errors.

I v Economy: The system is costly to maintain. Timeliness: Reports are late or queries are not answered in time.

v Capacity: Inadequate processing, transmission or storing capacity.

V I Throughput: Exactly contradictory problem of capacity means more capacity is available but less work is being done, which affects the efficiency in other way.

3. Nature of problem : Some questions must be posed to find out the exact nature of the problem such as,

I What is the actual problem?

II How complex it is?

III What are the causes of the problem?

IV What are the likely solutions?

V Once the problem is solved what type of benefit is expected? Answers to all these questions provide the exact nature of the problem. Once the exact nature of the problem with its cases & type is identified, the possible opportunities or solutions are checked and here the feasibility study starts.

2.3.2 Feasibility study Feasibility study is useful to evaluate the cost & benefits of the system requested. There are three major aspects of feasibility study.

I. Technical feasibility: It focuses on the existing computer hardware, software & personnel. The need of these three factors is verified & procurement or installation is done accordingly.

II. Economical feasibility: It considers cost & benefit analysis of the proposed system. If the benefit overweighs the cost then only project is approved.

The economic feasibility helps to find out development cost.

Development cost can be categorized under two heads.

- i) One time cost such as • Investigation or survey cost, • Cost of converting present system to new one

- ii) ii) Recurring cost such as • Salaries of personnel, • Training of staff, • equipment maintenance
- iii) III. Operational or Behavioral feasibility: It considers the acceptability of the system. It checks pre & post implementation procedures & thereby tries to find out the troubleshooting areas of the system.
- iv) If any business is to be computerized then proposed system requires efforts to
- v) i) Convince the user of the system for the acceptance
- vi) ii) Educate the staff means to give knowledge of the system
- vii) iii) Train the staff means to provide all the skill set for the required system.

2.3.3 Requirement Analysis Requirement analysis is basically determination of requirements for new system. Determination of requirements means studying the existing system & collecting the details about it to find out the users requirement first. Requirement analysis can be done with the help of three activities,

1. Identification of basic requirements
2. Investigation of basic requirements
3. Specification of basic requirements

1. Identification of basic requirements: In order to identify the basic requirements it is necessary to find out how the system works & where the improvement is required. This can be done by imposing major questions such as

I What are the problems in existing system?

II What users expect from proposed system?

III What are the various process involved related with the problem?

I v What data is used & produced during the process? v Which controls are used currently?

2. **Investigation of requirements** : Requirement investigation uses fact finding methods such as

I Interview

II Questionnaire

III Observations

I v Record review Software Development Life Cycle /

13 Structured System Analysis & Design /

v Brainstorming v I Desk research These fact finding techniques are used for gathering information about the system.

This activity is very important and documentation description of features of the system is also done for future analysis.

Requirements are documented & presented using special tools like system flow charts, data flow diagrams and presentation graphics which in turn helps the designer to design the system

Specification of requirements: Requirement specification is a deal between developer & end user. The data collected from end-user is not always sufficient. So it has to be analyzed to verify whether it meets the organization's demands or not. Sometimes user may specify additional features that should be included in new system.

This process of requirement specification is done by identifying

I Data used in various activities

II Different controls needed in system

III User's transactional requirements

I v User's decisional requirements

v User's organization dependent requirements appropriate time.

2.3.4 ADVANTAGES: System Analysis

1. It helps in setting proper system goals
2. Determines the boundary of the project by giving due consideration to the limitations of the available resources.
3. It focuses on the boundary and scope of the project undertaken.
4. Also checks limitations of available resources.

BOOK REFERRED : MANAGEMENT INFORMATION SYSTEM-I BY AMAN JINDAL, MANAGEMENT INFORMATION SYSTEM -II BY Dr .S. P. RAJAGOPALAN