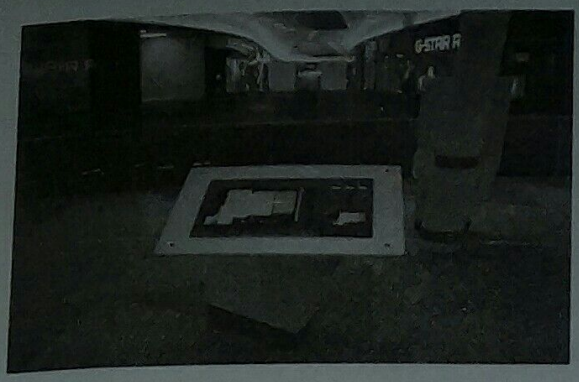


1 CHAPTER

SYSTEM

1.1 INTRODUCTION

A system is an organised entity i.e. a company or a business enterprise made up of parts connected and directed to some purpose. Each system has an input, a process and an output. It acts as a self sufficient unit. Every system is interlinked with its subsystems. Any organisation is looked upon as an artificial system, the internal parts of which work together to achieve established goals and the external parts to achieve interplay with the environment including customers, the general public, suppliers and government. The manager integrates available facilities to achieve a goal by means of systems that relate activities required for the end result. The system serves as the media through which the manager operates. An integrated system can be used purposefully for the conduct of production, marketing, distribution and other activities relating to business in an orderly manner. A manager can conduct various activities in an orderly manner with the help of the systems established. A system is a set of interrelated and interdependent parts arranged in a manner that produces a unified whole. Almost anything can be viewed as a system.

The figure given below gives us an idea of the concept of system:

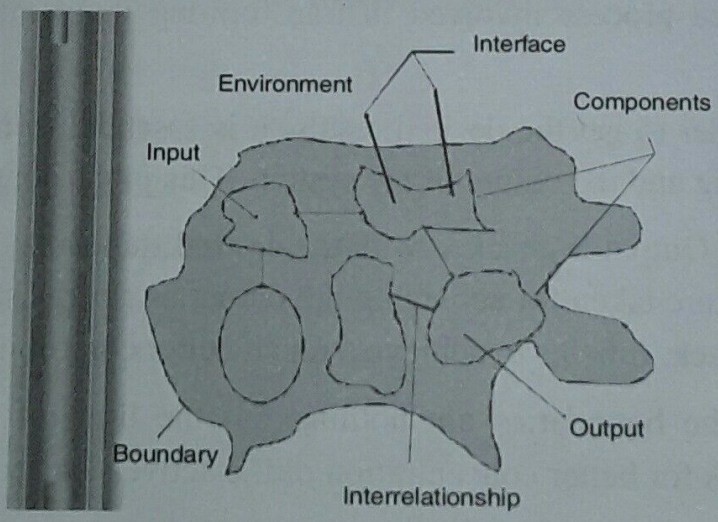


Fig 1.1: Concept of a System

Some common definitions of a system are:

- A system is a set of interacting or interdependent components integrated together for a particular purpose.
- A system can be defined as the regularly interacting interdependent group of the items ultimately leading to the formation of a united whole
- A system is a set of detailed methods, procedures, and routines established or formulated to carry out a specific activity, perform a duty, or solve a problem.
- A system is an organized, purposeful structure regarded as a whole and consisting of interrelated and interdependent elements.
- All systems have
  (a) inputs, outputs, and feedback mechanisms
  (b) maintain an internal steady-state (called homeostasis) despite a changing external environment
  (c) display properties that are peculiar to the whole (called emergent properties) but are not possessed by any of the individual elements
  (d) boundaries that are usually defined by the system observer.
  (e) have interconnectivity: the various parts of a system have functional as well as structural relationships to each other.

1.2 ELEMENTS OF THE SYSTEM

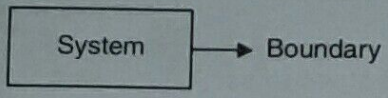
A system has three basic elements input, processing and output. The other elements include control, feedback, boundaries, environment and interfaces.

- **Input**: Input is the data or raw material a system receives to produce a certain output.
- **Output**: What goes out from the system after being processed is known as Output.
- **Processing:** The process involved in transforming input into output is known as Processing.
- **Control:** In order to get the desired results it is essential to monitor and control the input, Processing and the output of the system. This job is done by the control.
- **Feedback:** The Output is checked with the desired standards of the output set and the necessary steps are taken for achieving the output as per the standards, this process is called as Feedback. It helps to achieve a much better control in the system.
- **Boundaries:** The boundaries are nothing but the limit of the system. Setting up boundaries helps for better concentration of the actives carried in the system.
- **Environment:** The things outside the boundary of the system are known as environment. Change in the environment affects the working of the system.

- **Interfaces:** The interconnections and the interactions between the sub-systems is known as the Interfaces. They may be inputs and outputs of the systems.

1.3 SYSTEM LEVEL CONCEPTS

- **Subsystem:** A subsystem is a set of elements, which is a system itself, and a component of a larger system. Each system is further made of the sub systems, which further consist of the other subsystems. All of these subsystems are defined specifically by boundaries.
- **Interfaces:** The Interconnections and the various interactions that generally take place between the various subsystems are referred to as the interfaces. These interfaces are generally known to occur at the boundary and usually take the form of the inputs and the outputs.
- **Environment and boundary:** A system can be defined by defining its boundary; this means choosing which entities are inside the system and which are outside it. A boundary is a part of the system which delineates it from its surrounding. The entities outside the system are part of the external environment. The system is inside the boundary and the environment is outside the boundary.



- **Transformation process:** A system can also be viewed as a bounded transformation process, that is, a process or collection of processes that transforms inputs into outputs. Inputs are consumed and outputs are produced by the system.

1.4 TYPES OF SYSTEM

Different kinds of system may be understood as

- Abstract and physical systems,
- Deterministic and probabilistic systems,
- Open and closed systems,
- Adaptive and Non Adaptive systems,
- Permanent & temporary Systems,
- Natural & Manufactured Systems,
- Social, Machine & Human-machines system.
- Simple and Complex System
- Manual and Automated System

Abstract and physical systems

- An abstract or conceptual system is an orderly arrangement of interdependent ideas or constructs, which may or may not have any counterpart in the real world.
- Physical systems are generally concrete operational systems made up of people, materials, machines, energy and other physical things; Physical systems are more than conceptual constructs.

Deterministic and Probabilistic Systems

- A deterministic system is the one in which the occurrence of all events is known with certainty.
- A probabilistic system is the one in which the occurrence of events cannot be perfectly predicted. Though the behaviour of such a system can be described in terms of probability, a certain degree of error is always attached to the prediction of the behaviour of the system.

Tab 1.1: Deterministic vs Probabilistic System

Deterministic system	Probabilistic system
It behaves in a predictable manner.	It behaves in an unpredictable manner.
If the current state of the system is known to us then its future state can be determined.	The future state cannot be determined even if the current state is known for sure.
It has strong relationship among elements.	It has weak relationship among the elements.
An error free computer program is an example of such type of system.	Business organization is an example of such type of system.
For example calculator has programmed logic for addition/ subtraction.	For example human system-some degree of uncertainty as to how he will behave in a given circumstance.

Open and Closed Systems

- An open system is the one that interacts with its environment and thus exchanges information, material, or energy with the environment, including random and undefined inputs. Open systems are adaptive in nature, as they tend to react with the environment in such a way, so as to favour their continued existence. Such systems are 'self organizing', in the sense that they change their organisation in response to changing conditions.
- A closed system is the one, which does not interact with its environment. Such systems in business world are rare, but relatively closed systems are common. Thus,

the systems that are relatively isolated from the environment but not completely closed, are termed closed system.

Tab 1.2: Open vs Closed System

Open system	Closed system
1. The system which interacts with its environment. 2. It gets influenced by the changes taking place in the environment. 3. The life time of such system is relatively longer.	1. The system which does not interacts with the environment. 2. It remains uninfluenced by the environment changes. 3. Its life time is much shorter.

Adaptive & Non Adaptive System

- ***Adaptive System:-*** Adaptive Systems respond to change in the environment in such a way to improve their performance and to survive. For example- Human beings, animals.
- ***Non Adaptive System:-*** The system which doesn't respond to the environmental changes are known as non adaptive system. For example- Machines

Permanent & Temporary System

- ***Permanent System:*** - The system which persists for long time is known as permanent system.
- ***Temporary System:*** - Temporary system is made for specified time and after that they are dissolved.

Natural & Manufactured System

- ***Natural System:-*** The system which exists naturally is called natural system. For example- Solar system, Seasonal System.
- ***Manufactured System:-*** System made by man is called manufactured system. Such systems are also known as man-made systems. For example- Rockets, Dams, and Trains.

Human, Machine & Human Machine Systems

- ***Human System*: -** The system which is made up of people only is known as social system.
- ***Machine System:*** - Machine system is a system. where human interference is neglected and all the tasks are performed by machines only.

- ***Human Machine System:*** - When both human and machines are involved to perform a particular a particular task to achieve a target is known as human machine system. Most of the physical systems are user-machine human- machine systems It is difficult to think of a system composed only of people who do not utilize equipment of some kind to achieve their goals. Also a system that is composed of machines performing the whole job without any human intervention does not exist. So practically only user-machine systems exist. In user-machine systems, both, i.e. human as well as machine perform some activities in the accomplishment of a goal. The machine elements are relatively closed and deterministic, whereas the human elements of the system are open and probabilistic.

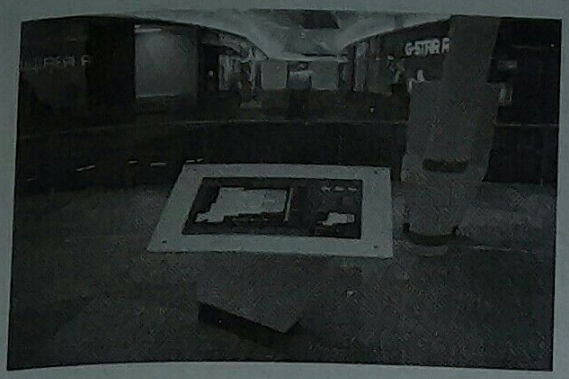
Simple and Complex Systems

- A *simple system* is one in which there are a few interrelated entities whereas a complex system is one in which there a lot of components with a lot of interrelations amongst them.
- A bicycle may be considered as an example of a simple system whereas a motorcycle may be considered a complex system. In the bicycle, the number of entities and subsystems are very few, whereas in a motorcycle the number of entities, subsystems and their interrelations are many. Each subsystem in a motorcycle may itself be considered as a simple system.

MANUAL AND AUTOMATED SYSTEMS

Tab 1.3: Manual vs Automated System

Manual system	Automated system
Here data collection, manipulation and final reporting are done absolutely by human efforts.	Here computer or microprocessor performs all the tasks.
It can handle less volume of data.	It can handle relatively huge volume of data which is not possible by human efforts.
Their processing speed is relatively slow and chance of human error is always there.	It offers quick and accurate processing of data.
Data are difficult to transmit from one place to another.	Data can be transported easily through computer network.
For example maintaining of files and paper record manually.	For example using computer to record data, operate and transmit data.



2

CHAPTER

MANAGEMENT

2.1 INTRODUCTION

The concept of management has acquired special significance in the present competitive and complex business world. Efficient and purposeful management is absolutely essential for the survival of a business unit. Management concept is comprehensive and covers all aspects of business. In simple words, management means utilising available resources in the best possible manner and also for achieving well defined objectives. It is a distinct and dynamic process involving use of different resources for achieving well defined objectives. The resources are: men, money, materials, machines, methods and markets. These are the six basic inputs in management process (six M's of management) and the output is in the form of achievement of objectives. It is the end result of inputs and is available through efficient management process. The term 'management' is used extensively in business. It is the core or life giving element in business. We expect that a business unit should be managed efficiently. This is precisely what is done in management. Management is essential for the conduct of business activity in an orderly manner. It is a vital function concerned with all aspects of working of an enterprise. The term management is explained in different ways. For example, it is said that management is what management does. Here, management is explained with reference to its basic functions which include planning, organising, coordinating and controlling. Similarly, management is described as a process which involves various elements. Management process is a continuous one and is run by the managers functioning at different levels. Management is now recognised as a distinct process in which managers plan, organise, lead, motivate and control human efforts in order to achieve well defined goals. In fact, process means a series of activities/operations undertaken/conducted for achieving a specific objective. Process is a systematic way of doing things. For example, in a factory there is a production process. Similarly, in the management process, resources and human efforts are used in an orderly manner for achieving specific objectives. The management process suggests functions to be performed by the managers. The elements in the management process are actually the basic functions of management these functions

constitute the management process in practice. Management process is in fact, management in practice. This process suggests what a manager is supposed to, do or the basic functions that he has to perform while managing the job assigned to him. In the next couple of decades, management theory and practice is bound to change in order to meet the complex and ever changing environmental variables. The phenomenal growth in multinational and transnational operations, fast changing technology, increasing complexity of decision making, dynamic social and economic environment, globalisation of business and elastic project organisations and task groups will significantly influence the future managerial world and managerial tasks. There are successful business and management leaders publishing their memories and offering their experience to the world. There is great increase in the number of business schools. Management education is bank ably providing expertise to nonage the business and this trend is likely to continue. Career paths are likely to be based on expertise alone. Managers will be under pressure to develop this expertise and apply it in an ever-widening range of situations rather than their ability to survive the bureaucratic jungle. They will have to combine their personal, professional and operational qualities and capacities to the satisfaction of employers and the society. The future must be considered as an opportunity and not a problem.

The future business environment will he dominated by Information Technology (IT), globalisation, material and energy shortages, problems of pollution and ecological balance, consumerism, inflation and R & D. The costs of employing expert managers are regarded as an investment for effective business performance. Management is a designated expertise, increasingly professionalized and is likely to progress to a highly organised status. It is assumed that young people will choose management as an occupation and will progress from lower to middle and from middle to top management positions. An ever-greater range of knowledge is available to all aspects of business and management. Often writers try to capture the dynamic element of management in their definition. A few such definitions are listed below.

2.2 DEFINITIONS OF MANAGEMENT

- Management is the act of getting people together to accomplish desired goals and objectives using available resources efficiently and effectively.
- Management is the art of getting things done through others.
- Management is the art and science of decision making and leadership
- Management is what a manager does
- Management comprises planning, organizing, staffing, leading or directing, and controlling an organization or effort for the purpose of accomplishing a goal.
- The organization and coordination of the activities of an enterprise in accordance with certain policies and in achievement of defined objectives is known as management.

- Management is often included as a factor of production along with machines, materials, and money.
- Management is the coordination of all resources through the process of planning, organising, directing and controlling in order to attain stated objectives.
- Management is principally the task of planning, coordinating, motivating and controlling the efforts of others towards a specific objective.
- Management is concerned with seeing that the job gets done

2.6 LEVELS OF MANAGEMENT/ MANAGEMENT HIERARCHY

There are three levels of management: Top level, Middle level and lower level.

The following figure shows the hierarchy of levels of management:

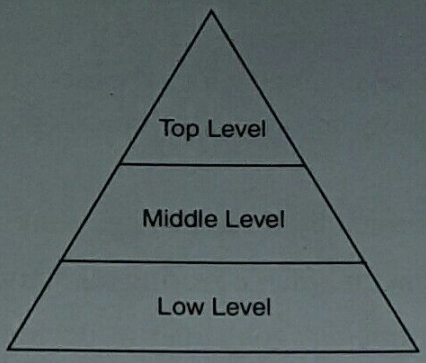


Fig 2.1 Levels of Management

- **Top Level Management:** The top level management is generally occupied by the ownership group. Generally, board of directors constitutes the top level of management. Besides the board, other functionaries including managing director, general manager or Chief executive to help directors, are included in this level. It is the highest level in the managerial hierarchy and the ultimate source of authority in the organisation. The top level managers are accountable to the owners and responsible for overall management of the organisation.

  The major functions of the top level management are as under:

  (a) To make a corporate plan for the entire organisation covering all areas of operations.

  (b) To decide upon the matters which are vital for the survival, profitability and growth of the organisation such as introduction of new product, shifting to new technology and opening new plant etc.

  (c) To decide corporate goals.

  (d) To decide structure of organisation, creating various positions there in.

  (e) To exercise overall managerial control through the process of reviewing over all financial and operating results.

  (f) To make decisions regarding disposal and distribution of profits.

  (g) To select key officials and executives for the company.

  (h) To coordinate various sub-systems of the organisation.

  (i) To maintain liaison with outside parties having a stake in business such as government, trade union and trade associations etc.

  (j) To formulate basic policies and providing direction and leadership to the organisation as a whole.

- **Middle Level Management:** In order to fill up the gap that exists between functional and operative level, some managerial positions are created at the middle level of

management. Middle level management consists of departmental managers, deputy managers and administrative officers etc. These executives are mainly concerned with the overall functioning of their respective departments. They act as a link between top and lower level managers. The activities of middle level manager's centres around determining departmental goals and devising ways and means for accomplishing them.

The main functions performed by these managers are as under:

(a) To prepare departmental plan covering all activities of the department

(b) To establish departmental goals and to decide upon various ways and means for achieving these goals to contribute to organisational goals.

(c) To perform all other managerial functions with regard to departmental activities for securing smooth functioning of the entire department.

(d) To issue detailed orders and instructions to lower level managers and coordinate the activities of various work units at lower level.

(e) Middle level managers explain and interpret policy decisions made at the top level to lower level managers.

- **Lower Level or Supervisory Level Management:** Lower-level management is known as supervisory management, because it is concerned mainly with personal oversight and direction of operative employees. It consists of factory supervisors, superintendents, foremen, sales supervisors, accounts officers etc. They directly guide and control the performance of workers. They issue orders and instructions and guide day to-day activities. They also represent the grievances of the workers to the higher levels of management.

Supervisory management performs the following functions:

(a) Planning of day to day work

(b) Assignment of jobs and issuing orders and instructions

(c) Supervising and guiding workers

(d) Maintaining close personal contacts with workers to ensure discipline and team-work

(e) Evaluating operating performance

(f) Sending reports and statements to higher authorities

(g) Communicating the grievances and suggestions of workers to higher authorities.