

CONSTRUCTION TECHNOLOGY AND MANAGEMENT

The evolution of management thought trying to achieve goals through the judicious use of people and resources, getting the other to work towards these goals and keeping track of whether or not we are accomplishing what we set out to do.

SCIENTIFIC MANAGEMENT:- It is an art of knowing what exactly you want from your men to do and then seeing that is done in the best possible manner.

Frederick Winslow Taylor is known as “ **Father of Scientific Management**”

OBJECTIVES OF SCIENTIFIC MANAGEMENT:-

- 1) *Each task must be scientifically designed so that it can replace the old, rule of thumb methods.*
- 2) *Workers must be scientifically selected and trained so that they can be more productive on their jobs*
- 3) *Bring the scientifically designed jobs and workers together so that there will be a match between them*
- 4) *There must be division of labour and cooperation between management and workers*

MANAGEMENT: According to Henry Koontz, “Management is the art of getting things done through and with people in the formally organized group to achieve the organizational goal efficiency and effectively”.

CHARACTERISTICS OF MANAGEMENT:

- 1) *Management is intangible: Management is intangible. It cannot be seen. It is an unseen force. However, its presence can be felt by the results of its efforts in the form of production, sales and profits.*
- 2) *Management is goal oriented: Management seeks to achieve goals. These goals may be economic or non economic. In a business organization the primary goal is to produce and distribute goods with a view to earn profit. In a service organization the goal might be customer service.*
- 3) *Management is universal: it is an all pervasive activity. It is needed in all types of organization. For example university, army, government, business. The basic principles of management are applicable in business as well as in other organization.*
- 4) *Management is social process: management is a social process because it deals with people to make the best use of human efforts, managers have to create close cooperation among employees in an organization. They have to look after the interest of employees, shareholders, customers and investors.*

- 5) *Management is a group activity: management is concerned with getting things done through people. People join groups in order to achieve results collectively.*
- 6) *Management is dynamic: management is a dynamic and growth oriented function. It tries to visualize problems before they turn into emergencies and takes suitable steps. According to Drucker, "managers don not wait for the future they make the future".*
- 7) *Management is a system of authority: manager is supposed to get things done, rather than doing things himself by using authority. Authority is the right to give orders and the power to obtain obedience from subordinates.*
- 8) *Management is multidisciplinary: management has received rich contributions from various disciplines like psychology, sociology etc. The insights obtained from these disciplines greatly help managers in understanding the human mind much better. They convert the disorganized resources of men, materials and machines into a useful, productive enterprise. They achieve results in an efficient and effective manner.*

PURPOSE OF MANAGEMENT:

- 1) *Optimum use of resources*
- 2) *Effective leadership and motivation*
- 3) *Establishes sound industrial relations*
- 4) *Achievement of goals*
- 5) *Change and growth*
- 6) *Improves standard of living*

DIFFERENT LEVELS OF MANAGEMENT

1) TOP LEVEL MANAGEMENT

- A) *Determines objectives and policies*
- B) *Design the basic operating and financial structure of an organization*
- C) *Provides guidance and direction*
- D) *Lays down standards of performance*
- E) *Maintains good public relations*

2) MIDDLE LEVEL MANAGEMENT

- A) *Interprets and explains the policies framed by the top.*
- B) *Issues detailed instructions*
- C) *Participates in operating decisions*
- D) *Trains other managers*

3) LOWER LEVEL MANAGEMENT

- A) *Plan day to day operations*
- B) *Assigns jobs to workers*
- C) *Provides supervision and control over work*
- D) *Arranges material tools and equipment*
- E) *Maintains discipline*

MANAGEMENT SKILLS:

- 1) *Technical skills*
- 2) *Human skills*
- 3) *Conceptual skills*

PROJECT: *It is a temporary endeavor undertaken to create a unique product or service. Temporary means that every project has a definite beginning and a definite end. Unique means that the product or service is different in some distinguishing way from all other products or services.*

Construction is defined as creation, renovation, repair and demolition of immobile structures and the alteration of natural topography of the ground. It is the process of translating the plans, specifications and resources into a physical facility to meet the specific requirements of owners within schedule, cost and quality. Construction activity by nature is impermanent as it shifts from one project and employer to another. Construction process is a hybrid of both manufacture and service functions.

Management is a sort of administration, whose function is to plan, organize, control and coordinate the use of other resources to achieve the desired goal. Thus management is an art of arranging various activities and group of people to achieve the common goal. Therefore an executive must have a managerial skill.

IMPORTANCE OF CONSTRUCTION INDUSTRY

- 1) Human resources
- 2) Materials resources
- 3) Construction equipment resources
- 4) Capital resources

CHARACTERISTICS OF CONSTRUCTION MANAGEMENT:-

- 1) A project exists for a fixed duration of time
- 2) A project cycle consists of project preparation, implementation and operation phases
- 3) Construction projects generally employ high value and huge resources of men, materials and machines
- 4) Each project has a definite finish or completion
- 5) The project team is constituted of members belonging to different disciplines
- 6) A project is dynamic in nature and is subjected to many changes during its life span
- 7) Each project has a fixed set of objectives. Once the objectives have been achieved, the project ceases to exist
- 8) Each project is comprised of series of intermediate activities consuming resources and time.
- 9) Every project has many constraints in terms of availability of resources and completion of time.
- 10) The project work is normally entrusted to a project manager who coordinates the work of various persons working on the project.

OBJECTIVES OF CONSTRUCTION MANAGEMENT:-

- 1) The work should be executed most economically
- 2) The work should be executed as per specifications
- 3) The quality and workmanship of the work should be good
- 4) The work should be planned and organized properly
- 5) The work should be properly supervised by qualified and trained staff
- 6) The work should be completed within the specified estimated cost and time

FUNCTION OF CONSTRUCTION MANAGEMENT :-

The function of management provides a useful structure for organizing management knowledge.

There are seven functions of management

- 1) Planning
- 2) Organizing
- 3) Staffing
- 4) Directing
- 5) Controlling
- 6) Coordinating
- 7) Scheduling

Planning: - it is a process of determining in advance what is to be done, where, when and by whom. Defining goals, establishing a strategy for achieving those goals and developing a plan to integrate and coordinate activities. Top managers should define goals for the overall organization. It requires decision making that is choosing future course of action from among alternatives.

OBJECTIVES OF PLANNING:-

- 1) Procurement of material well in advance
- 2) Proper design of each element of the project
- 3) Employment of trained and experienced staff on the project
- 4) To provide welfare schemes for the staff and workers such as medical and recreational facilities
- 5) Proper selection of equipment and machinery
- 6) To arrange proper safety measures such as proper ventilation, proper arrangement of light and water

PRINCIPLES OF PLANNING:-

- 1) The plan should be comprehensive
- 2) The plan should be flexible
- 3) The plan should be realistic

- 4) The plan should serve as a basis for project monitoring and control
- 5) The plan should provide information in a readily understandable form

ORGANISING:-

It is a process of determining what tasks are to be done, who is to do them, how the tasks are to be grouped, who reports to whom and where decisions are to be made. The purpose of organizing structure is to help and create an environment for human performance.

STAFFING:-

It involves filling and keeping filled the positions in the organization structure. This is done by identifying work force requirements; inventorying the people available, recruiting, selecting, placing, promoting, appraising so that tasks are accomplished effectively and efficiently.

DIRECTING

The function of management involves motivation, guidance, supervision and leading the employees of the organization. This function can be achieved by establishing effective communication between the employees and the management to develop awareness of the planned programmes and means and methods to be employed to implement them.

CONTROLLING

It is measuring and correcting individual and organizational performance to ensure that events conform to plans. The manager is also responsible for ensuring that the organization gets back on track if the results are not as expected.

COORDINATING

It involves bringing together and coordinating the work of various departments and sections so as to have good communication. It is necessary for each section to be aware of its role and the assistance to be expected from others.

SCHEDULING

It can be defined as the mechanical process for setting various planned activities in order by fixing the starting and finishing dates for each activity of the work to execute the whole work in a systematic and orderly manner.