

## 1.6. FUTURE OF INDUSTRIAL ENGINEERING

For the rapid development of our country in economic field, we must be cost conscious and productivity conscious and which is possible by giving due consideration to industrial engineering. If industrial engineering is to take root in the country, our immediate aim should be to provide education facilities in the universities at the graduate and post graduate levels and they must also run special courses of short duration in collaboration with industries for :

- (i) existing industrial engineers to make them familiar with the latest development in the field, and
- (ii) other staff members to impart basic knowledge of the activities of industrial engineering.

There is also a need for the massive and continuous research and development to get facts which we do not yet have. Productivity measurement methods must be evolved in the production field as well as in the service sector specially where it is extremely difficult to measure the work.

We must put more time, money and effort for positive encouragement of productivity improvement. Concerted efforts must also be made to remove many of the road blocks and restrictions to productivity improvement which presently exist.

In making the industrial engineering popular, it is moral duty of the existing Industrial Engineers to convince the top management (with their work) that money spent on their salaries and projects is one of the best investment which a company makes, and that industrial engineering department is an excellent investment and not just added overhead.

To justify their existence, they must give a high return of the investment made on them.

## 1.7. INDUSTRIAL (PRODUCTION) MANAGEMENT

### Concept and Background

Industrial management involves studying the performance of machines as well as people. Specialists are employed to keep machines in good condition and to ensure the quality of their production. The flow of materials through the plant is supervised to ensure that neither workers nor machines are idle.

Industrial management term applies to highly organised modern methods of carrying on industrial especially manufacturing operations. The field of industrial (production) management has been evolved since eighteenth century.

**Progressing through a series of names**—manufacturing management, production management, and operations management - all of which describe the same general principle. The traditional view of *manufacturing management* began in eighteenth century with the concept of 'division of labour' advocated by Adam Smith. Charles Babbage, a mathematician extended Smith's work by recommending the use of scientific methods for analysing factory problems. Then F.W. Taylor who was recognised as the 'Father of Scientific Management' extended the scientific management theories to factory working. Taylor has also recognised the potential improvements gained from analysing the work content of a job and designing the job for maximum efficiency. Frank Gilbreth and his wife Lillian Gilbreth contributed to motion studies in 1911. Lillian Gilbreth also wrote a book on her works concerning the human factors in organisation. In 1913, Henry Ford developed the concept of mass production, and work stations into an assembly line with moving belt. "In 1913 also, Henry Gantt contributed in charting the production schedule. Harrington suggested the use of experts in organisation to improve efficiency.

In 1928, Wilson developed the concept of Economic Ordering Quantity (EOQ). Elton Mayo contributed towards human relations. Till 1930, traditional view on manufacturing management prevailed.

**Production Management** then became more widely accepted term from 1930s through the 1950s. During this period use of statistics was recognised in quality control, and operation research techniques were applied in production problems, techniques were developed on economic efficiency in manufacturing. Studies were also conducted to eliminate wasteful efforts of works and achieve greater efficiency. At this time other needs of workers were also realised, and social scientists started studying human behaviour in the work environment. Economists, mathematicians, and computer scientists also contributed newer, and more sophisticated analytical approaches. During this period value engineering technique, and concepts of CPM and PERT were also developed.

Around 1970s, two distinct changes emerged, which reflected the new name — *Operations Management* and was a clear shift in the service and manufacturing sector. As the service sector became more prominent, the change from 'production' to 'operations' emphasized the broadening of field to service organisations. Now-a-days, organisational goals are better focussed to meet consumers' needs. Systems approach is taking an integrated look at the problems of operating systems. Computer applications to manufacturing, scheduling, and control, materials requirement planning, applications of Japanese theories like 'Just in Time (JIT) system', Quality circles are being adopted. Other notable developments in recent past have been group technology (GT), computer-aided design/manufacturing (CAD/GAM) etc.

Thus the term operations management includes the number of non-manufacturing sectors of economy such as transport, energy, health, agriculture, warehousing, banking etc. Therefore, the terms *production and operation management* or *operations management* have been suggested to indicate the general applications of the techniques of management of machines and materials. However, by generalizing the concept of production as the 'process through which goods and services are created' we can include both manufacturing and service organisations within the purview of production management.

## Definitions

*Production Management* is a branch of general management which is concerned with production activities. It can also be defined as 'Production management deals with decision-making related to production process so that the resulting goods or services are produced according to specifications in amounts and by the schedules demanded, and at a minimum cost'.

*Operations Management* can be defined as the management of the conversion process, which converts land, labour, capital, and management inputs into desired outputs of goods and services.

**Production** is an organised activity of converting raw materials into useful products, by organised utilisation of natural resources, men, money, materials and machines. Whereas in the input-conversion-output sequence, the smallest unit of productive activity, is termed as *operation*. Therefore, an operation is some step in the overall process of producing a product or service that leads to the final output.

Production can also be defined as follows :

- (i) Production is a sequence of technical processes, requiring either directly or indirectly the mental and physical skill of craftsman and consists of changing the shape, size and properties of materials and ultimately converting them into more useful articles.
- (ii) Production is a process developed to transform a set of inputs like men, materials,

money, machinery, and energy into a specified set of outputs like finished products and services in desired quantity and quality in order to achieve the objectives of the enterprise.

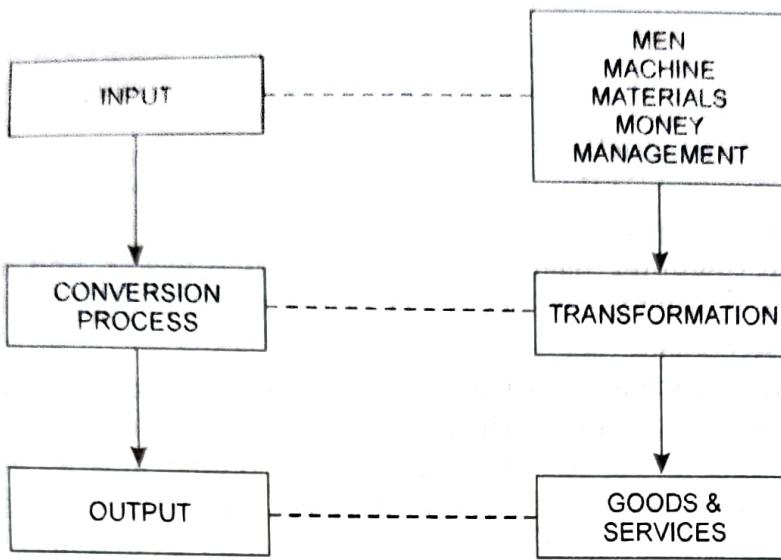


Fig. 1.1. Production system.

**Production includes Manufacture of Goods and Services**, which has four recognised factors, namely (i) natural resources including land, (ii) labour, (iii) capital i.e. factory building, machinery, tools, raw materials etc, (iv) organisation. Production involves wide range of activities starting from selection of site to packing of products for distribution.

## 1.8. SCOPE OF PRODUCTION MANAGEMENT

- 1. Relating to Designing of Production System:** These activities concern the production engineering, and include design of tools and jigs ; design, development and installation of equipment, and selection and optimisation of the size of the firm. Selection of plant location, plant layout, materials handling systems are functions of production engineering. The problems of human factor, and research and development are also considered.
- 2. Relating to Analysis and Control of Production Operations:** These activities include production planning, production control. Production control activities are looked after at three levels : control of inventory, control of flow of materials, and control of work-in-progress. Other controls to be looked into are quality control, cost control and labour control.

## 1.9. MANAGEMENT SCIENCE

Management Science is a problem solving process used by interdisciplinary team for decision-making and may use quantitative analysis and other scientific approach. The management science is that application of the scientific methods to the study of the operations of large and complex organisations.

**Management Science has following Characteristics**

- Uses inter-disciplinary approach.

- (ii) Identifies all important functional interactions and determine their impact on the company as a whole.
- (iii) Uncovers new problems to light for study.
- (iv) Uses systematic approach including mathematic modes.
- (v) Primary focus is on managerial decision-making.

Management Science uses following important tools for solving managerial problems:

1. Mathematical Programming.
2. Network Techniques.
3. Dynamic Programming.
4. Markov chains.
5. Simulation Models.
6. Game Theory.
7. Inventory Models.
8. Waiting line Models.
9. Decision Matrices.
10. Decision Trees.
11. Linear Programming.

## QUESTIONS

1. Define the following :
  - (i) Cybernetics,
  - (ii) Inventory control,
  - (iii) System engineering,
  - (iv) Work measurement,
  - (v) Operation research.
2. List the various activities of Industrial Engineering.
3. How Productivity can be improved by the aid of Industrial engineering?
4. Describe the place of Industrial Engineering department in the organisation.
5. Write a note on the future of Industrial Engineering.
6. What are the main branches of Industrial Engineering? Write a paragraph on each of them.
7. What is Management Science? List the tools of Management Science for solving managerial problems.
8. Define industrial management. Discuss functions of production manager of a modern factory.
9. Write short notes on :
  - (a) Scope of production management.
  - (b) Evolution of industrial management.
  - (c) History and development of industrial engineering.
10. Explain the scope of industrial engineering.
11. Mention different applications of industrial engineering.
12. Explain as to how productivity can be improved through the application of industrial engineering.

# 2

## MANAGEMENT CONCEPT

### 2.1. INTRODUCTION

Management is concerned with direction and control over the various activities and work for the attainment of the objectives laid by the administration. As per W.R. Sprigal, management is an executive function, which is mainly concerned with carrying out the policies laid by the administration.

Management is an executive function which actively directs human efforts towards common goal.

Management can also be defined as, the art of getting things done through the people, this concept of management is old and often not liked as it ignores the needs of workers and does not offer them human treatment.

Harold Koontz defined, "the management as, the art of getting things done through and with people in formally organised groups. Thus it is an art of creating an environment in which people can perform as individuals and yet cooperate towards attainment of group goals. It is the art of removing blocks to such performance, a way of optimising efficiency in reaching goals."

This definition covers the following aspects of management, namely.

- (i) Management as a process.
- (ii) Management as an activity.
- (iii) Management as a group of management personnel.
- (iv) Management as a discipline of knowledge.
- (v) Management as a science.

#### Characteristics of Management

Following are some of the characteristics of good management:

1. To maintain discipline and to keep control over the employees of various sections.
2. To distribute work and machines among the workers in such a way as to secure maximum output.
3. To keep co-ordination among the staff at various levels.
4. To improve efficiency, management keeps sufficient watch and strict inspection.
5. To suggest new ideas and improvements.
6. To arrange for the efficient storing and recording.
7. To make the arrangement of payments and their records etc.

8. To provide good training to staff for attaining high skill in all fields.
9. To impart the instruction timely and to provide consistent guidance
10. By adhering to high standards of performance it must be able to provide facilities and wages to the workers and reduce the prices.

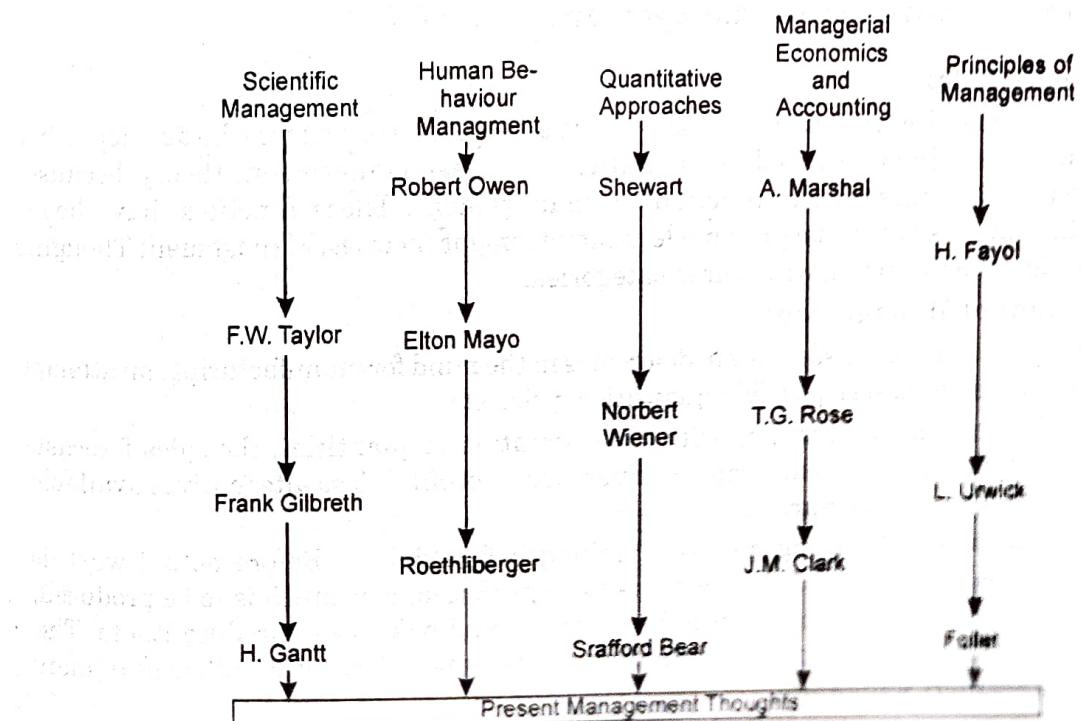
## Importance of Management

A scientific management is most essential as it fulfils the following necessities:

1. It maintains discipline by keeping proper control over the employees of various departments.
2. It distributes the work and machines among the workers in such a way so as to secure maximum output.
3. It keeps co-ordination among the staff at various levels.
4. It improves efficiencies, as it keeps sufficient watch and strict inspection.
5. It suggests new idea and improvements.
6. It arranges for the efficient storing and recording.
7. It makes arrangement for payment on scientific basis and to keep their records properly.
8. It develops means of marketing and publicity.
9. It gives due importance to labour grievances and study their psychology of the purpose of maintaining the good human relations and for achieving the goals.

## 2.2. DEVELOPMENT OF MANAGEMENT THOUGHTS

The diagram given under represents the most important contribution to the modern management thoughts. Only few important pioneers have been listed. Vertical columns represent the broad divisions. Some pioneers of management thoughts made the contribution in more than one field e.g. Taylor). Here we are dealing only some of those ideas that have made important role to the management thought.



Management being very wide and comprehensive subject, developed since civilisation, and the present state has been achieved gradually. Management thoughts have been developed very slowly and managers are working since centuries. But the actual development in the field of management have taken place in last one hundred years only.

With the increasing growth and size of organisations, there is need for more efficient managers. Depending upon the efficiency of the management some companies have grown, whereas others have stagnated or even been eliminated.

It is very difficult to write detailed description on the development of management thoughts, since much work has gone unnoticed and unrecorded. Whereas, writers on management have been very few. Here only the most important thoughts are covered.

<i>Field of Management</i>	<i>Functional Approach</i>	<i>Scientific Management</i>	<i>Human Behaviour Management</i>
Pioneers	Henry Fayol (1841-1925)	F.W. Taylor (1856-1912)	Robert Owen (1771-1855)
		↓	↓
		Gilbreth (1868-1924)	G. Elton Mayo (1880-1949)
		↓	↓
		Henry Gantt (1861-1919)	Mary Parker Follett (1880-1933)

These pioneers laid the foundation of modern management. Development of management Science can be studied in 3 categories (1) Functional Approach, which includes work of Fayol, (2) Scientific Management approach, which includes the work of Taylor, Gilbreth and Gantt. (3) Human Relations approach, which includes the work of Mayo, Owen and Follett.

### 2.2.1. Functional Approach to Management

#### Henry Fayol (1841-1925)

Henry Fayol, a French industrialist and Manager, was one of the first writers who developed his theory of management. He is regarded as the Father of modern management theory, because he was the first who suggested the functions of management. These functions have been recognised as the main task of manager in modern management theories. Management Thoughts of Fayol can be classified into following three categories.

##### 1. Functions of Management

- (i) **Forecasting.** As soon as an idea comes in the mind for manufacturing, an attempt is made to assess possible quantities, price etc.

Forecasting is concerned with the estimation of quantities, the sales forecast, cost, finance problems, capital expenditure, profit or loss alternatives available and planning is started.

- (ii) **Planning.** Planning means "thinking before doing". Before actual work is started, it is decided that, what is to be produced, how much is to be produced, how to be produced, when to be produced and who are to produce it, etc. The planning should aim at eliminating the wastage of material, idleness of men, machinery and capital.

- (iii) **Organizing.** When complete planning is done, next step is to arrange the men, money and material, for actual execution of manufacture.
- (iv) **Directing.** It means the system of directing the plan to operation. The person who directs must have dynamic leadership and must guide the subordinates. The instruction must be simple, clear, complete and as far as possible in writing.
- (v) **Motivating.** Suppose a person is a highly capable, physically strong and technically qualified, but if he is not willing to work hard his output will be much less. So the function of the motivating is to find out the motives of work in a man and then he should be encouraged to do work by keeping his moral high.
- (vi) **Co-ordinating.** In an enterprise, there may be large number of workers, all engaged with the object of producing particular product. This is the task of co-ordination to integrate and harmonise them to achieve a common object.
- (vii) **Controlling.** It's function of the management to see that other functions are being done perfectly alright. Controlling means to watch actual performance with the plans and to point out defective work, to rectify them and to prevent recurrence. Some of the controls are Quality Control, Cost Control, Material Control and Production Control etc.
- (viii) **Communication.** This function transmits the informations and instructions to all concerned parties, i.e. to employees, customers, suppliers, shareholders and to general public. Without this there are chances of mistrust, fears etc. and therefore, management must stress on better communication system.  
Communication must include the acceptance of good ideas coming from the persons who are direct in touch with practical use. Therefore, for sound communication, joint consultations and works committees must be formed for free exchange of views.
- (ix) **Leadership.** All the managers are supposed to have the quality of leadership as they are leaders of concern.
- (x) **Decision Making.** As managers are required to take decisions very frequently, and the efficiency of the concern, loss or profit etc. are affected by these decisions, great amount of attention is required to be paid to this function.

## 2. Principles of Organisation

Fayol, the founder of the movement for better organisation, in 1916 gave the following principles of organisation:

- (i) **Division of Work.** It promotes efficiency, because it permits the work to be executed in limited space or area. Division of work permits all the work to be performed more effectively.
- (ii) **Authority and Responsibility.** Authority and Responsibility always go together. Authority means "right to act, decide and command". Hence, whenever a task is assigned to a manager, he must be given sufficient powers (i.e., authority) to exercise control to achieve the task.  
Responsibility is the obligations of a subordinate for the performance of any job allotted by the superior.
- (iii) **Discipline.** It means obedience, application, energy and respect. There are many examples that poor performance is due to the lack of these four mentioned factors or say discipline.

- (iv) **Unity of Command.** A subordinate should take orders from only one superior. If not, then according to Fayol, authority is undetermined, discipline is in jeopardy, orders disturbed and stability threatened".
- (v) **Unity of Direction.** According to Fayol, each management objective should have only one plan.
- (vi) **Subordination of Individual Interest to General Interest.** This means that the interest of the organisation is much before the interests of individual.
- (vii) **Remuneration of Personnel.** Payment to workers should be fair, and some proper method should be adopted.
- (viii) **Centralisation.** According to this principle, there should be one central point in the organisation which have power to control overall work.
- (ix) **Equity.** Kindness and justice on the part of management to create loyalty and devotion among employees.
- (x) **Stability.** Efficiency can be achieved by having stable work force.
- (xi) **Initiative.** To have success, plans should be well made before starting the actual work.

### 3. Activities of Managers

Concept developed by Fayol in General and Industrial Management are identified into following six activities. Managers must have ability to perform these activities well to give good results.

- (i) **Managerial.** Managerial activity means to follow management functions like, planning, organising, commanding, co-ordinating and controlling etc.
- (ii) **Technical.** Technical know how and production work.
- (iii) **Commercial.** Buying, selling and exchange functions.
- (iv) **Financial.** Utilisation of capital in an optimum way.
- (v) **Security.** Property and interests of the organisation must be secured.
- (vi) **Accounting.** To keep accounts properly so as to determine financial position of the organisation.

#### 2.2.2. Scientific Management Approach

##### Frederick Winslow Taylor (1856-1912)

F.W.Taylor is a most significant figure in the history of management thoughts. He is known as founder of "Scientific management". He reformed the management through a thoughtful and systematic approach to its problems. Taylor found that much of waste (man, long time, energy, efficiency etc.) is due to the lack of order and system in the management. He emphasized that usually management was ignorant about the amount of work performed by a worker in a day, and also about the best way of doing the job. Hence it remained at the mercy of the workers. Taylor, therefore, suggested that management should adopt scientific methods for achieving higher efficiency.

Some significant achievements of Taylor are listed below :

- (i) **Work Study.** This is a work measurement and work improvement technique. Taylor scientifically conducted Time and Motion Studies, Method Study and Fatigue Studies. Work-study is used to determine the standard time, that a qualified worker should take to perform the operation when working at a normal pace. Work study also

determines the best method of performing each operation and to eliminate wastage so that production increases with less fatigue.

- (ii) **Standardisation of Tools and Equipment of Workman and Working Conditions.** Taylor carried out several experiments, out of which following is the famous shovelling experiment of Taylor:

In 1898, at the works of the Bethlehem Steel Corporation, Taylor gave his attention to the best size of shovel for different types of materials. After several experiments he

selected  $21 \frac{1}{2}$  lb as being the optimum shovel load and then he designed shovel of such a size sufficient to hold this quantity of material. He designed small shovel for heavier material and larger shovel for lighter materials so that each man can lift  $21 \frac{1}{2}$  lb of material so as to achieve maximum output.

- (iii) **Incentive Scheme.** The Taylor differential Piece Rate scheme provides an incentive for a worker to achieve high level of optimum output.
- (iv) **Principles of Management.** Taylor introduced the idea of functional management. He recommended that greater productivity and improved efficiency is possible through the use of specialised knowledge and skill.
- (v) **Application of Scientific Methods.** Taylor introduced the scientific method in management to solve various problems. He observed, recorded the facts, applied knowledge and avoided mistakes, and thus was able to solve problems. Thus he was able to apply his thought to improve the efficiency of workers and increased productivity, and higher wages were also possible for workers.

### Frank B. Gilbreth and Lilian M. Gilbreth

Frank Bunker Gilbreth (1868-1924) did work with his wife Lilian M. Gilbreth (1878-1972) regarding modern management. Frank B. Gilbreth started his career from the apprenticeship as a bricklayer and rose to the position of having his own contracting business. His wife Lilian was a trained psychologist. She helped Mr. Gilbreth in the matters related to the fatigue and monotony.

Some of the important works of Gilbreth are:

- (i) **Development of Motion Study.** Gilbreth did development of motion study as part of the work study. His thought was to find "one best way of doing a work".
- (ii) **Development of New Techniques.** They invented several techniques, out of which following are important:
- (a) **Micromotion Study.** Motions are taken on picture films with the help of picture camera, which helps in measuring the time of a motion up to 0.0005 min. This procedure of motion study is known as Micromotion Study.
  - (b) **Therbligs.** For the purpose of recording motions, he split up different motions of a process into fundamental events made by various members of human body and each event was allotted a symbol and letter abbreviation. These, are 17 therbligs are :
- Search, Hold, Select, Grasp, Release Load, Transport loaded, Transport empty, Position, Preposition, Assemble, Disassemble, Use, Inspect, Avoidable delay, Unavoidable delay, Rest to overcome fatigue, Plan.

(ii) Cyclograph: There are many methods used cyclo-graph. Cyclograph is a device which records movements of a hand or other part of the body. The movement will be photographed in a record the path of motion. With a still camera, the path of hand or fingers is called cyclograph.

If the reflector mirror is placed in the electric circuit with the bulb and the light fluctuates with the path of hand or finger, then the path of bulb shall appear as a dotted line with points showing the direction of motion. The space between the dots will be according to the speed of the hand or finger. The number of dots will give the time taken by that motion. Such a record is called chronocyclograph.

(iii) Studies of Fatigue: Gilbreth suggested that fatigue can be reduced by allowing short periods, planning seating arrangements and working conditions.

### **Henry Gantt (1861-1919)**

Gantt made many improvements in production planning and control. He is mainly remembered for the production control chart, known as Gantt chart or Bar chart. Gantt also suggested an incentive scheme.

### **2.2.8. Human Relations Approach**

#### **Elton Mayo (1880-1949)**

Elton Mayo, the director of Hawthorne studies is considered as the father of the human relations management thought. Mayo headed a team of researchers from the Harvard University, who conducted experiments at the Hawthorne plant of the Western Electric Company, between 1927 to 1936. He recognised emotional factors in determining production efficiency.

#### **Robert Owen (1771-1858)**

Robert Owen played an important role in the field of Personnel management. He being a social reformer helped in the development of the management thoughts. He gave an idea that workers should be treated as human beings. He emphasized that good results can be obtained through "positive motivation". Positive Motivation means that employees should be given a fair treatment and they should also feel that they are being given fair treatment. Owen is mainly responsible for getting Factory Act introduced for the first time in 1891.

#### **Mary Parker Follet (1868-1933)**

Mary Parker Follet, an American philosopher, had her approach to the study of management essentially psychological. Her main contributions are:

1. Mary Follet rejected the remedies during conflict through :
  - (i) domination and
  - (ii) compromise, on the plea that domination leaves the feeling of having been dominated and compromise gives a feeling of loss and surrender to both sides. She was for the integration of desires of both the sides as a solution during conflict since this gives a more stable solution of problem of conflict.
2. She was of the view that for achieving good results, various parts of the organisation should be well coordinated and closely knitted so that they work as a single entity. She also pleaded for integrating the interests of the workers, investors and consumers. She pleaded for the application of scientific method to the solution of personnel problems.

### Latest Management Thoughts

Latest techniques for management are quantitative techniques. Many writers have used mathematical models for solving management problems. These techniques are Operation research, Linear programming, use of statistics in quality control; work sampling, study for work measurement, Queuing or Waiting line theory, Simulation and Monte Carlo techniques, Game theory, Dynamic programming.

### Use of Management Theories

Management theories provide special attention to the motivation for establishing the correct social relationship, to develop the moral. These also recognise that management must concern itself with human problems and conflicts by employing work study, operation research and psychological aspects etc. The management theories are also applied on productivity and efficiencies with the help of quantitative approach.

## 2.3. PRINCIPLES OF MANAGEMENT

Large efforts have been made in the later nineteenth and in the twentieth century to establish universal generalised principles of management. Examples of these principles are- "no man should work under two bosses". Henry Fayol a French industrialist, has large contribution to this school of thought. Some of the important concepts developed by Fayol in this school are mentioned below in brief:

1. **Division of work.** It promotes efficiency, because it permits the work to be executed in limited space of area. Division of work permits all the work to be performed more effectively.
2. **Authority and responsibility.** Authority and responsibility always go together. The right and power to give other cause a good performance.
3. **Discipline.** It means obedience, application, energy and respect. There are many examples that poor performance is due to the lack of these four mentioned factors or say Discipline.
4. **Unity of common.** A subordinate should take orders from only one superior. If not, then according to Fayol "authority is undermined, discipline is in jeopardy, order disturbed and stability threatened".
5. **Unity of direction.** According to Fayol "each management objective should have only one head and one plan".
6. **Subordination of individual interest to general interest** means that the interest of the organisation is much before the interest of individual.
7. **Remuneration of personnel.** Payment to workers should be fair and some proper method should be adopted.
8. **Centralization.** According to this principle, there should be one central point in the organisation which have power to control overall work.
9. **Order means** "a place for everyone and everyone in his place".
10. **Equity.** Kindness and justice on the part of management create loyalty and devotion among employees.
11. **Stability.** Efficiency can be achieved by having stable work force.
12. **Initiative.** To have success, plans should be well made before starting the actual work.

## 2.4. MANAGEMENT CLASSIFICATION

The term of management have three classifications:

1. **Top level management.** It consists of Managing Director or General Manager or other high rank officers such as Deputy General Manager etc. They are the chief heads in the concern.
2. **Middle level management.** Different departmental heads such as Purchase Production Superintendent, Chief Store Officer, Works Manager etc. come under this level. They are responsible for top management on one hand and on the other they have to control and supervise over the lower level management staff.
3. **Lower level management.** It consists of Foremen, Supervisors, Inspectors, Chargemen and Office Superintendent and such other staff. They are just above operational staff and their function is to get the work done from operational management according to the instructions of middle management issued by the top management.

## 2.5. MANAGEMENT OBJECTIVES

Organizations are created by their members as a means for satisfying their personal objectives, but organizations also have objectives, other than the members' objectives. An organization also exist when it achieves both types of objectives, first its own and then of members. The organizational or management objectives give purpose and meaning of the organization.

### Importance of Management Objectives:

The importance of well-defined objectives are well recognized, such as :

1. Objectives serve as reference points for the efforts of management.
2. Objectives are needed for co-ordinating effort.
3. For co-ordination the first step is to state the objectives, the organization desire to achieve.
4. The organization that wishes to complete effectively and grow, must continually review its objectives.
5. Management objectives are the ends towards which all organizational action is directed.
6. Management objectives define the destination of the organisation, they move forward as rapidly as they are attained.
7. Well-defined management objectives are similar to a star which can be used for navigation by ships and airplanes.

### 2.5.1. Setting the Objectives

For the determination of the objectives of a concern, large number of complex questions are to be decided. What is to be produced and how is to be produced are very simple matters. Other questions may either be related to the internal structure of the concern. Following are some of the factors which must be considered for establishing the company's objectives:

1. Government rules and regulations and other government controls like restrictions, price control etc.
2. Political atmosphere.

1. Personnels available.
2. Level of productivity.
3. Total expected demand.

Objectives of a concern are determined by Board of directors. Main object of management is to secure the 'maximum prosperity of the employer' means a state of highest productivity. While for the employees it means the development of each person to his highest state of efficiency through proper training and taking proper work from him. Objectives determination is concerned with establishing the targets for all level of staff.

Objectives are needed in every area where performance and results directly and vitally affect the survival and prosperity of the business. The areas in which objectives of performance and results have to be set are market standing, innovation, productivity, financial and physical resources, profitability, managerial performance and attitude, public responsibility etc.

As per latest thinking objectives for the management are set in order to increase managerial efficiency by following logical techniques, the existing rating system, which use rating for measuring objectives such as good, better, normal, outstanding, describe manager's personality rather than measure for his productivity. The objectives for managers, uses quantitative approach to deal actual results than traditional rating system.

Management by objectives places great importance on defining of responsibilities and thereby establishing targets. For this purpose, managerial performance is measured objectively and quantitatively by using statements of responsibility which have a very specific targets. The way individual manager becomes familiar with the expectations from him by contributing to the achievement of company goals.

The objectives set for the managers are useful when the interest of both the manager and the company are taken into account. For the company, objectives should measure performance in terms of contribution to profits and other significant goods. For the managers, objectives must be such that they can be understood by the manager, and they are attainable with in the authority he exercises.

Performance objective programmes must be designed in such a way so that they can easily be adaptable to changing conditions.

### **Performance Objectives are Realistic**

There had been a disappointment in the past because none of the techniques for performance measurement was fool-proof. For deciding performance objectives some thought should be given to the relationship between the company and manager and the authority of manager.

Performance objective is a statement describing the conditions that will exist when a job is being done. The statement includes measure to determine clearly the extent to which the objective is to be achieved. An example of an objective is "scrap loss will not be more than 4 percent of the total value of the material used."

Important aspect of performance objectives is that this should have clear relation with company goals. Some of the concepts which are of significance for the manager and company as well, and should be incorporated in the objective are- savings, costs, over-heads, profits, sales etc.

Normally a rating of objectives are fixed to provide suitable coverage of manager's responsibilities. To assess his overall achievements, relative values are assigned for each objective depending upon their importance over each other. Hence if a manager has done very well in objectives having a high value but not too well in objectives of lesser importance, his contribution for overall achievement would be considered quite good.

# 3

## FUNCTIONS OF MANAGEMENT

### 3.1 INTRODUCTION

For attainment of objectives, every organisation has a group of persons for managing its affairs. This group directs the activities of the organisation for effective utilisation of the resources. It is concerned with productivity, effectiveness and efficiency by performing various managerial functions.

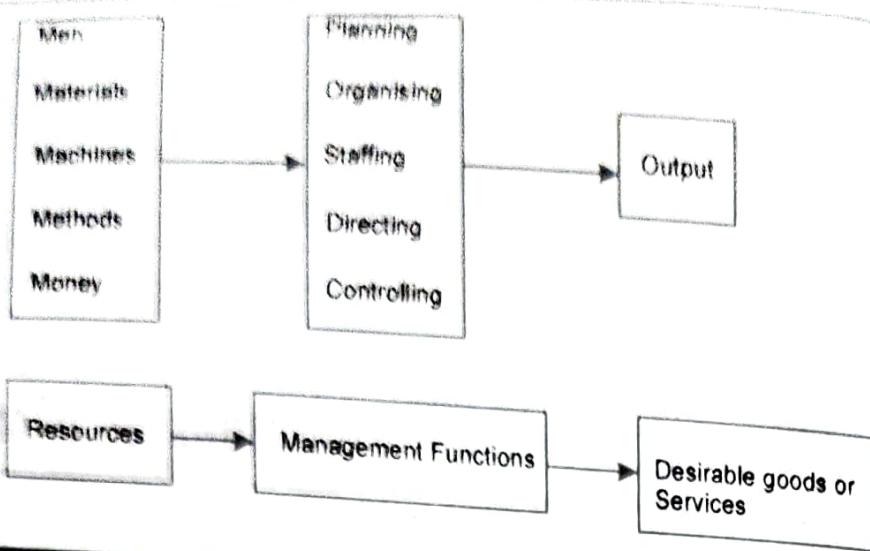
Henry Fayol, the father of principles of management described the various functions of management as :

- (i) Forecasting and planning
- (ii) Organising
- (iii) Commanding
- (iv) Coordinating, and
- (v) Controlling.

Various pioneers in the field listed different functions of management. A comprehensive list of all such functions is given hereunder :

1. Planning
2. Organising
3. Staffing
4. Directing ——————
  - Leadership
  - Communication,
  - Motivation
  - Supervision
5. Controlling
6. Coordinating

Ralph Davis has divided managerial functions in only three categories, namely planning, organising and controlling. He considered commanding/directing and coordination as a part of controlling, while staffing as part of organising. Some authors have classified these functions as planning, organising, leading and controlling. They considered staffing as a part of organising, whereas leading included motivation, communication and supervision. Some authors have considered decision-making also a separate category of function.



### 3.2. PLANNING

Planning is the process of establishing goals and suitable courses of action for achieving those goals. Planning involves setting the 'right' goals and then choosing the 'right' means for attaining those goals. Planning is necessary to ensure proper utilisation of resources (*i.e.*, men, materials, machines, time and money) to achieve the objectives of the enterprise. In planning, a manager searches for the alternative courses open to him, and then selects from these alternatives to determine general and specific objectives and detailed means for achieving them.

Planning is a mental process requiring the use of intellectual facilities imagination, foresight, sound judgement etc. to decide in advance as to what is to be done, how and where it is to be done, who will do it and how the results are to be evaluated. In other words, planning is the process of thinking before doing. Planning is performed by the managers at all levels. The managers at the top level spend more time on planning as compared to those at lower levels. The managers at low level are supposed to follow the policies, programmes and procedures laid down by higher level managers.

#### Steps in Planning

Following steps are taken by the planning manager for the purpose of planning.

1. Recognition of the need for planning
2. Establishing objectives
3. Building the premises for planning. Forecast is based on the inferences drawn from the known facts and figures. The forecasts are used for formulating plans for future.
4. Identifying alternative courses of action.
5. Evaluating alternative courses.
6. Selecting a course of action.

#### Nature of Planning

1. Planning is an intellectual process.
2. Planning is goal oriented
3. Planning is a primary function of management.
4. Planning spreads to all managerial activities.
5. Planning is directed towards efficiency.

## Principles of Effective Planning

An efficient plan must conform to the following principles :

1. **Principle of Limitations.** As limitations stand in the way of attainment of goals, planners are required to recognize these limitations and confine their search for alternatives which can overcome these limitations.
2. **Commitment Principle.** The commitment principles imply long range planning for future decisions. These decisions are commitment, normally of funds, direction of action or reputation.
3. **Flexibility Principle.** Flexibility means ability to change a plan without undue costs, to keep moving towards a goal, even if changes are there in environment or there is a failure of plan. The more the flexibility can be built into plans, the less the danger of losses incurred by unexpected events.
4. **Principle of Navigational Changes.** The planners, like a navigator must continuously check his course and redraw plan to meet desired goals.
5. **Principle of Open System Approach.** Manager must consider interactions of economical, technical, social, political and other elements of enterprise with their total environment.
6. **SWOT Principle.** While planning one should know strengths, weaknesses, opportunities, and threats. These factors should be analysed in the light of the market, competitions, customers requirements, etc.

## Advantages of Planning

1. Planning gives direction.
2. Planning helps to offset changes and uncertainty.
3. Planning helps in economic operation
4. Planning focuses attention on important activities in order to fulfil its objectives
5. Planning helps in controlling.
6. Planning helps in growth.

### 3.2.1. Types of Plans

Plans can be classified in following categories :

#### 1. Standing or Repeated use Plans:

- (a) Objectives
- (b) Policies
- (c) Procedures
- (d) Rules
- (e) Strategy

#### 2. Single-use Plans:

- (a) Budget
- (b) Programmes
- (c) Projects

#### 3. Kinds of Enterprise Plans:

- (a) Divisional Plans
- (b) Functional Plans

- (c) Regional Plans
- (d) Corporate Plans
- 4. Time Plans:
  - (a) Short Range Plan
  - (b) Medium Range Plan
  - (c) Long Range Plan.

### 1. Standing or Repeated-use Plans

These plans are used again and again and are repetitive in nature. These are formulated by managers at different levels meant for repeated use as and when the situation demands. Such plans are :

- (a) **Objectives.** These are the goals established to guide the efforts of the enterprise, its each department and each section. Every organisation is required to set its objectives in respect of market standing, innovation, physical and financial resources, productivity, performance, attitude and public relations etc. The objectives must be both for long term and short term. Objectives may be treated as goals or targets.
- (b) **Policies.** Policies are the statements that guide the decision maker. Policies are adopted by the management, and the employees are expected to follow them to attain the goals. Policies must be clear, definite, and reasonably stable. These provide guidelines for action and helps the subordinate in their day-to-day working.
- (c) **Procedures.** Procedures are more specific than a policy statement, as it enumerates the sequences of steps to be taken in order to achieve an objective. It ensures uniformity of action and decision-making as simple and easy.
- (d) **Rules.** A rule is definite and rigid and do not allow any deviation of or disreception to subordinates. Generally breach of rules invite a penalty.
- (e) **Strategies.** It is a special kind of plan, prepared to meet the challenges of the policies of the competitors. These are generally formulated by the top management.

### 2. Single-Use Plans

Single-use plans are drafted to meet a particular situation. These include the following:

- (a) **Budget.** A budget is an estimate of revenue and expenditure and as a plan it is a statement of expected results expressed in numerical terms. These are mostly prepared in terms of money units. Budget preparation is a part of planning, as it is a compilation of all relevant facts and figures like any plan. Budgets are also used as a tool for control. Budgets may be : sales budget, materials budget, production budget, personnel budget, cash budget, etc.
- (b) **Programmes.** A programme is a specific plan drawn for a specific purpose for which the programme was drawn is achieved. This programme is not likely to be used again in the same form.
- (c) **Projects.** Planning of a project is a single use plan. While planning a project, special task force and ad-hoc administrative set up is also envisaged for its implementation.

### 3. Kinds of Enterprise Plans.

- (a) **Divisional Plans.** These are the plans for individual division in an enterprise.
- (b) **Functional Plans.** Separate plans are drawn for each of the functional departments. These should match with the organisation plan.

- (c) **Regional Plans.** These are the plans concerning to the activities of each region or zone.
- (d) **Corporate Plans.** These are the plans prepared for the enterprise as a whole.

#### 4. Time Plans

- (a) **Short Range Plans.** Short range plans are generally for a period upto one year. In some cases planning for a week in advance is also sufficient. These plans must contribute towards long term plans. Being for a shorter period these are more realistic, as in this case it is easy to predict resource availability.
- (b) **Medium Range Plans.** Medium-range plans are generally for a period between 1 to 5 years.
- (c) **Long Range Plans.** Long-range plans generally extend for more than 5 years. In large organisations, because of the complexity, long-range planning has acquired considerable significance. These plans are drawn considering the strengths, weaknesses, opportunities and threats concerning the organisation.

### 3.2.2. Strategic Planning

Strategic planning establishes long term goals considering the current environmental conditions. Strategic planning process consists of following steps :

1. *Analyse the environment* to identify new opportunities for existing and new products and services. Environment includes political, social, economical technological and internal environment.
2. Identify company strengths and weaknesses,
3. Identify opportunities and risks.
4. Define product scope
5. Define the competitive edge
6. Established objectives and measures of performance
7. Determine deployment of resources.

## 3.3. POLICIES, OBJECTIVES, GOALS AND MISSION

### Policies

Policies are the guidelines set by the management for action. These provide broad guide for achieving the objectives of the firm. Problems are handled by the lower management by following these policies without going to the top management for a decision every time.

### Objectives

These are the end results towards which the activities of the firm are aimed. Objectives may be classified as external or internal; short term, long term or medium term; economic or non-economic; major or minor objectives. A firm can have number of objectives and sets the priorities. Objectives may be set for different levels, i.e., for the corporate level, business level, divisional level and individual level.

### Goals

A goal is an achievement of an end point and stated in quantitative terms. Goal represent the desired future condition, which organization strives to achieve, e.g., manufacture of 10,000

items in a given time period. The goals are the relatively long term targets, and provide an index or standard for measuring progress and performance.

### Mission

This is a general term to describe the company's overall reason for existence. Mission refers to the broad purpose that society expects the organisation to serve.

Thus goals are derived from the organization's mission, and its objectives are derived from the goals. Mission must be clear enough so that it leads to action. A firm exists and functions only in relation to the customer whose need(s) it satisfies. Thus the starting point for defining the mission of any business is its customer. The mission should be so described that it remains valid for at least some years.

The formulation of mission, objectives and strategy imply interaction with the environment and concern with improving the effectiveness, while policies, programmes and procedures affect the internal structure and operational effectiveness of the firm.

Mission, objectives and strategy are mainly the concern of top management while policies, programmes and procedures are concerned primarily with the middle and operating management level.

The mission, objectives and strategy are for long-term and their formulation have far-reaching consequences on the firm while policies, programmes and procedures have a shorter time horizon and are easier to change.

## 3.4. ORGANISING

Organising is that part of managing that involves establishing an intentional structure of roles for people to fill in an organisation. Intentional means to assign the tasks, to accomplish the goals, to people who can do them best.

Organising involves the following :

- Identification and classification of required activities,
- Grouping of activities necessary to attain objectives,
- Assignment of each group to a manager with the authority necessary for its supervision and
- making provision for coordination horizontally and vertically in the organisation structure.

Organising is providing everything essential for proper functioning and combining the human power with other resources to give desired output.

Organisation is a large group of persons united to achieve any task. Organisational structure deals with the overall organisational arrangement in an enterprise.

Organisation is concerned with the building, developing and maintaining a structure of the working relationship in order to accomplish the objectives of the enterprise.

Organisation structure means the systematic arrangement of the people working for the organisation, their positions, and the relationships between positions. The structure provides an appropriate authority and responsibility relationships. The organisation structure varies with the organisation and the functions to be performed and depends upon the goals and objectives established, the resources availability, the communications, and the working relationships of the individuals, motivational other factors.

## Effectiveness in Organising

1. Plan properly
2. Clarify relationships
3. Proper authority delegation
4. Avoid confusion of lines of authority and lines of information.
5. Sufficient flexibility
6. Avoid conflict by clear instruction
7. Promoting an appropriate organisation culture.

### 3.4.1 Principles of Good Organisation

Efficiency of an enterprise depends on the organisational structure. A good organisation should have the following main principles :

- (i) Allotment of work,
- (ii) Grant of necessary authority.
- (iii) Flexibility to permit slight alternatives and expansions whenever needed.
- (iv) Distribution of work in different departments.
- (v) Coordination among different departments.
- (vi) Able to avoid wastage of labour, money and materials.

Principles of organisation assist in arriving at the final structure of an organisation. Major common principles of organisation are :

1. **Consideration of Objectives:** Objectives decide the functions to be performed in the organisation and have direct bearing on the organisation structure.
2. **Responsibility and Authority:** Refer chapter on "Organisation-Structure".
3. **Span of Control:** Span of control is a number of subordinates which are directly under their supervisors. This number should be reasonable, as too small number will lead to non utilisation of full time and energy of the superior while large number will lead to difficulty in exercising control. An ideal number is 4, and at the lowest level 12 to 16. Thus a manager may have 4 deputy managers, and a foreman may have 16 workers.

For details refer chapter on 'Organisation-Structure'.

4. **Delegation:** Delegation is a process a manager follows, in dividing the work assigned to him so that he can perform that part which only he, because of his unique organisational placement, can perform effectively and so he can get others to help him with that remains.

#### Guidelines for Delegation

- (i) Establish the goals
- (ii) Define the Authority and Responsibility
- (iii) Motivate the subordinates
- (iv) Provide proper check and control
- (v) Chain of command. It has been felt that for efficient working, employee should receive the orders only from his superior boss. If he has more bosses, work may suffer and it creates discipline problem difficult.
- (vi) Specialisation

- (i) Balance stability and flexibility
- (ii) Discipline
- (iii) Unity of command. This means that employees should get orders and instructions from one boss only.

### 3.4.2. Division of Labour

It means division of work into different parts or processes which are performed by one group of workers according to their ability and aptitude. A good example of division of labour is found in mass scale production factory, where workers are classified according to the nature of work performed by them, e.g., electrician, welder, blacksmith, carpenter etc.

In this system every worker specialises in a particular type of work, therefore, it improves the efficiency and results in economy.

### 3.4.3. Types of Organisations

According to different methods of distribution of authorities and responsibilities, the organisation structures are of following types :

1. **Line or Scalar organisation.** In this type of organisation, also known as departmental or military type of organisation, the flow of authority moves from top to bottom through vertical lines.
2. **Functional Organisation.** In this type, specialised people are employed under the production superintendent and everybody is supposed to give his functionalised advice to all other foreman and workers. Every specialised boss will go to individual workers for his related function.
3. **Line and Staff Organisation.** In a firm of large size, managers cannot give full attention to every function of management, they can not give time to think and plan. They are busy with routine tasks. Hence 'some staff' is deputed to do their work of investigation, research, recording, planning and advising the managers. Thus staff maintains the discipline and stability, and staff provides expertise and helps to improve the overall efficiency. In other words, staff are 'thinkers' while line are 'doers'. A staff man usually controls one function of which he is an expert.

## 3.5. STAFFING

Staffing, now-a-days also termed as 'human resource management', is defined as filling and keeping filled, positions in the organisation structure. Thus staffing function comprises of all activities essential to manage and keep manned the positions created by the organisational structure. Staffing function involves recruiting, selecting, placing, promoting, appraising, career planning, training, compensating etc. so that they can accomplish their tasks effectively and efficiently.

Various staffing functions have been discussed separately in the book.

## 3.6. DIRECTING

Directing is the inter-personnel aspect of managing by which subordinates are led to understand and contribute effectively and efficiently to attainment of enterprise objectives. Directing

**dominating function of management because it infuses life into organisation.** Directing can also be defined as a function which includes all those activities which are designed to encourage subordinates to work effectively both in short and long run.

Directing is telling people that what to do and seeing that they do it to the best of their ability. It includes making assignments, corresponding procedures, seeing that mistakes are corrected, providing on-the-job instructions and, of course, issuing orders.

Directing process involves :

1. Leadership
2. Communication
3. Motivation
4. Supervision

### Principles of Direction

- (i) Harmony of objectives
- (ii) Unity of command
- (iii) Direct supervision
- (iv) Effective communication
- (v) Effective leadership

#### 3.6.1. Leadership

Leadership is the process of influencing other members of the organisation or the group to co-operate in achieving the organisational goals. **Leadership means to inspire confidence and trust so that there is maximum co-operation from the employees within the control of a manager.** Leadership can also be defined as the ability to persuade others to seek defined objectives enthusiastically. Leadership is the ability to get desirable action, voluntarily and without force from the followers.

Success of leader depends upon his qualities and characteristics. These characteristics are natural in some cases but there are many cases where these have been developed by constant efforts. Thus it can be said that leaders are both born and self-made. Leadership can also be defined as "the quality of the behaviour of the individual in the guidance of the people on the desired activities". *Living-stone* has described it as "**the quality to awaken in others the desire to follow a common objective**". It can also be defined as "the relation between an individual and a group for some common interest and behaving in a manner directed or determined by him".

**Leadership is the process of directing and influencing the task-related activities of group members.** This definition includes three implications : (i) Leadership involves other people may be subordinates or followers, who willingly accept direction from the leader. Group members help to define the status of leader (ii) Leadership involves unequal distribution of power between leaders and followers. Here *power* means the ability to exert influence, i.e., to change the attitudes or behaviour of individuals or groups (iii) Leadership involves the ability to use the different forms of power to influence the behaviour of followers.

Weber said that in a leader oriented organisation there are followers and a leader to whom the followers allow some special strength or powers. When followers lose confidence in the leader then his leadership position can fall. He is the manager of the organisation. Leader makes decisions and centralizes delegation of authority. Personal devotion and obedience to the leader is necessary, while qualification, professional competency or training etc. is of less

consideration. Working depends on the decisions of the leader and his wishes are taken commands.

To be more clear a leader's role in an organisation can be compared with the role of electrons entering an atom. An electrons with low energy will generally be absorbed without substantially changing the atom. In the same way, a low energy 'leader' will have small effect on the organisation and a high energy leader will be largely beneficial to the organisation.

## Leadership of Dynamic Organisation

In the previous chapters it has been explained as to how managers perform the important functions of creating, planning, organising, motivating, communicating and controlling organisations. These show the manager's job. Still there are few more additional functions that do not fit nearly into the six managerial functions mentioned above. The additional functions are very critical to the success or failure of enterprise.

These functions of a leader may be :

1. Arbitrating
2. Suggesting
3. Supplying objectives.
4. Catalyzing
5. Providing Security
6. Representing
7. Inspiring
8. Praising

1. **Arbitrating.** A leader has to make several decisions to set the organisation moving. Generally other members sometime may disagree even on the best decision of the leader. So an effective leader should be able to resolve the conflict or disagreement by arbitrating.
2. **Suggesting.** Suggesting allows the subordinate to maintain his dignity and sense of participation more than if he is given a direct order. In the long run, the power of suggestions is a powerful tool in the manager's hand. Suggestions should often be given by a leader. The leader may say, "I think it will be best done in this way".
3. **Supplying Objectives.** A manager frames and then defines the organisation's objectives to their members. These objectives will allow members to work together collectively. The leader must, therefore, see that the organisation is always supplied with suitable objectives.
4. **Catalyzing.** Some force is essentially needed to begin or accelerate movement. The leader can provide this force. When he provides this force, he is acting like a catalyst. In this way, leader initiates the subordinates to work.
5. **Providing Security.** In organisations, personal security is an important factor. The leader can develop a large measures of security by developing a positive optimistic attitude.
6. **Representing.** A leader is said to be the symbol of the organisation. He is the representative of his organisation. He has to speak on behalf of the organisation stating the organisation's position on matters with which it is concerned. Whenever a leader makes contact with outsiders, they think of the entire organisation in terms of the impression of the leader. If the impression of the leader is favourable, they may think well of the entire organisation. On the other hand, if the leader leaves a poor impression, the reputation of the entire organisation will suffer.

7. **Inspiring.** If the leader lets workers know that the work they are doing is worthwhile and important, then certain workers will atleast do them more efficiently. Thus they can be more inspired to achieve organisational goals, and will enthusiastically accept organisational objectives and work more effectively.
8. **Praising.** Praising is necessary for the good and hard work done. It increases the interest in work and sincerity at heart. Leader should satisfy these needs by sincere praise. Workers need to know that they are important and their good work is praised. It is to note that empty flattering will fail, while a sincere pat on the back for good job done will make a person pleased and help him to become involved with his job.

### Types of Leaders

Different types of leaders in an industry can be classified as under :

#### A-According to Style of Leadership :

- Authoritarian or Autocratic Leaders.** This type of leaders drive their gang through command and by developing fear in their followers. Such leaders give orders, assign duties and responsibilities without consulting the employees or caring for their opinions. Such leaders never like to delegate their powers.
- Democratic or Consultative Leaders.** These leaders always work according to the wishes of their followers. They frame the policies and procedures in consultation with them but sometimes such leaders also work as a moderator of the ideas and suggestions of the gang.
- Persuasive Leaders.** Such leaders influence their followers due to his personal contacts, to join with him in getting things done. He gives directions personally and whole of the gang responds to his call, because they love and respect him and have full confidence in him.
- Functional Leaders.** Such leaders lead because of their expert knowledge and win the confidence of their followers by their superior knowledge.
- Free-rein Leaders.** Such leaders use very little power and give a high degree of independence in their working. These leaders are dependent on subordinates to set their own goals.

Practical experience has shown that the authoritarian leadership produces hostility towards their leaders and whenever the leader is out, the production drops to a minimum. But in the democratic leadership the difference in production in the absence of leader is very less. It tends to increase the production because it wins the confidence, co-operation, loyalty and initiative from his followers.

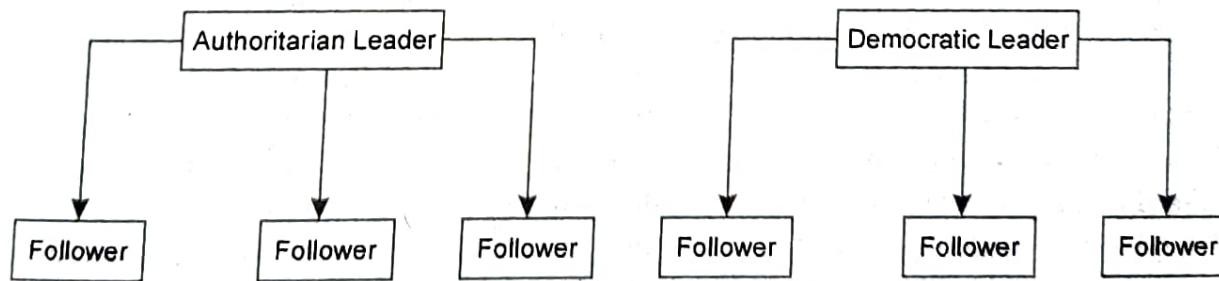


Fig. 3.1. Flow of influence of leaders.

#### B-According to Field

- Labour Leaders.** These leaders come to prominence due to their qualities of speech,

behaviour and action. They are capable to convince the people and bring them round their view point. They then organise themselves into trade unions.

2. **Administrative Leaders.** By administrative leadership we mean leaders or bosses of the administration. These leaders obtain this position by virtue of their ability, experience and association with the organisation. These persons are responsible for formulation of policies, programmes and plans of the industry and also responsible for their execution. Administrative leadership must work in close co-operation with the workers' leaders for smooth working.

In an industry, general manager or managing director works as administrative leader. But in big industries he alone cannot direct all the activities of the concern. Hence, he is assisted by subleaders (managers) and deputy leaders like the sectional managers, foremen and supervisors etc. Each one works as a leader of certain group of men, although the number of such persons under each leader depends upon the responsibility and post held by each.

### Acceptance of Administrative Leadership

Following are some of the factors, because of which a worker accepts the administrative leadership :

1. **Fear of Losing Jobs.** Generally workers obey their boss because of the fear of losing jobs. This factor is more important in the society where unemployment problem is more.
2. **Thankfulness and Faithfulness.** Workers also obey their bosses because of the thankfulness and faithfulness. Generally this factor holds good where approach is positive rather than negative. The workers look to their leader and obey him because they feel indebted to him.
3. **Bargaining.** Sometimes workers obey their leaders as a result of bargain and leaders provide certain benefits or facilities to the workers. Management enters into agreement with the union and a mutual obligation is created.
4. **Common Object.** Sometimes management convinces the workers that there is something common, which both of them wanted to achieve, and then get the confidence of the workers. However, it is very difficult to convince the workers.

### Qualities of Leaders

Following are some of the qualities, which a good administrative leader must possess :

1. **Intelligence and Technical Knowledge.** A good leader must have an intelligence which is more than that of his followers. He must be able to understand and solve the problem in accordance with the prevailing situation. He must also be technically sound. Technically soundness includes skill in planning, organisation, coordination and control. In addition to these he must have atleast working knowledge of the technology, financial, legal procedure and economies required for discharging his job.
2. **Initiative.** He must initiate good activities and must be capable of taking the initiative.
3. **Decisiveness.** A leader must be able to make proper decision at proper time and must stick to it, as lack of decisiveness results in the loss of efficiency. General ability to decide comes from self-confidence.
4. **Persuasiveness.** Persuasion is also a good quality of a leader. It also helps him in implementing his decisions, orders etc.
5. **Responsibility.** A leader must be able to know and feel his responsibilities. He must not shirk his responsibilities and must be in a position to take the burden of decision on his shoulders.

- 1. Ability to Inspire.** A leader cannot do whole of the work himself. He **has to inspire** his men so as to get the work done from them. Generally best inspiration is from the conduct and personality of the leader and the standards set by him.
- 2. Social Consciousness.** He must always realise that he is dealing with **human beings**, who are also having feelings of social status and sense of respect.
- 3. Positive Attitude.** He should always have a positive attitude towards the **problems** of the industry or workers.
- 4. Energy.** Good health and physical as well as mental energy.
- 5. Knowledge of Human Relations.** He should feel for individuals and **recognise their problems** and should be considerate towards them. Such leaders can motivate and get people **to work** together.
- 6. Communication Skills.** He should be able to talk and write clearly and forcefully.
- 7. Teaching Ability.** He should help, develop and inspire his subordinates.
- 8. Maturity.** He should be emotionally stable and do not breakdown with frustration and able to take decision in any situation.
- 9. Attitude.** He should have enthusiastic, optimistic, and loyalist attitude towards the organisation.
- 10. Creative and independent thinking.**
- 11. Open mindedness.**
- 12. Self-confidence.**
- 13. Foresightedness.**
- 14. Faith and respect from followers.**
- 15. Vigilant.**

### 3.6.2. Communication

It is the process of conveying information so that thoughts or opinions are interchanged. It is two way media for transmitting ideas, plans, commands, reports and suggestions that influence attitudes towards the organisation objectives. A good communication can play important role in motivating people and stimulating them to put extra effort. Success of the leader and the organisation depends upon adequacy of communication. Communication determines the quality and climate of human relationships.

#### Communication Flow

There are three basic directions in which communications can be sent within an organisation:

(i) Downward Communication, (ii) Upward Communication, and (iii) Crosswise Communication.

- (i) **Downward Communication.** This type of flow begins **from superior to subordinates**. It is closely associated with the exercise of authority generally concerned with the introduction of new decisions, the clarification and interpretation of previous decisions and requests from higher officers for some specific information.
- (ii) **Upward Communication.** In this, information moves from **subordinates to superior officers**. It is associated with the response **to order** from officers and requests from subordinates for higher level **decisions** on operating problems. Also flowing upwards are opinions, **attitudes**, ideas, suggestions, complaints, grievances and rumours etc.
- (iii) **Crosswise Communication.** This type of communication is found between

individuals working at the same level and under one officer, when advice related to organisational activity is sought from fellow workers.

### Types of Communication

There are usually two means for sending communication:

- (i) Oral
- (ii) Written.
- (i) **Oral.** Oral instructions may be given to the individual when they are face to face or can be communicated through the telephone or messengers.
- (ii) **Written.** It means sending the messages, instructions, orders or information in writing. Written communication carries more authority and leaves a record.

In any organisation both types of communication are employed. If an individual has difficulty in hearing, there is an increased chance that he will misunderstand or even fail to hear some of the verbal communications. Students of foreign countries are required to be better acquainted with the language in which the course work is being presented. In such cases written instructions may be given.

### Factors for Effective Communication

The following are the guiding principles of effective communication:

- (a) **Clarity.** The message must be simple and very clear so that the recipient can understand it fully.
- (b) **Consistency.** It means that message should be consistent with one another and with known objective of the organisation.
- (c) **Adequacy.** The purpose of communication is to transmit optimum flow of information. It should also be noted that not all informations need be communicated. Some officers think that, if subordinates are informed about everything, they can be highly motivated and, therefore, they sent very heavy downward flow of information but it is found that with such a heavy information recipients become confused.
- (d) **Timing and Timeliness.** The different individuals should receive a particular message at the same time, and proper time should be allowed for the action to be taken on the message.
- (e) **Distribution.** A communication from top to bottom should pass through every stage of the line of authority. It is also seen that sometimes informations do not reach to the right person. It must be born in mind that who is to be told is as important as what is to be told.
- (f) **Balance Between Adaptability and Uniformity.** The smooth working of an organisation also depends upon uniformity. Yet adaptability should be resorted to when different situations and individuals are involved. Orders and reports should be transmitted through a system that provides opportunity for adoption to specific situations.
- (g) **Interest and Acceptance.** The purpose of communication is to secure positive response. Therefore, the receiver of message must be capable and interested in accepting the message. Downward communication is more effective, if moral is high and upward communication gets through when the higher officer is a good listener.

### 3.6.3. Motivation and Morale

**Motivation.** All administrative actions are of no use if the workers are not willing to contribute efforts towards the completion of the assigned task. By any way each worker must desire to do his duties effectively. Motivation is the means of increasing this desire among the individuals. Motivation is a powerful tool in the hands of managers for getting work done.

Each individual has variety of desires and belief that shape his reactions. It is the task of manager to arrange the total work situation and group attitudes in such a way so that each of his subordinates find greater satisfaction in carrying out his duties. In fact, every worker should have a positive desire to do the work effectively and efficiently.

In building such an attitude in his subordinate, a manager should consider a variety of measures such as higher financial income, social status and respect, attractive work, security, opportunity, personal power and influence, treatment as in individual person, voice in own affairs and fair supervision etc. Some of these measures provide general background of co-operative efforts while others can be related directly to performance of particular instructions.

In fact leadership and motivation go together. Managers must motivate every employee so that they can act with enthusiasm and vigour.

**Morale.** It means the prevailing mood or spirit which is conducive to willing and dependable performance of task. This mood is a large measure of the degree of faith for the ultimate success of group effort. Morale presumably determines the extent of co-operation in achievement of goal leading in exceptional cases necessarily synonymous with relation, cheerfulness or what is sometimes called good fellowship. Good morale means much more being in a good mood.

In increasing efficiency, good motivation and morale are essentially required.

For details refer seprate chapter.

### 3.6.4. Supervision

Supervising and over-seeing his subordinates is an important part of direction function of every manager. Supervision means observing the subordinates at work, to see that they are working according to plans and policies of the organisation and keeping the time schedule, and to help them in solving their work problems.

The lowest level managers have, as their primary duty, to supervise workers in basic operations. Therefore, the managers at the lowest level are known as supervisors. They are directly in touch with their operative employees or the workers. In a plant or factory, supervisors may be called as foreman, gangman, chargeman or a section officer.

#### Functions of a Supervisor

- (i) Planning the work
- (ii) Issuing orders
- (iii) Providing guidance or leadership
- (iv) Controlling output
- (v) Controlling schedule
- (vi) Motivate
- (vii) Maintaining records
- (viii) Liaison between management and workers.

## Requisites of Effective Supervision

1. Technical and Managerial knowledge
2. Position and Authority
3. Knowledge of rules and regulations
4. Skill in leading
5. Human orientation
6. Issuing clear instructions

## Qualities of a Supervisor

1. Technical competence.
2. Social skills.
3. Tact and discretion
4. Communication skills.
5. Honesty.
6. Empathy
7. Courage to take right decision
8. Teaching and guiding ability.
9. Self confidence.
10. Strong common sense.

## 3.7. CONTROLLING

Controlling function of management can be defined as :

1. Controlling is a continuous process of measuring actual results in relation to those planned.
2. Controlling is that managerial activity whereby the manager compares actual performance against the planned one, finds out the deviation, and takes corrective actions.
3. Controlling is a process which sets standards, measures job performance and takes corrective action, if required.

Controlling consists of verifying whether everything occurs in conformity with the plans adopted; the instructions issued and the principles established. The object is to point out the weaknesses and errors in order to rectify them and prevent recurrence.

Controlling is the checking current performance against predetermined standards contained in the plans, with a view to ensuring adequate progress and satisfactory performance.

### Control Process

The control process in all the situations have following steps :

- (a) **Establishment of Standards:** A standard is a criterion against which results can be measured. These standards refer to goal, plan, objectives, targets, norms or a yard stick.
- (b) **Measurement of Performance:** Second step in the process of control is to measure performance for the purpose of comparison with standards. This step in the control process includes the setting up of methods of observation, inspection and reporting. Reports at regular intervals, audits, test checks etc. are generally done to control the performance at various levels in the organisation.

### MANAGEMENT

- (iii) **Comparing the Activity:** Results obtained are then compared with the standards. Returns received at regular intervals, audits etc. provide feed back for performance which is then compared to find out if there is any deviation. Negative deviation means a loss and needs remedial action, whereas positive deviation means a gain and does not warrant any control function, and as such the feedback informations are ignored.
- (d) **Remedial Action:** In the last step in the process of control, manager initiates action for correction of deviation from standards. For such action, a review is promptly done to make control function more effective. In good organisations, a system is made for automatic and self-regulating control process.

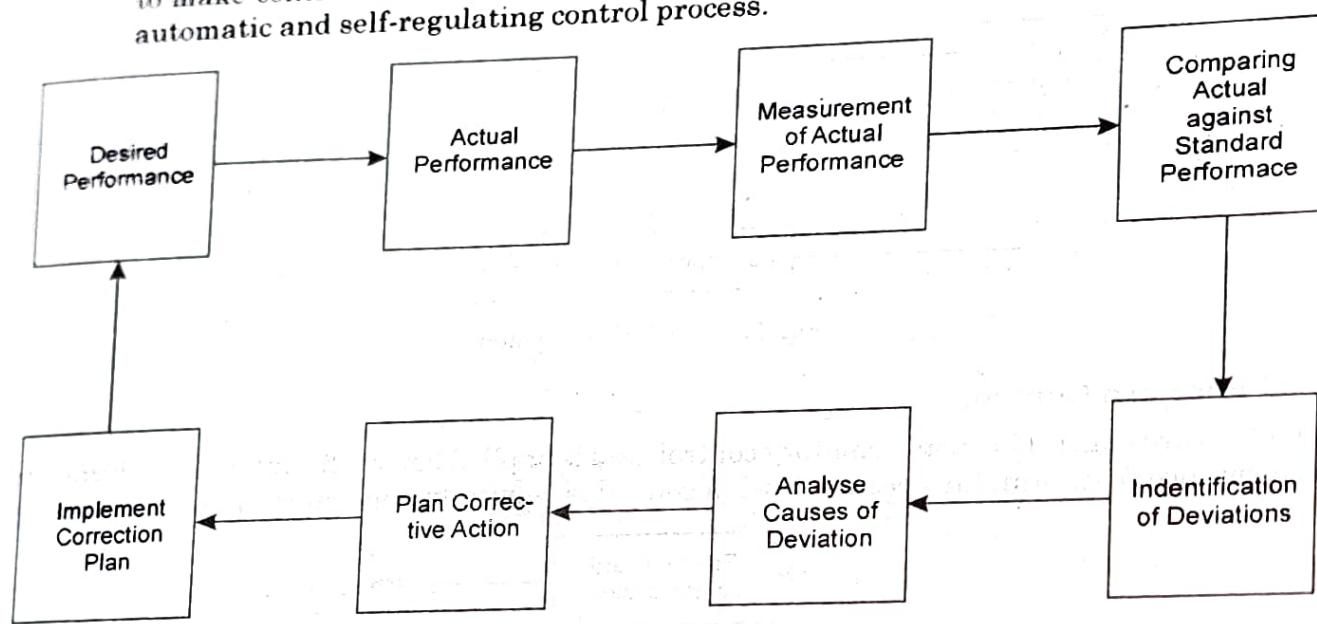


Fig. 3.2. Management control system.

### Open and Closed Loops Control Systems

An open loop control system has inputs, processes, and outputs and do not have any information flow from process or outputs back to the inputs. In this system, control depends on the inputs and the processes being corrected. In closed loop systems, information about process and/or about the outputs is fed back to adjust the inputs and systems as per requirement. These systems are also known as information feedback systems.

### Input, Processor and Output In a System

The basic elements (functionally or operationally) are same for all the systems regardless to their complexity. Input is the start up component on which the system operates. An input to a system is the output of some other system. Output is the result of an operation and is the purpose or objective for which the system was designed. The processor is the activity that makes possible the transformation of input into output. Men, machines, operations, organisations or their combinations are the processors.

### Control and Feedback

Systems are dynamic, where it is necessary to review periodically or continuously the state of output, which may necessitate alterations due to changes which might occur.

The purpose of feedback is control. Control is defined as the system function that compares output to a predetermined standard. Feedback is the function that provides information on the

deviation between output and control standard, and delivers this information as input into process from which the output was derived.

The positions of feedback and control are indicated in the Fig. 3.3.

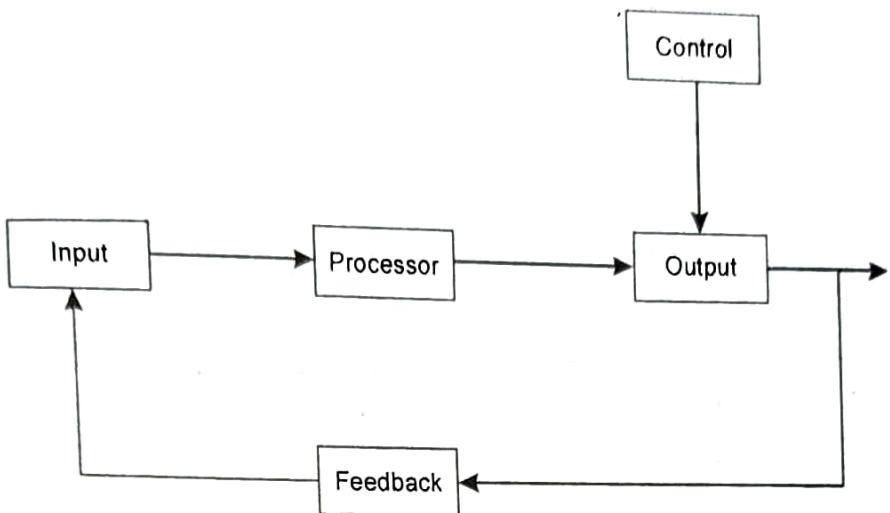


Fig. 3.3. A feedback system.

### Feed Forward Control

Feed forward control is an anticipatory control, and is applied before the anticipated deviation performance from standard occurs. Such a control is generally applicable in cash flow sys

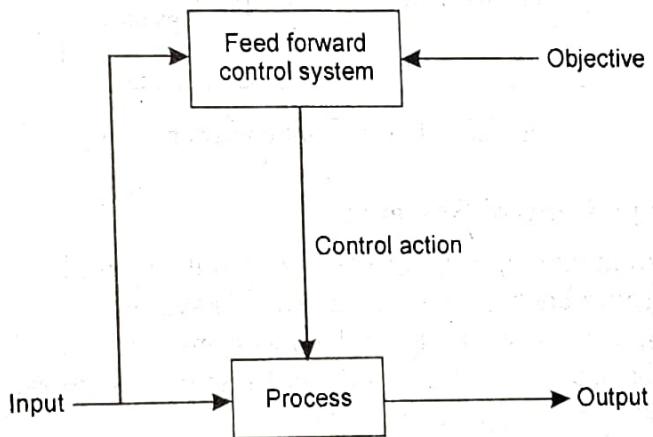


Fig. 3.4. Feed forward control system.

### Essentials of an Effective Control System

While designing a control system for an enterprise following considerations should be kept in mind:

- (i) **Suitability.** Controlling system should be so devised that it must fulfil the objectives sought from it.
- (ii) **Responsibility for Control.** Main responsibility for exercising the control rests with the person who is assigned with the task of implementation of a plan.
- (iii) **Objective.** Control system should be objective and not to be influenced by any criteria. Objective standards must be quantitative (say, quantity produced per time, quantity of raw material consumed per unit of item produced).

- (i) **Flexibility.** Control system should be such that it remains effective even if the plan is changed. Thus it should be flexible and responsive to the changing conditions.
- (ii) **Prompt Reporting.** A control system should be such that an immediate report is sent whenever there is any deviation from the plans and targets.
- (iii) **Focus on Strategic Points.** A good control system pin points the important or strategic points, in addition to reporting the deviations.
- (iv) **Understandable.** The system should be clear and easy to understand by both, who are reporting and who are taking corrective steps.
- (v) **Economical.** A control system should be economical, i.e., the expenditure incurred on its maintenance should be less than the benefits derived from it.

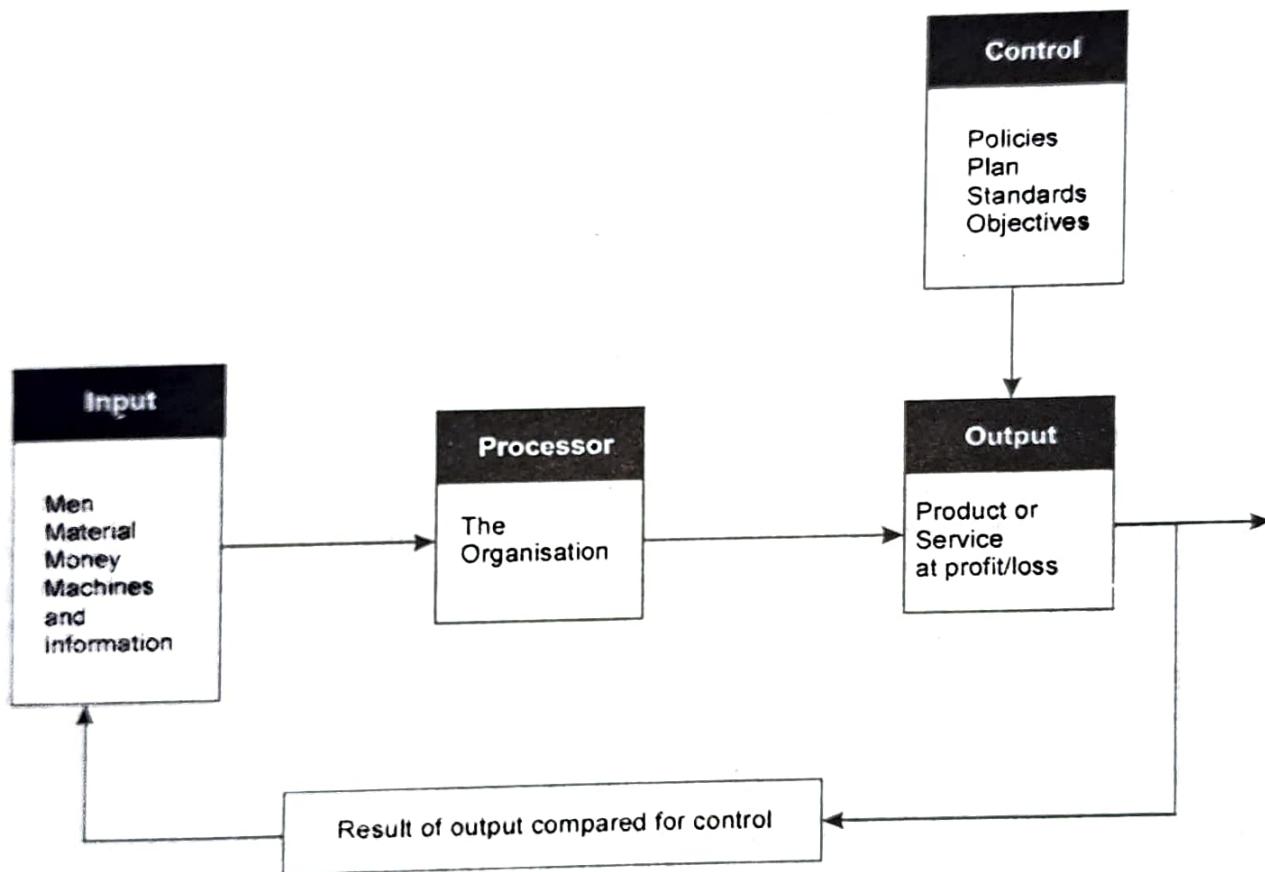


Fig. 3.5. A business system

### 3.7.1. Responsibility Centres

A responsibility centre enables to measure a manager's financial performance. Any business organisation is concerned with four major elements, known as responsibility centres namely **expenses**, **revenue**, **profit** and **investment**. All these elements are inter-related and have mutually interactive relationship. If the manager incharge of a responsibility centre has control over expenses, his sphere of control can be termed an expense centre. Similarly manager who has control over revenue, and profits, those areas of responsibility are termed as revenue centre and profit centres respectively.

A company has one or more profit centres and each profit centre will have one or more expense responsibility centres. An effective responsibility centre should have following characteristics:

- (i) It is a clearly defined segment of an organisation.
- (ii) A designated individual is responsible for its performance.
- (iii) The designated individual has the necessary authority to discharge the assigned responsibilities.

#### **(a) Expense Centres**

Manager of this responsibility centre is basically responsible for production of a product or service. His decision authority relates to how human resources, machinery and materials should be used to the product or service. The expense centre manager has no control over revenue, profits or investments. An appropriate reporting system is used to report effectiveness. Efficiency is normally judged in terms of financial performance. Usually his performance is evaluated by comparing the actual expenses of the centre against budgeted expenses.

An expense could be considered controllable if the centre manager can make decisions which could considerably or significantly influence that expense.

#### **(b) Profit Centres**

A profit centre is responsible for both revenues and expenses. The profit centre managers are concerned with both the production and marketing of the products. Financial performance of profit centre manager is measured in terms of achievement of budget profits. The main advantage of having profit centres is that it enables the management to focus its attention and advice on those segments which require them the most.

#### **(c) Investment Centres**

An investment centre encompasses additional problems with respect to what assets and liabilities should be included in the investment base of the investment centre and as to how the profits are related to assets employed. An investment centre is responsible for production, marketing and investment in the assets employed in the segment. The investment centre manager takes decisions regarding credit and inventory, equipment requirement and equipment replacement. For measuring performance it employs the return on investment (ROI), i.e., a relationship between return (profit) and investment as a percentage.

#### **(d) Revenue Centres**

A revenue centre manager is concerned with marketing and is responsible for all the revenues of the division. The performance of the revenue centre is evaluated on the basis of achievement of the budgeted targets.

### **Performance Evaluation of Various Centres**

Type of centre	Control variables of the Centre	Objective	Variable pre-determined by top management
1. Expense Centre	Prices and quantities of inputs.	Minimum cost	Prices and quantities of output/budget
2. Profit centre	Prices and quantities of inputs and outputs.	Maximum profit.	Investment
3. Investment centre	Prices and quantities of inputs and outputs and investment.	Maximum return on investment.	None
4. Revenue Centre of inputs	Prices and quantities of inputs	Maximum sales revenue	Quantities to be sold/budget

## Designing Performance Evaluation Report

For the purpose of designing a performance evaluation reporting system, following steps are taken:

1. Establish desired segmentation like product line, geographic divisions, classes of customers, production units or departments etc.
2. Identify separable and controllable costs.
3. Select performance indicators. These indicators may be :
  - (a) Results achieved: sales, units produced, orders booked etc.
  - (b) Efforts in terms of inputs : machine hours, men hours, customers contacted etc.
  - (c) Costs incurred : to support efforts and future capabilities.
  - (d) Resources employed.
4. Compare performance achieved with expectations.

## Designing Control Systems

- A control system must provide accurate feedback in a timely and economical way, and acceptable to organisation members.
- It should be carefully decided as to what needs to be controlled, and how often progress needs to be measured.
- Too much control of too many elements too strictly can waste valuable time, energy and money, annoy and demoralise employees.

**Identifying Strategic Control Points:** It is important to identify the critical points in the system where monitoring is essential. Such areas and points may be as follows :

- (a) *Production* – quantity, quality, cost, job performance by individuals.
- (b) *Marketing* – sales volume, expense, advertising expenses, performance of individuals.
- (c) *Finance and Accounting* – Capital expenditure, flow of capital, inventory.
- (d) *Personnel Management* – labour relations, labour turnover, labour absenteeism.

### 3.7.2. Techniques of Management Control

Following are the important techniques used by managers to help them to secure effective control of engineering systems :

- Budget and budgetary control
- Cost control and cost accounting
- Inventory control
- Quality control
- Network techniques
- Production control
- Special reports.

Here, in this chapter we shall discuss only introduction of these techniques. However, each of them has been described separately in detail.

#### 1. Budget and Budgetary Control

Budget is a tool of management for planning its future activities including estimate of sales, production, expenditure etc. Budget estimates are based on past experiences, present business conditions and expected future trends. Expected results are projected

in financial terms or in numerical terms, like units of products, man-hours, machine hours etc.

Budget provides predetermined standards of performance for the guidance of the efficiency and activities in the business. As budgets provide standards of performance, they become the basis for control. Control used for the execution of budgets is what is called "budgetary control".

Budgetary control means application of control in relation to budgets. This is a process of comparing the actual result with the corresponding budget data to know the actual cause of differences. Budgetary control can also be defined as "**the process which keeps the actual standard as nearly as possible to the predetermined standard by strict supervision and control.**"

## 2. Cost Accounting and Cost Control

Cost accounting is the application of costing and cost accounting principles, methods and techniques as the science, art and practice of cost control and the ascertainment of profitability. It includes the presentation of information derived therefrom for the purpose of managerial decision-making. **Cost accounting completely analyses the financial records and tries to allocate and a proportion expenses incurred by the departments, processes, jobs or contracts to which they apply and thus builds up the total cost of each activity.**

Cost control is a technique which involves the determination of standards in respect of each item of cost and determining the actual cost of those very items, detecting variations of actuals from the standards laid down, analysing these variances in order to find out the real cause and then taking necessary corrective steps for future.

## 3. Inventory Control

Inventory control may be defined as, the systematic location, storage and recording of goods in such a way that desired degree of service can be made at the minimum cost. The necessity of inventory control is to maintain a reserve (store) of goods that will ensure manufacturing according to a production plan with the lowest possible ultimate cost. This topic is explained in detail in the chapter on "Materials Management".

## 4. Quality Control

In simplest term, quality control is the control of quality during manufacturing. Where quality of any product is regarded as the degree to which it fulfils the requirements of the customer. Quality can be determined by some characteristics namely design, size, material, chemical composition, mechanical functioning, workmanship, finish and other properties. Quality of a product depends upon the application of materials, machines and manufacturing conditions. Systematic control of all these factors is called quality control.

In the words of Alford and Beatly, "quality control" may be broadly defined as the "**industrial management technique by means of which products of uniform acceptable quality are manufactured**". Quality control is concerned with the making things right rather than discovering and rejecting those made wrong.

Now-a-days Statistical Quality Control technique is used as a means for quality control in the industries. Statistical quality control involves the statistical analysis of inspection data obtained from samples. The quality in statistical quality control is usually related to measurements made of the items manufactured. A good quality item is an item which conforms to specified standards, and does not mean having higher standards of manufacture. Most desirable situation is which represents consistency.

quality standards rather than the absolute standards. Quality control has been described in a separate chapter in the book.

#### 5. Network Techniques. (For Progress Monitoring).

Network technique is a technique for planning, scheduling (programming) and controlling the progress of projects. This technique provides an effective management, determines project duration more accurately, identifies the activities which are critical at different stages of project completion to enable to pay more attention on these activities, analyse the scheduling at regular intervals for taking corrective action well in advance, facilitates in optimising resources, helps management for taking timely and better decisions for effective monitoring and control during execution of the project.

Network technique is basically a synthesis of two techniques namely, Programme Evaluation and Review Technique (PERT) and Critical Path Method (C.P.M.). Both these methods have many common features and are combined together and are called network technique. Network techniques are increasingly being used for planning and management of complex, inter-related projects. Network technique also helps in resource allocation. For details, refer chapter on "Network Techniques".

#### 6. Production Control

Production control is the design and use of a systematic procedure to establish planning and controlling all the elements of an activity. Production control can also be defined as **(the process of planning the production in advance, setting the exact route of each item, fixing the starting and finishing dates for each item, to give production orders to shops and lastly to follow-up, the progress according to the production orders)**. The aim of production control is to produce the products of right quality, in the right quantity, at the right time, by using the best and least expensive methods.

Henry Fayol defines production control as, "ensuring that all which occurs is in accordance with the rules established and the instructions issued". Production control rests on mechanism by means of which observations of current happenings are recorded and continuously compared with the planned production programme. Production control includes the control of activities, control over material movement, control over time, control of tool availability, control of quantity produced, control over workers efficiency. For the purpose of effective production control, it is necessary to properly implement : routing, scheduling, dispatching, and follow-up, as described separately in the book.

#### 7. Reports and Returns

As we know that during the process of production, delays may creep up either due to material receipts, work in progress, assembly or erection etc. In order to know the point of delay and time of delay so that the follow-up can be done, certain reporting system should be introduced. The reporting system and returns should be so designed that the manager must not only take corrective action after a delay has occurred, but also anticipate and prevent it before it actually develops, as we all know that, 'prevention is better than cure', and also that, 'a stitch in time saves nine'.

A report in the form of tabular statements, charts, comparing side by side is always preferred. Columns of the statement, axes of charts and other factors to be reported alongwith the frequency should be designed considering the purpose for which reports are required. The speed with which information is produced is important where short-term decisions have to be made.

### 3.7.3. Reporting

Reporting is a part of management information system, and reports are helpful for management to take necessary decisions. Reports may be written or verbal. Written reports are treated as formal and authentic. The reports should be clear, concise and well presented. Report should serve following main functions:

- (i) To help the writer to assess his work.
- (ii) To convey correct information to others.
- (iii) To provide a record for future references.

### Principles of Reporting

Following are the main principles which determine the effective reporting:

- (i) Cost of producing the information should be less as compared to the cost of not producing the information.
- (ii) The information should contribute to decision-making.
- (iii) Information should be able to provide meaningful conclusion.
- (iv) Information should be accurate only upto desired degree, as higher degree of accuracy where not required, may result in avoidable expenditure.
- (v) Information should be furnished at desired frequency. As too frequent information may result in extra expenditure, while infrequent information may lead to delay in decision and delayed decision may result in avoidable expenditure.
- (vi) Speed of the information is determined by the importance of decisions and their efficiency due to delay.

### Principles of Designing Monitoring Reports.

1. Report should be need based. Report should be tailor made, i.e., not same for similar organisations. Even in the same organisation, these should be amended according to priorities from time to time.
2. Report should be control and action oriented. It should be able to highlight various problems and corrective action.
3. Report should be based on 'Management by Exception', in order to focus attention on major items and critical problems.
4. Report should be forward looking and predictive to alert in advance and not to alarm.
5. Format should be able to be understood by the person who is filling it up and those who will use or interpret.
6. Only needed information be included.
7. It should indicate correct status.
8. Periodicity of the report should be decided on the basis of:
  - User level
  - Criticality of items
  - Scheme size and complexity.
  - Time required for processing the information for action.
  - Type of report : Detailed/analytical reports, control reports, routine reports, summary reports.

The task of monitoring and control is simplified, if suitable formats are designed for each purpose. Principle of designing a format is that, it should be related to time,

and other resources like manpower, equipment and material, and should be properly presented so that it can be understood properly and quick decisions can be taken. Generally, the reports are obtained for monitoring and control with following objects :

- Comparing progress achieved with targets.
- Cost incurred on each unit of production is to be compared with that of budget.
- To review the targets and time schedules for future, if necessary.
- Identifying the deviations and short fall and determining the causes for initiating corrective action.
- Record keeping. Information so received are recorded so as to use them in future, if so required.

## 3.8. COORDINATION

oordination means achieving harmony of individual effort towards the accomplishment of company objectives. Coordination implies joint efforts, and as such it may be described as the orderly arrangement of group efforts to provide unity of action in pursuit of a common purpose. oordination can also be defined as the orderly synchronisation of efforts of the subordinates to provide the proper quantity, timing and quality of execution so that their unified efforts lead to the common purpose of the enterprise.

### Objectives of Coordination

Following objectives are sought through coordinations :

- (i) Reconciliation of goals
- (ii) Total accomplishment
- (iii) Economy and efficiency
- (iv) Good Personnel relations
- (v) Helps in keeping high moral of employees.

### Techniques of Effective Coordination

1. Clearly defined goals.
2. Clear lines of authority and responsibility
3. Precise and comprehensive programmes and policies
4. Cooperation
5. Effective communication
6. Effective leadership and supervision.

## 3.9. MANAGERIAL SKILLS

anagerial skills are the skills required of a successful manager. These can be viewed from the differing emphasis placed by various management thoughts. According to management science group, he is a decision maker and should use mathematical models and computers to help in arriving at optimum decisions. Behavioural scientists emphasise on the leadership and motivational skills.

Managerial skills can be classified as follows :

1. **Technical Skills.** He should have proficiency in handling methods, processes and techniques required for his job.

**Conceptual Skills.** He should be able to see the entire organisation, and recognise the relationship among different functions and should be able to guide effectively his subordinates for organisational goals. Technical skills are required more for lower managers, while conceptual skills are required more for top management as shown in the Fig. 3.6.

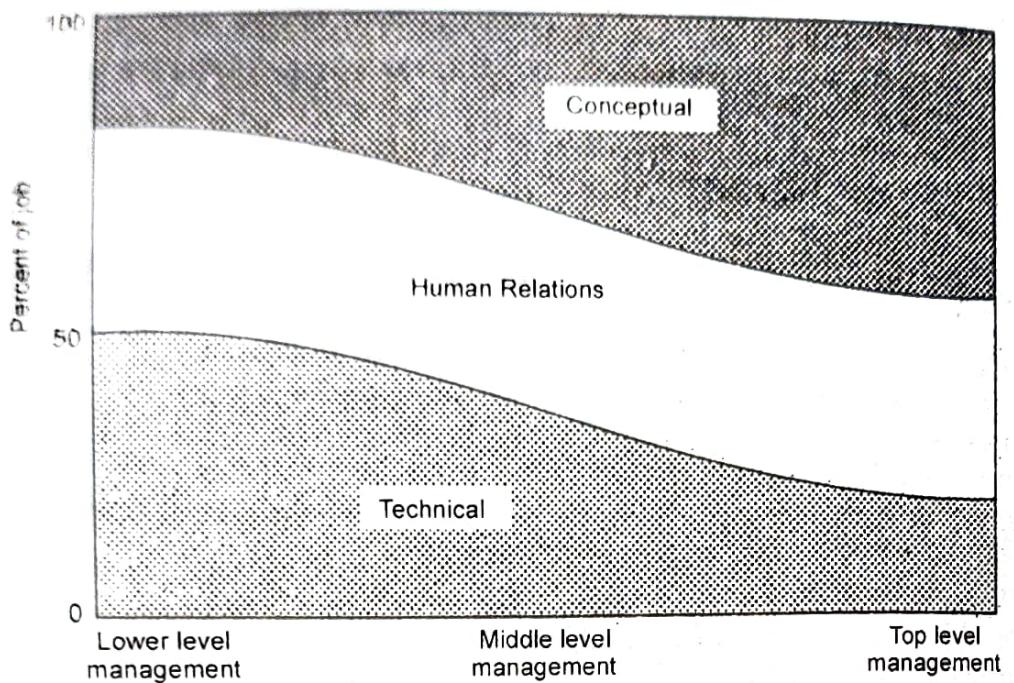


Fig. 3.6. Managerial Skills.

Conceptual skills are decision making skills and organisational skills. Decision making is the ability of a person to take timely and accurate decisions, while organisational skills help select and post different people at work best suited for them.

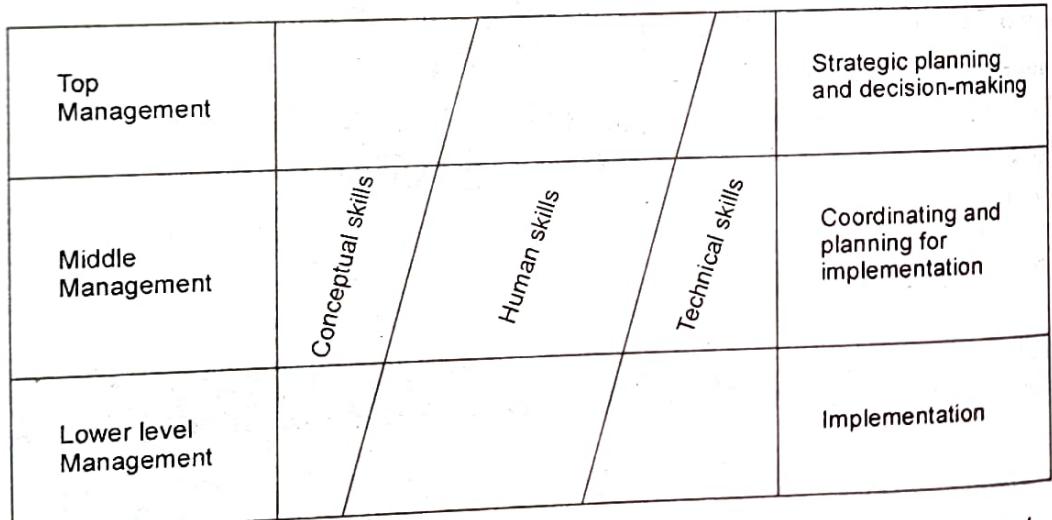


Fig. 3.7. Relative significance of managerial skills with the level of management.

3. **Human Relations Skills.** This is the ability of a manager to work effectively with others and build cooperation in his team so as to achieve organisational goals. For this purpose, he should have communicating skills, motivating skills, and leadership skills.

## 3.10. TASKS OF A MANAGER

A professional manager is expected to fulfil various tasks, for which he must have following characteristics:

- (i) A professional manager must learn the necessary skills and gain competence from his experience.
- (ii) His primary concern must be organisation for the company in which he works.
- (iii) He must be responsible for performance, managing resources (men, money, materials and machines) in the most optimal manner for achievement of some pre-determined objectives.

Following tasks are expected to be fulfilled by a professional manager :

1. Providing purposeful direction.
2. Managing survival and growth.
3. Maintaining firm's efficiency for profit generation.
4. Meeting the challenge of competition.
5. Managing for innovation.
6. Building human organisation.
7. Retaining talent.
8. Substaining leadership effectiveness.
9. Inculcating sense of loyalty.
10. Meeting the challenge of change.
11. Coping with level of aspiration, public criticism.
12. Coping with growing technological sophistication.
13. Maintaining relations with various segments of society.

## 3.11. RESPONSIBILITIES OF A MANAGER

A manager is expected to discharge his responsibilities towards :

- (i) customers by fulfilling his needs, ensuring the desired quality of product and keep the right price of product,
- (ii) shareholder so that they can earn profit on their capital,
- (iii) employees by providing good wages, safe and healthy environment which is conducive to work,
- (iv) supplies by providing correct design of product for adhering quality as per schedule at a fixed price and timely payment,
- (v) distributors and retailers by providing products of specified quality as per schedule at reasonable price,
- (vi) industry by discharging its obligations towards industry by registering the firm as a member of the industry association,
- (vii) union by handling them sensibly and tactfully,
- (viii) government by paying all taxes fairly and regularly, and operating the firm well within the legal framework,
- (ix) society by keeping the pollution free environment.

## 3.12. INTER-RELATIONSHIP OF FUNCTIONS

In actual practice the functions of management are interrelated. As explained earlier, planning is done in organising, staffing, motivating, leading and controlling. Similarly controlling is done while planning, directing, and staffing and also while decision theory is used in the organisational communication and M.I.S. Thus each function affects the others, and all are intimately interrelated in a system to form the major components of the system of management.

### QUESTIONS

1. Describe the management approach to planning.
2. Describe different types of plans.
3. Write short notes on :
 

(a) Rules	(b) Strategy
(c) Single use plan	(d) Strategic planning
(e) Policy	(f) Objectives
(g) Repetitive use plans.	
4. Describe in detail the planning of engineering systems.
5. Describe the term organising. Explain the procedure for organising.
6. Explain as to how various Management functions are interrelated.
7. Write short notes on :
 

(a) Staffing	(b) Directing
(c) Communication	(d) Leadership
(e) Controlling	(f) Controlling-aids
(g) Coordination (h) Managerial skills.	
8. Name the type of leaders. Explain them in brief.
9. What are the qualities expected from a good leader?
10. What are the requisites of an effective controlling?
11. Why management is necessary, and what are its functions?
12. Describe various functions of management.
13. Discuss planning as a major activity of management.
14. Discuss the importance of planning in implementation of a programme.
15. Discuss the main features of a good plan.
16. Comment on the following types of plans:
 

(i) Objectives,	(ii) Policies,
(iii) Procedure, and	(iv) Programmes