INTRODUCTION TO MANAGEMENT

1.1 INTRODUCTION

A business develops in course of time with complexities. With increasing complexities managing the business has become a difficult task. The need of existence of management has increased tremendously. Management is essential not only for business concerns but also for banks, schools, colleges, hospitals, hotels, religious bodies, charitable trusts etc. Every business unit has some objectives of its own. These objectives can be achieved with the coordinated efforts of several personnel. The work of a number of persons are properly co-ordinated to achieve the objectives through the process of management is not a matter of pressing a button, pulling a lever, issuing orders, scanning profit and loss statements, promulgating rules and regulations. Rather it is the power to determine what shall happen to the personalities and happiness of entire people, the power to shape the destiny of a nation and of all the nations which make up the world." Peter F. Drucker has stated in his famous book "The Practice of Management" that, "the emergence of management as an essential, a distinct and leading social institution is a pivotal event in social history. Rarely in human history has a new institution proved indispensable so quickly and even less often as a new institution arrived with so little opposition, so little disturbance and so little controversy?"

Management is a vital aspect of the economic life of man, which is an organised group activity. It is considered as the indispensable institution in the modern social organization marked by scientific thought and technological innovations. One or the other form of management is essential wherever human efforts are to be undertaken collectively to satisfy wants through some productive activity, occupation or profession.

It is management that regulates man's productive activities through coordinated use of material resources. Without the leadership provided by management, the resources of production remain resources and never become production.

Management is the integrating force in all organized activity. Whenever two or more people work together to attain a common objective, they have to coordinate their activities. They also have to organize and utilize their resources in such a way as to optimize the results. Not only in business enterprises where costs and revenues can be ascertained accurately and objectively but also in service organizations such as government, hospitals, schools, clubs, etc., scarce resources including men, machines, materials and money have to be integrated in a productive relationship, and utilized efficiently towards the achievement of their gals. Thus, management is not unique to business organizations but common to all kinds of social organizations.

Management has achieved an enviable importance in recent times. We are all intimately associated with many kinds of organizations, the most omnipresent being the government, the school and the hospital. In fact, more and more of major social tasks are being organized on an institution basis. Medical care, education, recreation, irrigation, lighting, sanitation, etc., which typically used to be the concern of the individual or the family, are now the domain of large organizations. Although, organizations other than business do not speak of management, they all need management. It is the specific organ of all kinds of organizations since they all need to utilize their limited resources most efficiently and effectively for the achievement of their goals. It is the most vital forces in the successful performance of all kinds of organized social activities.

Importance of management for the development of underdeveloped economies has been recognized during the last one and a half decade. There is a significant gap between the management effectiveness in developed and underdeveloped countries. It is rightly held that development is the function not only of capital, physical and material resources, but also of their optimum utilization. Effective management can produce not only more outputs of goods and services with given resources, but also expand them through better use of science and technology. A higher rate of economic growth can be attained in our country through more efficient and effective management of our business and other social organizations, even with existing physical and financial resources. That is why it is now being increasingly recognized that underdeveloped countries are indeed somewhat inadequately managed countries.

The emergence of management in modern times may be regarded as a significant development as the advancement of modern technology. It has made possible organization of economic activity in giant organizations like the Steel Authority of India and the Life Insurance Corporation of India. It is largely through the achievements of modern management that western countries have reached the stage of mass consumption societies, and it is largely through more effective management of our economic and social institutions that we can improve the quality of life of our people. It is the achievements of business management that hold the hope for the huge masses in the third world countries that they can banish poverty and achieve for themselves decent standards of living.

1.2 DEFINITION OF MANAGEMENT

Although management as a discipline is more than 80 years old, there is no common agreement among its experts and practitioners about its precise definition. In fact, this is so in case of all social sciences like psychology, sociology, anthropology, economics, political science etc. As a result of unprecedented and breath-taking technological developments, business organizations have grown in size and complexity, causing consequential changes in the practice of management. Changes in management styles and practices have led to changes in management thought. Moreover, management being interdisciplinary in nature has undergone changes because of the developments in behavioural sciences, quantitative techniques, engineering and technology, etc. Since it deals with the production and distribution of goods and services, dynamism of its environments such as social, cultural and religious values, consumers' tastes and preferences, education and information explosion, democratization of governments, etc., have also led to changes in its theory and practice. Yet, a definition of management is necessary for its teaching and research, and also for improvement in its practice.

Many management experts have tried to define management. But, no definition of management has been universally accepted. Let us discuss some of the leading definitions of management:

Peter F. Drucker defines, "management is an organ; organs can be described and defined only through their functions".

According to Terry, "Management is not people; it is an activity like walking, reading, swimming or running. People who perform Management can be designated as members, members of Management or executive leaders."

Ralph C. Davis has defined Management as, "Management is the function of executive leadership anywhere."

According to Mc Farland, "Management is defined for conceptual, theoretical and analytical purposes as that process by which managers create, direct, maintain and operate purposive organization through systematic, co-ordinated co-operative human effort."

Henry Fayol, "To mange is to forecast and plan, to organize, to compound, to co-ordinate and to control."

Harold Koontz says, "Management is the art of getting things done through and within formally organized group."

William Spriegal, "Management is that function of an enterprise which concerns itself with direction and control of the various activities to attain business objectives. Management is essentially an executive function; it deals with the active direction of the human effort."

Kimball and Kimball, "Management embraces all duties and functions that pertain to the initiation of an enterprise, its financing, the establishment of all major policies, the provision of all necessary equipment, the outlining of the general form of organization under which the enterprise is to operate and the selection of the principal officers."

Sir Charles Reynold, "Management is the process of getting things done through the agency of a community. The functions of management are the handling of community with a view of fulfilling the purposes for which it exists."

E.F.L. Brech, "Management is concerned with seeing that the job gets done, its tasks all centre on planning and guiding the operations that are going on in the enterprise."

Koontz and O'Donnel, "Management is the creation and maintenance of an internal environment in an enterprise where individuals, working in groups, can perform efficiently and effectively toward the attainment of group goals. It is the art of getting the work done through and with people in formally organized groups."

James Lundy, "Management is principally a task of planning, co-ordinating, motivating and controlling the efforts of other towards a specific objective. It involves the combining of the traditional factors of production land, labour, capital in an optimum manner, paying due attention, of course, to the particular goals of the organization."

Wheeler, "Management is centered in the administrators or managers of the firm who integrate men, material and money into an effective operating limit."

J.N. Schulze, "Management is the force which leads guides and directs an organization in the accomplishment of a pre-determined object."

Oliver Scheldon, "Management proper is the function in industry concerned in the execution of policy, within the limits set up by the administration and the employment of the organization for the particular objectives set before it."

Keith and Gubellini, "Management is the force that integrates men and physical plant into an effective operating unit."

Newman, Summer and Warren, "The job of Management is to make co-operative endeavour to function properly. A manager is one who gets things done by working with people and other resources in order to reach an objective."

G.E. Milward, "Management is the process and the agency through which the execution of policy is planned and supervised."

Ordway Tead, "Management is the process and agency which directs and guides the operations of an organization in the realizing of established aims."

Mary Parker Follett defines management as the "art of getting things done through people". This definition calls attention to the fundamental difference between a manager and other personnel of an organization. A manager is one who contributes to the organization's goals indirectly by directing the efforts of others – not by performing the task himself. On the other hand, a person who is not a manager makes his contribution to the organization's goals directly by performing the task himself.

Sometimes, however, a person in an organization may play both these roles simultaneously. For example, a sales manager is performing a managerial role when he is directing his sales force to meet the organization's goals, but when he himself is contacting a large customer and negotiating a deal, he is performing a non-managerial role. In the former role, he is directing the efforts of others and is contributing to the organization's goals indirectly; in the latter role, he is directly utilizing his skills as a salesman to meet the organization's objectives.

A somewhat more elaborate definition of management is given by George R. Terry. He defines management as a process "consisting of planning, organizing, actuating and controlling, performed to determine and accomplish the objectives by the use of people and other resources". According to this definition, management is a process – a systematic way of doing things. The four management activities included in this process are: planning, organizing, actuating and controlling. Planing means that managers think of their actions in advance. Organizing means that managers coordinate the human and material resources of the organization. Actuating means that managers motivate and direct subordinates. Controlling means that managers attempt to ensure that there is no deviation from the norm or plan. If some part of their organization is on the wrong track, managers take action to remedy the situation.

To conclude, we can say that various definitions of management do not run contrary to one another. Management is the sum-total of all those activities that (i) determine objectives, plans, policies and programmes; (ii) secure men, material, machinery cheaply (iii) put all these resources into operations through sound organization (iv) direct and motivate the men at work, (v) supervises and control their performance and (iv) provide maximum prosperity and happiness for both employer and employees and public at large.

1.3 CHARACTERISTICS OF MANAGEMENT

Management is a distinct activity having the following salient features:

Economic Resource : Management is one of the factors of production together with land, labour and capital.

As industrialization increases, the need for managers also increases. Efficient management is the most critical input in the success of any organized group activity as it is the force which assembles and integrates other factors of production, namely, labour, capital and materials. Inputs of labour, capital and materials do not by themselves ensure production, they require the catalyst of management to produce goods and services required by the society. Thus, management is an essential ingredient of an organization.

Goal Oriented : Management is a purposeful activity. It coordinates the efforts of workers to achieve the goals of the organization. The success of management is measured by the extent to which the organizational goals are achieved. It is imperative that the organizational goals must be well-defined and properly understood by the management at various levels.

Distinct Process : Management is a distinct process consisting of such functions as planning, organizing, staffing, directing and controlling. These functions are so interwoven that it is not possible to lay down exactly the sequence of various functions or their relative significance.

Integrative Force : The essence of management is integration of human and other resources to achieve the desired objectives. All these resources are made available to those who manage. Managers apply knowledge, experience and management principles for getting the results from the workers by the use of non-human resources. Managers also seek to harmonize the individuals' goals with the organizational goals for the smooth working of the organization.

System of Authority : Management as a team of managers represents a system of authority, a hierarchy of command and control. Managers at different levels possess varying degree of authority. Generally, as we move down in the managerial hierarchy, the degree of authority gets gradually reduced. Authority enables the managers to perform their functions effectively.

Multi-disciplinary Subject : Management has grown as a field of study (i.e. discipline) taking the help of so many other disciplines such as engineering, anthropology, sociology and psychology. Much of the management literature is the result of the association of these disciplines. For instance, productivity orientation drew its inspiration from industrial engineering and human relations orientation from psychology. Similarly, sociology and operations research have also contributed to the development of management science.

Universal Application : Management is universal in character. The principles and techniques of management are equally applicable in the fields of business, education, military, government and hospital. Henri Fayol suggested that principles of management would apply more or less in every situation. The principles are working guidelines which are flexible and capable of adaptation to every organization where the efforts of human beings are to be coordinated.

1.4 MANAGEMENT FUNCTIONS /PROCESS OF MANAGEMENT

There is enough disagreement among management writers on the classification of managerial functions. Newman and Summer recognize only four functions, namely, organizing, planning, leading and controlling.

Henri Fayol identifies five functions of management, viz. planning, organizing, commanding, coordinating and controlling. Luther Gulick states seven such functions under the catch word "POSDCORB' which stands for planning, organizing, staffing, directing, coordinating, reporting and budgeting. Warren Haynes and Joseph Massie classify management functions into decision-making, organizing, staffing, planning, controlling, communicating and directing. Koontz and O'Donnell divide these functions into planning organizing, staffing, directing and controlling.

For our purpose, we shall designate the following six as the functions of a manager: planning, organizing, staffing, directing, coordinating and controlling.

Planning : Planning is the most fundamental and the most pervasive of all management functions. If people working in groups have to perform effectively, they should know in advance what is to be done, what activities they have to perform in order to do what is to be done, and when it is to be done. Planning is concerned with 'what', 'how, and 'when' of performance. It is deciding in the present about the future objectives and the courses of action for their achievement. It thus involves:

determination of long and short-range objectives;
development of strategies and courses of actions to be

followed for the achievement of these objectives; and

formulation of policies, procedures, and rules, etc., for the implementation of

strategies, and plans.

The organizational objectives are set by top management in the context of its basic purpose and mission, environmental factors, business forecasts, and available and potential resources. These objectives are both long-range as well as short-range. They are

divided into divisional, departmental, sectional and individual objectives or goals. This is followed by the development of strategies and courses of action to be followed at various levels of management and in various segments of the organization. Policies, procedures and rules provide the framework of decision making, and the method and order for the making and implementation of these decisions.

Every manager performs all these planning functions, or contributes to their performance. In some organizations, particularly those which are traditionally managed and the small ones, planning are often not done deliberately and systematically but it is still done. The plans may be in the minds of their managers rather than explicitly and precisely spelt out: they may be fuzzy rather than clear but they are always there. Planning is thus the most basic function of management. It is performed in all kinds of organizations by all managers at all levels of hierarchy.

Organizing : Organizing involves identification of activities required for the achievement of enterprise objectives and implementation of plans; grouping of activities into jobs; assignment of these jobs and activities to departments and individuals; delegation of responsibility and authority for performance, and provision for vertical and horizontal coordination of activities. Every manager has to decide what activities have to be undertaken in his department or section for the achievement of the goals entrusted to him. Having identified the activities, he has to group identical or similar activities in order to make jobs, assign these jobs or groups of activities to his subordinates, delegate authority to them so as to enable them to make decisions and initiate action for undertaking these activities, and provide for coordination between himself and his subordinates, and among his subordinates. Organizing thus involves the following sub-functions :

- Identification of activities required for the achievement of objectives and implementation of plans.
- Grouping the activities so as to create self-contained jobs.
- Assignment of jobs to employees.
- Delegation of authority so as to enable them to perform their jobs and to command the resources needed for their performance.
- Establishment of a network of coordinating relationships.

Organizing process results in a structure of the organization. It comprises organizational positions, accompanying tasks and responsibilities, and a network of roles and authority-responsibility relationships.

Organizing is thus the basic process of combining and integrating human, physical and financial resources in productive interrelationships for the achievement of enterprise objectives. It aims at combining employees and interrelated tasks in an orderly manner so that organizational work is performed in a coordinated manner, and all efforts and activities pull together in the direction of organizational goals.

Staffing : Staffing is a continuous and vital function of management. After the objectives have been determined, strategies, policies, programmes, procedures and rules formulated for their achievement, activities for the implementation of strategies, policies, programmes, etc. identified and grouped into jobs, the next logical step in the management process is to procure suitable personnel for manning the jobs. Since the efficiency and effectiveness of an organization significantly depends on the quality of its personnel and since it is one of the primary functions of management to achieve qualified and trained people to fill various positions, staffing has been recognized as a distinct function of management. It comprises several sub-functions :

Manpower planning involving determination of the number and the kind of personnel required.

Recruitment for attracting adequate number of potential employees to seek jobs in the enterprise.

Selection of the most suitable persons for the jobs under consideration.

Placement, induction and orientation.

Transfers, promotions, termination and layoff.

Training and development of employees.

As the importance of human factor in organizational effectiveness is being increasingly recognized, staffing is gaining acceptance as a distinct function of management. It need hardly any emphasize that no organization can ever be better than its people, and managers must perform the staffing function with as much concern as any other function.

Directing : Directing is the function of leading the employees to perform efficiently, and contribute their optimum to the achievement of organizational objectives. Jobs assigned to subordinates have to be explained and clarified, they have to be provided guidance in job performance and they are to be motivated to contribute their optimum performance with zeal and enthusiasm. The function of directing thus involves the following sub-functions :

Communication

Motivation

Leadership

Coordination : Coordinating is the function of establishing such relationships among various parts of the organization that they all together pull in the direction of organizational objectives. It is thus the process of tying together all the organizational decisions, operations, activities and efforts so as to achieve unity of action for the accomplishment of organizational objectives.

The significance of the coordinating process has been aptly highlighted by Mary Parker Follet. The manager, in her view, should ensure that he has an organization "with all its parts coordinated, so moving together in their closely knit and adjusting activities, so linking, interlocking and interrelation, that they make a working unit, which is not a congeries of separate pieces, but what I have called a functional whole or integrative unity". Coordination, as a management function, involves the following sub-functions:

- Clear definition of authority-responsibility relationships
- Unity of direction
- Unity of command
- Effective communication
- Effective leadership

Controlling : Controlling is the function of ensuring that the divisional, departmental, sectional and individual performances are consistent with the predetermined objectives and goals. Deviations from objectives and plans have to be identified and investigated, and correction action taken. Deviations from plans and objectives provide feedback to managers, and all other management processes including planning, organizing, staffing, directing and coordinating are continuously reviewed and modified, where necessary.

Controlling implies that objectives, goals and standards of performance exist and are known to employees and their superiors. It also implies a flexible and dynamic organization which will permit changes in objectives, plans, programmes, strategies, policies, organizational design, staffing policies and practices, leadership style, communication system, etc., for it is not uncommon that employees failure to achieve predetermined standards is due to defects or shortcomings in any one or more of the above dimensions of management.

Thus, controlling involves the following process :

Measurement of performance against predetermined goals.

Identification of deviations from these goals.

Corrective action to rectify deviations.

It may be pointed out that although management functions have been discussed in a particular sequence-planning, organizing, staffing, directing, coordinating and controlling – they are not performed in a sequential order. Management is an integral process and it is difficult to put its functions neatly in separate boxes. Management functions tend to coalesce, and it sometimes becomes difficult to separate one from the other. For example, when a production manager is discussing work problems with one of his subordinates, it is difficult to say whether he is guiding, developing or communicating, or doing all these things simultaneously. Moreover, managers often perform more than one function simultaneously.

1.5 NATURE OF MANAGEMENT

Management has been conceptualized earlier in this lesson, as the social process by which managers of an enterprise integrate and coordinate its resources for the achievement of common, explicit goals. It has developed into a body of knowledge and a separate identifiable discipline during the past six decades. Practice of management as an art is, of course, as old as the organized human effort for the achievement of common goals. Management has also acquired several characteristics of profession during recent times. Large and medium-sized enterprise in India and elsewhere are managed by professional managers – managers who have little or no share in the ownership of the enterprise and look upon management as a career. The nature of management as a science, as art and as a profession is discussed below :

Management as a Science : Development of management as a science is of recent origin, even though its practice is ages old. Fredrick W. Taylor was the first manager-theorist who made significant contributions to the development of management as a science. He used the scientific methods of analysis, observation and experimentation in the management of production function. A perceptive manager, as he was, he distilled certain fundamental principles and propounded the theory and principles of scientific management. His work was followed by many others including Gantt, Emerson, Fayol, Barnard, etc. During the last few decades, great strides have been made in the development of management as a systematized body of knowledge which can be learnt, taught and researched. It has also provided powerful tools of analysis, prediction and control to practicing managers. The scientific character of management has been particularly strengthened by management scientists who have developed mathematical models of decision making.

Another characteristic of science in management is that it uses the scientific methods of observation, experimentation and laboratory research. Management principles are firmly based on observed phenomena, and systematic classification and analysis of data. These analyses and study of observed phenomena are used for inferring cause-effect relationships between two or more variables. Generalizations about these relationships result in hypotheses. The hypotheses when tested and found to be true are called principles. These principles when applied to practical situations help the practitioner in describing and analyzing problems, solving problems and predicting the results.

Even though management is a science so far as to possess a systematized body of knowledge and uses scientific methods of research, it is not an exact science like natural sciences. This is simply because management is a social science, and deals with the behaviour of people in organization. Behaviour of people is much more complex and variable than the behaviour of inanimate things such as light or heat. This makes controlled experiments very difficult. As a result, management principles lack the rigour and exactitude which is found in physics and chemistry. In fact, many natural sciences which deal with living phenomena such as botany and medicine are also not exact. Management is a social science like economics or psychology, and has the same limitations which these and other social sciences have. But this does not in any way diminish the value of management as a knowledge and discipline. It has provided powerful tools of analysis, prediction and control to practicing managers and helped them in performing their material tasks more efficiently and effectively.

Management as an art : Just as an engineer uses the science of engineering while building a bridge, a manager uses the knowledge of management theory while performing his managerial functions. Engineering is a science; its application to the solution of practical problems is an art. Similarly, management as a body of knowledge and a discipline is a science; its application to the solution of organizational problems is an art. The practice of management, like the practice of medicine, is firmly grounded in an identifiable body of concepts, theories and principles. A medical practitioner, who does not base his diagnosis and prescription on the science of medicine, endangers the life of his patient. Similarly, a manager who manages without possessing the knowledge of management creates chaos and jeopardizes the well-being of his organization.

Principles of management like the principles of medicine are used by the practitioner not as rules of thumb but as guides in solving practical problems. It is often said that managerial decision making involves a large element of judgement. This is true too. The raging controversy whether management is a science or an art is fruitless. It is a science as well as an art. Developments in the field of the knowledge of management help in the improvement of its practice; and improvements in the practice of management spur further research and study resulting in further development of management science.

Management as a Profession : We often hear of professionalisation of management in our country. By a professional manager, we generally mean a manager who undertakes management as a career and is not interested in acquiring ownership share in the enterprise which he manages. But, is management a profession in the true sense of the word? or, is management a profession like the professions of law and medicine? According to McFarland a profession possess the following characteristics : (i) a body of principles, techniques, skills, and specialized knowledge; (ii) formalized methods of acquiring training and experience; (iii) the establishment of a representative organization with professionalisation as its goal; (iv) the formation of ethical codes for the guidance of conduct; and (v) the charging of fees based on the nature of services.

Management is a profession to the extent it fulfils the above conditions. It is a profession in the sense that there is a systematized body of management, and it is distinct, identifiable discipline. It has also developed a vast number of tools and techniques. But unlike medicine or law, a management degree is not a prerequisite to become a manager. In fact, most managers in India as elsewhere do not have a formal management education. It seems reasonable to assume that at no time in the near future, the possession of a management degree will be a requirement for employment as a career manager.

Management is also a profession in the sense that formalized methods of training is available to those who desire to be managers. We have a number of institutes of management and university departments of management which provide formal education in this field. Training facilities are provided in most companies by their training divisions. A number of organizations such as the Administrative Staff College of India, the Indian Institutes of Management, Management Development Institute, the All India Management Association, and the university departments of management offer a variety of short-term management training programmes.

Management partially fulfils the third characteristic of profession. There are a number of representative organizations of management practitioners almost in all countries such as the All India Management Association in

India, the American Management Association in U.S.A., etc. However, none of them have professionalisation of management as its goal.

Management does not fulfill the last two requirements of a profession. There is no ethical code of conduct for managers as for doctors and lawyers. Some individual business organizations, however, try to develop a code of conduct for their own managers but there is no general and uniform code of conduct for all managers. In fact, bribing public officials to gain favours, sabotaging trade unions, manipulating prices and markets are by no means uncommon management practices. Furthermore, managers in general do not seem to adhere to the principle of "service above self". However little regard is paid to the elevation of service over the desire for monetary compensation is evidenced by switching of jobs by managers. Indeed, such mobile managers are regarded as more progressive and modern than others.

It may be concluded from the above discussion that management is a science, an art as well as a profession. As a social science, management is not as exact as natural sciences, and it is not as fully a profession as medicine and law.

1.6 MANAGEMENT VS. ADMINISTRATION

The use of two terms management and administration has been a controversial issue in the management literature. Some writers do not see any difference between the two terms, while others maintain that administration and management are two different functions. Those who held management and administration distinct include Oliver Sheldon, Florence and Tead, Spriegel and Lansburg, etc. According to them, management is a lower-level function and is concerned primarily with the execution of policies laid down by administration. But some English authors like Brech are of the opinion that management is a wider term including administration. This controversy is discussed as under in three heads:

Administration is concerned with the determination of policies and management with the implementation of policies. Thus, administration is a higher level function.

Management is a generic term and includes administration.

There is no distinction between the terms management and administration and they are used interchangeably.

Administration is a Higher Level Function : Oliver Shelden subscribed to the first viewpoint. According to him, "Administration is concerned with the determination of corporate policy, the coordination of finance, production and distribution, the settlement of the compass of the organization and the ultimate control of the executive. Management proper is concerned with the execution of policy within the limits set up by administration and the employment of the organization in the particular objects before it... Administration determines the organization; management uses it. Administration defines the goals; management strives towards it".

Administration refers to policy-making whereas management refers to execution of policies laid down by administration. This view is held by Tead, Spriegel and Walter. Administration is the phase of business enterprise that concerns itself with the overall determination of institutional objectives and the policies unnecessary to be followed in achieving those objectives. Administration is a determinative function; on the other hand, management is an executive function which is primarily concerned with carrying out of the broad policies laid down by the administration. Thus, administration involves broad policy-making and management involves the execution of policies laid down by the administration as shown in Table 1.

Table 1: Administration Vs. Management

Basis	Administration	Management
1. Meaning	Administration is concerned with the formulation of objectives, plans and policies of the organization	Management means getting the work done through and with others.
2. Nature of work	Administration relates to the decision-making. It is a thinking function.	Management refers to execution of decisions. It is a doing function.
3. Decision Making	Administration determines what is to be done and when it is to be done	Management decides who shall implement the administrative decisions.
4. Status	Administration refers to higher levels of management	Management is relevant at lower levels in the organization.

Management is a Generic Term : The second viewpoint regards management as a generic term including administration. According to Brech, "Management is a social process entailing responsibility for the effective and economical planning and regulation of the operation of an enterprise in fulfillment of a given purpose or task. Administration is that part of management which is concerned with the installation and carrying out of the procedures by which the programme is laid down and communicated and the progress of activities is regulated and checked against plans". Thus, Brech conceives administration as a part of management. Kimball and Kimball also subscribe to this view. According to them administration is a part of management. Administration is concerned with the actual work of executing or carrying out the objectives.

Management and Administration are Synonymous: The third viewpoint is that there is no distinction between the terms 'management' and 'administration'. Usage also provides no distinction between these terms. The term management is used for higher executive functions like determination of policies, planning, organizing, directing and controlling in the business circles, while the term administration is used for the same set of functions in the Government circles. So there is no difference between these two terms and they are often used interchangeably.

It seems from the above concepts of administration and management that administration is the process of determination of objectives, laying down plans and policies, and ensuring that achievements are in conformity with the objectives. Management is the process of executing the plans and policies for the achievement of the objectives determined by an administration. This distinction seems to be too simplistic and superficial. If we regard chairmen, managing directors and general managers as performing administrative functions, it cannot be said that they perform only planning functions of goal determination, planning and policy formulation, and do not perform other functions such as staffing functions of selection and promotion, or directing functions of leadership, communication and motivation. On the other hand, we cannot say that managers who are responsible for the execution of plans and formulation of plans and policies, etc. do not contribute to the administrative functions of goal determination, and formulation of plans and policies. In fact all manages, whether the chief executive or the first line supervisor, are in some way or the other involved in the performance of all the managerial functions. It is, of course, true that those who occupy the higher echelons of organizational hierarchy are involved to a greater extent in goal determination, plans and policy formulation and organizing than those who are at the bottom of the ladder.

1.7 LEVELS OF MANAGEMENT

An enterprise may have different levels of management. Levels of management refer to a line of demarcation between various managerial positions in an enterprise. The levels of management depend upon its size, technical facilities, and the range of production. We generally come across two broad levels of management, viz. (i) administrative management (i.e., the upper level of management) and (ii) operating management (i.e., the lower level of management). Administrative management is concerned with "thinking" functions such as laying down policy, planning and setting up of standards. Operative management is concerned with the "doing" function such as implementation of policies, and directing the operations to attain the objectives of the enterprise.

But in actual practice, it is difficult to draw any clear cut demarcation between thinking function and doing function. Because the basic/fundamental managerial functions are performed by all managers irrespective of their levels or, ranks. For instance, wage and salary director of a company may assist in fixing wages and salary structure as a member of the Board of Directors, but as head of wages and salary department, his job is to see that the decisions are implemented.

The real significance of levels is that they explain authority relationships in an organization. Considering the hierarchy of authority and responsibility, one can identify three levels of management namely:

Top management of a company consists of owners/shareholders, Board of Directors, its Chairman, Managing Director, or the Chief Executive, or the General Manager or Executive Committee having key officers.

Middle management of a company consists of heads of functional departments viz. Purchase Manager, Production Manager, Marketing Manager, Financial controller, etc. and Divisional and Sectional Officers working under these Functional Heads.

Lower level or operative management of a company consists of Superintendents, Foremen, Supervisors, etc.

Top management : Top management is the ultimate source of authority and it lays down goals, policies and plans for the enterprise. It devotes more time on planning and coordinating functions. It is accountable to the owners of the business of the overall management. It is also described as the policy making group responsible for the overall direction and success of all company activities. The important functions of top management include :

To establish the objectives or goals of the enterprise.

To make policies and frame plans to attain the objectives laid.

To set up an organizational frame work to conduct the operations as per plans.

To assemble the resources of money, men, materials, machines and methods to put the plans into action.

To exercise effective control of the operations.

To provide overall leadership to the enterprise.

Middle management : The job of middle management is to implement the policies and plans framed by the top management. It serves as an essential link between the top management and the lower level or operative management. They are responsible to the top management for the functioning of their departments. They devote more time on the organization and motivation functions of management. They provide the guidance and the structure for a purposeful enterprise. Without them the top management's plans and ambitious expectations will not be fruitfully realized. The following are the main functions of middle management :

To interpret the policies chalked out by top management.

To prepare the organizational set up in their own departments for fulfilling the objectives implied in various business policies.

To recruit and select suitable operative and supervisory staff.

To assign activities, duties and responsibilities for timely implementation of the plans.

To compile all the instructions and issue them to supervisor under their control.

To motivate personnel to attain higher productivity and to reward them properly.

To cooperate with the other departments for ensuring a smooth functioning of the entire organization.

To collect reports and information on performance in their departments.

To report to top management

To make suitable recommendations to the top management for the better execution of plans and policies.

Lower or operative management: It is placed at the bottom of the hierarchy of management, and actual operations are the responsibility of this level of management. It consists of foreman, supervisors, sales officers, accounts officers and so on. They are in direct touch with the rank and file or workers. Their authority and responsibility is limited. They pass on the instructions of the middle management to workers.

They interpret and divide the plans of the management into short-range operating plans. They are also involved in the process of decisions-making. They have to get the work done through the workers. They allot various jobs to the workers, evaluate their performance and report to the middle level management. They are more concerned with direction and control functions of management. They devote more time in the supervision of the workers.

1.8 MANAGERIAL SKILLS

A skill is an individual's ability to translate knowledge into action. Hence, it is manifested in an individual's performance. Skill is not necessarily inborn. It can be developed through practice and through relating learning to one's own personal experience and background. In order to be able to successfully discharge his roles, a manager should possess three major skills. These are conceptual skill, human relations skill and technical skill. Conceptual skill deals with ideas, technical skill with things and human skill with people. While both conceptual and technical skills are needed for good decision-making, human skill in necessary for a good leader.

The *conceptual skill* refers to the ability of a manager to take a broad and farsighted view of the organization and its future, his ability to think in abstract, his ability to analyze the forces working in a situation, his creative and innovative ability and his ability to assess the environment and the changes taking place in it. It short, it is his ability to conceptualize the environment, the organization, and his own job, so that he can set appropriate goals for his organization, for himself and for his team. This skill seems to increase in importance as manager moves up to higher positions of responsibility in the organization.

The *technical skill* is the manager's understanding of the nature of job that people under him have to perform. It refers to a person's knowledge and proficiency in any type of process or technique. In a production department this would mean an understanding of the technicalities of the process of production. Whereas this type of skill and competence seems to be more important at the lower levels of management, its relative importance as a part of the managerial role diminishes as the manager moves to higher positions. In higher functional positions, such as the position of a marketing manager or production manager, the conceptual component, related to these functional areas becomes more important and the technical component becomes less important.

Human relations skill is the ability to interact effectively with people at all levels. This skill develops in the manager sufficient ability (a) to recognize the feelings and sentiments of others; (b) to judge the possible actions to, and outcomes of various courses of action he may undertake; and (c) to examine his own concepts and values which may enable him to develop more useful attitudes about himself. This type of skill remains consistently important for managers at all levels.

Table-2 gives an idea about the required change in the skill-mix of a manager with the change in his level. At the top level, technical skill becomes least important. That is why, people at the top shift with great ease from one industry to another without an apparent fall in their efficiency. Their human and conceptual skills seem to make up for their unfamiliarity with the new job's technical aspects.

Tables-2 : Skill-mix of different management levels

Top Management → Conceptual Skills

Middle Management → Human Relations Skills

Low Management → Technical Skills

1.9 THE MANAGER AND HIS JOB

Management performs the functions of planning, organizing, staffing, directing and controlling for the accomplishment of organizational goals. Any person who performs these functions is a manager. The first line manager or supervisor or foreman is also a manager because he performs these functions. The difference between the functions of top, middle and lowest level management is that of degree. For instance, top management concentrates more on long-range planning and organization, middle level management concentrates more on coordination and control and lowest level management concentrates more on direction function to get the things done from the workers.

Every manager is concerned with ideas, things and people. Management is a creative process for integrating the use of resources to accomplish certain goals. In this process, ideas, things and people are vital inputs which are to be transformed into output consistent with the goals.

Management of ideas implies use of conceptual skills. It has three connotations. *First*, it refers to the need for practical philosophy of management to regard management as a distinct and scientific process. *Second*, management of ideas refers to the planning phase of management process. *Lastly*, management of ideas refers to distinction and innovation. Creativity refers to generation of new ideas, and innovation refers to transforming ideas into viable relations and utilities. A manager must be imaginative to plan ahead and to create new Ideas.

Management of things (non-human resources) deal with the design of production system, and acquisition, allocation and conversion of physical resources to achieve certain goals. Management of people is concerned with procurement, development, maintenance and integration of human resources in the organization. Every manager has to direct his subordinates to put the organizational plans into practice.

The greater part of every manager's time is spent in communicating and dealing with people. His efforts are directed towards obtaining information and evaluating progress towards objectives set by him and then taking corrective action. Thus, a manager's job primarily consists of management of people. Though it is his duty to handle all the productive resources, but human factor is more important. A manager cannot convert the raw materials into finished products himself; he has to take the help of others to do this. The greatest problem before any manager is how to manage the personnel to get the best possible results. The manager in the present age has to deal efficiently with the people who are to contribute for the achievement of organizational goals.

Peter F. Drucker has advocated that the managerial approach to handle workers and work should be pragmatic and dynamic. Every job should be designed as an integrated set of operations. The workers should be given a sufficient measure of freedom to organize and control their work environment. It is the duty of every manager to educate, train and develop people below him so that they may use their potentialities and abilities to perform the work allotted to them. He has also to help them in satisfying their needs and working under him, he must provide them with proper environment. A manager must create a climate which brings in and maintains satisfaction and discipline among the people. This will increase organizational effectiveness.

Recently, it has been questioned whether planning, organizing, directing and controlling provides an adequate description of the management process. After an intensive observation of what five top executive actually did during the course of a few days at work, Henry Mintzberg concluded that these labels do not adequately capture the reality of what managers do. He suggested instead that the manager should be regarded as playing some ten different roles, in no particular order.

Role Performed by Managers

Interpersonal Roles

Figurehead : In this role, every manager has to perform some duties of a ceremonial nature, such as greeting the touring dignitaries, attending the wedding of an employee, taking an important customer to lunch and so on.

Leader : As a leader, every manager must motivate and encourage his employees. He must also try to reconcile their individual needs with the goals of the organization.

Liaison : In this role of liaison, every manager must cultivate contacts outside his vertical chain of command to collect information useful for his organization.

Informational Roles

Monitor : As monitor, the manager has to perpetually scan his environment for information, interrogate his liaison contacts and his subordinates, and receive unsolicited information, much of it as result of the network of personal contacts he has developed.

Disseminator: In the role of a disseminator, the manager passes some of his privileged information directly to his subordinates who would otherwise have no access to it.

Spokesman : In this role, the manager informs and satisfies various groups and people who influence his organization. Thus, he advises shareholders about financial performance, assures consumer groups that the organization is fulfilling its social responsibilities and satisfies government that the origination is abiding by the law.

Decisional Roles

Entrepreneur : In this role, the manager constantly looks out for new ideas and seeks to improve his unit by adapting it to changing conditions in the environment.

Disturbance Handler : In this role, the manager has to work like a fire fighter. He must seek solutions of various unanticipated problems – a strike may loom large a major customer may go bankrupt; a supplier may renege on his contract, and so on.

Resource Allocator : In this role, the manager must divide work and delegate authority among his subordinates. He must decide who will get what.

Negotiator : The manager has to spend considerable time in negotiations. Thus, the chairman of a company may negotiate with the union leaders a new strike issue, the foreman may negotiate with the workers a grievance problem, and so on.

In addition, managers in any organization work with each other to establish the organization's long-range goals and to plan how to achieve them. They also work together to provide one another with the accurate information needed to perform tasks. Thus, managers act as channels of communication with the organization.

Characteristics of Professional Managers

Managers are responsible and accountable : Managers are responsible for seeing that specific tasks are done successfully. They are usually evaluated on how well they arrange for these tasks to the accomplished. Managers are responsible for the actions of their subordinates. The success or failure of subordinates is a direct reflection of managers' success or failure. All members of an organization, including those who are not managers, are responsible for their particular tasks. The difference is that managers are held responsible, or accountable, not only for their own work, but also for the work of subordinates.

Managers balance competing goals and set priorities : At any given time, the manager faces a number of organizational goals, problems and needs all of which compete for the manager's time and resources (both human and material). Because such resources are always limited, the manager must strike a balance between the various goals and needs. Many managers, for example, arrange each day's tasks in order of priority the most important things are done right away, while the less important tasks are looked at later. In this way, managerial time is used effectively.

A manager must also decide who is to perform a particular task and must assign work to an appropriate person. Although ideally each person should be given the task he would most like to do, this is not always possible. Sometimes individual ability is the decisive factor, and a task is assigned to the person most able to accomplish it. But sometimes a less capable worker is assigned a task as a learning experience. And, at times, limited human or other resources dictate decisions for making work assignments. Managers are often caught between conflicting human and organizational needs and so they must identify priorities.

Managers think analytically and conceptually : To be an analytical thinker, a manager must be able to break a problem down into its components, analyze those components and then come up with a feasible solution. But even more important, a manager must be a conceptual thinker, able to view the entire task in the abstract and relate it to other tasks. Thinking about a particular task in relation to its larger implications is no simple matter. But it is essential if the manager is to work towards the goals of the organization as a whole as well as towards the goals of an individual unit.

Managers are mediators : Organizations are made up of people, and people disagree or quarrel quite often. Disputes within a unit or organization can lower morale and productivity, and they may become so unpleasant or disruptive that competent employees decide to leave the organization. Such occurrences hinder work towards the goals of the unit or organization; therefore, managers must at times take on the role of mediator and iron out disputes before they get out of hand. Setting conflicts requires skill and tact. Managers who are careless in their handling conflicts may later on find that they have only made matters worse.

Managers make difficult decisions : No organization runs smoothly all the time. There is almost no limit to the number and types of problems that may occur : financial difficulties, problems with employees, or differences of opinion concerning an organization policy, to name just a few. Managers are expected to come up with solutions to difficult problems and to follow through on their decisions even when doing so may be unpopular.

This description of these managerial roles and responsibilities shows that managers must 'change hats' frequently and must be alert to the particular role needed at a given time. The ability to recognize the appropriate role to be played and to change roles readily is a mark of an effective manager.

1.10 PRINCIPLES OF MANAGEMENT

A body of principles of management has been developed by Henri Fayol, the father of modern management. Fayol wrote perceptibly on the basis of his practical experience as a manager. Although, he did not develop an integrated theory of management, his principles are surprisingly in tune with contemporary thinking in management theory.

Fayol held that there is a single "administrative science", whose principles can be used in all management situations no matter what kind of organization was being managed. This earned him the title of "Universality". He, however, emphasized that his principles were not immutable laws but rules of thumb to be used as occasion demanded.

Fayol held that activities of an industrial enterprise can be grouped in six categories : (i) technical (production), (ii) commercial (buying, selling and exchange), (iii) financial (search for and optimum use of capital), (iv) security (protection of property and persons), (v) accounting (including statistics); and (vi) managerial. However, he devoted most of his attention to managerial activity. He developed the following principles underlying management of all kinds of organizations :

Authority and Responsibility are Related : Fayol held that authority flows from responsibility. Managers who exercise authority over others should assume responsibility for decisions as well as for results. He regarded authority as a corollary to responsibility. Authority is official as well as personal. Official authority is derived from the manager's position in organizational hierarchy and personal authority is compounded of intelligence, experience, moral worth, past services, etc.

A corollary of the principle that no manager should be given authority unless he assumes responsibility is that those who have responsibility should also have commensurate authority in order to enable them to initiate action on others and command resources required for the performance of their functions. This aspect of relationship between responsibility and authority is particularly relevant in India where authority tends to be concentrated in higher echelons of management.

Unity of Command : This principle holds that one employee should have only one boss and receive instructions from him only. Fayol observed that if this principle is violated authority will be undermined, discipline will be jeopardy, order will be disturbed and stability will be threatened. Dual command is a permanent source of conflict. Therefore, in every organization, each subordinate should have one superior whose command he has to obey.

Unity of Direction : This means that all managerial and operational activities which relate a distinct group with the same objective should be directed by "one head and one plan. According to Fayol, there should be, "one head and one plan for a group of activities having the same objective". It, however, does not mean that all decisions should be made at the top. It only means that all related activities should be directed by one person. For example, all marketing activities like product strategy and policy, advertising and sales promotion, distribution channel policy, product pricing policy, marketing research, etc., should be under the control of one manager and directed by an integrated plan. This is essential for the "unity of action, coordination of strength and focusing of effort". Violation of this principle will cause fragmentation of action and effort, and wastage of resources.

Scalar Chain of Command : According to Fayol scalar chain is the chain of superiors ranging from the ultimate authority to the lowest ranks. The line of authority is the route followed via every link in the chain by all communication which start from or go to the ultimate authority.

Division of Work : This is the principle of specialization which, according to Fayol, applies to all kinds of work, managerial as well as technical. It helps a person to acquire an ability and accuracy with which he can do more and better work with the same effort. Therefore, the work of every person in the organization should be limited as far as possible to the performance of a single leading function.

Discipline : Discipline is a *sine qua non* for the proper functioning of an organization. Members of an organization are required to perform their functions and conduct themselves in relation to others according to rules, norms and customs. According to Fayol, discipline can best be maintained by : (i) having good superiors at all levels; (ii) agreements (made either with the individual employees or with a union as the case may be) that are as clear and fair as possible; and (iii) penalties judiciously imposed.

Subordination of Individual Interest to General Interest : The interest of the organization is above the interests of the individual and the group. It can be achieved only when managers in high positions in the organization set an example of honesty, integrity, fairness and justice. It will involve an attitude and a spirit of sacrificing their own personal interests whenever it becomes apparent that such personal interests are in conflict with organizational interests. It may, however, be emphasized that social and national interests should have precedence over organizational interests whenever the two run counter to each other.

Remuneration : Employees should be paid fairly and equitably. Differentials in remuneration should be based on job differentials, in terms of qualities of the employee, application, responsibility, working conditions and difficulty of the job. It should also take into account factors like cost of living, general economic conditions, demand for labour and economic state of the business.

Centralisation : Fayol believed in centralisation. He, however, did not contemplate concentration of all decision making authority in the top management. He, however, held that centralisation and decentralisation is a question of proportion. In a small firm with a limited number of employees, the owner-manager can give orders directly to everyone. In large organizations, however, where the worker is separated from the chief executive through a long scalar chain, the decision making authority has to be distributed among various managers in varying degrees. Here one generally comes across a situation of decentralisation with centralised control. The degree of centralisation and decentralisation also depends on the quality of managers.

Order : Order, in the conception of Fayol, means right person on the right job and everything in its proper place. This kind of order, depends on precise knowledge of human requirements and resources of the concern and a constant balance between these requirements and resources.

Equity : It means that subordinates should be treated with justice and kindliness. This is essential for eliciting their devotion and loyalty to the enterprise. It is, therefore the duty of the chief executive to instill a sense of equity throughout all levels of scalar chain.

Stability of Tenure of Personnel : The managerial policies should provide a sense of reasonable job security. The hiring and firing of personnel should depend not on the whims of the superiors but on the well-conceived personnel policies. He points out that it takes time for an employee to learn his job; if they quit or are discharged within a short time, the learning time has been wasted. At the same time those found unsuitable should be removed and those who are found to be competent should be promoted. However, "a mediorce manager who stays is infinitely preferable to outstanding managers who come and go".

Initiative : It focuses on the ability, attitude and resourcefulness to act without prompting from others. Managers must create an environment which encourages their subordinates to take initiative and responsibility. Since it provides a sense of great satisfaction to intelligent employees, managers should sacrifice their personal vanity in order to encourage their subordinates to show initiative. It should, however, be limited, according to Fayol, by respect for authority and discipline.

Esprit de Corps : Cohesiveness and team spirit should be encouraged among employees. It is one of the chief characteristics of organized activity that a number of people work together in close coopearation for the achievement of common goals. An environment should be created in the organization which will induce people to contribute to each other's efforts in such a way that the combined effort of all together promotes the achievement of the overall objectives of enterprise. Fayol warns against two enemies of *esprit de corps*, viz. (i) divide and rule, and (ii) abuse of written communication. It may work to the benefit of the enterprise to divide its enemy but it will surely be dangerous to divide one's own workers. They should rather be welded in cohesive and highly interacting work-groups. Overreliance on written communication also tends to disrupt team spirit. Written communication, where necessary, should always be supplemented by oral communication because face-to-face contacts tend to promote speed, clarity and harmony.

The other important principles of management as developed by pioneer thinkers on the subject are :

Separation of planning and execution of business operations.

Scientific approach to business problems.

Adoption of technological changes.

Economizing production costs and avoiding the wastage of resources.

Fuller utilization of the operational capacity and emphasis on higher productivity.

Standardisation of tools, machines, materials, methods, timings and products.

Evaluation of results according to criteria of standard levels of performance.

Understanding and co-operation among the members of the organization set-up.

1.11 SIGNIFICANCE OF MANAGEMENT

Management is concerned with acquiring maximum prosperity with a minimum effort. Management is essential wherever group efforts are required to be directed towards achievement of common goals. In this management conscious age, the significance of management can hardly be over emphasized. It is said that, anything minus management amounts to nothing. Koontz and O' Donnel have rightly observed "there is no more important area of human activity than management since its task is that of getting things done through others."

The significance of management in business activities is relatively greater. The inputs of labour, capital and raw material never become productive without the catalyst of management. It is now widely recognized that management is an important factor of growth of any country. The following points further highlight the significance of management :

Achievements of group goals : Management makes group efforts more effective. The group as a whole cannot realise its objectives unless and until there is mutual co-operation and co-ordination among the members of the group. Management creates team work and team spirit in an organization by developing a sound organization structure. It brings the human and material resources together and motivates the people for the achievement of the goals of the organization.

Optimum utilization of resources : Management always concentrates on achieving the objectives of the enterprise. The available resources of production are put to use in such a way that all sort of wastage and inefficiencies are reduced to a minimum. Workers are motivated to put in their best performance by the inspiring leadership. Managers create and maintain an environment conducive to highest efficiency and performance. Through the optimum use of available resources, management accelerates the process of economic growth.

Minimisation of cost : In the modern era of intense competition, every business enterprise must minimise the cost of production and distribution. Only those concerns can survive in the market, which can produce goods of better quality at the minimum cost. A study of the principles of management helps in knowing certain techniques used for reducing costs. These techniques are production control, budgetary control, cost control, financial control, material control, etc.

Change and growth : A business enterprise operates in a constantly changing environment. Changes in business environment create uncertainties and risk and also produce opportunities for growth. An enterprise has to change and adjust itself in the everchanging environment. Sound management moulds not only the enterprise but also alters the environment itself to ensure the success of the business. Many of the giant business corporations of today had a humble beginning and grew continuously through effective management.

Efficient and smooth running of business : Management ensures efficient and smooth running of business, through better planning, sound organization and effective control of the various factors of production.

Higher profits : Profits can be enhanced in any enterprise either by increasing the sales revenue or reducing costs. To increase the sales revenue is beyond the control of an enterprise. Management by decreasing costs increases its profits and thus provides opportunities for future growth and development.

Provide innovation : Management gives new ideas, imagination and visions to an enterprise.

Social benefits : Management is useful not only to the business firms but to the society as a whole. It improves the standard of living of the people through higher production and more efficient use of scarce resources. By establishing cordial relations between different social groups, management promotes peace and prosperity in society.

Useful for developing countries : Management has to play a more important role in developing countries, like India. In such countries, the productivity is low and the resources are limited. It has been rightly observed, "There are no under-developed countries. They are only under-managed ones".

Sound organization structure : Management establishes proper organization structure and avoids conflict between the superiors and subordinates. This helps in the development of spirit of cooperation and mutual understanding, and a congenial environment is provided in the organization.

1.12 SUMMARY

Management is the force that unifies various resources and is the process of bringing them together and coordinating them to help accomplish organization goal. Management is both, a science as well as art. It is an inexact science. However, its principles as distinguished from practice are of universal application. Management does not yet completely fulfill all the criteria of a profession. There are three levels of management - top, middle and lower. Managers at different levels of the organization require and use different types of skills. Lower level managers require and use a greater degree of technical skill than high level managers, while higher level managers require and use a greater degree of conceptual skill. Human skills are important at all managerial levels.

1.13 SELF ASSESSMENT QUESTIONS

"There is no important area of human activity than management since its task is that of getting things done through people". Discuss.

"Management is both a science and an art". Discuss this statement, giving suitable examples.

Define Management. How does it differ from Administration?

What do you understand by the term "Levels of Management"? Explain with reference to an organization with which you are familiar.

Briefly discuss the nature and scope of Management.

What are the functions of a Manager? Is mere knowledge of Management enough to become successful manager?

Discuss basic principles of Management along with their significance.

Discuss and illustrate the meaning, definition and characteristics of management in modern organizations.

What is Management? Explain the principles of management with suitable illustrations.

1.14 FURTHER READINGS

Kootnz & O'Donnell, Principles of Management.

J.S. Chandan, Management Concepts and Strategies.

Arun Kumar and R. Sharma, Principles of Business Management.

Sherlerkar and Sherlerkar, Principles of Management

B.P. Singh, Business Management and Organizations

EVOLUTION OF MANAGEMENT THOUGHTS

2.1 INTRODUCTION

Organized endeavors, directed by people, responsible for planning, organizing, leading and controlling activities have been in existence for thousands of years. Management has been practiced in some form or the other since the dawn of civilization. Ever since human beings started living together in groups, techniques of organization and management were evolved. The Egyptian pyramids, the Chinese Civil Service, The Roman Catholic Church, the military organizations and the Great Wall of China, for instance, are tangible evidence that projects of tremendous scope, employing tens of thousands of people, were undertaken well before the modern times.

The pyramids are particularly interesting examples. The construction of a single pyramid occupied more than 1,00,000 workers for 20 years. Who told each worker that what did one do? Who ensured that there would be enough stones at the site to keep the workers busy? The answer is Managers, regardless of what managers were called at that time. He had to plan what was to be done, organize people and material to do it, lead and direct the workers, and impose some controls to ensure that everything was done as planned. This example from the past demonstrates that organizations have been around for thousands of years and that management has been practices for an equivalent period. However, two pre-twentieth-century events played significant roles in promoting the study of management. First is Adam Smith's contribution in the field of management and second is influence of Industrial Revolution in management practice.

Adam Smith's name is typically cited in field of economics for his contribution to classical economic doctrine, but his contribution in Wealth of Nations (1776) outlined the economic advantage that organization and society can gain from the *division of labor*. He used the pin-manufacturing industry for his example. Smith noted that 10 individuals, each doing a specialized task, could produce about 4800 pins a day. However, if each worked separately and had to perform each task, it would be quite an accomplishment to produce even 10 pins a day. Smith concluded that division of labor increased productivity by increasing each worker's skill and dexterity, by saving time lost in changing tasks, and by creating labor-saving inventions and machinery.

Industrial Revolution is another most important aspect that influences management in pre-twentieth century. The major contribution of the industrial revolution was the substitution of machine power for human power, which in turn, made it more economical to manufacture goods in factories. The advent of machine power, mass production, the reduced transportation costs that followed a rapid expansion of the railroads and lack of governmental regulation also fostered the development of big organization.

Now, a formal theory to guide managers in running their organization was needed. However, it was not until the early 1900s that the first major step toward developing such a theory was taken. The periods of evaluation of management thoughts are highlighted in the *Table-2.1*:

TABLE-2.1 EVOLUTION OF MANAGEMENT THOUGHTS

MANAGEMENT THOUGHTS	PERIOD
• Early Contributions	Upto 19th century
• Scientific Management	1900-1930
• Administrative/operational management	1916-1940
• Human relations approach	1930-1950
• Social systems approach	1940-1950
• Decision theory approach	1945-1965
• Management science approach	1950-1960
• Human behavior approach	1950-1970
• Systems approach	1960s onwards
• Contingency approach	1970s onwards

Thus, management has been recognized and identified as a distinctive branch of academic discipline in the twentieth century.

2.2 FORCES BACKING MANAGEMENT THOUGHTS

Management thoughts have took birth/evolved under the anxiety of political, social and economic forces. These are explained as follows:

***Political Forces*:** Management thoughts have been shaped by the political forces manifested through the administration of political institutions and government agencies. The important political forces includes the political assumptions with respect to property rights, contractual rights, concepts of justice, judicial processes and attitudes towards governmental control versus laissez-faire. Legal processes which emanate from political pressures, such as the Union Carbide disaster in Bhopal, have a tremendous impact on management thinking and practice. Political pressures also define the interrelated rights of consumers, suppliers, labour, owners, creditors and different segments of public.

***Social Forces*:** These evolve from the values and beliefs of a particular culture of people. The needs, education, religion and norms of human behaviour dictate the relations among people, which form social contracts. *Social contracts*, is that unwritten but understood set of rules that govern the behaviour of the people in their day-to-day interrelationships. The same happens between corporations and their constituents- labour, investors, creditors, suppliers and consumers. These social contracts defined relationships, responsibilities and liabilities that influence the development of management thoughts. It gives the society a sense of order and trust in which human affairs can be conducted in relative security and confidence.

***Economic Forces*:** These forces determine the scarcity, transformation and distribution of goods and services in a society. Every social institution competes for a limited amount of human, financial, physical and information resources. This competition over scarce resources allocates them to their most profitable use and is the motivator of technological innovation by which resource availability can be maximized.

2.3 A FRAMEWORK FOR THE MANAGEMENT THOUGHTS

In the past, the business houses, particularly corporates, did not have a high academic stature and position in the society and it certainly compelled the scholars inculcate the academic interest in the study of business management so that its real fruits could be realized for the stakeholders under reference. There was a widespread belief that management process consisted of hidden tricks, mysterious clues and intuitive knowledge that could be mastered only by a few divinely gifted people. Moreover, the businessmen were very much afraid that through the study of management their tricks and secrets would be exposed.

But the advent of industrial revolution and the introduction of large scale mechanized production and the resultant growth of trade, industry and commerce necessitated the study of management. The evolution of management thoughts might be better approached through the framework as depicted in *Figure-2.1*. In the beginning there were two classical schools of management thoughts. These were- the scientific management school and the organizational school. Later on, behavioural school and the quantitative school came into existence. These four schools merged into integration school which led to the contemporary school of management thoughts.

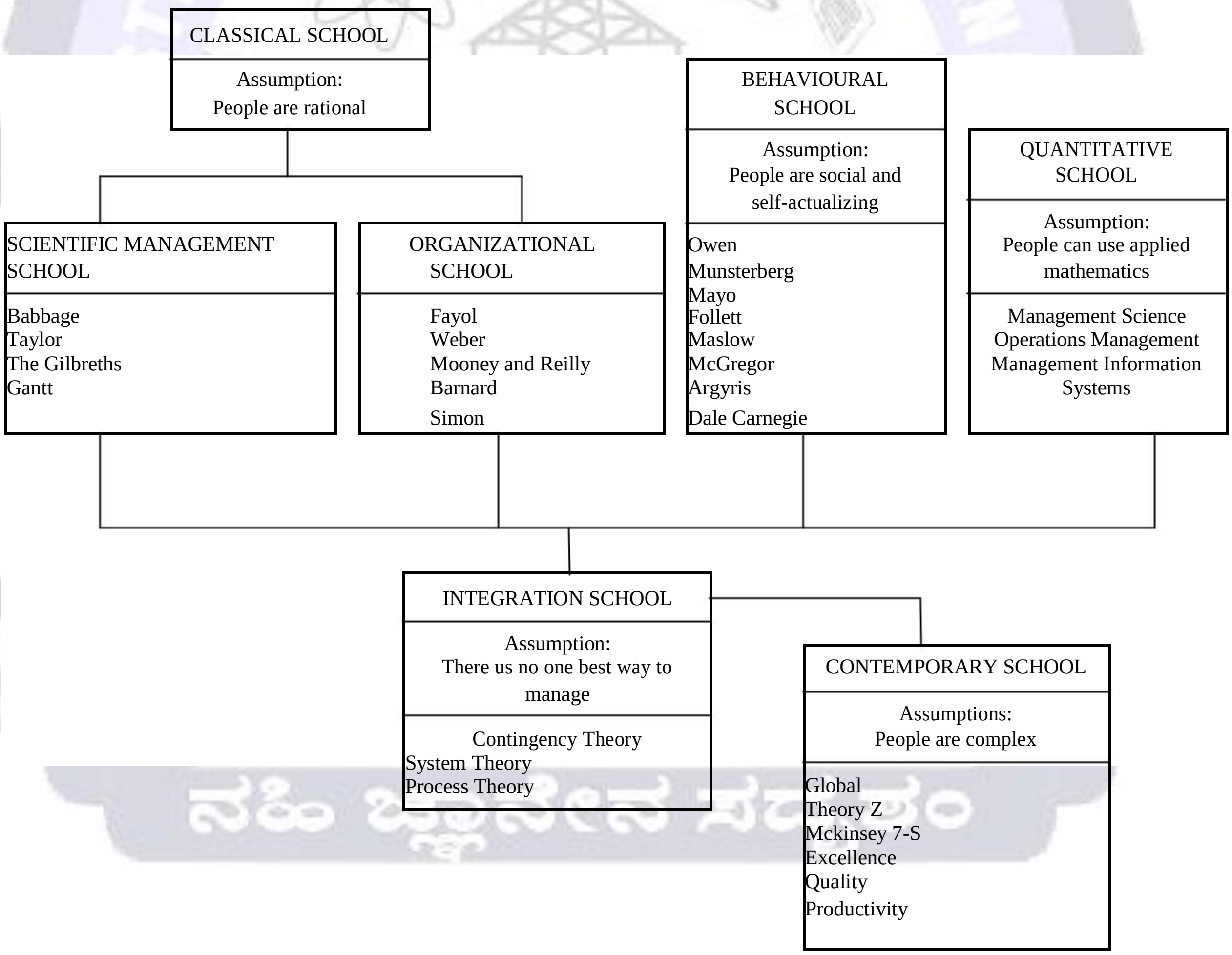


Figure- 2. 1 FRAMEWORK FOR THE MANAGEMENT THOUGHTS

Among the people who were in search of management principles, techniques and processes, a few emerged as outstanding pioneers. These are- Urwick and Brech, Boulton and Watt, Robert Owen, Charles Babbage, Oliver Sheldon, Lyndall Urwick, Herbert A. Simon, Frederick Winslow Taylor, H.S. Person, Henry L. Gantt, Frank Gilbreth, Harrington Emerson, H.P. Kendall, C.B. Barth, F.A. Halsey, Henri Dennison, Mooney and Reiley, Chester I. Barnard, Elton Mayo, F.J. Roethlisberger and T.N.Whitehead, Mary Parker Follett and Henry Fayol etc.

2.4 CONTRIBUTION OF LEADING THINKERS

Classical School: The classical development of management thoughts can be divided into- the scientific management, the organizational management, the behavioural management and the quantitative management. The first two (scientific management school and organizational) emerged in late 1800s and early 1900s were based on the management belief that people were rational, economic creatures choose a course of action that provide the greatest economic gain. These schools of management thoughts are explained as below:

Scientific Management School: Scientific management means application of the scientific methods to the problem of management. It conducts a business or affairs by standards established by facts or truth gained through systematic observation, experiments, or reasoning. The followings individuals contribute in development of scientific management school of management thoughts. They dedicated to the increase in efficiency of labour by the management of the workers in the organization's technical core. They are:

Charles Babbage (1792-1871): He was professor of mathematics at Cambridge University from 1828 to 1839. He concentrated on developing the efficiencies of labour production. He, like Adam Smith, was a proponent of the specialization of labour, and he applied mathematics to the efficient use of both production

materials and facilities. He wrote nine books and over 70 papers on mathematics, science and philosophy. He advocated that the managers should conduct time studies data to establish work standards for anticipated work performance levels and to reward the workers with bonuses to the extent by which they exceed their standards. His best known book is 'On the Economy of Machinary and Manufacturers' published in 1832. He visited many factories in England and France and he found that manufacturers were totally unscientific and most of their work is guess work. He perceived that methods of science and mathematics could be applied to the operations of factories. His main contributions are as follows:

He stressed the importance of division of and assignment to labour on the basis of skill.

He recommended profit-sharing programs in an effort to foster harmonious management-labour relations.

He stressed the means of determining the feasibility of replacing manual operations with machines.

Fredrick W. Taylor (1856-1915): He is known as 'father of scientific management'. His ideas about management grew out of his wide-ranging experience in three companies: Midvale Steel Works, Simonds Rolling Mills and Bethlehem Steel Co.

TABLE-2.2 TAYLOR'S FOUR PRINCIPLES OF SCIENTIFIC MANAGEMENT

Taylor's Principle	**Related Management Activity**
1. Develop a science for each job with standardized work implements and efficient methods for all to follow.	Complete time-and-motion study to determine the best way to do each task.
2. Scientifically select workers with skills and abilities that match each job, and train them in the most efficient ways to accomplish tasks.	Use job descriptions to select employees, set up formal training systems, and establish optimal work standards to follow.
3. Ensure cooperation through incentives and provide the work environment that reinforces optimal work results in a scientific manner.	Develop incentive pay, such as piece-rate system, to reward productivity, and encourage safe condition by using proper implements.

As an engineer and consultant, Taylor observed and reported on what he found to be inexcusably inefficient work practices, especially in the steel industry. Taylor believed that workers output was only about one-third of what was possible. Therefore, he set out to correct the situation by applying scientific methods. Taylor's philosophy and ideas are given in his book, 'Principles of Scientific Management' published in 1911. Taylor gave the following principles of scientific management. These are outlined in Table- 2.2:

Taylor concluded that scientific management involves a completer mental revolution on the part of both workers and management, without this mental revolution scientific management does not exist.

Henry Gantt (1861-1919): He was a consulting engineer who specialized in control system for shop scheduling. He sought to increase workers efficiency through scientific investigation. He developed the *Gantt Chart* (Figure-2.2) that provides a graphic representation of the flow of the work required to complete a given task. The chart represents each planned stage of work, showing both scheduled times and actual times. Gantt Charts were used by managers as a scheduling device for planning and controlling work. Gantt devised an incentive system that gave workers a bonus for completing their job in less time than the allowed standards. His bonus systems were similar to the modern *gain sharing* techniques whereby employees are motivated to higher levels of performance by the potential of sharing in the profit generated. In doing so, Gantt expanded the scope of scientific management to encompass the work of managers as well as that of operatives.

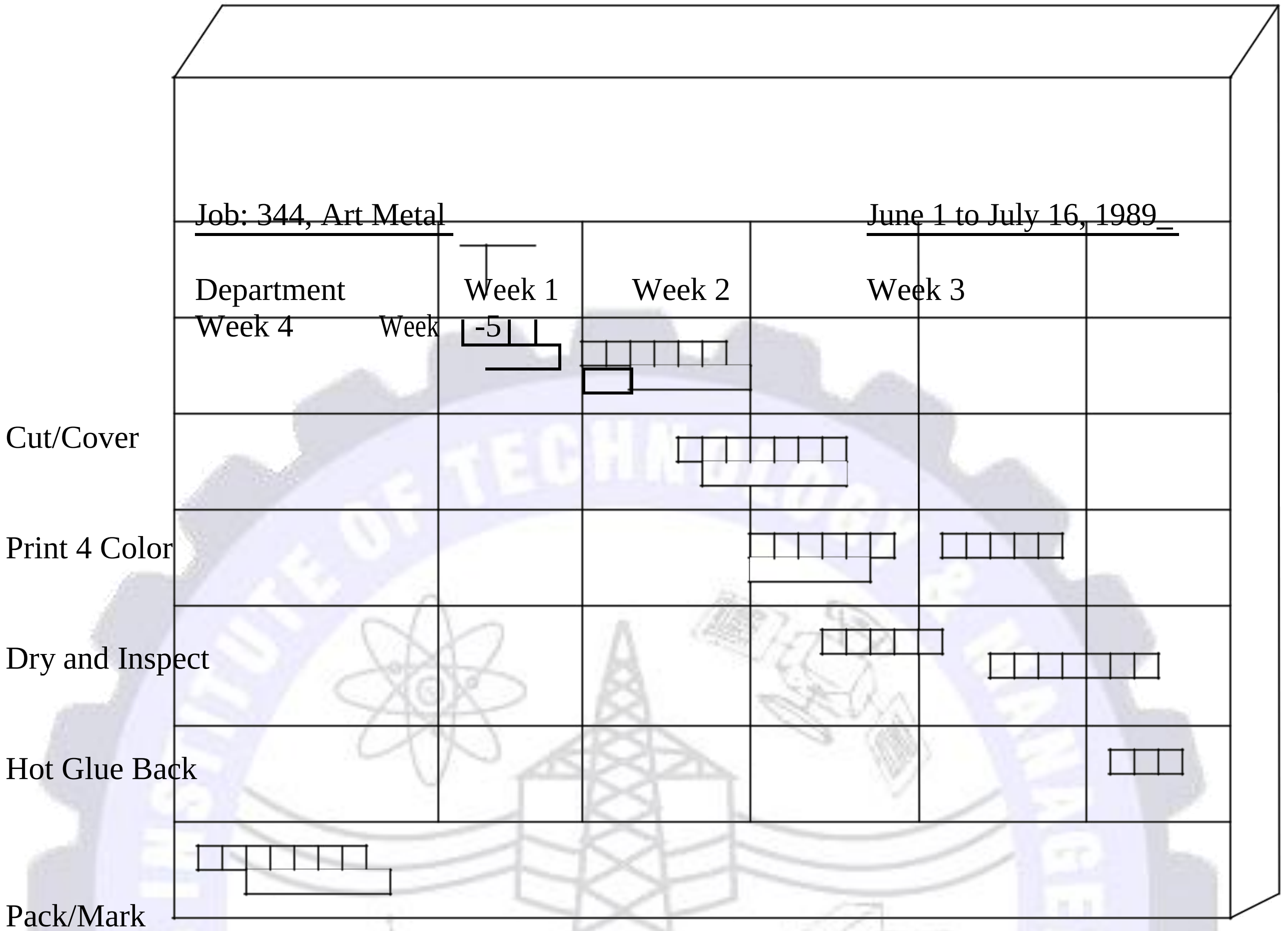


FIGURE-2.2 GANTT CHART FOR BOOK BINDERY

IV. **Frank (1868-1924) and Lillian (1878-1972) Gilbreth**: Frank Gilbreth, a construction contractor by back ground, gave up his contracting career in 1912 to study scientific management after hearing Taylor's speak at a professional meeting. Along with his wife Lillian, a psychologist, he studied work arrangements to eliminate wasteful hand-body-motion. Frank specialized in research that had a dramatic impact on medical surgery and, through his time and motion findings, surgeons saved many lives. Lillian is known as 'first lady of management' and devoted most of her research to the human side of management. Frank Gilbreth is probably best known for his experiments in reducing the number of motions in bricklaying.

The man and wife team developed a classification scheme for the various motions (17 basic hand motions) used to complete a job referring a motion as a *therblig*.

Their classification design covered such motions as grasping, moving, and holding. This scheme allowed him to more precisely analyze the exact elements of worker's hand movements. Their scientific motion scheme noted the relationship between types and frequencies of motions and the creation of workers fatigue, identifying that unnecessary or awkward motions were a waste of workers energy. By eliminating inappropriate motions and focusing on appropriate motion, the Gilbreth methodology reduces work fatigue and improves workers performance.

Gilbreth were among the first to use motion pictures films to study hand-and-body motions. They devised a micro chronometer that recorded time to 1/2,000 of a second, placed it in the field of the study being photographed and thus determined how long a worker spent enacting each motion. Wasted motions missed by the naked eyes could be identified and eliminated. Gilbreths also experimented with the design and use of the proper tools and equipments for optimizing work performance.

Organizational School: The organizational school of management placed emphasis on the development of management principles for managing the complete organization. The contributors of organizational schools are:

Henri Fayol (1841-1925): was a Frenchman with considerable executive experience who focused his research on the things that managers do. He wrote during the same period Taylor did. Taylor was a scientist and he was managing director of a large French coal-mining firm. He was the first to envisage a functional process approach to the practice of management. His was a functional approach because it defined the functions that must be performed by managers. It was also a process approach because he conceptualized the managerial job in a series of stages such as planning, organizing and controlling. According to Fayol, all managerial tasks could be classified into one of the following six groups:

Technical (related to production);

Commercial (buying, selling and exchange);

Financial (search for capital and its optimum use);

Security (protection for property and person);

Accounting (recording and taking stock of costs, profits, and liabilities, keeping balance sheets, and compiling statistics);

Managerial (planning, organizing, commanding, coordinating and control);

He pointed out that these activities exist in every organization. He focused his work on the administrative or managerial activities and developed the following definition:

Planning meant developing a course of action that would help the organization achieve its objectives.

Organizing meant mobilizing the employees and other resources of the organization in accordance with the plan.

Commanding meant directing the employees and getting the job done.

Coordinating meant achieving harmony among the various activities.

Controlling meant monitoring performance to ensure that the plan is properly followed.

Max Weber (1864-1920): He was a German sociologist. Writing in the early 1900s, Weber developed a theory of authority structures and described organizational activities on the basis of authority relations. He described an ideal type of organization that he called a bureaucracy, a form of organization characterized by division of labour, a clearly defined hierarchy, detailed rules and regulations, and impersonal relationships. Weber recognized that this ideal bureaucracy didn’t exist in reality. He used it as a basis for theorizing about work and the way that work could be done in large groups. His theory became the model structural design for many of today’s large organizations. The features of Weber’s ideal bureaucratic structure are outlined in *Figure-*

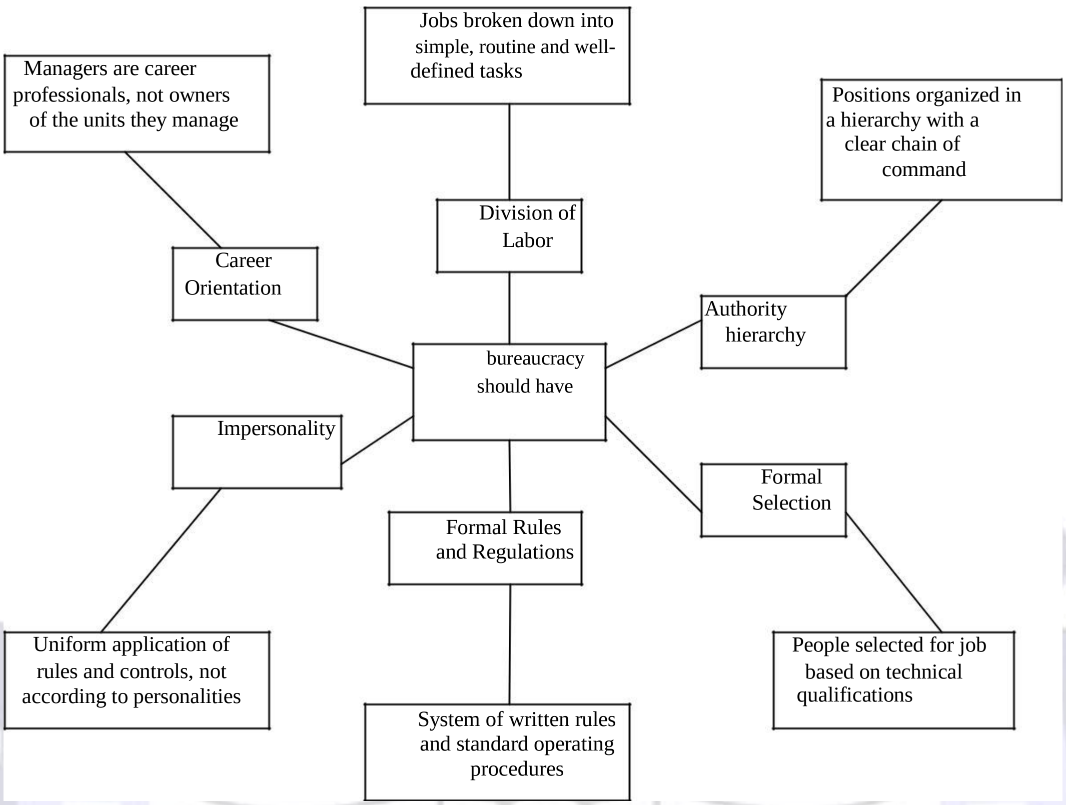


Figure-2.3 WEBER'S IDEAL BUREAUCRACY

The Elements of Bureaucracy are:

Labour is divided with clear definition of authority and responsibility that are legitimatized as official duties.

Positions are organized in a hierarchy of authority, with each position under the authority of a higher one.

All personnel are selected and promoted based on technical qualifications, which are assessed by examination or according to training and experience.

Administrative acts and decisions are recorded in writing. Recordkeeping provides organizational memory and continuity over time.

Management is separate from the ownership of the organization.

Management is subject to rules and procedures that will insure reliable, predictable behaviour. Rules are impersonal and uniformly applied to all employees.

James D. Mooney and Alan C. Reilly: James Mooney was a General Motors executive who teamed-up with historian Alan Reilly to expose the true principles of an organization in their books. They wrote a book 'Onward Industry' in 1931 and later revised and renamed it as 'Principles of Organization' which had greatly influenced the theory and practice of management in USA at that time. They contended that an efficient organization should be based on certain formal principles and premises. They contended that organizations should be studied from two view points:

The employees who create and utilize the process of organization; and

The objective of the process

With respect to first aspect, their contributions to some fundamental principles of organization are:

The Coordination Principle: It was considered to be the single basic principle that actually encompassed the other two principles. They defined coordination as the orderly arrangement of work group effort that provides unity of action in pursuit of common goals.

The Scalar Principle: It was borrowed from the Fayol's work, was the devise for grading duties in accordance with the amount of authority possessed at the different organizational levels.

The Functional Principle: The functional distinction is those unique differences in organizational operations that the manager must perceive in order to effectively integrate and coordinate all the functions of the organization.

In essence, Mooney and Reilley made an attempt to offer a rigid framework of management theory with emphasis on hierarchical structure, clear division and definition of authority and responsibility, specialization of tasks, coordination of activities and utilization of staff experts.

IV Chester Barnard (1886-1961): Chester Barnard, president of Bell Telephone Company, developed theories about the functions of the manager as determined by constant interaction with the environment. Barnard saw organizations as social systems that require human cooperation. He expressed his view in his book *The Function of the Executive*. He proposed ideas that bridged classical and human resource view points. Barnard believes that organizations were made up of people with interacting social relationships. The manager's major functions were to communicate and stimulate subordinates to high level of efforts.

He saw the effectiveness of an organization as being dependent on its ability to achieve cooperative efforts from a number of employees in a total, integrated system. Barnard also argued that success depended on maintaining good relations with the people and institutions with whom the organization regularly interacted. By recognizing the organization's dependence on investors, suppliers, customers, and other external stakeholders, Barnard introduced the idea that managers had to examine the external environment and then adjust the organization to maintain a state of equilibrium. Barnard also developed set of working principles by which organizational communication systems can maintain final authority for the management team. These principles are:

- Channels of communication should be definitely known.
- Objective authority requires a definite formal channel of communication to every members of an organization.
- The line of communication must be as direct or short as possible.
- The complete line of communication should usually be used.
- Competence of the persons serving at communication centers that is officers, supervisory heads, must be adequate.
- The line of communication should not be interrupted during the time the organization is to function.

Herbert A. Simon: Simon, the Noble Laureate in economics (1978), is an American political and social scientist. He started his career in local government. He analyzed the classical principles of management. Due to their ambiguous and contradictory nature, he criticized these principles as 'myths'. He analyzed the problems of management from the socio-psychological view point. But he is best known for his work in the field of decision making and administrative behaviour. He perceived the modern manager as being limited in his knowledge of a problems and the number of alternative available to him is also limited. Thus, the manager is an administrative man, not an economic man, who makes decision amid bounded rationality and selects not the maximizing alternative. Simon's arguments for the administrative man concept of a manager are highlighted in *Table-2.3*:

TABLE-2.3 ECONOMIC MAN AND ADMINISTRATIVE MAN

Economic Man- Full Rationality	**Administrative Man-Bounded Rationality**
1.Economic man maximizes- selects the best alternative from among all those available to him.	Administrative man satisfies- looks for a course of action that is satisfactory or good enough.
2.Economic man deals with the real world in all its complexity. He is rational.	Administrative man recognizes that the world he perceives is a drastically simplified model of the buzzing, blooming confusion that constitute the real world.
3.Rationality requires a complete knowledge and anticipation of the consequences that will follow on each choice.	Knowledge of consequences is always fragmentary. Since these consequences lies in the future, imaginations must supply the lack of experienced feeling.
4.Rationality requires a choice among all possible alternative behaviour.	In actual behaviour only a very few of all possible alternatives ever come to mind.

Behavioural School: The school of behavioural management theory involved in recognition on the importance of human behaviour in organization. The major contributors were *Figure-2.4*:

Robert Owen (1771-1858) was a British industrialist who was the first to speak out on behalf of the organization's human resources. He carried out experiments and introduced many social reforms. He believed that workers' performance was influenced by the total environment in which they worked. He criticized industrialists who spent huge sums of money repairing their production machines, but did little to improve the lot of their human machines. Owen worked for the building up of a spirit of co-operation between the workers and managers. He introduced new ideas of human relations e.g. shorter work hours, housing facilities, education of children, provision of canteen, training of workers in hygiene etc. He suggested that proper treatment of workers pays dividends and is an essential part of every manager's job.

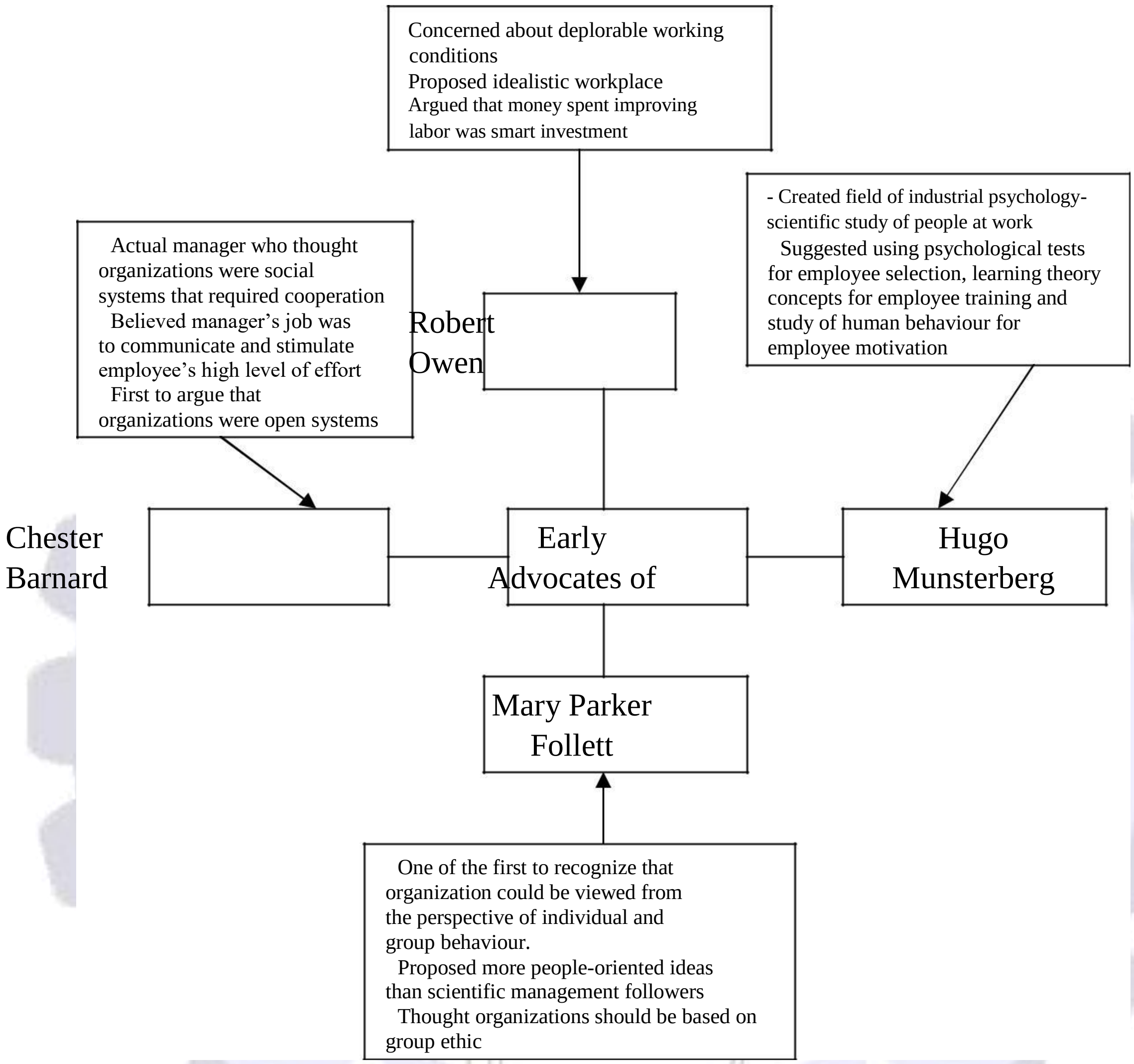


Figure-2.4 EARLY ADVOCATES OF ORGANIZATION BEHAVIOUR

Hugo Munsterberg (1863-1916): developed a psychology laboratory at Harvard University where he studied the application of psychology to the organizational settings. Psychology and Industrial Efficiency he argued for the study of scientific study of human behaviour to identify the general patterns and to explain individual differences. Thus, his concern for the human side of business led his peers to consider him to be father of industrial psychology. He successfully documented the psychological conditions associated with varying levels of work productivity, and he instructed managers on ways to match workers with jobs and also how to motivate them. Munsterberg suggested the use of psychological tests to improve employee selection, the value of learning theory in the development of training methods, and the study of human behaviour to determine what techniques are most effective for motivating workers.

George Elton Mayo (1880-1949): Mayo was a professor at the Harvard Business School. He served as the leader of the team which carried out the famous Hawthorne Experiments at the Hawthorne plant of the Western Electric Company (USA) during 1927-32. Originally the research was an application of Taylor's management science techniques designed to improve production efficiency.

Mayo discussed in detail the factors that cause a change in human behaviour. Mayo's first study involved the manipulation of illumination for one group of workers and comparing their output with that of another group whose illumination was held constant. He concluded that the cause of increase in the productivity of workers is not a single factor like changing working hours or rest pauses but a combination of these several other factors. Considerate supervision, giving autonomy to the workers, allowing the formation of small cohesive groups of workers, creating conditions which encourage and support the growth of these groups and the cooperation between workers and management lead to increase in productivity.

Mayo's contribution to management thoughts lies in the recognition of the fact that worker's performance is related to psychological, sociological and physical factors. Mayo and his associates concluded that a new social setting created by their tests had accounted for the increase in productivity. Their finding is now known as the Hawthorne Effect or the tendency for people, who are singled out for special attention, to improve their performance. Hawthorne study was an important landmark in studying the behaviour of workers and his relationship to the job, his fellow workers and organization. He highlighted that workers were found to restrict their output in order to avoid displeasure of the group, even at the sacrifice of incentive pay. Thus, Hawthorne studies were a milestone in establishing the framework for further studies into the field of organizational behaviour.

IV. **Mary Parker Follett (1868-1933):** She was a social philosopher whose ideas had clear implications for management practice. Her contribution towards the understanding of group is of immense value. She believed that groups were the mechanisms through which people could combine their differing talents for the greater good of the organization, which she defined as the community in which managers and subordinates could work in harmony. The Mangers and workers should view themselves as partners and as a part of common group. She was convicted that the traditional and artificial distinction between the managers who give the orders and the workers who take the orders obscured their natural relationships. Manager should rely more on their expertise and knowledge to lead subordinates than on the formal authority of their position. Thus, her humanistic ideas influenced the way we look at motivation, leadership, power and authority. The Follett Behavioural Model of control being sponsored by an oriented towards the group, while self-control exercised by both individuals and the group ultimately result in both sharing the power. In the Follett Holistic Model of Control, Follett captured the interactive, integrative nature of self-control groups being influenced by the forces within the work environment.

Abraham Maslow: He was a humanistic psychologist, proposed a hierarchy of five needs: physiological, safety, social, esteem and self-actualization. He proposed that man was a wanting animal whose behaviour was calculated to serve his most pressing needs. A need can be described as a physiological or psychological deficiency that a person is motivated to satisfy. Maslow further proposed that man's need could be placed in a hierarchy of needs as shown in *Figure-2.5*. The study shows that a man has various needs and their order can be determined. The moment the first need of man is satisfied he starts thinking of the second need, and then follows his worry about the third need and the sequence continues till all the needs are satisfied. Maslow's theory is operationalized through two principles.

The *deficit principle* holds that a relatively well-satisfied need is not a strong motivator of behaviour.

The *progression principle* holds that, once a need is fairly-well satisfied, behaviour is dominated by the next level in the need hierarchy.

Physiological Needs: This category includes those needs which a man needs to satisfy first of all in order to remain alive. It includes food to eat, house to live in, clothes to wear and sleep for rest.

Safety Needs: After having satisfied the physical needs a man thinks of his safety. Safety needs mean physical, economic and psychological safety. *Physical safety* means saving him from accidents, diseases and other unforeseen situations. *Economic safety* means security of employment and making provision for old age. *Psychological safety* means maintaining his prestige.

Social Needs: Man is a social being and wants to live in society with honour. It is, therefore, necessary that he should have friends and relatives with whom he can share his joys and sorrows.

Figure-2.5 MASLOW'S HIERARCHY OF HUMAN NEEDS

Esteem and Status Needs: They are called ego needs of man. It means everybody wants to get a high status which may increase his power and authority.

Self Actualization Needs: Last of all man tries to satisfy his self actualization need. It means that a man should become what he is capable of. For example- a musician wants to be proficient in the art of music, an artist wants to gain proficiency in creating works of art and similarly, a poet wants to be an expert in the art of writing poems.

VI. **Douglas McGregor (1906-1964):** He is best known for his formulation of two sets of assumptions- Theory X and Theory Y. McGregor argued that managers should shift their traditional views of man and work (which he termed Theory X) to a new humane views of man and work (which he termed Theory Y).

According to McGregor, Theory X attitudes, that man was lazy and work was bad were both pessimistic and counter productive. Theory X assumes that people have little ambition, dislike work, want to avoid responsibility, and need to be closely supervised to work effectively.

Theory Y, view that man wanted to work and work was good should become the standard for humanizing the workplace. Theory Y offers a positive view, assuming that people can exercise self-direction, accept responsibility and consider work to be as natural as rest of play. McGregor believed that Theory Y assumptions best captured the true nature of workers and should guide management practice. *Table-2.4* depicts the assumptions of both these theories:

Table-2.4: Theory X and Y Theory

Traditional Theory 'X'	Modern Theory 'Y'
1)Man by nature is sluggish and shirker.	Man wants to work provided the conditions are favourable.
2)Mostly people are not ambitious and are afraid to take responsibility.	This theory takes people as enthusiastic, responsible and full of effort.
3)Under this people want to be directed, meaning thereby that they want somebody to tell them to work and only they will work.	It is thought that the employee has the quality of self-direction and they do not feel the necessity of being directed by somebody else.
4)Motivation is limited to only physical and security needs.	According to this, physical and security needs motivate for a short time while it is continuous in case of self-actualization and esteem and status needs.
5)Strict control, threat and punishment are used in order to get work.	If proper environment is provided a person himself performs his work laboriously.

VII. **Chris Argyris:** He was an eminent social scientist and a professor of industrial administration at Yale University. He conducts research into personality and organizational life factors and developed the theory that both traditional management practices and organizational structure are inconsistent with the growth and development of the matured personality. Further he argued that the continuing incongruence between one's work environment and one's personality will result in conflict, frustration and failure.

Quantitative School: With the revolutionary change in the application of information technology came the quantitative school of thoughts, which finds its foundation in decision theory, the application of statistics in decision making and the evolution of mathematical/econometric models that are nurtured by computer technology. This approach is based upon the assumption that mathematical techniques can help the manager in solution of problems. The features of quantitative management school were:

Primary Focus on Decision Making: The end result of problem analysis will include direct implications for managerial action.

Based on Economic Decision Theory: Final actions are chosen criteria as costs, revenue and rates of return on investment.

Use of Formal Mathematical Models: Possible solutions to problems are specified as mathematical equations and then analyzed according to mathematical rules and formulas.

Frequent Use of Computers: Heavy reliance is placed on computers and their advanced processing capabilities.

The quantitative approach has found favor through the following applications:

Management Science: Explained later in this chapter.

Operations Management: It entails the application of quantitative methods to the organizational tasks of production and operations control. The operational management techniques utilizes following basic quantitative techniques:

Forecasting is the process by which future predictions are formulated through mathematical computations

Inventory control entails the control of costly inventories through mathematical formulas that determine the proper level of inventory to be maintained as well as the economic quantities to be ordered.

Linear programming involves the use of computations to allocate scarce resources for their optimal use.

Networks are complex models, such as Program Evaluation and Review Techniques (PERT) and the Critical Path Methods (CPM) for analyzing, planning and controlling complex operations.

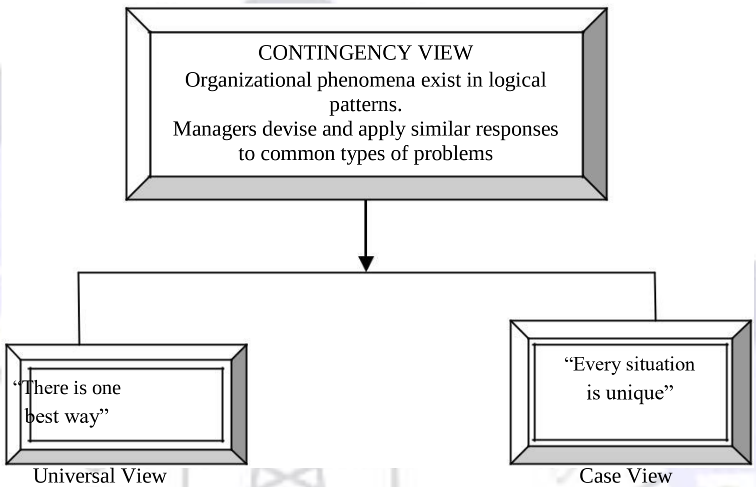
Regression analysis is used to predict the relationships between two or more variables and to determine how changes in one variable might affect other variables.

Management Information System: These are integrated programs for the collection, analysis and dissemination of information to support management decision making. The total MIS network is more than a machine; it contains human resources, hardware, software and intricate processes. Most MIS networks are computer based due to vast amount of number crunching to be done. That is why the ideal MIS provides accurate, condensed informational analysis to the appropriate manager in a timely manner.

In recent years, an attempt has been made to integrate the classical theories with the modern behavioural and quantitative theories into an overall framework that use the best of each approach. These approaches assumed that there is no best way to manage, and all theories have application to the practice of management. Two such integrative developments are explained as follows:

Contingency Theory: It is based on the notion that the proper management technique in a given situation depends upon the nature and conditions of that situation. The contingency view of management is highlighted in *Figure-2.6* contend that an organizational phenomenon exists in logical patterns which managers can come to understand. Along with this organizational understanding comes the development of unique behaviours that have proven successful in particular situations. However, there are no universal solution techniques because every problem situation is unique in itself.

Figure-2.6 THE CONTINGENCY VIEW OF MANAGEMENT



II**Systems Theory:** It has been explained later in this lesson.

The contemporary school of management thoughts outlines the framework for studying the more recent trends in management practices, such as the impact of global business, Theory Z concepts, McKinsey 7-S approach, the search for excellence, and the concern for quality and productivity. These are explained as follows:

Global: The recent emergence of a truly global economy is affecting every manager in the world. In today's environment, success in the long run demands that the manager think globally, even if he can still limit his actions to local market.

Theory Z: These firms are those which are highly successful American firms that use many of the Japanese management practices. The Type Z firm features long-term employment with a moderately specialized career path and slow evaluation and promotion. Lifetime employment would not be especially attractive to America's mobile work force and the slow evaluation and promotion processes would not meet the high expectations of American workers.

Mckinsey 7-S: The 7-S factors are as follows:

Strategy: The plans that determine the allocation of an organization's scarce resources and commit the organization to a specified course of action.

Structure: The design of the organization that determines the number of levels in its hierarchy and the location of the organization's authority.

Systems: The organizational processes and proceduralized reports and routines.

Staff: The key human resource groups within an organization, described demographically.

Style: The manner in which manager behave in pursuit of organizational goals.

Skills: The distinct abilities of the organization's personnel.

Super ordinate Goals (shared values): The significant meanings or guiding concepts that an organization instill in its members.

IV **Excellence**: The firms that qualified as excellent companies shared the following characteristics:

A successful firm makes things happen.

Successful firms make it a point to know their customers and their needs.

Autonomy and Entrepreneurship is valued in each employee.

Productivity through people is based on trust.

Hands on, value driven management is mandatory.

A firm must always deal with strength.

A firm leads to cost effective works teams.

A firm can decentralize many decisions while retaining tight controls, usually through the function of finance.

Quality and Productivity: In today's dynamic marketplace, consumers are encouraged to buy a product that demonstrates the highest level of quality at the optimum price. This requires a dedicated and skilled work force that places utmost importance on quality workmanship.

2.5 APPROACHES TO THE STUDY OF MANAGEMENT

Classical Approach

The classical approach is also known as traditional approach, management process approach or empirical approach. The main features of this approach are as follows:

It laid emphasis on division of labour and specialization, structure, scalar and functional processes and span of control. Thus, they concentrated on the anatomy of formal organization.

Management is viewed as a systematic network (process) of interrelated functions. The nature and content of these functions, the mechanics by which each function is performed and the interrelationship between these function is the core of the classical approach.

It ignored the impact of external environment on the working of the organization. Thus, it treated organization as closed system.

On the basis of experience of practicing managers, principles are developed. These principles are used as guidelines for the practicing executive.

Functions, principles and skills of management are considered universal. They can be applied in different situations.

The integration of the organization is achieved through the authority and control of the central mechanism. Thus, it is based on centralization of authority.

Formal education and training is emphasized for developing managerial skills in would be managers. Case study method is often used for this purpose.

Emphasis is placed on economic efficiency and the formal organization structure.

People are motivated by economic gains. Therefore, organization controls economic incentives.

The Classical approach was developed through three mainstreams- Taylor's Scientific Management, Fayol's Administrative Management and Weber's Ideal Bureaucracy. All the three concentrated on the structure of organization for greater efficiency.

Merits of Classical Approach

The classical approach offers a convenient framework for the education and training of managers.

The observational method of case study is helpful in drawing common principles out of past experience with some relevance for future application

It focuses attention on what managers actually do.

This approach highlights the universal nature of management.

It provides scientific basis for management practice.

It provides a starting point for researchers to verify the validity and to improve the applicability of management knowledge. Such knowledge about management is effectively presented.

Shortcomings of Classical Approach

Weber's ideal bureaucracy suggested strict adherence to rules and regulations, this lead to redtapism in the organization.

It offers a mechanistic framework that undermines the role of human factor. The classical writers ignored the social, psychological and motivational aspect of human behaviour.

The environmental dynamics and their effect on management have been discounted. Classical theory viewed organization as closed system i.e. having no interaction with environment.

There is positive danger in relying too much on past experiences because a principle or technique found effective in the past may not fit a situation of the future.

The classical principles are mostly based on the personal experience and limited observations of the practitioners. They are not based on personal experience.

The totality of real situation can seldom be incorporated in a case study.

Scientific Management Approach

The impetus for the scientific management approach came from the first industrial revolution. Because it brought about such an extraordinary mechanization of industry, this revolution necessitated the development of new management principles and practices. The concept of scientific management was introduced by

Frederick Winslow Taylor in USA in the beginning of 20th century. He defined scientific management as," *Scientific management is concerned with knowing exactly what you want men to do and then see in that they do it in the best and cheapest way".*

Elements and Tools of Scientific Management: The features of various experiments conducted by Taylor are as follows:

Separation of Planning and doing: Taylor emphasized the separation of planning aspects from actual doing of the work. The planning should be left to the supervisor and the workers should emphasize on operational work.

Functional Foremanship: Separation of planning from doing resulted into development of supervision system that could take planning work adequately besides keeping supervision on workers. Thus, Taylor evolved the concept of functional foremanship based on specialization of functions. This involve activities of workers as depicted in Figure-2.7:

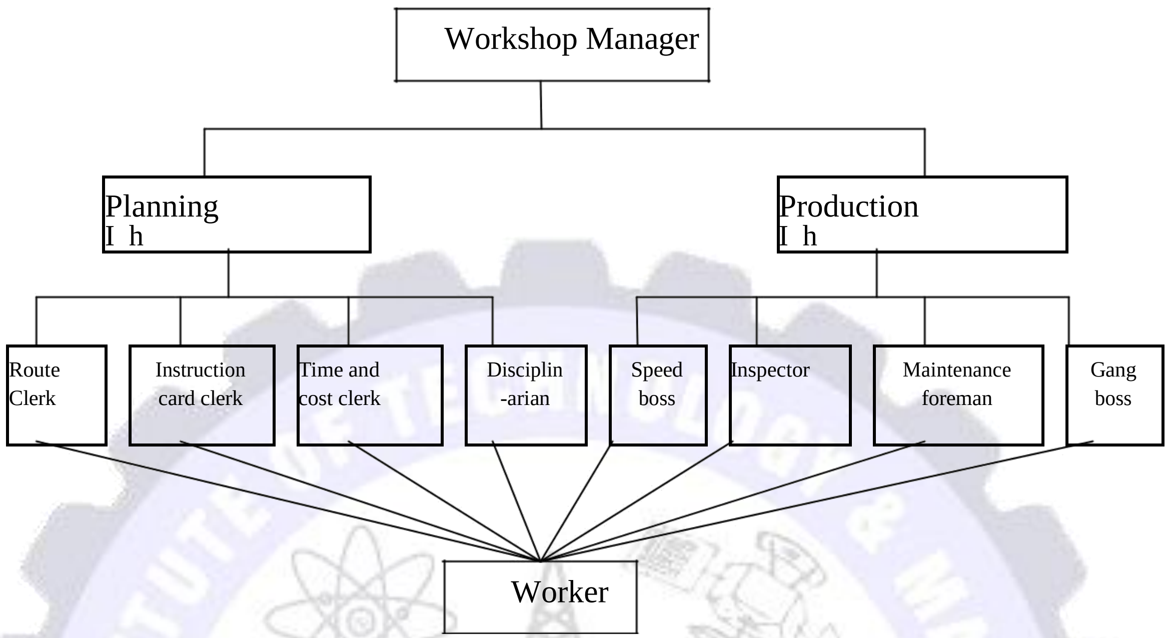


Figure-2.7 FUNCTIONAL FOREMANSHIP

Job Analysis: It is undertaken to find out the best way of doing things. The best way of doing a job is one which requires the least movement consequently less time and cost.

Standardization: Standardization should be maintained in respect of instruments and tools, period of work, amount of work, working conditions, cost of production etc.

Scientific Selection and Training of Workers: Taylor has suggested that the workers should be selected on scientific basis taking into account their education, work experience, aptitudes, physical strength etc.

Financial Incentives: Financial incentives can motivate workers to put in their maximum efforts. Thus, monetary (bonus, compensation) incentives and non monetary (promotion, upgradation) incentives should be provided to employees.

Principles of Scientific Management: Already discussed in this lesson.

Criticism of Scientific Management: The main grounds of criticism are given below:

Taylor advocated the concept of functional foremanship to bring about specialization in the organization. But this is not feasible in practice as a worker can't carry out instructions from eight foremen.

Workers were hired on a first-come, first-hired basis without due concern for workers ability or skills.

Scientific management is production oriented as it concentrates too much on the technical aspects of work and undermines the human factors in industry. It resulted in monotony of job, loss of initiative, over speeding workers, wage reductions etc.

Training was haphazard at best, with only minimal use of basic apprentice system.

Tasks were accomplished by general rule of thumb without standard times, methods or motion.

Managers worked side-by-side with the workers, often ignoring such basic managerial function of planning and organizing.

Administrative Approach to Management

The advocates of this school perceive management as a process involving certain functions such as planning, organizing, directing and controlling. That's why it is called as 'functional approach' or 'management process' approach. Fayol's contributions were first published in book form titled 'Administration Industrielle at Generale' in French Language, in 1916. He defined management in terms of certain functions and then laid down fourteen principles of management which according to him have universal applicability. Thus, he was a pioneer in the field of management education. In brief, Fayol's views on management command acceptability even today because they are much in tune with the requirements of management in the present day world.

Fayol's **General Principles of Management**

Division of Work: The object of division of work is to produce more and better work with the same effort. It is accomplished through reduction in the number of tasks to which attention and effort must be directed.

Authority and Responsibility: Authority is defined as 'the right to command and the power to make oneself obeyed'. Responsibility coexists with authority and is its other side. Fayol made a distinction between official authority and personal authority, the latter stemming from the manager's own intelligence, integrity, experience, personality, knowledge and skills.

Discipline: It implies respect for agreements designed to secure obedience. It must prevail throughout an organization to ensure its smooth functioning. Discipline requires clear and fair agreements, good supervision and judicious application of penalties.

Unity of Command: Every employee should receive orders and instruction from only one superior and a subordinate should be accountable to only one superior.

Unity of Direction: Each group of activities having one objective should be unified by having one plan and one head.

Subordination of Individual to General Interest: The interest of any one employee or group of employees should not take precedence over the interests of the organization as a whole.

Remuneration of Personnel: The amount of remuneration and the methods of payment should be just and fair and should provide maximum possible satisfaction to both employees and employers.

Centralisation: It refers to the degree to which subordinates are involved in decision making. Whether decision making is centralized (to management) or decentralized (to subordinates) is a question of proper proportion. The task is to find the optimum degree of centralization for each situation.

Scalar Chain: The scalar chain is the chain of superiors ranging from the ultimate authority to the lowest ranks. Communication should follow this chain. However, if following the chain creates delays, cross-communications can be followed if agreed to by all parties and superiors are kept informed.

Order: It is a rational arrangement for things and people. Fayol emphasized both material order and human order. In material order, there should be a place for everything and everything should be in its proper place. In human order, there should be an appointed place for everyone and everyone should be in his and her appointed place.

Equity: Managers should be kind and fair to their subordinates. The application of equity requires good sense, experience and humanistic attitude for soliciting loyalty and devotion from subordinates.

Stability of Tenure: High employee turnover is inefficient. Management should provide orderly personnel planning and ensure that replacements are available to fill vacancies.

Initiative: Subordinates should be provided with an opportunity to show their initiative as a way to increase their skills and to inculcate a sense of participation.

Espirit de Corps: Union is strength, and it comes from the harmony and mutual understanding of the personnel. Management should not follow the policy of 'divide and rule'. Rather it should strive to maintain team spirit and co-operation among employees so that they can work together as a team for the accomplishment of common objectives.

Criticism: Fayol's work has been criticized on the following grounds:

His theory is said to be too formal. There is no single classification of managerial functions acceptable to all the functional theorists. There is also lack of unanimity about the various terms such as management, administration etc.

He did not pay adequate attention to workers.

The fundamentalists considered their principles to be universal in nature. But many of the principles have failed to deliver the desired results in certain situations.

There is a vagueness and superficiality about some of his terms and definition.

TABLE-2.5 DISSIMILARITY BETWEEN CONTRIBUTION OF TAYLOR AND FAYOL

Basis of Comparison	Taylor	Fayol
1. Perspective	Shop floor level or the job of a supervisor	Top Management
2. Focus	Improving productivity through work simplification and standardization	Improving overall administration through general principles
3. Personality	Scientists	Practitioner
4. Results	Scientific observation and measurement	Universal Truths developed from personal experiences
5. Major Contribution	Science of industrial management	A systematic theory of management

Human Relation Approach to Management

The criticism of the Scientific and Administrative Management as advocated by Taylor and Fayol, respectively, gave birth to Human Relation Approach. The behavioural scientists criticized the early management approaches for their insensitiveness to the human side of organization. The behavioural scientists did not view the employees mechanically in work situation, but tried to show that the employees not only have economic needs but also social and psychological needs like need for recognition, achievement, social contact, freedom, and respect. Human relations school regards business organization as a psycho-social system.

Elton Mayo of Harvard and his associates conducted a famous study on human behaviour at the Hawthorne plant of the Western Electric Company and this study formed the foundation of this school of management thoughts. The basic hypotheses of this study as well as the basic propositions of the Human Relation Approach are the following:

The business organization is a social system.

The employees not only have economic needs but also psychological needs and social needs, which are required to be served properly to motivate them.

Employees prefer self-control and self-direction.

Employee oriented democratic participative style of management is more effective than mechanistic task oriented management style.

The informal group should be recognized and officially supported.

The human relations approach is concerned with recognition of the importance of human element in organizations. It revealed the importance f social and psychological factors in determining worker's productivity and satisfaction. It is instrumental in creating a new image of man and the work place. However, this approach also did not go without criticism. It was criticized that the approach laid heavy emphasis on the human side as against the organizational needs. However, the contribution of this approach lies in the fact that it advises managers to attach importance to the human side of an organization.

Social System Approach to Management

It is developed during social science era, is closely related to Human Relation Approach. It includes those researchers who look upon management as a social system. Chester I. Barnard is called as the spiritual father of this approach. According to this approach, an organization is essentially a cultural system composed of people who work in cooperation. The major features of this approach are as follows:

Organization is a social system, a system of cultural relationships.

Relationships exist among the external as well as internal environment of the organization.

Cooperation among group members is necessary for the achievement of organizational objectives.

For effective management, efforts should be made for establishing harmony between the goals of the organization and the various groups therein.

Decision Theory Approach to Management

Decision Theory is the product of management science era. The decision theorists emphasize on rational approach to decisions, i.e. selecting from possible alternatives a course of action or an idea. Major contribution in this approach has come from Simon. Other contributors are March, Cyert, Forrester etc. The major emphasis of this approach is that decision making is the job of every manager. The manager is a decision maker and the organization is a decision making unit. Therefore, the major problem of managing is to make rational decision. The main features of this approach are:

- Management is essentially decision-making. The members of the organization are decision makers and problem solvers.
- Organization can be treated as a combination of various decision centers. The level and importance of organizational members are determined on the basis of importance of decisions which they make.
- All factors affecting decision making are subject matter of the study of management. Thus, it covers the entire range of human activities in organization as well as the macro conditions within which the organization works.

Management Science Approach to Management

Management science is an approach to management that applies mathematical analysis to decision making. It involves the use of highly sophisticated techniques, statistical tools and complex models. The primary focus of this approach is the mathematical model. Through this device, managerial and other problems can be expressed in basic relationships and where a given goal is sought, the model can be expressed in terms which optimize that goal. The management science approach found its origins during World War II, when highly technical military/production problems become far too complex for traditional management methodology. The major features of this approach are:

- Management is regarded as the problem-solving mechanism with the help of mathematical tools and techniques.

Management problems can be described in terms of mathematical symbols and data. Thus every managerial activity can be quantified.

This approach covers decision making, system analysis and some aspect of human behaviour. Operations research, mathematical tools, simulation, model etc, are the basic methodologies to solve managerial problems.

Human Behavioural Approach to Management

Human Behavioural approach is a modified version of Human Relation approach. Human Behavioural approach is devoid of any emotional content, which is the core of Human Relation Approach. This approach stresses the individual performing the jobs. Here the attention is directed towards the human aspects of management. The neglect of human factor and the over emphasis on machines and materials led to the development of this approach. The Behavioural approach emphasizes synchronization of group goals within the broader framework of management. It does not consider the goals of the different groups as conflicting with others.

Many sociologists, psychologists and social psychologists have shown considerable interest in studying the problems of management. The sociologists who have contributed to management are Blak, Selznick, Homans, Dubin, Dalton, and Katz and Kahn. The social psychologist who have contributed to management are McGregor, Argyris, Leavitt, Blake and Mouton, Sayles, Tannenbaum and his associates, Bennis, Fielder, Stogdill and Herzberg. The behavioural theories have drawn heavily on the work of Maslow. Douglas McGregor built on Maslow's work in explaining his 'Theory X' and 'Theory Y'. Frederick Herzberg develops a two factor theory of motivation. To sum up, many conclusions of the contributions made by behaviouralists can presented as follows:

People do not dislike work. If they have helped to establish objectives, they want to achieve them. In fact, job itself is a source of motivation and satisfaction to employees.

Most people can exercise a great deal of self-direction and self-control than are required in their current job. Therefore, there remains untapped potential among them.

The manager's basic job is to use the untapped human potential in the service organization.

The managers should create a healthy environment wherein all the subordinates contribute to the best of their capacity. Te environment should provide healthy, safe, comfortable and convenient place to work.

The manager should provide for self direction by subordinates and they must be encouraged to participate fully in all important matters.

Operating efficiency can be improved by expanding subordinate influence, direction and self control.

Work satisfaction may improve as a by product of subordinates making use of their potential.

Merits of Behavioural Approach

It generated an awareness of the overwhelming role of the human element in organizations. It recognizes the quality of leadership as a critical factor in management success. It recognizes the role of individual psychology and group behaviour in organizational effectiveness.

Shortcomings of Behavioural Approach

Conclusions of behavioural approach discounts theory and stress radical empiricism. This approach neglects the economic dimension of work satisfaction. It is group oriented and anti-individualistic.

TABLE-2.6 DISTINCTION BETWEEN HUMAN RELATIONS AND BEHAVIOURAL APPROACH

Human Relations Approach	Behavioural Sciences Approach
1. It laid emphasis on individual, his needs and behaviour.	It stressed upon groups and group behaviour.
2. It focused on inter-personal relationships	It focused on group relationships.
3. It was based on the Hawthorne Experiments and so its scope is limited.	It refined the Human Relations approach and has a wide scope. It is much more systematic study of human behaviour in organization.
4. It was pioneered by Elton Mayo and its associates.	It was pioneered by Feith Davis, Rensis Likert and others.
5. It laid emphasis on informal groups' motivation, job satisfaction and morale.	The behaviourists studied group dynamics, informal organization leadership. Motivation and participative management.

Mathematics or Quantitative Approach to Management

It emphasizes that the organization or decision making is a logical process and it can be expressed in terms of mathematical symbols and relationships, which can be used to solve corporate problems and conduct corporate affairs. This approach focuses attention on the fundamentals of analysis and decision making. This brings together the knowledge of various disciplines like Operation Research and Management Science for effective solution of management problems. The Quantitative School quantifies the problem; generate solution, tests the solution for their optimality and then it recommends. The decisions are optimum and perfect as distinguished from the human behavioural approach, in which decisions are 'satisfying'. This approach is devoid of any personal bias, emotions, sentiments, and intuitiveness. The main postulates of the quantitative approach are as follows:

Management is a series of decision making. The job of a manager is to secure the best solution out of a series of interrelated variables.

These variables can be presented in the form of a mathematical model. It consists of a set of functional equation which set out the quantitative interrelationship of the variable.

If the model is properly formulated and the equations are correctly solved, one can secure the best solution to the model.

Organizations exist for the achievement of specific and measurable economic goals.

In order to achieve these goals, optimal decisions must be made through scientific formal reasoning backed by quantification.

Decision making models should be evaluated in the light of set criteria like cost reduction, return on investment, meeting time schedules etc.

The quality of management is judged by the quality of decisions made in diverse situations.

TABLE-2.7 DIFFERENCE BETWEEN QUANTITATIVE APPROACH AND SCIENTIFIC APPROACH

Quantitative Approach	Scientific Management
1. It makes use of mathematical and statistical techniques in management.	It makes use of scientific approach in management.
2. It focuses on finding right answers to managerial problems (decision making).	It focuses on improving efficiency of men and machines (one best way of doing things).
3. In this operation research is the main techniques	Time and motion studies are the main techniques.
4. It is developed by W. C. Churchman.	A movement launched by F. W. Taylor and his associates.
5. Application of Econometric models.	Application of Experiments and research.

System Approach to Management

In the 1960s, a new approach to management appeared which attempted to unify the earlier school of thoughts. This approach is commonly referred to as ‘System Approach’. The system approach is based on the generalization that an organization is a system and its components are inter-related and inter-dependent. “A system is composed of related and dependent elements which, when in interactions, form a unitary whole. On other words, a system may be defined as an organized and purposeful entity of inter-related, inter-dependent and inter-acting elements. It is a goal oriented organism that is composed of parts interrelated in such a way that the total system is greater than the sum of its parts. The elements of each system may themselves be sub systems. These sub-systems are functionally related to each other and to the total system. The basic postulates of the system approach are as follows:

An organization is a system consisting of several subsystems. For example, in a business enterprise production, sales and other departments re the subsystem The position and function of each subsystem can be analyzed only in relation to other subsystem and to the organization as a whole rather than in isolation. An organization is a dynamic system because it is responsive or sensitive to its environment. It is vulnerable to changes in its environment.

Systems are of several types. A *static system*, e.g. a petrol engine operates repetitively completing the same cycle of functions without change or deviation. On the other hand, the *dynamic system*, undergoes change, it grows or decays. Biological systems, e.g., plants, animals and human being are dynamic. A *closed system* is self-dependent and does not have any interaction with the external environment. Physical and mechanical systems are closed systems. A closed

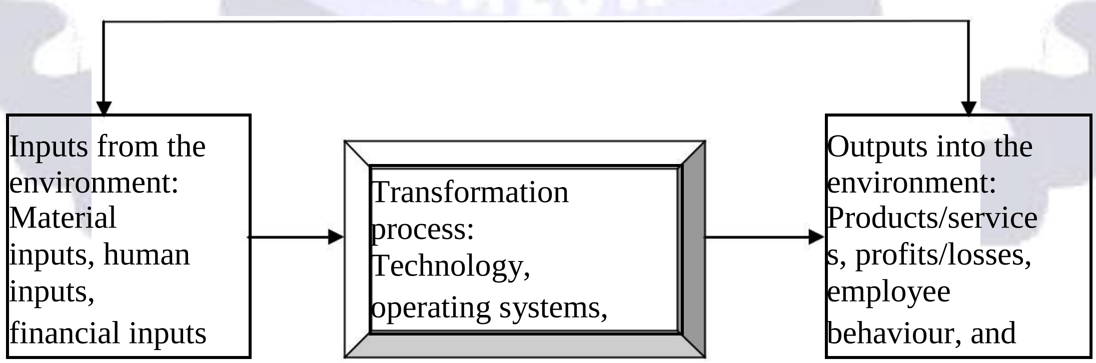
system concentrates completely on internal relationships, i.e. interaction between sub-systems only.

The open system consisting of four basic elements

Inputs: These are ingredients required to initiate the transformation process. They include human, financial, material and information resources.

ELEMENTS OF OPEN SYSTEM

Feedback from the environment



Transformation Process: The inputs are put through a transformation process that applies technology, operating methodologies, administrative practices and control techniques in order to produce the output.

Outputs: The output may be products and/or services, the sale of which creates profits or losses. This process also has by-product outputs such as worker behaviour, information, environmental pollution, community services and so on.

Feedback: A feedback loop is used to return the resultant environmental feedback to the system as inputs.

If the environment is satisfied with the output, business operations continue. If it is not, changes are initiated within the business systems so that requirements of the customers are fully met. This is how an open system responds to the forces of change in the environment.

Contingency or Situational Approach to Management

Another important approach which has arisen because of the inadequacy of the Quantitative, Behavioural and System Approach to management is the Contingency Approach. Pigors and Myers propagated this approach in 1950. Other contributors include Joan Woodward, Tom Burns, G.W.Stalker, Paul Lawrence, Jay Lorsch and James Thompson. They analyzed the relationship between organization and environment. They concluded that managers must keep the functioning of an organization in harmony with the needs of its members and the external forces. Management is situational and lies in identifying the important variables in a situation. The basic theme of contingency approach is that organizations have to cope with different situations in different ways. There cannot be particular management action which will be suitable for all situations. The management must keep the functioning of an organization in harmony with the needs of its members and the external forces.

According to Kast and Rosenzweig, “The contingency view seeks to understand the interrelationships within and among sub-system as well as between the organization and its environment and to define patterns of relationships or configurations of variables. Contingency views are ultimately directed towards suggesting organizational designs and managerial actions most appropriate for specific situations”.

The approach has been used in important sub systems of management like organization, design, leadership, behaviour change and operation. The main features of contingency approach are:

Management is entirely situational. The application and effectiveness of any techniques is contingent on the situation.

Management action is contingent on certain action outside the system or subsystem as the case may be.

Management should, therefore, match or fit its approach to the requirements of the particular situation. To be effective management policies and practices must respond to environmental changes.

Organizational action should be based on the behaviour of action outside the system so that organization should be integrated with the environment.

Management should understand that there is no one hard way to manage.

They must not consider management principles and techniques universal.

A general framework for contingent management has been shown in the *Figure-2.10*. However, it is an abstract depiction of the contingency model. In order to operationalise the contingency approach, managers need to know the alternatives for different situations. It may be operationalized as a 'if then' approach to management. The environment (If) is an independent variable where as management (when) is a dependent variable. In this model, a manager has to take four sequential steps:

Analyze and understand the situation,

Examine the applicability or validity of different principles and techniques to the situation at hand,

Make the right choice by matching the techniques to the situations,

Implement the choice.

TABLE- 2.8 SYSTEM APPROACH VS. CONTINGENCY APPROACH

Systems Approach	Contingency Approach
1. It treats all organizations alike irrespective of their size, cultural settings and dynamics	It treats each organization as a unique entity.
2. It stresses interactions and interdependencies among systems and sub-systems.	It identifies the exact nature of inter dependencies and their impact on organizational design and managerial style.
3. It studies organization at an abstract and philosophical level.	It is more down to earth and action oriented.
4. It is neutral or non-committal on the validity of classical principles of management.	It firmly rejects the blind application of principles regardless of realities of individual situations.
5. It stresses upon the synergetic effect of organizations and the external input.	It is related to organization structure and design to the environment.
6. It is vague and complex.	It is pragmatic and action oriented.

2.6 SUMMARY

The study of organization and management is a must to understand the underlying principles of management. The foregoing analysis reveals that management thought is the outcome of diverse contributions of several management thinkers and practitioners. Each of this approach discussed above is an extension of the previous one. A composite or synthesis of various contributions made over a period of more than a century is the best management theory. The new trends, developments and challenges in the evolution of management thought and movement which will make new demands on managers in India are listed below:

- Growing intervention in trade, industry and commerce by the government. Growth of Trade Union Movement, profoundly influenced by political considerations only.
- Greater consciousness and growth of organizations of consumers.

High cost economy and expansion of the services sector including the social sector, public sector and public utility services.

Emerging growth of industry and consequent stiff competition from foreign goods, growth of multinational corporations in the context of new liberalized industrial policy.

Rapid advancement in the field of technology.

Utilization of information as an input and spread of Management Information System.

Increasing Demand for participation by subordinates in decision making process.

India is heading towards a business management manned by properly trained and educated persons.

Social Responsibility and prevention of environmental pollution have aroused much public attention. This is indeed a great challenge to future and government is required to take necessary action in this regard.

TABLE-2. 9 SUMMARY OF APPROACHES AND CONTRIBUTIONS TO MANAGEMENT

Approach	Main Contributions	Main Contributors	Environment at that Time
Classical Approach	- Scientific Management - Management Functions - Administrative Theory - Bureaucracy	- F.W.Taylor, Frank Gilbreth, H. Emerson - Henery L. Gantt - L.F. Urwick, Mooney & Reliey, R.C.Davis - Max Weber	- Expanding Size of organization - Growing markets - Post-Industrial Revolution Decline of owner/ manager - Rise of professional manager
Behavioural Approach	- Human Relations - Hawthorne Experiments - Participation - MBO - Organizational Behaviour	- F.J. Roethlisberger - Elton Mayo - D. McGregor - P.F. Drucker - C.I. Barnard	- World War II unionization - Need for trained maangers - Government regulation - Labour unrest
Management Science Approach	- Operations Research - Simulation - Game Theory - Decision Theory - Mathematical Models	- W.C. Churchman - J.C. March - Forrester - H.A. Simon - Raiffa	- Cold war recession - Conglomerates - Indusrial/military conflict
System Approach	- Open System - Closed System - Socio-technical system	- E.L.Trist - A.K. Rice - F. E. Kast & J.E. Rosenzweig	- Turbulency - Information Technology - Robotics

	- Supra System - System interface mechanism	- R.A. Johnson - K.Boulding, D. Katz, R.L. Khan	- Pollution Problem
Contingency Approach	- Dynamic Environment - Organic mechanistic technology - Matrix designs and Social Responsibilities - Organizational Change - Information Systems	- Burns and Stalker - John Woodward - Thompson - P.R. Lawrence - J.A. Lorseh	- Space race. Expanding economy - High Technology - Global Trade - Social discontent - Rise of skilled professions

FUNCTIONS OF MANAGEMENT

3.1 INTRODUCTION

Management practice is as old as human civilization, when people started living together in groups, for every human group requires management and the history of human beings is full of organizational activities. Even a smallest human group in our society i.e. family also needs management. The head of the family acts as top management and the housewife acts as a home manager. She plans about the work to be done, how the work has to be done, who is to do the work and whether the work is done properly or not. She performs all the four functions of management i.e. planning the budget and day to day activities, organizing the things and activities of different people, directing the servants and different members of the family and controlling activities of different members of the family. Family is a very informal type of human group. Even if this informal human group is not managed properly it will lead to great fuse and confusion. So, just imagine about large and complex institutions emerging these days.

During the last five decades, management as a discipline has attracted the attention of academicians and practitioners to a very great extent. The basic reason behind this phenomenon is the growing importance of management in day to day life of people. Today, the society has large and complex institutions with many people working together. The relationship between managers and managed has changed as compared to the older master-servant relationship making it more complex. People have greater expectations from their jobs. In order to make all these things function properly, people have been trying to evolve some method and techniques. Such attempts have given birth to management as a separate discipline. It has grown over the period of time making itself one of the most respected disciplines. Today, the study of management has become an important fact of human life.

3.2 UNDERSTANDING MANAGEMENT AS CONCEPT

The term management can have different meanings, and it is important to understand these different definitions. The term management can be considered as :-

Management as a process : Have you ever said "That is a well managed company" or "That organization has been mismanaged"? If you have, you seem to imply that : (i) management is some type of work or set of activities and (ii) sometimes the activities are performed quite well and sometimes not so well.

You are referring to management as a process involving set of activities. Since the late nineteenth century, it has been common practice to define management in terms of four specific functions of managers. Planning, organizing, leading and controlling. We can thus say that management is the process of planning, organizing, leading and controlling the efforts of organization members and of using all other organizational resources to achieve stated organizational goals.

Management as a discipline : If you say you are a student of management or majoring in management, you are referring to the discipline of management. Classifying management as a discipline implies that it is an accumulated body of knowledge that can be learned. Thus management as a subject with principles, concepts and theories. A major purpose of studying the discipline of management is to learn and understand the principles, concepts, and theories of management and how to apply them in the process of managing.

Management as people : Whether you say, "That company has an entirely new management team" or "She is the best manager I have ever worked for" you are referring to the people who guide, direct and thus, manage organizations. The word management used in this manner refers to the people, manager who engage in the process of management.

Management as a career : "Mr. Saxena has held several managerial positions since joining the bank upon his graduation from college". This statement implies that management is a career. People who devote their working lives to the process of management progress through a sequence of new activities and, often, new challenges. More than ever before, today's business environment is fast changing and competitive, posing challenges, opportunities, and rewards for individuals pursuing management as a career.

These different meanings of the term management has been related as follows by John M. Ivancevich -

"People who wish to have a career as a manager must study the discipline of management as a means toward practicing the process of management".

3.3. FUNCTIONS OF MANAGEMENT

Management process suggests that all the managers in the organization perform certain functions to get the things done by others. However, what are these functions which comprise management process is not quite clear and divergent views have been expressed on this. List of management functions varies from author to author with the number of functions ranging from three to eight.

There is enough disagreement among management writers on the classification of managerial functions. Newman and Summer recognize only four functions, namely, organizing, planning, leading and controlling. Henri Fayol identifies five functions of management, viz. planning, organizing, commanding, coordinating and controlling. Luther Gulick states seven such functions under the catch word "POSDCORB' which stands for planning, organizing, staffing, directing, coordinating, reporting and budgeting. Warren Haynes and Joseph Massie classify management functions into decision-making, organizing, staffing, planning, controlling, communicating and directing. Koontz and O'Donnell divide these functions into planning organizing, staffing, directing and controlling.

Davis includes planning, organizing and controlling. Breach includes planning, organizing, motivating, coordinating and controlling.

Evolution of Management Functions

1.Early concepts	Plan	Organize	Command	Discipline
2.Management Process by Fayol	Plan	Organize	Command coordinate	Control
3.Further modification	Plan	Organize	Direct	Control
4.Modified by behavioural influence	Plan	Organize	Motivate	Control
5.Recent modification by business	Plan	Organize	Integrate	Measure
6.Suggested further	Plan	Organize	Achieve	Appraise

Source : Ervin Williams, “Evaluation of Organic Management Function”, Atlanta Economic Review, April 1971, p. 27.

For our purpose, we shall designate the following six as the functions of a manager: planning, organizing, staffing, directing, coordinating and controlling.

Henry Fayol, an early thinker of management process, has classified management functions into planning, organizing, commanding, coordinating and controlling.

Gullick and Urwick have described the functions of management as POSDCORB referring to planning, organizing, staffing, directing, coordinating, reporting and budgeting.

Koontz and O'Donell have included planning, organizing, staffing, leading and controlling.

Earnest Dale has suggested innovation and representing also as important management functions besides these. Thus it can be seen that there is no agreement over the various functions of management. These functions have been treated differently over the period of time.

Ervin Williams has summarized the various managerial functions developed over the period of time.

All the above functions can be categorized into four basic functions of management i.e. planning, organizing, leading and controlling.

3.3.1. Planning

The planning function is the primary activity of management. Planning is the process of establishing goals and a suitable course of action for achieving those goals. Planning implies that managers think through their goals and actions in advance and that their actions are based on some method, plan, or logic rather than on a....... Plans give the organization its objectives and set up the best procedures for reaching them. The organizing, leading and controlling functions all derived from the planning function.

The first step in the planning is the selection of goals for the organization. Goals are then established for each of the organization's subunits-its division, department and soon. Once these are determined, programs are established for achieving goals in a systematic manner.

The organizational objectives are set by top management in the context of its basic purpose and mission, environmental factors, business forecasts, and available and potential resources. These objectives are both long-range as well as short-range. They are divided into divisional, departmental, sectional and individual objectives or goals. This is followed by the development of strategies and courses of action to be followed at various levels of management and in various segments of the organization. Policies, procedures and rules provide the framework of decision making, and the method and order for the making and implementation of these decisions.

Every manager performs all these planning functions, or contributes to their performance. In some organizations, particularly those which are traditionally managed and the small ones, planning are often not done deliberately and systematically but it is still done. The plans may be in the minds of their managers rather than explicitly and precisely spelt out: they may be fuzzy rather than clear but they are always there. Planning is thus the most basic function of management. It is performed in all kinds of organizations by all managers at all levels of hierarchy.

Relationship and time are central to planning activities. Planning produces a picture of desirable future circumstances - given currently available resources, past experience etc. Planning is done by all managers at every level of the organization. Through their plans, managers outline what the organization must do to be successful while plans may differ in focus, they are all concerned with achieving organizational goals in the short and long term. Taken as a whole, an organization's plans are the primary tools for preparing for and dealing with changes in the organization's environment.

3.3.2 Organizing

After managers develop objectives and plans to achieve the objectives, they must design and develop an organization that will be able to accomplish the objectives. Thus the purpose of the organizing function is to create a structure of task and authority relationships that serves this purpose.

Organizing is the process of arranging and allocating work, authority, and resources among an organization's members so they can achieve the organization's goals.

Stoner defines "organizing as the process of engaging two or more people in working together in a structured way to achieve a specific goal or set of goals.

The organizing function takes the tasks identified during planning and assigns them to individuals and groups within the organization so that objectives set by planning can be achieved. Organizing, then, can be thought of turning plans into actions. Organizing function can be viewed as a bridge connecting the conceptual idea developed in creating and planning to the specific means for accomplishing these ideas.

The organizing function also provides on organizational structure that enables the organization to function effectively. Managers must match an organization's structure to its goals and resources, a process called organizational design. Organizing thus involves the following sub-functions:

Identification of activities required for the achievement of objectives and implementation of plans.

Grouping the activities so as to create self-contained jobs.

Assignment of jobs to employees.

Delegation of authority so as to enable them to perform their jobs and to command the resources needed for their performance.

Establishment of a network of coordinating relationships.

Organizing process results in a structure of the organization. It comprises organizational positions, accompanying tasks and responsibilities, and a network of roles and authority-responsibility relationships.

Organizing is thus the basic process of combining and integrating human, physical and financial resources in productive interrelationships for the achievement of enterprise objectives. It aims at combining employees and interrelated tasks in an orderly manner so that organizational work is performed in a coordinated manner, and all efforts and activities pull together in the direction of organizational goals.

3.3.3 Staffing

Staffing is a continuous and vital function of management. After the objectives have been determined, strategies, policies, programmes, procedures and rules formulated for their achievement, activities for the implementation of strategies, policies, programmes, etc. identified and grouped into jobs, the next logical step in the management process is to procure suitable personnel for manning the jobs. Since the efficiency and effectiveness of an organization significantly depends on the quality of its personnel and since it is one of the primary functions of management to achieve qualified and trained people to fill various positions, staffing has been recognized as a distinct function of management. It comprises several sub-functions :

- Manpower planning involving determination of the number and the kind of personnel required.
- Recruitment for attracting adequate number of potential employees to seek jobs in the enterprise.
- Selection of the most suitable persons for the jobs under consideration.
- Placement, induction and orientation.
- Transfers, promotions, termination and layoff.
- Training and development of employees.

As the importance of human factor in organizational effectiveness is being increasingly recognized, staffing is gaining acceptance as a distinct function of management. It need hardly any emphasize that no organization can ever be better than its people, and managers must perform the staffing function with as much concern as any other function.

3.3.4 Directing

Directing is the function of leading the employees to perform efficiently, and contribute their optimum to the achievement of organizational objectives. Jobs assigned to subordinates have to be explained and clarified, they have to be provided guidance in job performance and they are to be motivated to contribute their optimum performance with zeal and enthusiasm. The function of directing thus involves the following sub-functions:

Communication

Motivation

Leadership

Once objectives have been developed and the organizational structure has been designed and staffed, the next step is to begin to move the organization toward the objectives. The directing function serves this purpose. It involves directing, influencing and motivating employees to perform essential tasks.

The best human resources employed will be of house if they are not motivated and directed in the right direction to achieve the organizational goals. Managers lead is an attempt to persuade others to join them in pursuit of the future that emerges from the planning, and organizing steps. By establishing the proper atmosphere, managers help their employees to do their best.

Effective leadership is a highly prized ability in organizations and is a skill that some managers have difficulty in developing. The ability requires both task-oriented capabilities and the ability to communicate, understand and motivate people.

3.3.5 Coordinating

Coordinating is the function of establishing such relationships among various parts of the organization that they all together pull in the direction of organizational objectives. It is thus the process of tying together all the organizational decisions, operations, activities and efforts so as to achieve unity of action for the accomplishment of organizational objectives.

The significance of the coordinating process has been aptly highlighted by Mary Parker Follet. The manager, in her view, should ensure that he has an organization "with all its parts coordinated, so moving together in their closely knit and adjusting activities, so linking, interlocking and interrelation, that they make a working unit that is not a congeries of separate pieces, but what I have called a functional whole or integrative unity". Coordination, as a management function, involves the following sub-functions :

Clear definition of authority-responsibility relationships

Unity of direction

Unity of command

Effective communication

Effective leadership

3.3.6 Controlling

Finally, the manager must be sure that actions of the organizations members do in fact move the organization towards its stated goals. This is the controlling function of management. The controlling is the process of ensuring that actual activities confirm to plan activities. It involves four main elements :-

Establishing standards of performance

Measuring current performance

Comparing this performance to the established standards.

Taking correction actions if deviations are detected.

Controlling implies that objectives, goals and standards of performance exist and are known to employees and their superiors. It also implies a flexible and dynamic organization which will permit changes in objectives, plans, programmes, strategies, policies, organizational design, staffing policies and practices, leadership style, communication system, etc., for it is not uncommon that employees failure to achieve predetermined standards is due to defects or shortcomings in any one or more of the above dimensions of management.

Thus, controlling involves the following process :

Measurement of performance against predetermined goals.

Identification of deviations from these goals.

Corrective action to rectify deviations.

It may be pointed out that although management functions have been discussed in a particular sequence-planning, organizing, staffing, directing, coordinating and controlling – they are not performed in a sequential order. Management is an integral process and it is difficult to put its functions neatly in separate boxes. Management functions tend to coalesce, and it sometimes becomes difficult to separate one from the other. For example, when a production manager is discussing work problems with one of his subordinates, it is difficult to say whether he is guiding, developing or communicating, or doing all these things simultaneously. Moreover, managers often perform more than one function simultaneously.

Through the controlling function, managers keep the organization on track. Without the controlling functions, other functions loose their relevance. If all the activities are properly planned, organized and directed but there is no control on the activities then there are full chances that the organization does not achieve its planned goals. Controlling function helps us knowing the deviations but the reasons for such deviations and the corrective actions is to be taken depends on the managers. Hence, the personal ability of the managers makes the controlling function effective or ineffective.

PLANNING

1 THE CONCEPT OF PLANNING

Planning is the most fundamental function of management. An organization can succeed in effective utilization of its human financial and material resources only when its management decides in advance its objectives, and methods of achieving them. Without it purposive and coordinated effort is not possible, and what results are chaos, confusion and wastage of resources. Planning involves determination of objectives of the business, formation of programmes and courses of action for their attainment, development of schedules and timings of action and assignment of responsibilities for their implementation. Planning thus precedes all efforts and action, as it is the plans and programmes that determine the kind of decisions and activities required for the attainment of the desired goals. It lies at the basis of all other managerial functions including organizing, staffing, directing and controlling. In the absence of planning, it will be impossible to decide what activities are required, how they should be combined into jobs and departments, who will be responsible for what kind of decisions and actions, and how various decisions and activities are to be coordinated. And, in the absence of organizing involving the above managerial activities, staffing cannot proceed, and directing cannot be exercised. Planning is also an essential prerequisite for the performance of control function, as it provides criteria for evaluating performance. Planning thus precedes all managerial functions.

Definition of Planning : Planning is the process of deciding in advance what is to be done, who is to do it, how it is to be done and when it is to be done. It is the process of determining a course of action, so as to achieve the desired results. It helps to bridge the gap from where we are, to where we want to go. It makes it possible for things to occur which would not otherwise happen. Planning is a higher order mental process requiring the use of intellectual faculties, imagination, foresight and sound judgment. According to Koontz, O'Donnell and Weihrich, *"Planning is an intellectually demanding process; it requires the conscious determination of courses of action and the basing of decisions on purpose, knowledge and considered estimates"*.

Planning is a process which involves anticipation of future course of events and deciding the best course of action. It is a process of thinking before doing. To plan is to produce a scheme for future action; to bring about specified results, at specified cost, in a specified period of time. It is deliberate attempt to influence, exploit, bring about, and control the nature, direction, extent, speed and effects of change. It may even attempt deliberately to create change, remembering always that change (like decision) in any one sector will in the same way affect other sectors. Planning is a deliberate and conscious effort done to formulate the design and orderly sequence actions through which it is expected to reach the objectives. Planning is a systematic attempt to decide a particular course of action for the future, it leads to determination of objectives of the group activity and the steps necessary to achieve them. Thus, it can be said that planning is the selecting and relating of facts and the making and using of assumptions regarding the future in the visualization and formulation of proposed activities believed necessary to achieve desired results.

Planning is thus deciding in advance the future state of business of an enterprise, and the means of attaining it. Its elements are :

What will be done – what are the objectives of business in the short and in the long run?

What resources will be required – This involves estimation of the available and potential resources, estimation of resources required for the achievement of objectives, and filling the gap between the two, if any.

How it will be done – This involves two things : (i) determination of tasks, activities, projects, programmes, etc., required for the attainment of objectives, and (ii) formulation of strategies, policies, procedures, methods, standard and budgets for the above purpose.

Who will do it – It involves assignment of responsibilities to various managers relating to contributions they are expected to make for the attainment of enterprise objectives. This is preceded by the breaking down of the total enterprise objectives into segmental objectives, resulting into divisional, departmental, sectional and individual objectives.

When it will be done – It involves determination of the timing and sequence, if any, for the performance of various activities and execution of various projects and their parts

4.2 MYTHS ABOUT PLANNING

There are certain commonly prevalent myths and fallacies about planning. An attempt is being made to highlight some of the important concepts of planning by way of its distinguishing features, so as to clarify the misconceptions:

Planning does no attempt to make future decisions : Planning choosing of the more desirable future alternatives open to a company, is the process so that better decisions may be made.

Planning provides a frame of reference within which the present decisions are to be made. At the same time, a plan often leads to additional but related decisions. For example, a college plan to introduce a new degree or diploma, necessitates the need for decisions like what should be the duration of the course leading to the degree or diploma, together with detailed curricula in the specific courses to be included, the system of evaluation of examination, and the necessary practical training, if any, etc.

Planning is not just forecasting or making projections : Forecasts are mere estimates of the future, and indicate what may or may not happen. However, corporate planning goes beyond these forecasts and asks questions like :

Are we in right business?

What are our basic goals and objectives?

When shall our present products become obsolete?

Are our markets expanding or shrinking?

Do we want to merge or go for takeover?

Planning is not a static process : Indeed, plans are obsolete as soon as they are executed, because the environment assumed in their preparation may have already changed. Planning is a continuous process. It involves continuous analysis and adjustments of the plans and even objectives in the context of changing circumstances.

4.3 NATURE AND SCOPE OF PLANNING

The nature of planning can be understood by focusing on its following aspects :

Planning is a Continuous Process

Planning deals with the future, and future, by its very nature, is uncertain. Although the planner bases his plans on an informed and intelligent estimate of the future, the future events may not turnout to be exactly as predicted. This aspect of planning makes it a continuous process. Plans tend to be a statement of future intentions relating to objectives and means of their attainment. They do not acquire finality because revisions are needed to be made in them in response to changes taking place in the internal as well as external environment of enterprise. Planning should, therefore, be a continuous process and hence no plan is final, it is always subject to a revision.

Planning concerns all Managers

It is the responsibility of every manager to set his goals and operating plans. In doing so, he formulates his goals and plans within the framework of the goals and plans of his superior. Thus, planning is not the responsibility of the top management or the staff of planning department only; all those who are responsible for the achievement of results, have an obligation to plan into the future. However, managers at higher levels, being responsible for a relatively larger unit of the enterprise, devote a larger part of their time to planning, and the time span of their plans also tends to be longer than that of managers at lower levels. It shows that planning acquires greater importance and tends to the longer in the future at higher than at lower management levels.

Plans are arranged in a Hierarchy

Plans are first set for the entire organization called the corporate plan. The corporate plan provides the framework for the formulation of divisional departmental and sectional goals. Each of these organizational components sets its plans laying down the programmes, projects, budgets, resource requirements, etc. The plans of each lower component are aggregated into the plans of successively higher component until the corporate plan integrates all component plans into a composite whole. For example, in the production department, each shop superintendent sets his plans, which are successively integrated into the general foremen's, works manager's and production manager's plans. All departmental plans are then integrated in the corporate plan. Thus, there is a hierarchy of plans comprising the corporate plan, divisional/department plans, sectional plans and individual manger's unit plans.

Planning Commits an Organization into the Future

Planning commits an organization into the future, as past, present and future is tied in a chain. An organization’s objectives, strategies, policies and operating plans affect its future effectiveness, as decisions made and activities undertaken in the present continue to have their impact into the future. Some of the plans affect the near future, while others affect it in the long run. For example, plans for product diversification or production capacity affect a company long into the future, and are not easily reversible, whereas plans relating to the layout of its office locations can be changed with relatively less difficulty in the future. This focuses on the need for better and more careful planning.

Planning is Antithesis of States Quo

Planning is undertaken with the conscious purpose of attaining a position for the company that would not be accomplished otherwise.

Planning, therefore, implies change in organizational objectives, policies, products, marketing strategies and so forth. However, planning itself is affected by unforeseen environmental changes. It, therefore, needs examination and re-examination, continual reconsideration of the future, constant searching for more effective methods and improved results.

Planning is thus an all pervasive, continuous and dynamic process. It imposes on all executives a responsibility to estimate and anticipate the future, prepare the organization to cope with its challenges as well as take advantage of the opportunities created by it, while at the same time, influence tomorrow's events by today's pre-emptive decisions and actions.

4.4 IMPORTANCE OF PLANNING

While planning does not guarantee success in organizational objectives, there is evidence that companies that engaged in formal planning consistently performed better than those with none or limited formal planning and improved their own performance over a period of time. It is very rare for an organization to succeed solely by luck or circumstances. Some of the reasons as to why planning is considered a vital managerial function are given below :

Planning is essential in modern business : The growing complexity of the modern business with rapid technological changes, dynamic changes in the consumer preferences and growing tough competition necessities orderly operations, not only in the current environment but also in the future environment. Since planning takes a future outlook, it takes into account the possible future developments.

Planning affects performance : A number of empirical studies provide evidence of organizational success being a function of formal planning, the success being measured by such factors as return on investment, sales volume, growth in earnings per share and so on. An investigation of firms in various industrial products as machinery, steel, oil, chemicals and drugs revealed that companies that engaged in formal planning consistently performed better than those with no formal planning.

Planning puts focus on objectives : The effectiveness of formal planning is primarily based upon clarity of objectives. Objectives provide a direction and all planning decisions are directed towards achievement of these objectives. Plans continuously reinforce the importance of these objectives by focusing on them. This ensures maximum utility of managerial time and efforts.

Planning anticipates problems and uncertainties : A significant aspect of any formal planning process in collection of relevant information for the purpose of forecasting the future as accurately as possible. This would minimize the chances of haphazard decisions. Since the future needs of the organization are anticipated in advance, the proper acquisition and allocation of resources can be planned, thus minimizing wastage and ensuring optimal utility of these resources.

Planning is necessary to facilitate control : Controlling involves the continual analysis and measurement of actual operations against the established standards. These standards are set in the light of objectives to by achieved. Periodic reviews of operations can determine whether the plans are being implemented correctly. Well developed plans can aid the process of control in two ways.

First, the planning process establishes a system of advance warning of possible deviations from the expected performance. Second contribution of planning to the control process is that it provides quantitative data which would make it easier to compare the actual performance in quantitative terms, not only with the expectations of the organization but also with the industry statistics or market forecasts.

Planning helps in the process of decision making : Since planning specifies the actions and steps to be taken in order to accomplish organizational objectives, it serves as a basis for decision-making about future activities. It also helps managers to make routine decisions about current activities since the objectives, plans, policies, schedules and so on are clearly laid down.

4.5 ADVANTAGES AND LIMITATIONS OF PLANNING

The importance of formal planning has already been discussed. A vigorous and detailed planning programme helps managers to be future oriented. It gives the mangers some purpose and direction. A sound blue print for plans with specific objective and action statements has numerous advantages for the organization which are as follows :

Focuses Attention on Objectives : Since all planning is directed towards achieving enterprise objectives, the very act of planning focuses attention on these objectives. Laying down the objectives is the first step in planning. If the objectives are clearly laid down, the execution of plans will also be directed towards these objectives.

Ensures Economical Operation : Planning involves a lot of mental exercise which is directed towards achieving efficient operation in the enterprise. It substitutes joint directed effort for uncoordinated piecemeal activity, even flow of work for uneven flow, and deliberate decisions for snap judgement costs. This helps in better utilization of resources and thus minimizing costs.

Reduces Uncertainty : Planning helps in reducing uncertainties of future because it involves anticipation of future events. Effective planning is the result of deliberate thinking based on facts and figures. It involves forecasting also. Planning gives an opportunity to a business manager to foresee various uncertainties which may be caused by changes in technology, taste and fashion of the people, etc. Sufficient provision is made in the plans to offset these uncertainties.

Facilitates Control : Planning helps the managers in performing their function of control. Planning and control are inseparable in the sense that unplanned action cannot be controlled because control involves keeping activities on the predetermined course by rectifying deviations from plans. Planning helps control by furnishing standards of control. It lays down objectives and standards of performance which are essential for the performance of control function.

Encourages Innovation and Creativity : Planning is basically the deciding function of management. It helps innovative and creative thinking among the managers because many new ideas come to the mind of a manager when he is planning. It creates a forward looking attitude among the managers.

Improves Motivation : A good planning system ensures participation of all managers which improves their motivation. It improves the motivation of workers also because they know clearly what is expected of them. Moreover, planning serves as a good training device for future managers.

Improves Competitive Strength : Effective planning gives a competitive edge to the enterprise over other enterprises that do not have planning or have ineffective planning. This is because planning may involve expansion of capacity, changes in work methods, changes in quality, anticipation tastes and fashion of people and technological changes, etc.

Achieves Better Coordination : Planning secures unity of direction towards the organizational objectives. All the activities are directed towards the common goals. There is an integrated effort throughout the enterprise. It will also help in avoiding duplication of efforts. Thus, there will be better coordination in the organization.

Limitations of Planning : Sometimes, planning fails to achieve the expected results. There are many causes of failure of planning in practice. These are discussed below :

Lack of reliable data : There may be lack of reliable facts and figures over which plans may be based. Planning loses its value if reliable information is not available or if the planner fails to utilize the reliable information. In order to make planning successful, the planner must determine the reliability of facts and figures and must base his plans on reliable information only.

Lack of initiative : Planning is a forward looking process. If a manager has a tendency to follow rather than lead, he will not be able to make good plans. Therefore, the planner must take the required initiative. He should be an active planner and should take adequate follow up measure to see that plans are understood and implemented properly.

Costly process : Planning is time consuming and expensive process. This may delay action in certain cases. But it is also true that if sufficient time is not given to the planning process, the plans so produced may prove to be unrealistic. Similarly, planning involves costs of gathering and analyzing information and evaluation of various alternatives. If the management is not willing to spend on planning, the results may not be good.

Rigidity in organizational working : Internal inflexibility in the organization may compel the planners to make rigid plans. This may deter the managers from taking initiative and doing innovative thinking. So the planners must have sufficient discretion and flexibility in the enterprise. They should not always be required to follow the procedures rigidly.

Non-acceptability of change : Resistance to change is another factor which puts limits on planning. It is a commonly experienced phenomenon in the business world. Sometimes, planners themselves do not like change and on other occasions they do not think it desirable to bring change as it makes the planning process ineffective.

External limitations : The effectiveness of planning is sometimes limited because of external factors which are beyond the control of the planners. External strategies are very difficult to predict. Sudden break-out of war, government control, natural havocs and many other factors are beyond the control of management. This makes the execution of plans very difficult.

Psychological barriers : Psychological factors also limit the scope of planning. Some people consider present more important than future because present is certain. Such persons are psychologically opposed to planning. But it should not be forgotten that dynamic mangers always look ahead. Long-range wellbeing of the enterprise cannot be achieved unless proper planning is done for future.

4.6 MEASURES TO OVERCOME LIMITATIONS OF PLANNING

Some people say that planning is a mere ritual in the fast changing environment. This is not a correct assessment on managerial planning. Planning may be associated with certain difficulties such as non-availability of data, lethargy on the part of the planners, rigidity of procedures, resistance to change and changes in external environment. But these problems can be overcome by taking the following steps :

Setting Clear-cut Objectives : The existence of clear-cut objectives is necessary for efficient planning. Objectives should not only be understandable but rational also. The overall objectives of the enterprise must be the guiding pillars for determining the objectives of various departments. This would help in having coordinated planning in the enterprise.

Management Information System : An efficient system of management information should be installed so that all relevant facts and figures are made available to the mangers before they perform the planning function. Availability of right type of information will help in overcoming the problems of complete understanding of the objectives and resistance to change on the part of the subordinates.

Carefully Premising : The planning premises constitute a framework within which planning is done. They are the assumptions of what is likely to happen in future. Planning always requires some assumptions to be made regarding future happenings. In other words, it is a prerequisite to determine future settings such as marketing, pricing, Government policy, tax structure, business cycle, etc. before giving the final shape to the overall business plan. Due weightage should be given to the relevant factors at the time of premising. It may be pointed out that the premises which may be of strategic significance to one enterprise may not be of equal significance to another because of size, nature of business, nature of market, etc.

Business Forecasting : Business is greatly influenced by economic, social, political and international environment. The management must have a mechanism of forecasting changes in such environment. Good forecasts will contribute to the effectiveness of planning.

Dynamic Managers : The persons concerned with the task of planning should be dynamic in outlook. They must take the required initiative to make business forecasts and develop planning premises.

A manager should always keep in mind that planning is looking ahead and he is making plans for future which is highly uncertain.

Flexibility : Some element of flexibility must be introduced in the planning process because modern business operates in an environment which keeps on changing. For achieving effective results, there should always be a scope to make necessary addition, deletion, or alternation in the plans as is demanded by the circumstances.

Availability of Resources : Determination and evaluation of alternatives should be done in the light of resources available to the management. Alternatives are always present in any decision problem. But their relative plus and minus points are to be evaluated in the light of the resources available. The alternative which is chosen should not only be concerned with the objectives of the enterprise, but also capable of being accomplished with the help of the given resources.

Cost-Benefit Analysis : The planners must undertake cost-benefit analysis to ensure that the benefits of planning are more than the cost involved in it. This necessarily calls for establishing measurable goals, clear insight to the alternative courses of action available, premising reasonable and formulation of derivative plans keeping in view the fact that environment is fast changing.

4.7 BASIC PRINCIPLES OF PLANNING

The important principles of planning are as follows:

Principle of contribution to objective : The purpose of plans and their components is to develop and facilitate the realization of organizational aims and objectives. Long-range plans should be interwoven with medium-range plans which, in turn, should be meshed with short-range ones in order to accomplish organizational objectives more effectively and economically.

Principle of limiting factors : Planning must take the limiting factors (manpower, money, machines, materials, and management) into account by concentrating on them when developing alternative plans, strategies, policies, procedures and standards.

Principle of pervasiveness of planning : Planning is found at all levels of management. Strategic planning or long-range planning is related to top management, while intermediate and short-range planning is the concern of middle and operative management respectively.

Principle of navigational change : This principle requires that managers should periodically check on events and redraw plans to maintain a course towards a desired goal. It is the duty of the navigator to check constantly, whether his ship is following the right direction in the vast ocean to reach the distinction as scheduled. In the same way, a manager should check his plans to ensure that these are processing as required. He should change the direction of his plans if he faces unexpected events. It is useful if plans contain an element of flexibility. It is the responsibility of the manager, to adapt and change the direction of plans, to meet the challenge of constantly changing environment that could not be foreseen.

Principle of flexibility : Flexibility should be built into organizational plans. Possibility of error in forecasting and decision-making and future uncertainties is the two common factors which call for flexibility in managerial planning. The principal of flexibility states the management should be able to change an existing plan because of changes in environment, without due cost or delay, so that activities keep moving towards established goals. Thus, an unexpected slump in demand for a product will require change in sales plan as well ass production plan. Change in these plans can be introduced, only when these possess the characteristics of flexibility. Adapting plans to suit future uncertainties or changing environment is easier if flexibility is an important consideration while planning.

4.8 CATEGORIES AND LEVELS OF PLANNING

Planning can be classified on different bases which are discussed below :

Strategic and Functional Planning : In strategic or corporate planning, the top management determines the general objectives of the enterprise and the steps necessary to accomplish them in the light of resources currently available and likely to be available in the future. Functional planning, on the other hand, is planning that covers functional areas like production, marketing, finance and purchasing.

Long-range and short-range planning : Long-range planning sets long-term goals of the enterprise and then proceeds to formulate specific plans for attaining these goals. It involves an attempt to anticipate, analyze and make decisions about basic problems and issues which have significance reaching well beyond the present operating horizon of the enterprise. Short-range planning, on the other hand, is concerned with the determination of short-term activities to accomplish long-term with the determination of short-term activities to accomplish long-term objectives. Short range planning relates to a relatively short period and has to be consistent with the long-range plans. Operational plans are generally related to short periods.

Adhoc and Standing Planning : Adhoc planning committees may be constituted for certain specific matters, as for instance, for project planning. But standing plans are designed to be used over and over again. They include organizational structure, standard procedures, standard methods etc.

Administrative and Operational Planning : Administrative planning is done by the middle level management which provides the foundation for operative plans. Operative planning, on the other hand, is done by the lower level mangers to put the administrative plans into action.

Physical Planning : It is concerned with the physical location and arrangement of building and equipment.

Formal and Informal Planning : Various types of planning discussed above are of formal nature. They are carried on systematically by the management. They specify in black and white the specific goals and the steps to achieve them. They also facilitate the installation of internal control systems. Informal planning, on the other hand, is mere thinking by some individuals which may become the basis of formal planning in future.

LEVELS OF PLANNING

In management theory it is usual to consider that there are three basic level of planning, though in practice there may be more than three levels of management and to an extent there will be some overlapping of planning operations. The three level of planning are as under :

Top Level Planning : Also known as overall or strategic planning, top level planning is done by the top management, i.e. board of directors or governing body. It encompasses the long-range objectives and policies of organization and is concerned with corporate results rather than sectional objective. Top level planning is entirely long-range and is inextricably linked with long-term objectives. It might be called the 'what' of planning.

Second Level Planning : Also known as tactical planning, it is done by middle level mangers or department heads. It is concerned with 'how' of planning. It deals with deployment of resources to the best advantage. It is concerned mainly, but not exclusively, with long-range planning, but its nature is such that the time spans are usually shorter than those of strategic planning. This is because its attentions are usually devoted to the step by step attainment of the organization’s main objectives. It is, in fact, oriented to functions and departments rather than to the organization as a whole.

Third Level Planning : Also known as operational or activity planning, it is the concern of department managers and supervisors. It is confined to putting into effect the tactical or departmental plans. It is usually for short-term and may be revised quite often to be in tune with the tactical planning.

4.9 ESSENTIAL STEPS IN PLANNING

Planning is a process which embraces a number of steps to be taken. It is an intellectual exercise and a conscious determination of courses of action. Therefore, it requires a serious thought on numerous factors necessary to be considered in making plans. Facts are collected and analyzed and the best out of all is chosen and adopted. The planning process, valid for one organization and for one plan, may not be valid for all other organizations or all types of plans, because various factors that go into planning process may differ from organization to organization or plan to plan. For example, planning process for a large organization may not be the same as for a small organization. The steps generally involved in planning are as follows :

Establishing Verifiable Goals or Set of Goals to be Achieved : The first step in planning is to determine the enterprise objectives. These are most often set by upper level or top managers, usually after a number of possible objectives have been carefully considered. There are many types of objectives managers may select: a desired sales volume or growth rate, the development of a new product or service, or even a more abstract goal such as becoming more active in the community. The type of goal selected will depend on number of factors: the basic mission of the organization, the values its managers hold, and the actual and potential ability of the organization.

2. **Establishing Planning Premises :** The second step in planning is to establish planning premises, i.e. certain assumptions about the future on the basis of which the plan will be intimately formulated. Planning premises are vital to the success of planning as

they supply economic conditions, production costs and prices, probable competitive behaviour, capital and material availability, governmental control and so on.

Deciding the planning period : Once upper-level managers have selected the basic long-term goals and the planning premises, the next task is to decide the period of the plan. Business varies considerably in their planning periods. In some instances plans are made for a year only while in others they span decades. In each case, however, there is always some logic in selecting a particular time range for planning. Companies generally base their period on a future that can reasonably be anticipated. Other factors which influence the choice of a period are as follows: : (a) lead time in development and commercialization of a new product; (b) time required to recover capital investments or the pay back period; and (c) length of commitments already made.

Findings Alternative Courses of Action : The fourth step is planning is to search for and examining alternative courses of action. For instance, technical know-how may be secured by engaging a foreign technician or by training staff abroad. Similarly, products may be sold directly to the consumer by the company's salesmen or through exclusive agencies. There is seldom a plan for which reasonable alternatives do not exit, and quite often an alternative that is not obvious proves to be the best.

Evaluating and Selecting a Course of Action : Having sought alternative courses, the fifth step is to evaluate them in the light of the premises and goals and to select the best course or courses of action. This is done with the help of quantitative techniques and operations research.

Developing Derivative plans : Once the plan has been formulated, its broad goals must be translated into day-to-day operations of the organization. Middle and lower-level managers must draw up the appropriate plans, programmes and budgets for their sub-units. These are described as derivative plans. In developing these derivative plans, lower-level managers take steps similar to those taken by upper-level managers – selecting realistic goals, assessing their sub-units particular strength and weaknesses and analyzing those parts of the environment that can affect them.

Measuring and Controlling the Progress : Obviously, it is foolish to let a plan run its course without monitoring its progress. Hence the process of controlling is a critical part of any plan. Managers need to check the progress of their plans so that they can (a) take whatever remedial action is necessary to make the plan work, or (b) change the original plan if it is unrealistic.

DEISION-MAKING

5.1 THE CONCEPT OF DECISION MAKING

Decision-making and problem-solving are basic ingredients of managerial leadership. More than anything else, the ability to make sound, timely decisions separates a successful manager from a non-successful. It is the responsibility of managers to make high quality decisions that are accepted and executed in a timely fashion. On the face of it the decisions should be cohesive, conjectured, contingent, flexible, improved, influencing, intuitional, non-judgemental, objective, operational one. One of the most important functions of a manager is to take decisions. Whatever a manager does, he does through decision-making. Each managerial decision is concerned with the process of decision-making. It is because of this pervasiveness of decision-making that Professor Herbert Simon has said the process of managing as a process of decision-making. According to him, a post or position cannot be said to be managerial level until and unless the right of decision-making is attached to it. As a matter of act, it is the core of executive activities in a business organization.

Decision-making is a mental process. It is a process of selecting one best alternative for doing a work. Thus, it is a particular course of action chosen by a decision maker as the most effective alternative for achieving his goals. According to D.E. McFarland, "A decision is an act of choice-wherein an executive forms a conclusion about what must be done in a given situation. A decision represents a course of behaviour chosen from a number of possible alternatives”. In the words of Haynes and Massie, "A decision is a course of action which is consciously chosen for achieving a desired result".

Hence decision-making is a typical form of planning. It involves choosing the best alternative among various alternatives, in order to realize certain objectives. A decision represents a judgement, a final word, and resolution of conflicts or a commitment to act in certain manner in the given set of circumstances. It is really a mental exercise which decides what to do.

Leaders must be able to reason under the most critical conditions and decide quickly what action to take. If they delay or avoid making a decision, this indecisiveness may create hesitancy, loss of confidence, and confusion within the unit, and may cause the task to fail. Since leaders are frequently faced with unexpected circumstances, it is important to be flexible - leaders must be able to react promptly to each situation. Then, when circumstances dictate a change in plans, prompt reaction builds confidence in them.

5.2 CHARACTERISTICS OF DECISION MAKING

The essential characteristics of decision making are given below:

- It is a process of choosing a course of action from among the alternative courses of action.
- It is a human process involving to a great extent the application of intellectual abilities.
- It is the end process preceded by deliberation and reasoning.
- It is always related to the environment. A manager may take one decision in a particular set of circumstances and another in a different set of circumstances.
- It involves a time dimension and a time lag.
- It always has a purpose. Keeping this in view, there may just be a decision not to decide.

It involves all actions like defining the problem and probing and analyzing the various alternatives which take place before a final choice is made.

5.3 IMPORTANCE OF DECISION MAKING

As a leader, you will make decisions involving not only yourself, but the morale and welfare of others. Some decisions, such as when to take a break or where to hold a meeting, are simple decisions which have little effect on others. Other decisions are often more complex and may have a significant impact on many people. Therefore, having a decision-making, problem-solving process can be a helpful tool. Such a process can help you to solve these different types of situations. Within business and the military today, leaders at all levels use some form of a decision-making, problem-solving process. There are several different approaches (or models) for decision-making and problem solving. We would briefly discuss it in this lesson as well.

It is beyond doubt that the decision making is an essential part of every function of management. According to Peter F. Drucker, "Whatever a manager does, he does through decision making". Decision making lies deeply embedded in the process of management, spreads over all the managerial functions and covers all the areas of the organization. Management and decision making are bound up and go side by side in every activity performed by manager. Whether knowingly or unknowingly, every manager makes decisions constantly.

Right from the day when the size of the organization used to be very small to the present day huge or mega size of the organization, the importance of decision making has been there. The significant difference is that in today's complex organization structure, the decision making is getting more and more complex. Whatever a manager does, he does through making decisions. Some of the decisions are of routine and repetitive in nature and it might be that the manager does not realize that he is taking decisions whereas, other decisions which are of strategic nature may require a lot of systematic and scientific analysis. The fact remains that management is always a decision making process.

The most outstanding quality of successful manager is his/her ability to make sound and effective decisions. A manager has to make up his/her mind quickly on certain matters. It is not correct to say that he has to make spur of the moment decisions all the time. For taking many decisions, he gets enough time for careful fact finding, analysis of alternatives and choice of the best alternative. Decision making is a human process. When one decides, he chooses a course alternative which he thinks is the best.

Decision making is a proper blend of thinking, deciding and action. An important executive decision is only one event in the process which requires a succession of activities and routine decisions all along the way. Decisions also have a time dimension and a time lag. A manager takes time to collect facts and to weigh various alternatives. Moreover, after decides, it takes still more time to carry out a decision and, often, it takes longer before he can judge whether the decision was good or bad. It is also very difficult to isolate the effects of any single decision.

5.4 DECISION MAKING PROCESS

The following procedure should be followed in arriving at a correct decision:

Setting objectives : Rational decision-making involves concrete objectives. So the first step in decision-making is to know one's objectives. An objective is an expected outcome of future actions. So before deciding upon the future course of efforts, it is necessary to know beforehand what we are trying to achieve. Exact knowledge of goals and objectives bring purpose in planning and harmony in efforts. Moreover, objectives are the criteria by which final outcome is to be measured.

Defining the Problem : It is true to a large extent that a problem well defined is half solved. A lot of bad decisions are made because the person making the decision does not have a good grasp of the problem. It is essential for the decision maker to find and define the problem before he takes any decision.

Sufficient time and energy should be spent on defining the problem as it is not always easy to define the problem and to see the fundamental thing that is causing the trouble and that needs correction. Practically, no problem ever presents itself in a manner that an immediate decision may be taken. It is, therefore, essential to define the problem before any action is taken, otherwise the manager will answer the wrong question rather than the core problem. Clear definition of the problem is very important as the right answer can be found only to a right question.

Analyzing the problem : After defining the problem, the next step in decision-making is analyzing it. The problem should be thoroughly analyzed to find out adequate background information and data relating to the situation. The problem should be divided into many sub-problems and each element of the problem must be investigated thoroughly and systematically. There can be a number of factors involved with any problem, some of which are pertinent and others are remote. These pertinent factors should be discussed in depth. It will save time as well as money and efforts.

In order to classify any problem, we require lot of information. So long as the required information is not available, any classification would be misleading. This will also have an adverse impact on the quality of the decision. Trying to analyze without facts is like guessing directions at a crossing without reading the highway signboards. Thus, collection of right type of information is very important in decision making. It would not be an exaggeration to say that a decision is as good as the information on which it is based. Collection of facts and figures also requires certain decisions on the part of the manager. He must decide what type of information he requires and how he can obtain this.

Developing Alternatives : After defining and analyzing the problem, the next step in the decision making process is the development of alternative courses of action. Without resorting to the process of developing alternatives, a manager is likely to be guided by his limited imagination. It is rare for alternatives to be lacking for any course of action. But sometimes a manager assumes that there is only one way of doing a thing. In such a case, what the manager has probably not done is to force himself consider other alternatives. Unless he does so, he cannot reach the decision which is the best possible. From this can be derived a key planning principle which may be termed as the principle of alternatives. Alternatives exist for every decision problem. Effective planning involves a search for the alternatives towards the desired goal.

Once the manager starts developing alternatives, various assumptions come to his mind, which he can bring to the conscious level. Nevertheless, development of alternatives cannot provide a person with the imagination, which he lacks. But most of us have definitely more imagination than we generally use. It should also be noted that development of alternatives is no guarantee of finding the best possible decision, but it certainly helps in weighing one alternative against others and, thus, minimizing uncertainties.

While developing alternatives, the principle of limiting factor has to be taken care of. A limiting factor is one which stands in the way of accomplishing the desired goal. It is a key factor in decision making. If such factors are properly identified, manager can confine his search for alternative to those which will overcome the limiting factors. In choosing from among alternatives, the more an individual can recognize those factors which are limiting or critical to the attainment of the desired goal the more clearly and accurately he or she can select the most favourable alternatives.

Selecting the Best Alternative : After developing alternatives one will have to evaluate all the possible alternatives in order to select best alternative. There are various ways to evaluate alternatives. The most common method is through intuition, i.e., choosing a solution that seems to be good at that time. There is an inherent danger in this process because a manager's intuition may be wrong on several occasions.

The second way to choose the best alternative is to weigh the consequences of one against those of the others. Peter F. Drucker has laid down four criteria in order to weigh the consequences of various alternatives. They are :

Risk : A manager should weigh the risks of each course of action against the expected gains. As a matter of fact, risks are involved in all the solutions. What matters is the intensity of different types of risks in various solutions.

Economy of Effort : The best manager is one who can mobilize the resources for the achievement of results with the minimum of efforts. The decision to be chosen should ensure the maximum possible economy of efforts, money and time.

Situation or Timing : The choice of a course of an action will depend upon the situation prevailing at a particular point of time. If the situation has great urgency, the preferable course of action is one that alarms the organization that something important is happening. If a long and consistent effort is needed, a slow start gathers momentum approach may be preferable.

Limitation of Resources : In choosing among the alternatives, primary attention must be given to those factors that are limiting or strategic to the decision involved. The search for limiting factors in decision-making should be a never ending process. Discovery of the limiting factor lies at the basis of selection from the alternatives and hence of planning and decision making. There are three bases which should be followed for selection of alternatives and these are experience, experimentation and research and analysis which are discussed below :

In making a choice, a manager is influenced to a great extent by his past experience. He can give more reliance to past experience in case of routine decisions; but in case of strategic decisions, he should not rely fully on his past experience to reach at a rational decision.

Under experimentation, the manager tests the solution under actual or simulated conditions. This approach has proved to be of considerable help in many cases in test marketing of a new product. But it is not always possible to put this technique into practice, because it is very expensive.

Research and Analysis is considered to be the most effective technique of selecting among alternatives, where a major decision is involved. It involves a search for relationships among the more critical variables, constraints and premises that bear upon the goal sought.

Implementing the Decision : The choice of an alternative will not serve any purpose if it is not put into practice. The manager is not only concerned with taking a decision, but also with its implementation. He should try to ensure that systematic steps are taken to implement the decision. The main problem which the manager may face at the implementation stage is the resistance by the subordinates who are affected by the decision. If the manager is unable to overcome this resistance, the energy and efforts consumed in decision making will go waste. In order to make the decision acceptable, it is necessary for the manager to make the people understand what the decision involves, what is expected to them and what they should expect from the management.

In order to make the subordinates committed to the decision it is essential that they should be allowed to participate in the decision making process. The managers who discuss problems with their subordinates and give them opportunities to ask questions and make suggestions find more support for their decisions than the managers who don't let the subordinates participate. The area where the subordinates should participate is the development of alternatives. They should be encouraged to suggest alternatives. This may bring to surface certain alternatives which may not be thought of by the manager. Moreover, they will feel attached to the decision. At the same time, there is also a danger that a group decision may be poorer than the one man decision. Group participation does not necessarily improve the quality of the decision, but sometimes impairs it. Someone has described group decision like a train in which every passenger has a brake. It has also been pointed out that all employees are unable to participate in decision making. Nevertheless, it is desirable if a manager consults his subordinates while making decision.

Follow-up the Decisions : Kennetth H. Killer, has emphatically written in his book that it is always better to check the results after putting the decision into practice. He has given reasons for following up of decisions and they are as follows:

If the decision is a good one, one will know what to do if faced with the same problem again.

If the decision is a bad one, one will know what not to do the next time.

If the decision is bad and one follows-up soon enough, corrective action may still be possible.

In order to achieve proper follow-up, the management should devise an efficient system of feedback information. This information will be very useful in taking the corrective measures and in taking right decisions in the future.

5.5 TYPES OF DECISIONS

Decisions have been classified by various authorities in various ways. The main types of decisions are as follows :

Programmed and non-programmed decisions : Professor Herbert Simon has classified all managerial decisions as programmed and non-programmed decisions. He has utilized computer terminology in classifying decisions. The programmed decisions are the routine and repetitive decisions for which the organization has developed specific processes. Thus, they involve no extraordinary judgement, analysis and authority. They are basically devised so that the problem may not be treated as a unique case each time it arises.

On the other hand, the non-programmed decisions are the one-shot, ill structured, novel policy decisions that are handled by general problem-solving processes. Thus, they are of extraordinary nature and require a thorough study of the problem, its in-depth analysis and the solving the problem. They are basically non-repetitive in nature and may be called as strategic decisions.

Basic and routine decisions : Professor George Katona has made a distinction between basic decision and routine decisions. Routine decisions are of repetitive nature and they involve the application of familiar principles to a situation. Basic or genuine decisions are those which require a good deal of deliberation on new principles through conscious thought process, plant location, distribution are some examples of basic decisions.

Policy and operative decisions : Policy decisions are important decisions and they involve a change in the procedure, planning or strategy of the organization. Thus, they are of a fundamental character affecting the whole business. Such decisions are taken by the top management. On the contrary, operating decisions are those which are taken by lower levels of management for the purpose of executing policy decisions. They are generally concerned with the routine type of work, hence unimportant for the top management. They mostly relate to the decision-makers own work and behaviour while policy decision influences the work and behaviour of subordinates.

Individual and group decisions : Individual decisions are those decisions which are made by one individual – whether owner of the business or by a top executive. On the other hand, group-decisions are the decisions taken by a group of managers – board, team, committee or a sub-committee. In India, individual decision-making is still very common because a large number of businesses are small and owned by a single individual. But in joint stock Company’s group decisions are common. There are both merits and demerits of each type of decision.

5.6 TOOLS OR TECHNIQUES OF DECISION MAKING

The following are some of the important decision making techniques :

Qualitative Techniques

Quantitative Techniques

Qualitative Decision Making Techniques

There is a great importance of generating a reasonable number of alternatives, so that one can decide upon the better quality items and make better decision.

Generating a reasonable number of alternatives is very useful for solving any complex problem. There are following means of generating the alternatives :

Brainstorming

Synectics, and

Nominal Grouping

Brainstorming

This technique was developed by Alex F. Osborn, and is one of the oldest and best known techniques for stimulating the creative thinking. This is carried out in a group where members are presented with a problem and are asked to develop as many as potential solutions as possible. The member of the group may be experts, may be from other organizations but the members should be around six to eight. The duration of the session may be around 30 minutes to 55 minutes. The premise of brainstorming is that when people interact in a free and exhibited atmosphere, they will generate creative ideas. The idea generated by one person acts as a stimulus for generating idea by others. This generation of ideas is a contagious and creates an atmosphere of free discussion and spontaneous thinking. The major objective of this exercise is to produce as many deals as possible, so that there is greater likelihood of identifying a best solution.

The important rules of brainstorming are as given below :

Criticism is prohibited.

Freewheeling is always welcome.

Quantity is desirable.

Combination and improvements are sought.

One session of brainstorming exercise generates around 50 to 150 ideas. Brainstorming is very useful in research, advertising, management, armed forces, governmental and non-governmental agencies.

Limitations of Brainstorming

The limitations of brainstorming are given below :

It is not very effective when a problem is very complex and vague

It is time consuming

It is very costly

It produces superficial solutions.

Synectics

This technique was developed by William J.J. Gordon. It is recently formalized tool of creative thinking. The word Synectics is a Greek word, meaning the fitting together of diverse elements. The basic purpose of synectics is to stimulate novel and even bizarre alternatives through the joining together of distinct and apparently irrelevant ideas.

The selection of members to synectics group is based on their background and training. The experienced leader states the problem for the group to consider, group reacts to the problem stated on the basis of their understanding and convictions. When the nature of the problem is thoroughly reviewed and analyzed, group proceeds to offer potential solutions. The leader has to structure the problem and he/she can use various methods to involve the preconscious mind, like role-playing, use of analogies, paradoxes, metaphors and other thought provoking exercises. This helps in generation of alternatives. The technical expert assists the group in evaluating the feasibility of ideas. It also suffers from some limitations of brainstorming. This is more useful and appropriate for solving complex and technical problems.

Nominal Grouping : This was developed by Andre Dellbecq and Andrew Van de Ven. Nominal group is very effective in situations where a high degree of innovation and idea generation is required. It is highly structured and follows following stages :

Stage-I : Around seven to ten participants with different background and training are selected, familiarized with a selected problem like what alternatives are available for achieving a set of objective.

Stage-2 : Each member is asked to prepare a list of ideas in response to the identified problem, individually for achieving a set of objective.

Stage -3 : After ten minutes, the member shares ideas, one at a time, in a round-robin manner. The group facilitator records the ideas on a blackboard or flip chart for all to see.

Stage-4 : Each group member then openly discusses and evaluates each recorded ideas. At this point, it may be rewarded, combined, added or deleted.

Stage-5 : Each member votes ranking the ideas privately. Following a brief discussion of the vote, a final secret ballot is conducted. The group's preference is the arithmetical outcome of the individual voter, these are followed by concluding meeting.

ORGANISING

6.1 INTRODUCTION

Organization is the backbone of management. Without efficient organization, no management can perform its functions smoothly. Sound organization contributes greatly to the continuity and success of the enterprise. Once Andrew Carnagie, an American industrialist said, "Take away our factories, take away our trade, our avenues of transportation, our money. Leave nothing but our organization, and in four years we shall have re-established ourselves". That shows the significance of managerial skills and organization. However, good organization structure does not by itself produce good performance – just as good constitution does not guarantee great presidents or good laws a moral society. But a poor organization structure makes good performance impossible, no matter how good the individuals may be. The right organizational structure is the necessary foundation; without it the best performance in all other areas of management will be ineffectual and frustrated.

6.2 MEANING AND CHARACTERISTICS OF ORGANISATION

The term 'organization' connotes different meanings to different people. Many writers have attempted to state the nature, characteristics and principles of organization in their own may. For instance, to the sociologists organization means a study of the interactions of the people, classes, or the hierarchy of an enterprise; to the psychologists organization means an attempt to explain, predict and influence behaviour of individuals in an enterprise; to a top level executive it may mean the weaving together the functional components in the best possible combination so that an enterprise can achieve its goals. The word 'organization' is also used widely to connote a group of people and the structure of relationships.

Some important definitions of organization are given below :

"It is grouping of activities necessary to attain enterprise objectives and the assignment of each grouping to a manager with authority necessary to supervise it". Koontz and O'Donnel

"The process of identifying and grouping the work to be performed, defining and delegating responsibility and authority and establishing relationship for the purpose of enabling people to work more effectively together in accomplishing objects". Louis A. Allen

"The structure and process by which a cooperative group of human beings allocates its tasks among its members, identifies relationship, and integrates its activities towards common objectives". Joseph L. Massive

From the above definitions, it is clear that organizing is the process of determining the total activities to achieve a given objective, grouping and assigning of activities to individuals, delegating them authority necessary to perform the activities assigned and establishing authority relationship among different positions in the organization.

An analysis of the above definitions reveals the following characteristics of an organization :

It is a group of individuals which may be large or small.

The group in the organization works under the executive leadership.

It is a machine or mechanism of management.

It has some directing authority or power which controls the concerted efforts of the group.

The division of labour, power and responsibilities are deliberately planned.

It implies a structure of duties and responsibilities.

It is established for accomplishment of common objectives

It is a functional concept.

Sound organization brings about the following advantages :

Facilitates attainment of the objectives of the enterprise.

Facilitates optimum use of resources and new technological development.

Facilitates growth and diversification.

Stimulates creativity and innovation.

Facilities effective communication.

Encourages better relations between the labour and the management.

Increase employee satisfaction and decreases employee turnover.

6.3 NATURE OF ORGANISATION

The term 'organization' is used in two different senses. In the first sense it is used to denote the process of organizing. In the second sense, it is used to denote the results of that process, namely, the organizational structure. So, the nature of organization can be viewed in two ways :

Organization as a process; and

Organization as a structure or framework of relationship.

Organization as a process : As a process, organization is an executive function. It becomes a managerial function involving the following activities :

Determining activities necessary for the accomplishment of the business objective.

Grouping of interrelated activities.

Assigning duties to persons with requisite competence,

Delegating authority, and

Coordinating the efforts of different persons and groups.

When we consider organization as a process, it becomes the function of every manager. Organizing is a continuous process and goes on throughout the life time of an enterprise. Whenever there is a change in the circumstances or material change in situation, new type of activities spring up. So, there is a need for constant review and reassignment of duties. Right persons have to be recruited and necessary training has to be imparted to enable them to be competent to handle the jobs.

The process of organization thus, involves dividing the work into rational way and interpreting the activities with work situation and personnel. It also represents humanistic view of the enterprise since it is the people which are uppermost in the process of integration of activities. Continuous review and adjustment makes this dynamic as well.

Organization as a structure or framework of relationships : As structure, organization is a network of internal authority, responsibility relationships. It is the framework of relationship of persons, operating at various levels, to accomplish common objectives. An organization structure is a systematic combination of people, functions and physical facilities. It constitutes a formal structure with definite authority and clear responsibility. It has to be first designed for determining the channel of communication and flow of authority and responsibility. For this, analysis of different types has to be done. Peter F. Drucker suggests following three types of analysis :

Activities analysis

Decision analysis, and

Relations analysis,

A hierarchy has to be built-up i.e., a hierarchy of positions with clearly defined authority and responsibility. The accountability of each functionary has to be specified. Therefore, it has to be put into practice. In a way, organization can be called a system as well.

The main emphasis here is on relationships or structure rather than on persons. The structure once built is not liable to change so soon. This concept of organization is, thus, a static one. It is also called classical concept. Organization charts are prepared depicting the relationship of different persons.

In an organizational structure, both formal and informal organizations take shape. The former is a per-planned one and defined by the executive action. The latter is a spontaneous formation, being laid down by the common sentiments, interactions and other interrelated attributes of the people in the organization. Both formal and informal organizations, thus, have structure.

6.4 STEPS IN THE PROCESS OF ORGANISING

The managerial function of organizing may be called as the 'process of organizing'. When the objectives have been set and policies framed, the necessary infrastructure of organization has to be built up. The concentration goes to activities and functions. These form 'the building blocks' of the organizational structure. There are no such rules as to which will lead to the best organizational structure. But the following steps can be of great help in the designing a suitable structure, which will laid in achieving enterprise objectives :

Clear definition of objectives : The first step in developing an organizational structure is to lay down its objectives in very clear terms. This will help in determining the type, stability and basic characteristics of the organization. In fact, organization activities are detailed in terms of objective to be achieved.

Determining activities : In order to achieve the objectives of the enterprise, certain activities are necessary. The activities will depend upon the nature and size of the enterprise. For example, a manufacturing concern will have production, marketing and other activities. There is no production activity in retail establishment. Each major activity is divided into smaller parts. For instance, production activity may be further divided into purchasing of materials, plant layout, quality control, repairs and maintenance, production research etc.

Assigning duties : The individual groups of activities are then allotted to different individuals according to their ability and aptitude. The responsibility of every individual should be defined clearly to avoid duplication and overlapping of efforts. Each person is given a specific job suited to him and he is made responsible for its execution. Right man is put in the right job.

Delegating authority : Every individual is given the authority necessary to perform the assigned activity effectively. By authority we mean power to take decisions, issue instructions, guiding the subordinates, supervise and control them. Authority delegated to a person should commensurate with his responsibility. An individual cannot perform his job without the necessary authority or power. Authority flows from top to bottom and responsibility from bottom to top.

Coordinating activities : The activities and efforts of different individuals are then synchronized. Such coordination is necessary to ensure effective performance of specialized functions. Interrelationship between different job and individuals are clearly defined so that everybody knows from whom he has to take orders and to whom he is answerable.

Providing physical facilities and right environment : The success of an organization depends upon the provision of proper physical facilities and right environment. Whereas it is important to have right persons on right jobs, it is equally important to have right working environment. This is necessary for the smooth running and the prosperity of the enterprise.

Establishment of structural relationship for overall control : It is very essential to establish well defined clear-cut structural relationships among individuals and groups. This will ensure overall control over the working of all departments and their coordinated direction towards the achievements of predetermined goals of business.

It is thus clear from the foregoing analysis that organization provides a structural framework of duties and responsibilities. It not only establishes authority relationship but also provides a system of communication. The various processes of organization explained above are technically

Performed through departmentation (b) delegation of authority and fixation of responsibilities and (c) decentralization of authority subject to central control through centralization of decision-making.

6.5 OBJECTIVES OF ORGANISING

Every economic activity which is deliberately done has some purpose. When a group of people assemble without any per-planed aim or purpose, it is not an organization but just a mob. But when, for instance they are invited to participate in a conference, an element of purpose has been introduced. A purpose refers to commitment to desired future. Objectives and purposes, generally, are interchangeable terms.

Why should business enterprise organize itself ? The answer to this question brings out its objectives. Objectives of a business organization are distinguished from the objectives of other social organizations. To put it more precisely, the nature of an organization (i.e. political, social, religious or economic) can only be known by studying its objectives.

The following may be, generally speaking, the objectives (or purpose) of organizing business :

Effective management of the enterprise : Effective management largely depends upon effective organization. It is the effective organization which ensures proper balance between authority and responsibility. It achieves a clear line of communication, and defines the areas of work. It is the organization which allows the top management to concentrate on overall planning and supervision, leaving the routine work for the lower levels of administration. It saves the entire enterprise from adhocism, over-lappings and inefficiency.

Maximum production at minimum cost : The activities are allotted according to the principle of division of labour. The efficient system of organization encourages every employee to make his best contribution in raising output. The increase in output and control of wasteful expenditure helps to decrease the cost of production. The profitability of the concern will also go up.

Sustained growth and diversification : A business enterprise should be a growing organism. With the passage of time, an enterprise must expand its activities. It should also aim at diversification of products and markets.

A static business soon grows stale and get out of run. It should grow from a small scale concern to a medium scale one and from a medium scale concern to large scale one. Organization plays an important role in this respect. Execution of policies in organized manner builds the necessary capacity and confidence in undertaking bigger activities.

Cooperation of employees : The organizational structure will succeed only if employees cooperate in the work. The employees learn working in closer cooperation of others. The management introduces various incentive schemes and gives monetary and other benefits to the employees, so that they work in a team spirit.

Discharging social responsibility : Maximizing of profits, no doubt, is the motive of every business. Without profit, no business can exist. But business is a part and parcel of society at large. It cannot survive long by exploiting consumers and society. It has to serve the society by providing it with goods of good quality at reasonable prices. It has to ensure smooth supply of goods as per the needs to consumers. The service motto cannot be realized without a well-knit organization structure. So, to discharge social obligation is an important objective of building up sound organization.

The purpose of sound organization is :

to establish an activity-authority environment in which people can perform most effectively.

to make group action efficient and effective by providing centres for decision making and a system of communication to effectively coordinate individual efforts towards group-goals.

to create relationships which minimize friction, focus on the objective, closely define the responsibilities of all parts and facilitate the attainment of the objective.

to subdivide the management process by which plans are translated into actions so as to make management most effective.

Thus, to sum up we can say that organization is a process by which the manger brings order out of chaos, removes conflicts between people over work or responsibility, and establishes an environment suitable for teamwork.

6.6 PRINCIPLES OF ORGANISATION

Effective and efficient working of any organization depends on how the managerial function of organization is being performed. The function of organization can be carried effectively with the help of under mentioned principles:

Division of work : While structuring organization, division of work, at the very outset, should be considered as the basis of efficiency. It is an established fact that group of individuals can secure better results by having division of work. Therefore, while designing the organization we should aim at making suitable grouping of activities. This is also called the principle of specialization.

Attention to objectives : An organization is a mechanism to accomplish certain goals or objectives. The objectives of an organization play an important role in determining the type of structure which should be developed. Clearly defined objectives facilitate grouping of activities, delegation of authority and consequently effective coordination.

Span of management : Span of management also refers to span of control signifying the number of subordinates reporting directly to any executive. It is an established fact that larger the number of subordinates reporting directly to the executive, the more difficult it tends to be for him to supervise and coordinate them effectively. This important principle of management should also be kept in mind.

Unity of command : Organization structure should also be designed in such a way that there exists unity of command in the sense that a single leader is the ultimate source of authority. This facilitates consistency in directing, coordinating and controlling to achieve the end objectives.

Flexibility : While designing the organization it should be kept in mind that organizational structure should not be regarded as static. Every organization is a living entity in a living environment which is fast changing . As such there must be sufficient room for changing and modifying the structure in the light of environmental changes so that the ultimate objective of the organization is achieved.

Proper balance : It is important to keep various segment or departments of an organization in balance. The problem of balance basically arises when an activity or a department is further divided and subdivided into smaller segments. The problems of balancing also crops up with the growing of any organization in its size and functioning.

Management by exception : It is a fundamental principle that makes any organization effective in its true sense. This principle signifies that problems of unusual nature only should be referred upward and decided by higher level executives in the managerial hierarchy, whereas the routine problems should be passed on to lower levels and resolved there. Application of this principle as such, certainly requires adhering to the principle of delegation of authority. The principle of exception is thus of significant practical utility and applies to all levels in the organization structure.

Decentralization : This principles is of great significance to big organizations. Decentralization implies selective dispersal of authority to help departments and units to run effectively and efficiently without frequent interruptions from the top of the enterprise. It requires very careful selection of what decisions to push down into the organization, of what to hold at or near the top specific policy making to guide the decision-making, selection and training of people and adequate control. Decentralization, as such, embraces all areas of management and evidently is of overwhelming significance in organization structure.

Departmentation : Departmentation is the process of grouping activities into units for purposes of administration. In other words, it denotes grouping of related jobs and activities without violating the principle of homogeneity over which an executive has authority to exercise and assert. The main advantages of departmentation are that it enables individual executive to mange his subordinates effectively since a manageable number of persons are brought under the direct supervision of individual executive.

Efficiency : The organization should be able to attain the predetermined objectives at the minimum cost. It is done so, it will satisfy the test of efficiency. From the point of view of an individual, a good organization should provide the maximum work satisfaction. Similarly, from the social point of view, an organization will be efficient when it contributes the maximum towards the welfare of the society.

Scalar principle : Scalar chain refers to the vertical placement of superiors starting from the chief executive at the top through the middle level to the supervisory level at the bottom. Proper scalar chain or line of command is prerequisite for effective organization.

Unity of direction : This means that each group of activities having the same objectives should have one plan and one head. There should be one plan or programme for each segment of work which is to be carried under the control and supervision of one head or superior. If different plans or policies are followed in one department by the subordinates, confusion is bound to occur.

Continuity : The form of organization structure should be such which is able to serve the enterprise to attain its objectives for a long period of time.

Coordination : The principal of coordination underlines that there should be proper liaison and cooperation between different departments and units of work. Unity of efforts for the accomplishment of desired objectives is the main aim of organization. This can be achieved through the principle of coordination.

Authority and responsibility : Authority should commensurate with responsibility. While assigning the responsibility, authority should also be assigned. If authority is not granted, the subordinates cannot discharge their responsibility properly.

6.7 ADVANTAGES OF ORGANISATION

The primary duty of management is to achieve the objectives of the enterprise. The objectives may be social, economic, political or religious. Proper organization of men, materials, money and equipment is necessary. Organization is the mechanism through which management directs, coordinates and controls the business. A sound organization offers the following advantages, which summarizes its importance :

Enhancement of managerial efficiency : A sound organization brings a proper coordination among various factors of production and leads to their optimum utilization. It avoids confusion, duplication and delays in work. It motivates the worker by proper division of work and labour. It reduces the work load of executives by delegation of authority.

Growth, expansion and diversification : Organization provides the framework within which an enterprise can expand and grow. Through organization, management can multiply its strength. In a good organization, the money and effort spent on different activities are in proportion to their contributions. It is through proper organization setup that many firms have grown from humble beginning to a giant size.

Specialization : A sound organization structure provides the benefits of specialization. Various activities are allocated between different individuals according to their qualifications, experience and aptitude. It increases their efficiency. Systematic organization of activities helps to secure economics and to minimize costs.

Adoption of new technology : A properly designed and well-balanced organization permits prompt adoption and optimum use of technological improvements. It has the capacity to absorb changes in the environment of business and to provide a suitable reaction to such changes. A good organization helps in the development of new and improved means of doing things.

Coordination : Organization facilitates coordination of diverse activities. Different functions are welded together to accomplish the desired objectives. Clear lines of authority and responsibility between various positions, ensure mutual cooperation and harmony in the enterprise. A good organization enables people to work with team spirit.

Training and Development : By delegating authority to lower levels, training and development of future executives is made possible. A good organization puts 'right man at the right job' and provide them right training and managerial development programmes. By appointing employees in different department assigning them different jobs, their training needs can be ascertained.

Creativity, initiative and innovation : A good organization encourages initiative and creative thinking. Employees are motivated to break new grounds and try unconventional methods. A sound organization offers the scope for recognition of merit followed by financial incentives to the personnel showing creativity.

Check on corrupt practices : A weak and unsound organization is source of corruption and inefficiencies. Well organized, well-defined, disciplined and sound organizations boost the morale and motivation of workers. It develops a feeling of involvement, belongingness, devotion, honesty and sincerity among employees. It prevents corruption, inefficiencies and wastage in an enterprise.

Proper weightage to all activities : A sound organization divides the entire enterprise into different departments, sections and sub-sections according to the functions to be performed by them. Each function of an enterprise has got its own importance. Emphasis is given according to their relative importance. Funds and manpower is allocated to their relative importance.

Better human relations : Human beings involved in an organization are only dynamic element of organization. A dedicated and satisfied group of persons proves an asset to any establishment. An organization, built on sound principles, helps harmony in human relations. With properly defined authority, responsibility and accountability, different persons enjoy job-satisfaction. Organization consists of human beings and their satisfaction helps in improving human relations.

Thus, organization is the foundation of management. Sound organization is an indispensable mean for efficient management and better business performance. It not only facilitates efficient administration but also encourages growth and diversification. It provides for optimum use of new technology, stimulates innovation and creativity.

6.8 FORMAL AND INFORMATION ORGANISATION

Formal organization refers to the structure of relationships deliberately built up by the top management to realize the objectives. In this form instructions, responsibility, authority, accountability, lines of command, and positions and authority are clearly defined and declared. Each person is aware of his duties and authority. Every subordinate is expected to obey his supervisor in the formal chain of command. Each individual is fitted in the organization like a cog in the machine. It is designed after careful identification, classification and assignment of business activities. So, it is conscious creation of relationships.

Informal organization refers to the network of personal and social relationships which arise spontaneously when people working together interact on personal whims, likes and prejudices. Such relations are not created by the top management and they are not recognized formally. The informal groups sometimes run parallel to the formal ones. Informal relations are not portrayed on organization charts and manuals. An informal organization provides an opportunity to workers to come close to each other, develop a feeling of cooperation and coordination among themselves.

Difference Between Formal and Informal Organizations

The difference between formal and informal organizations can be enumerated briefly as below :

Formation : Formal organization is deliberately created by management. It is the result of a conscious and deliberate effort involving delegation of authority. On the other hand, informal organization arises spontaneously and no conscious efforts are made to create it. It takes place on the basis of relationships, caste, culture, occupations and on personal interests etc. No delegation of authority is essential in informal organization.

Basis : A formal organization is based upon rules and procedures, while an informal organization is based upon attitudes and emotions of the people. It depends on informal, social contacts between people working and associating with one another.

Nature : A formal organization is stable and predictable and it cannot be changed according to the whims or fancies of people. But an informal organization is neither stable nor predictable.

Set up : A formal organization is a system of well defined relationships with a definite authority assigned to every individual. It follows predetermined lines of communication. On the contrary, an informal organization has no definite form and there are no definite rules as to who is to report to whom. Even a low-placed employee may have an informal relationship with an officer far above him in the formal hierarchy.

Emphasis : In a formal organization, the main emphasis is placed on authority and functions. In an informal organization the stress is on people and their relationships.

Authority : Formal authority is attached to a position and it flows from top to bottom. Informal authority is attached to a person and it flows either downwards or horizontally.

Existence : A formal organizations exists independently of the informal groups that are formed within it. But an informal organization exists within the framework of a formal structure.

Rationality : A formal organization operates on logic rather than on sentiments or emotions. All activities follow a predetermined course. As an association between like-minded people, an informal organization has little rationality behind it. In an informal organization, activities are influenced by emotions and sentiments of its members.

Depiction : Formal organization can be shown in an organization chart or a manual. But an informal organization cannot be depicted in the chart or manual of the enterprise.

6.9 FORMS OF ORGANISATION STRUCTURE

Organization requires the creation of structural relationship among different departments and the individuals working there for the accomplishment of desired goals. The establishment of formal relationships among the individuals working in the organization is very important to make clear the lines of authority in the organization and to coordinate the efforts of different individuals in an efficient manner. In order to organize the efforts of individuals, any of the following types of organization structures may be set up : (i) Line organization, (ii) Line and staff organization, (iii) Functional organization, (iv) Committee organization, (v) project Organization, and (vi) Matrix organization. The nature, merits and demerits of line organization, and line and staff organization are discussed as under :

6.9.1 Line Organization

The line organization represents the structure in a direct vertical relationship through which authority flows. It is the simplest from of organization structure and is also known as scalar or military organization.

Under this, the line of authority flows vertically downward from top to bottom throughout the organization. The quantum of authority is highest at the top and reduces at each successive level down the hierarchy. Every person in the organization is in the direct chain of command as shown in Fig.1

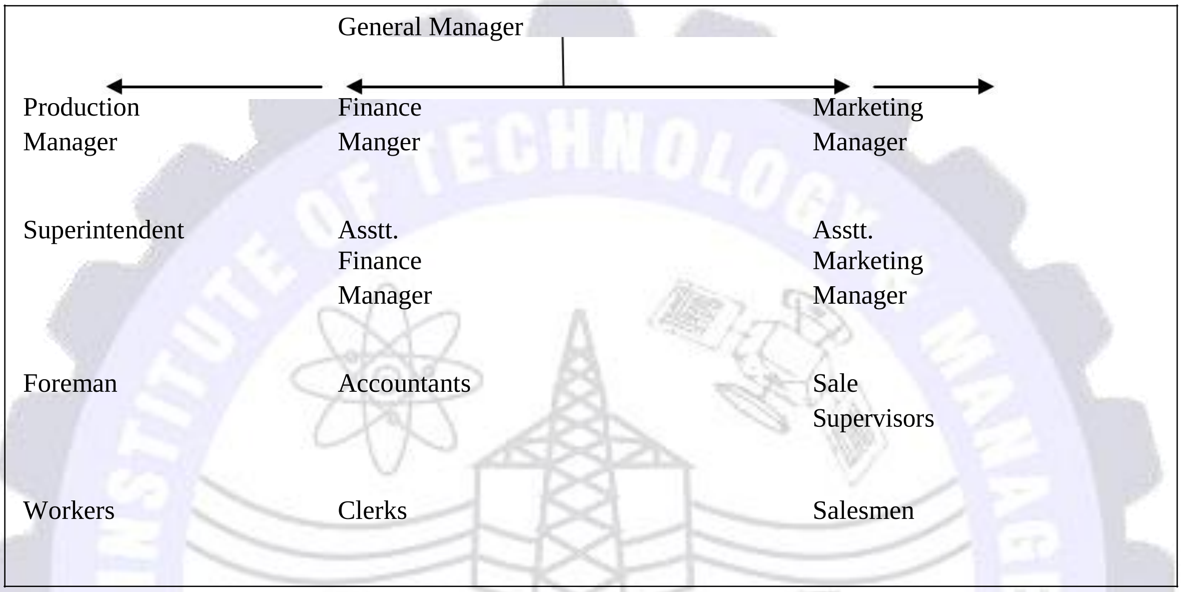


Fig. 6.1 : Line Organization

In line organization, the line of authority consists of an uninterrupted series of authority steps and forms a hierarchical arrangement. The line authority not only becomes the avenue of command to operating personnel but also provides the channel of communication, coordination and accountability in enterprise.

Advantages of Line Organization

- It is very easy to establish line organization and it can be easily understood by the employees.
- If facilitates unity of command and thus conforms to the scalar principle of organization.

There is clear-cut identification of authority and responsibility relationship. Employees are fully aware of the boundaries of their jobs.

It ensures excellent discipline in the enterprise because every individual knows to whom he is responsible.

It facilitates prompt decision-making because there is definite authority at every level. An executive cannot shift his decision making to others, nor can the blame be shifted.

Disadvantages of Line Organization

With growth, the line organization makes the superiors too overloaded with work. If the executive try to keep up with every activity, they are bogged down in myriad details and are unable to pay proper attention to each one. It will hamper their effectiveness.

There is concentration of authority at the top. If the top executives are not capable, the enterprise will not be successful.

Line organization is not suitable to big organizations because it does not provide specialists in the structure. Many jobs require specialized knowledge to perform them.

There is partially no communication from bottom upwards because of concentration of authority at the higher levels. If superiors take a wrong decision, it would be carried out without anybody having the courage to point out its deficiencies.

In spite of these drawbacks, the line organization structure is very popular particularly in small organizations where there are less number of levels of authority and a small number of people. A modification of this structure is line and staff organization under which specialists are attached to line executives to provide them specialized assistance on matters of great importance to be enterprise.

6.9.2 Line and Staff Organization

The line executive is often described as the individual who stands in the primary chain of command and is directly concerned with the accomplishment of primary objectives. Line organization provides decision-making authority to the individuals at the top of the organization structure and a channel for the flow of communication through a scalar chain of authority. Line executives are generalists and do not possess specialized knowledge which is a must to tackle complicated problems. With a view to give specialist aid to line executives, staff positions are created throughout the structure. Staff elements bring expert and specialized knowledge to provide advice to line managers so that they may discharge their responsibilities successfully.

In line and staff organization, the line authority remains the same as it does in the line organization. Authority flows from top to bottom. The main difference is that specialists are attached to line managers to advise them on important matters. These specialists stand ready with their specialty to serve line men as and when their services are called for to collect information and to give help which will enable the line officials to carry out their activities better. The staff officers do not have any power of command in the organization as they are employed to provide expert advice to the line officers. Staff means a supporting function intended to help the line manager. In most organizations, the use of staff can be traced to the need for help in handling details, gathering data for decision-making and offering advice on specific managerial problems. Staff investigates and supplies information and recommendations to managers who make decisions. Specialized staff positions are created to give counsel and assistance in each specialized field of effort as shown in Fig.2

Line Authority	Board of Directors	Staff Authority
Executive Committee	Managing Director	Controller of Finance
		Assistant to Managing Director
Manager Division A	Manager Division B	Manger Division C

Fig. 6.2 Line and Staff Organization

Line and staff structure has gained popularity because certain problems of management have become very complex and, in order to deal with them, expert knowledge is necessary which can be provided by the staff officers. For instance, personnel department is established as staff department to advise the line executives on personnel matters. Similarly, finance, law and public relations departments may be set up to advice on problems related to finance and accounting, law and public relations.

The staff officers do not have any power of command in the organization as they are employed to provide advice to the line officers. In most organizations, the use of staff can be traced to the need for help in handing details, gathering data and offering advice on specific managerial problems.

Advantages of Line and Staff Organization

Specialized knowledge. Line managers get the benefit of specialized knowledge of staff specialists at various levels.

Reduction of burden. Staff specialists relieve the line managers of the botheration of concentrating on specialized functions like accounting, selection and training, public relations, etc.

Proper weightage. Many problems that are ignored or poorly handled in the line organization can be properly covered in the line and staff organization by the use of staff specialists.

Better decisions. Staff specialists help the line executives in taking better decisions by providing them with adequate information of right type at the right moment and expert advice.

Flexibility. Line and staff organization is more flexible as compared to the line organization. General staff can be employed to help line managers at various levels.

Unity of command. Under this system, the experts provide special guidance without giving orders. It is the line manager who only has got the right to give orders. The result is that the enterprises takes advantage of functional organization while maintaining the unity of command i.e., one subordinate receiving orders from one boss only.

Demerits of Line and Staff Organization

Line and staff organization suffers from the following drawbacks :

There is generally a conflict between the line and staff executives. There is a danger that the staff may encroach on the line authority.

Line managers feel that staff specialists do not always give right type of advice, and staff officials generally complain that their advice is not properly attended to.

The allocation of duties between the line and staff executives is generally not very clear. This may hamper coordination in the organization.

Since staff men are not accountable for the results, they may not be performing their duties well.

There is a wide difference between the orientation of the line and staff men. Line executives' deals with problems in a more practical manner. But staff officials who are specialists in their fields tend to be more theoretical.

Superiority of Line and Staff Organization over Line Organization

Line and staff organization is considered better than the line organization because of the following reasons :

Staff makes available expert advice to line executives. This is necessary to deal with complex problems of management. For instance, personnel department is established as a staff department to advise the top executives and other line executives on personnel matters.

Better decisions are ensured in line and staff organization as compared to a simple line organization.

Line and staff structure is more suitable for large organizations as expert advice is always available. The line managers can make use of the knowledge of staff specialists to deal with complicated problems. Therefore, line and staff organization is certainly better than line organization.

AUTHORITY AND RESPONSIBILITY

7.1 THE CONCEPT OF AUTHORITY

Authority is a legal power which is possessed by a person from his superior officers and with the help of which he succeeds in getting the things done by his sub-ordinates. Authority is the key to managerial functions. If the managers do not possess required authority, they will not be able to perform their duties properly. A manager is in a position to influence his subordinates only by the use of his authority. It is the authority which enables him to discharge the important functions of planning, co-ordination, motivation and controlling etc. in an enterprise. If proper authority is not vested in him, he cannot perform these functions in the required manner and he cannot be held responsible for all these functions in the absence of proper authorities. It is only the authority by virtue of which he dominates his sub-ordinates and gets work done by them.

Definitions

"Authority is the right to give order and the power to exact obedience". – Henri Fayol

"Authority is the power to command, to act or not to act in a manner deemed by the possessor of the authority to further enterprise or departmental performance". – Koontz and O'Donnell

While concluding the meaning of authority it can be said that authority in ordinary sense of the term is nothing more than a legal right. It empowers an individual to take decisions. He is given a right to command and to exercise control over those who are responsible for the execution of policies and programmes of the enterprise. For decisions taken the authorized person is held responsible and is made answerable to his superiors and the organization as a whole.

7.2 FACTORS FOR SUCCESSFUL USE OF AUTHORITY

For the successful use of authority following factors may be taken into consideration:

Favourable Atmosphere : For the implementation of authority, favourable atmosphere must be created in the enterprise so that sweet human relations may be established in the enterprise.

Justified Behaviour : The second important use for successful implementation of authority is the justified behaviour of the officers towards their subordinates. They must feel and treat all the employees on an equal ground. If they do not do so, the employees may not contribute their efforts towards the attainment of objectives of enterprise.

Mutual Co-operation and Faith : There must be mutual co-operation and mutual trust between officers and employees of the enterprise for the successful use of authority.

Interest in the work : A very important condition of the successful use of authority is that the employees must have an interest in the work for which they are responsible. If they are not interested in their work, it may be very difficult for the higher officers to implement their authority.

Respect to Superiors : There must be an atmosphere in the enterprise in which the employees pay their best regards to their bosses. If they do not have a feeling of regard for them, they may not obey their orders.

7.3 SOURCES OF AUTHORITY

There are three different schools of thought about the sources of authority which are discussed below :

Formal Authority Theory

According to this theory, all authority originates in the formal structure of an organization. The ultimate authority in a joint stock company lies with the shareholders. Shareholders entrust the management of the company to the Board of Directors and delegate to it most of their authority. The Board of Directors delegates authority to the chief executive and chief executive in turn to the departmental managers and so on. Every manager or executive possesses authority because of his organizational position and this authority is known as formal authority. Authority conferred by law is also regarded as formal authority. Subordinates accept the formal authority of a manager because of his position in the organization. The subordinates are aware of the fact that if they disregard the formal authority they will be punished according to the rules and regulations of the company. The formal authority theory further states that the superiors have the right to delegate their authority. Thus, formal authority always flows from top to bottom.

Acceptance Theory

This theory states that authority is the power that is accepted by others. Formal authority is reduced to nominal authority if it is not accepted by the subordinates. The subordinates accept the authority if the advantages to be derived by its acceptance exceed the disadvantages resulting from its refusal. The subordinates give obedience to the managers because they visualize the following advantages :

Receipt of financial incentives.

Contribution in attaining the objectives of the enterprise.

Fulfillment of responsibilities.

Appreciation from colleagues.

Setting of an example for others.

Responsibility to leadership of superior

Moral obligation because of regard for old age, experience, competence, etc.

According to acceptance theory, authority flows from bottom to top. A manager has authority if he gets obedience from the subordinates. Subordinates obey the manager because of the fear of losing financial rewards. This theory emphasizes sanctions that a manager can use and overlooks the influence of social institutions like trade unions.

Competence Theory

The supporters of this view assert that an individual derives authority because of his personal qualities and technical competence. Many persons derive informal authority because of their competence. For instance a person possesses expert knowledge in a particular subject. People will go to him for guidance in that matter even though he has got no formal authority.

7.4 MEANING AND SOURCES OF POWER

Power is a method of operating in order to influence the behaviour of others. It is the power politics within the organization that gives rise to power centres in the organization. The power-centres need not necessarily be located at the position of higher authority. Nobody wants to lose power because power can be used in desirable or undesirable ways.

Power may be defined as "the ability to exert influence. If a person has power it means that he is able to change the attitude of other individuals".

In any organization for sound organizational stability, power and right to do things must be equated, when power and authority for a given person or position are roughly equated, we may call the situations as "Legitimate Power".

Sources of Powers

If we study the origin and sources of power we cannot forget the name of John French and Berhram Raven. They have written that there are five sources of power which are found at all levels of the organization. They are as follows :

Legitimate Power : The power corresponds to the term authority. It exists when an influencer acknowledge that the influencer is lawfully entitled to exert influence. In this the influence has an obligation to accept this power.

Reward Power : This power is based on the influencer having the ability to reward the influence for carrying out orders.

Corrective Power : It is based on the influencer's ability to punish the influence for not carrying out orders or for not meeting requirements.

Referent Power : It is based on the influencer's, desire to identify with or imitate the influence. For example – a manager will have referent power over the subordinates if they are motivated to emulate his work habits.

Expert Power : This power is based on belief that the influencer has some relevant expertise or special knowledge that the influence does not have. For example a doctor has expert power on his patients.

In having the study of power the role of the influence in accepting or rejecting the attempted influence is very important. It must be noted that each of the five power bases is potentially inherent in a manager's position and his activities.

Difference between 'Authority' and 'Power'

If we study from close in practice the terms 'Authority' and 'Power' are generally used interchangeably but there is a clear-cut difference between these two words and they are as follows :

Right to Command : Authority is the right to command where as power is the ability or power to command.

Right to Exercise : Authority usually resides in the position in the organization, but power is exercised by the person. Authority includes the right to exercise which have been institutionalized.

Positional and Legitimate : Authority is always positional and legitimate and is conferred on the position. But power is not institutional, rather it is personal. It is acquired by people in various ways and then exercised upon others. It is acquired through political means or by having certain personal attributes.

Authority Increases : It has been observed that authority increases as soon as one goes up in the organizational hierarchy, but it need not necessary be accompanied by more power.

In actual practice – the power centres may be located at the power levels in the organization. Therefore, one cannot have an idea of power centres in an organization by merely looking at its organization chart.

Authority Relationships : In practice, authority relationships are modified by power politics in the organization. Some individuals may have more power and less authority or more authority and less power. It is the operating mechanism of the organization which is relevant for studying organizational behaviour.

Authority a Downward Concept : Authority is a downward flowing concept; whereas power flows in all directions.

Delegation of Authority : Authority can be delegated to the lower levels in the organization. The lower we go down the lesser is the authority.

7.5 DELEGATION OF AUTHORITY AND ITS METHODS

Delegation means devolution of authority on subordinates to make them to perform the assigned duties or tasks. It is that part of the process of organization by which managers make it possible for others to share the work of accomplishing organizational objectives. Delegation consists of granting authority or the right to decision-making in certain defined areas and charging the sub-ordinate with responsibility for carrying through the assigned tasks.

Delegation refers to the assignment of work to others and confer them the requisite authority to accomplish the job assigned.

In the words of F.G. Moore – "Delegation means assigning work to others and gives them authority to do it."

Louis A. Allen has said – "Delegation is the dynamics of management, it is the process a manager follows in dividing the work assigned to him so that he performs that part which only he, because of his unique organizational placement, can perform effectively and so that he can get others to help him with what remains".

E.F.L. Brech has also said – "Delegation is a process of sharing a few or all of the four elements of the management process, i.e. command, planning, co-ordination and control". He goes on to say that the delegation is not a question of issuing instructions but is a bringing down of the executive's responsibility and transmission of part or all of it to other persons.

Since one person constitutes only one man power, so F.G. Moore has once said that – "Delegation, therefore, is necessary for enlarging his capacity by asking trusted subordinates to share his burden." Without delegation says

Chatterjee, "The very existence of organization is shattered at once. If there are no duties to be divided and no authorities to be shared in the enterprise, the existence of an organization structure is nullified and becomes absurd. Management of that organization becomes impossible without delegation." For this reason activities are to be integrated, co-ordinated and unity of purpose to be achieved, this necessitates effective delegation.

METHODS OF DELEGATION

In a big manufacturing concern the following may be the methods of delegation of authority to ensure better result, unified direction and command and effective delegation :

Administrative Delegation – When a few of the administrative functions are delegated to sub-ordinate staff it is called administrative delegation. These functions are generally of routine nature, e.g. to maintain discipline, to supervise the work, to recommend for the reward or punishment etc.

Geographical Delegation – When the work of enterprise is located at different distant places it is not possible for an executive to mange the whole affairs single handed. He then proceeds to delegate his authority to those who are posted at the places where physically he cannot be present round the year. This is known as geographical method of delegating the authority.

Functional Delegation – When the enterprise is organized on the basis of functional organization, the delegation of authority is also done on the functional basis. All the heads are given to manage their departments according to their skill, knowledge and experience of course, they are accountable to the chief executives.

Technical Delegation : This method of delegation of authority is based on technical knowledge and skill. Here the authority is delegated in order to get the advantages of expert and experienced hands and their technical skill.

7.6 ELEMENTS OF DELEGATION AND ITS TYPES

The elements of delegation of authority involve three steps :

Authority : The superior grants authority to the subordinate to carry out the assigned task or duty. This may include right to use resources, spend money, engage people, etc.

Responsibility : The superior entrusts some responsibility or duty to a subordinate.

Accountability : The last step in delegation is concerned with creating an obligation to carry out duty or responsibility and render an account of the results achieved through the use of delegated authority. The subordinate must be held accountable for the exercise of authority granted to him. By accepting the duties and authority, a subordinate becomes responsible to his superior.

7.6.1 Authority : Authority is the sum of the rights entrusted to an individual to make possible the performance of the work delegated. It includes such rights or powers as that spending money, of using certain kinds of quantities of materials, of hiring and firing people. Allen talks of authority of knowledge, authority of position and legal authority. Authority of knowledge according to him is possessed generally by the staff specialists appointed by the company. The consultants more often influence the action of persons in line by virtue of the knowledge possessed by them. Similarly, some persons acquire authority by virtue of their position. For instance, a person close to the person having line authority wields considerable authority. A Private Secretary to Managing Director or even a Staff Assistant may have no formal power and authority. Legal authority is the authority which is entrusted to a person by the law of the land. A company, for instance, is a legal person which enjoys several rights under the Companies Act. The organizations are built on authority relationships between their members. Authority is a building force in an organization and is the key to the executive job. An executive cannot get things done through others without the right to command them.

7.6.2 Responsibility : Responsibility represents the work or duties assigned to a person by virtue of his position in the organization. It refers to the mental and physical activities which must be performed to carry out the task or duty. That means every person who performs some kind of mental or physical activities as an assigned task has responsibility. In order to enable the subordinates perform his responsibility well, the superior must clearly tell the former as to what is expected of him. In other words, the delegator must determine clearly the task or duty that is assigned to the delegatee. The duty must be expressed either in terms of function or in terms of objectives. If a subordinate is asked to control the operations of a machine, the duty is in terms of function. But if he is asked to produce a certain number of pieces of a product, the duty is in terms of target or objective. Determination of duties in terms of objective will enable the subordinate to know by what standards his performance will be evaluated.

According to Alwin Brown, responsibility is capable of being understood in two senses. In one, it denotes the definition of a part or role to be performed in administration. In the other, it denotes the obligation for the performance of that part. Two meanings are reciprocal. In most circumstances, there is so little difference between the concept of the part and the concept of the obligation that it is more useful to view them as inseparably-related aspects of the same concept, and to refer to them by single term. Taken in this sense, many authors have held that responsibility cannot be delegated. But authority and responsibility are co-extensive; and responsibility or duty can be delegated within the framework of authority. In fact, it is the accountability which cannot be delegated. Therefore, it is essential to make a distinction between responsibility and accountability.

Responsibility or duty implies the task assigned to a person to be completed in accordance with the standards laid down. It is his superior who has entrusted this task to him. He should not find any difficulty in expecting it because his superior knows his plus and minus points at work. He would not assign a task which the subordinate is unable to complete. In fact he has divided and sub-divided the task pertaining to this division in such a manner that each one of his subordinates gets the task of his choice. Hence there is no ground for the subordinate to object the duty assigned to him by his superior unless the superior has acted deliberately in an indicative manner. If he does so, there are other ways to remedy the situation.

Whenever the superior assigns any task to his subordinate, it is implied that he has delegated his responsibility. In this process, though he may hold his subordinate accountable for the task delegated to him, but he continues to be accountable to his own boss on the ground that accountability can never be delegated.

The extent of authority delegated should be commensurate with the responsibilities or duties assigned. In other words, there must be a balance between responsibility and authority. However, in practice, it is very difficult to achieve a balance between responsibility and authority.

According to McGregor, the realities of business place most managers in situations where they cannot effectively control everything that affects the results they are attempting to achieve. Uncontrollable factors include unexpected changes in consumer preferences, action of labour unions, government legislations and the fluctuations of business cycles. The recognition of these problems does not reduce or destroy the utility of this concept. If a manager is abreast of the time, he will make allowance for the unforeseen events outside the control of the subordinate. Many factors prevent a superior to delegate sufficient authority. The risk of losing control is an important factor. Real or presumed non-availability of qualified subordinates, lack of delegating skills and enhancement of one's indispensability are the other factors which cause an imbalance of responsibility and authority. An effective manager is willing to delegate authority as needed to accomplish the desired objectives.

Responsibility can not be delegated or transferred. The superior can delegate to subordinate the authority to perform and accomplish a specific job. But he can not delegate responsibility in the sense that once duties are assigned, he is relieved for his responsibility for them. This delegation of tasks does not absolve the superior from his own responsibility for effective performance of his subordinate. In other words, we can say that responsibility is divided into two parts at the time of delegation : (a) operating responsibility; and (b) ultimate responsibility. The subordinate assumes only the operating responsibility for the task. The superior retains ultimate responsibility for getting the job done. If the subordinate fails to perform the job (operating responsibility), the superior is held responsible for this failure (ultimate responsibility). To explain that the ultimate responsibility cannot be shifted or reduced by assigning duties to another. Newman cites the example of a person borrowing money from the bank and then realigning it to his son. This transaction with his son in no way reduces his own obligation and responsibility to repay the money to the bank.

Responsibility may be specific or continuing. It is specific when on being discharged by a subordinate it does not arise again. Thus, a consultant's responsibility is specific. It ceases when the assignment is completed. The responsibility of a foreman is, however, of a continuing nature.

7.6.3 Accountability : Accountability is a logical derivative of authority. When a subordinate is given an assignment and is granted the necessary authority to complete it, the final phase in basic organization relationship is holding the subordinate responsible for results. In other words, the subordinate undertakes an obligation to complete the assignment by the fair use of authority and account for the discharge of responsibility assigned.

Accountability is the obligation to carry out responsibility and exercise authority in terms of performance standards established by the superior. Creation of accountability is the process of justifying the granting of authority to a subordinate for the accomplishment of a particular task. In order to make this process effective, the standards of performance should be determined before assigning a task and should be accepted by the subordinate. An important principle of management governing this basic relationship is that of single accountability. An individual should be answerable to only one immediate superior and no more.

The extent of accountability depends upon the extent of delegation of authority and responsibility. A person cannot be held answerable for the acts not assigned to him by his superior. For instance, if the production manager is given responsibility and authority to produce a specified quantity of certain product and the personnel department is given responsibility and authority for the development of workforce, the production manager cannot be held accountable for the development of workforce. "Accountability is, by the act which creates it, of the same quality and weight as the accompanying responsibility and authority".

7.6.4 Accountability cannot be delegated : Though it is incurred as a result of assignment of duty and conferring of authority, accountability in itself cannot be delegated. The diligent cannot abdicate responsibility. He remains accountable to his superior for that which the latter has delegated to him. Since accountability cannot be delegated, the accountability of persons higher in the hierarchy for the acts of subordinates is unconditional.

TYPES OF DELEGATION

The important kinds of delegation of authority are as follows :

General and Specific Delegation :

General Delegation : It is that delegation in which the authority is given to perform general managerial functions, like planning, organizing, directing etc. The sub-ordinate managers perform these functions and enjoy the authority required to carry out these responsibilities. The Chief Executive exercises over all control and guides the subordinates from time-to-time.

The Specific Delegation : Specific Delegation relates to a particular function or an assigned task. The authority delegated to the production manager for carrying out this function will be a specific delegation. Various departmental managers get specific authority to undertake their department duties.

Formal or Informal Delegation :

Formal Delegation : Formal delegation has been considered as a part of organizational structure. Whenever a task is assigned to a person, the required authority is also given to him. This delegation is a part of the normal functioning of the organization. Every person is automatically given authority as per his duties. When production manager gets powers to increase production then it is formal delegation of authority.

Informal Delegation : This delegation does not arise due to position but it arises according to the circumstances of the case. A person may undertake a particular task not because he has been assigned it but because it is necessary to do his normal work.

Written or Unwritten Delegation :

Written Delegation : Written delegation is normally given through letters, instructions, circulars etc. Whatever has been delegated it must be in writing.

Unwritten Delegation : Unwritten delegation is given to the person concerned not in any particular way but through conventions, customs and usages the other party has to do work accordingly.

Downward or Upward Delegation

Downwards Delegation : Downwards delegation is a common type of delegation and is used in every type of the working concern. This delegation has been considered as a superior's delegation of authority to his immediate subordinate.

Upward Delegation : This type of delegation takes place when a subordinate assigns some of his tasks to his superiors. This is an uncommon type of delegation and its instances are very rare.

7.7 PRINCIPLES OF DELEGATION

The following principles may be considered as essential for effective delegation of authority :

There must be Proper Planning : An executive must plan as to what is to be achieved, if delegation of authority is made. He should define clearly the objectives to be achieved and the functions to be performed by delegating the authority. The job should be designed and divided in such a way as to achieve the objectives. The subordinates must understand clearly what activities they must undertake and what delegator expects from him.

Select appropriate subordinate of delegation : The subordinate should be selected in the light of the work to be achieved. The qualification of the individual concerned may influence the nature of the delegation of authority. This is the purpose of the managerial function of staffing, most carefully considered.

Maintain purity of authority and responsibility : Authority should be delegated commensurate with responsibility. This is on the assumption that where subordinates are held responsible for performance of certain duties it is fair that they should be vested with the necessary authority to carry out such duties. Although technically it would be inaccurate to stress the questions of equality as the executive does without a certain amount of authority, there must be adequate correlation between duty and authority delegated.

Ensure unity of command : This is one of the common principles of organization advocated by Henry Fayol which stresses that subordinates should have only one boss to whom he should be accountable, to avoid confusion and friction. Of course, in practice, it is not possible to follow this principle.

Maintain adequate communication : There should be free and continuous flow of information between the superior and the subordinate with a view to furnish the subordinate with relevant information to help him make decisions and also to interpret properly the authority delegated to him. Plans may change and decisions have to be taken in the light of the changed conditions.

Reward effective delegation : Effective delegation and successful assumption of authority must be rewarded. This will provide a proper environmental climate for fuller delegation and effective assumption of authority.

Establish a climate of confidence : The subordinate to whom authority is delegated must generally feel free from fear and have a feeling of confidence that delegation will not result in punishment but is an opportunity for his own self-development and growth.

Establish a strong belief in delegation: For delegation to be successful, the man who delegates must himself be convinced of the need and benefits of delegation. He must also be willing to allow his subordinates to make mistakes although he can be strict if the same mistake is repeated.

Proper Selection and Training of Personnel : Selection of personnel to various jobs should be fair and just. It should not be arbitrary but it must be based on certain principles. Only right persons should be placed on the right job. The person selected must also be given proper training to enable him to handle the post efficiently and to perform the assigned job properly. Proper selection and training helps to develop their self-confidence and morale.

Proper Control Techniques be Developed : In a good organization proper control techniques be developed and major deviations from standard should be checked. There should be no interference in day-to-day functioning of subordinates.

7.8 VARIOUS STEPS IN THE PROCESS OF DELEGATION

The following steps are essential and they must be kept in mind while delegating :

The delegation should define the result expected from his subordinates.

Duties should be assigned according to the qualifications, experience and aptitude of the subordinates. They may be described either in terms of activity or set of activities to be performed by a subordinate or in terms of results that are expected from the performance of activities.

For Example : How much sale is to be achieved by salesman? It is better to assign duties in terms of results expected, because the subordinate knows in advance the terms in which his performance will be judged, while assessing duties and responsibilities.

The delegator must ensure that subordinates understand and accept the assignment, otherwise delegation would be meaningless or ineffective.

Adequate authority must be given to sub-ordinates – The authority to be delegated to each particular sub-ordinate is determined in advance. The delegator confers upon the subordinate the right to act in a specified way within limited boundaries. It decides what actions we may take and what action we cannot take. Proper authority to any sub-ordinate not given in time, will not give or produce expected results.

For Example : A sales manager, charged with the responsibility of increasing sales of company's product should be given authority to hire competent salesmen, pay wages and incentives, allow concessions, within specified limits.

The subordinate must produce expected results from the task assigned to him – It is obligatory on the part of the subordinate that he must give satisfactory performance from the tasks assigned. He becomes answerable for the proper performance of the assigned duties and for the exercise of the delegated authority. Authority without accountability is likely to be misused. Accountability without authority may be frustrating to the subordinates. The extent of accountability depends upon the extent of delegated authority and responsibility. A subordinate cannot be held responsible for acts not assigned to him by his superior. He is accountable only to his immediate superior.

Proper Evaluation of the Performance must be made – In the end, information and control system must be established to check and evaluate the performance of the subordinates to whom authority has been delegated. Duties, authority and responsibility are the three interdependent essential steps in the process of delegation. In this connection an eminent authority H.W. Newman has said – "These three inevitable attributes of delegation are like a three legged stool, each depends on the others to support the whole and no two can stand alone." What to delegate and when to delegate are two ticklish questions which a delegator has to answer to himself within the framework of the organization?

An executive according to *Louise A. Allen* can follow the undermentioned rules while delegating :

Established goals that are to be attained.

Define and enumerate the authority which the delegatee can exercise and the responsibility he is to shoulder.

Motivate the subordinate and provide him sufficient guidance. If necessary proper and adequate training should also be given to the delegatee before authority is delegated to him.

Ask for the completed work. In between if any help is needed by the delegatee he should be provided with such help either directly through someone who knows the work and is writing of help.

Establish an adequate control so as to supervise and provide necessary guidance.

7.9 MERITS OF DELEGATION

It avoids wastage of time : Present-day management is a complicated process. A manager has to perform various functions as a matter of routine work. It is not possible for him to give proper attention to all matters coming to him. Delegation helps him in transferring the less important subject to his juniors and attends to more important works.

It helps in training the new incumbents : The lower units that use the delegated power, get a spontaneous feel of their future responsibility. They become aware of the works at the higher level to which they may be promoted. Delegation also helps in developing the managerial personnel within the organization.

It avoids over-work : Delegation shifts some portions of the responsibility and work from the shoulders of the manager. To quote Beach : "The over worked manager who learns the art of delegation, is at one and the same time able to relieve himself of some of his burden, increase the competence of his men, and raise the level of accomplishment of his unit.

It develops increased sense of responsibility : Delegation generates an increased sense of responsibility in the subordinate personnel. It also increases their working capacity and helps in enhancing their unspotted caliber which could be helpful for management.

Delegation also helps in avoiding any kind of act at a higher level which may, otherwise undermine the powers vested in the lower level units.

It avoids delay : Delegation helps in taking timely and accurate decisions. The personnel at lower level, being delegated, act quickly which serves the organization with due economy, efficiency and rapidly.

7.10 RELATIONSHIP OF AUTHORITY AND RESPONSIBILITY

In every business unit, internal organization is necessary for its efficient and smooth running. Under internal organization, duties are determined and distributed among the employees. All activities are combined and co-ordinated. The lines of authority are to be determined, a well recognized principle, to be followed for any organization and management.

In the internal organization of any concern, there must be a proper assignment of duties among the various personnel. This means that some people assign and some others have to perform those duties. The former people have an authority. The latter are subordinates to the former. The relationship of authority and subordination among the various personnel and groups should be properly determined. The position of each individual is to be fixed, i.e., whether he is to be in the position of authority or in the subordinate position. This work is very important. In this connection, the following principle is to be followed. The greater the responsibility attached to a post, the higher will be the position of the person holding the post, in the hierarchy. Thus, it is stated that authority should go with responsibility.

When the duties are assigned, there will be two types of employees. Some have authority and others take up responsibility. The former occupy a superior position, while the latter are placed in a subordinate position. Authority refers to the right to make decision and to command subordinate to follow these decisions. It is the supreme coordinating power and is very important for the managerial job. Responsibility refers to the obligation of a subordinate. Every subordinate has to perform the duty assigned to him. The essence of authority is obligation. It arises from the superior-subordinate relationship. It has a meaning, only when it is applied to a person. Authority seems to flow from the superiors to the subordinates. Every manager can see that his orders are executed by persuasion, coercion or economic social sanctions. Persuasion is the best means. Otherwise, the task may not be successfully accomplished, responsibility cannot be delegated. But authority can be delegated.

When these expressions 'Authority' and 'Subordination' are used, they should not create a sense of superiority or inferiority in the minds of the employees. Authority cannot be concentrated in the hands of one or a few individuals. It appears to flow from top to bottom. But it is not really so. There must be de-personalization of orders. This will help in developing good industrial relations among all the employees.

In management literature, responsibility is one of the most misunderstood words, usually, responsibility is referred to as 'Delegation of Responsibility' holding a person responsible or carrying out a responsibility. People use the word responsibility in different senses as referring to a duty, an activity or an authority. Actually responsibility can be defined as the 'obligation' of a subordinate to perform a duty which has been assigned to him.

Thus, obligation is the essence of responsibility. Normally the superior subordinate relationship gives rise to this responsibility as the superior is vested with the authority to require specified services from his subordinates. In case of business, this authority is generally a result of the contractual arrangement under which the subordinate has agreed to perform certain services in return for a monetary reward. In this sense, authority flows from the superior to the subordinate manager to whom certain duties are assigned and responsibility is the obligation of the subordinate to accomplish these duties. Responsibility can be discharged by a single action or it may be a continuous obligation.

7.11 DISTINCTION BETWEEN AUTHORITY AND ACCOUNTABILITY

The term 'Accountability' is used by a few writers in the field of management to indicate the managers' liability for the proper discharge of the duties by his subordinates. In the military, the concept of accountability is used to indicate the duty and an officer to maintain accurate records and to safeguard public property and funds.

Thus, the three words confusingly used in varying sense in management literature are authority, responsibility and accountability. A less confusing use would be to use the word 'authority' as referring to the power to get something done, the word responsibility as the liability of the individual for failing to discharge his responsibility. One is thus accountable for failures to his boss. Accountable is similar to tendering of accounts in its case, which refers to discharging of the responsibility. To carry out responsibility, a manager requires adequate authority or power.

7.12 DISTINCTION BETWEEN RESPONSIBILITY AND DELEGATION

Whilst a manager can delegate his authority to his subordinates, responsibility cannot be so delegated. A manager is responsible for the performance of his duties even though he may delegate to a subordinate, authority to accomplish a service and the subordinate also in his turn may delegate a part of authority received by him. Therefore, delegation does not absolve a manager of his own responsibilities to perform his duties. In short no manager can shift responsibility to his subordinates. For example, the managing director of a company employed by the board of directors cannot avoid total responsibility for the conduct of the enterprise. Therefore, responsibility cannot be delegated in this sense. A manager cannot relieve himself of his responsibility although he can delegate authority and assign duties to his subordinates.

7.13 DIFFICULTIES IN DELEGATION

There is a fear aspect in delegation which plays a dominant role in a decision as to "what to delegate" and "to whom to delegate". Executive knows for certain that once authority is delegated they will loose the grip over their subordinates and also control over the operations. It is natural that the executives may not like to lose either the grip or control over the operation. But the important psychology is that by their nature executives have no confidence in their subordinates. They feel that the subordinates are not capable of shouldering the responsibility, therefore, the question of delegation of authority does not arise.

Sometimes, executives suffer from inferiority psychosis. They know for certain that though they occupy a position of strength but their knowledge and skill are not up to the mark. Their subordinates are well equipped and thus they may do the assigned job well. No executive would like to delegate when he feels that his subordinate may surpass him.

From the above discussion we may come to a conclusion that there are three types of fears which discourage delegation and thus create difficulties in delegation. They are :

Fear of loosing the grip and control over the operations;

Fear of not a better performance by the sub-ordinate to whom the authority may be delegated; and

Fear of better performance by the subordinate to whom the authority may be delegated.

The above difficulties arise out of –

Luck of mutual confidence;

Non-existence of atmosphere of team-work;

Non independence in thinking and behaviour;

No proper and ambiguous definition of common goals to be achieved;

No inter-exchange of ideas and suggestions;

No favourable management climate;

Existence of element of fear and frustration ; and

Incapable hands manning the executive positions.

Delegation is an important managerial technique. Every effort should be made to encourage delegation. This creates a sense of belonging among subordinates. It develops the personality of the subordinates and helps in evaluating the managerial performance. It also induces a sense of security among both the executives and their subordinates. A favourable management climate should be created for encouraging delegation.

7.14 MEANING OF DECENTRALISATION

Decentralization is a word that we frequently hear take about by political leaders and business managers. Many of them view decentralization as a panacea or a magical device that will compensate for poor management, encourage participation, increase efficiency, and raise morale. Most people do not have a clear view of what decentralization is and, as often as not when an organization is having "decentralization", it is for the wrong reasons and in the wrong way the term is understood and used.

Earnest Dale mentions four criteria to measure the extent of decentralization in an organization. He states that whenever decentralization is greater.

The greater is the number of decisions made at lower levels;

The more important are the decisions made lower levels;

The more is the number of areas in which decisions can be made at lower levels; and

The fewer are the people to be consulted the less is the checking required on the decisions made at the lower levels.

The way many people use the term, decentralization mean about the same thing as delegation–simply pushing authority down to subordinates. But decentralization means much more than simple delegation. Decentralization is a philosophy of the organization and management, one that implies both selectively determining what authority to push down into the organization; developing standing plans (such as policies) to guide subordinates who have this authority delegated to them; and implementing selective but adequate controls for monitoring performance. Thus, decentralization is a philosophy of organization and management which involves both selective delegation of authority as well as concentration of authority through the imposition of policies and selective but adequate controls.

According to McFarland, decentralization is a situation in which ultimate authority to command and ultimate responsibility for results is localized as far down in the organization as efficient management of the organization permits. According to Allen, decentralization refers to the systematic effort to delegate to the lowest levels all authority except that which can only be exercised at central points. Thus, decentralization means reservation of some authority (to plan, organize, direct and control) at the top level and delegation of authority to make routine decisions at points as near as possible to where action takes place.

7.14.1 Essential Characteristics of Decentralization

The essential characteristics of decentralization are :

Decentralization not the same thing as delegation – It is something more than delegation. Delegation means demi-transfer of responsibility and authority from one individual to another. But decentralization means scattering of authority throughout the organization. It is the diffusion of authority within the entire enterprise. Delegation can take place from one person to another and be a complete process. But decentralization is completed only when the fullest possible delegation is made to all or most of the people. Under delegation control rests entirely with the diligent, but under decentralization, the top management may exercise minimum control and delegate the authority of controlling to the departmental managers. It should be noted that complete decentralization may not be possible or desirable, but it certainly involves more than one level in the organization.

Decentralization is distinct from dispersion – Decentralizing is often confused with the separation of physical facilities which is not correct. Dispersion occurs when plants and offices are located at different places with physical distance between them. Performance of work in dispersed plants and offices does not necessarily lead to decentralization. Decentralization can proceed without separation of facilities and facilities can be separated without decentralization. A company may be highly decentralized even though all physical facilities and employees are located in a single building. Thus, decentralization can take place even without dispersion.

Decentralization is not a type of organization. Some people believe that a company can decentralize by changing its organizational structure. This is not true. Decentralization may be achieved even without changing the organizational structure as it refers primarily to the systematic delegation authority throughout the organization industries in which markets are less uncertain, production processes technologically less dynamic and competitive relationships more stable, tend to become more centralized.

7.14.2 Gauging the Degree of Decentralization

How decentralized a particular organization is? There are no hard and fast rules, but the following guidelines may be used to test the degree of decentralization in a company :

The narrower the breadth of the control imposed on managers, the greater the decentralization : Thus, a company in which each product-division manager simply has to report once or twice a year on the rate of return his division has earned on its investment is more decentralized. The division in which a variety of day-to-day production, marketing, and personnel decisions are monitored is less decentralized;

The greater the discretion permitted by the company's policies, procedures and rules, the greater the decentralization;

The greater the breadth of decision in terms of the number of functions they cover, the more the decentralization. Thus, the company in which division managers are authorized to take production, marketing and personnel decisions is more decentralized than one in which the managers can take only production and personnel decisions;

The less a subordinate has to check with his superior before taking decisions, the greater is the degree of decentralization – Thus, a company in which a manager does not have to check at all with his superior is more decentralized than one in which the manager must get most of his decisions approved beforehand;

The closer the level to which the decision is made in the relation to the point where the problem arise, the greater the decentralization – Suppose a customer in Maharashtra has a problem, and the western division manager is authorized to make the necessary decisions, then to that extent the company is more decentralized than if the boss in the New Delhi had to make the decisions; and

The more important are the decisions that can be made at the lower levels, the greater the decentralization – For example, a company in which divisional managers can make equipment purchase decisions of up to Rs. 500,000 is more decentralized than one in which they are authorized to make these decisions up to a limit of Rs. 1,00,000.

7.14.3 Advantages of Decentralization

The merits of decentralization are listed below :

It leads to a competitive climate in the organization.

It relieves the management of much workload;

It makes jobs at the lower levels of the organization more attractive and interesting. As a result, the level of motivation of the employee increases;

It encourages initiative at lower levels where the employees are allowed to participate in the decision-making process;

Decision made closer to the actual situations is likely to be more realistic. Effective decisions are possible because of the speed and first-hand knowledge that decentralization provides.

7.14.4 Disadvantages of Decentralization

It increases the administrative cost due to duplication of specialized services and the appointment of capable executives at lower levels;

It becomes difficult for top management to exercise control over what people at lower levels are doing or even to know what decisions they are taking;

Emergency situations cannot be tackled properly in decentralized structure. Adjustment to changing conditions may be difficult; and

It hampers uniformity in decision making and consistency of procedures.

7.15 DECENTRALISATION VS. DELEGATION

Though both delegation and decentralization are related concepts, but the distinction between the two terms must be clearly understood.

Decentralization could be differentiated from delegation in the following way :

Delegation creates authority-responsibility relationship between a superior and his subordinates, whereas decentralization refers to the creation of semi-autonomous decision-making units or even profit centres functionally related to the top management. In other words, decentralization is diffusion of decision making authority throughout the multiple layers of the organization;

Decentralization is simply not an extension of delegation. The purpose of delegation may be confined to relieve the excessive burden of key managerial personnel, but decentralization has a deeper meaning bordering on a new philosophy of organization and management;

Delegation is a process whereby the superior assigns certain tasks and responsibilities within his control to his subordinates, immediately vests part of his decision-making authority in them and precisely it is an obligation from them for proper discharge of authority conferred upon them and for effective performance in the area of delegated activity. But, on the other hand, decentralization refers to structural dispersal of authority for decision making in various facts of organizational operations throughout the organization in the form of semi autonomous units, subject to overall control by the top management.

Delegation takes place between a superior and a subordinate and is a complete process. It may consist of certain tasks alone. But decentralization involves spreading out the total decision-making power throughout the organization.

Sheer pressure of managerial workload forces managers to delegate a part of their burden to their subordinates, as a matter of necessary with few alternatives. Decentralization, on the other hand, could be only one of the options open to an enterprise out of several alternative ways of organizing expanding operations. This means that delegation of authority could take place without decentralization, whereas there can be no decentralization without delegation of authority.

In case of delegation of authority, the diligent has directive responsibility in relation to his subordinates. But in a decentralized setting, direction is to a large extent substituted by control by the top management. The control mechanism is also elaborate so as to ensure that the dispersal of authority strengthens the entire organization and that the semi autonomous units have a central focus on viability and vitality of the organization; and

Delegation could be a routine administrative activity involving only managers and their subordinates while decentralization is a conscious and deliberate organizational action with strategy overtones, to manage growth and expansion under conditions of environmental pressures, challenges and opportunities.

7.16 CENTRALISATION OF AUTHORITY

According to Allen, centralization is the systematic and consistent reservation of authority at central points in an organization, while decentralization refers to consistent and systematic dispersal to the lowest levels all authority except that which can only be exercised at central points. Centralization denotes that a majority of the decisions having to do with the work being performed are not made by those doing the work but at a point higher in the organization. Everything that goes to increase the importance of the subordinate's role is decentralization, everything which goes to reduce it is centralization.

Centralization represents certain attitudes and approaches which the management follows. The major implication of centralization is the reservation of decision-making power in regard to planning, organizing, directing and control at the top level. The other implications will depend on the philosophy of management. For instance, in a company where the top management is very particular about the use of authority, it will make all the operations and decisions at lower levels subject to its approval.

Centralization of authority has certain merits also. In case of centralization, most of the decisions are taken not at a point where work is being done, but at a point higher in the organization. They may involve considerable cost and delay in making the decisions. Centralization of authority increases the burden on the top managers and hampers the growth of low level managers. Because of these disadvantages, absolute centralization is not found in practice. Different organizations follow centralization in different degrees. It should be noted that complete decentralization is also not a feasible proposition of creating an effective organization structure. Some authority must be reserved at the highest level of management. Greater the reservation of authority at the top level, higher is the degree of centralization and lower is the degree of decentralization and vice-versa.

7.17 CENTRALISATION VS. DECENTRALISATION

Centralization and decentralization are the opposite ends of an organization continuum. On the one hand, centralization brings uniformity of policy and action, utilizes the skills of centralized and specialized staff, and enables closer control over operating units. And on the other hand, decentralization tends to effect faster decision-making and action on the spot without consulting higher levels. Decentralization has the effect of motivating the subordinates since they have a greater share in management decision-making.

The question of centralization or decentralization is a matter of degree. It is not possible to conceive of an organization which is exclusively centralized as some decentralization of authority is bound to exist. Likewise, there can be no absolute decentralized structure as the top executive cannot delegate all his authority. The issue of centralization and decentralization has to be decided objectively taking into consideration the size and nature of enterprise, diversity of the company's product, economies of division of labour, location of markets, nature of services to be performed, availability of trained and efficient managers, philosophy of management, etc. Centralization is not a system of management good or bad by itself, capable of being adopted or discarded at the whim of managers or of circumstances; it is always present to a greater or less extent.

RECRUITMENT AND SELECTION

8.1 THE CONCEPT OF RECRUITMENT

Selection of a suitable candidate is the most important function of personnel department. If a right candidate is not selected, such an error can prove to be very costly for an undertaking. Many organizations, therefore, have developed sophisticated recruiting and selection methods. Manpower planning must precede recruitment and selection. The present and future requirements should also be kept in mind while planning for manpower.

Recruitment is a positive process of searching for prospective employees and stimulating them to apply for the jobs in the organization. In simple words, the term recruitment stands for discovering the sources from where potential employees will be available. The scientific recruitment leads to greater productivity, better wages, high morale, reduction in labour turnover and better reputation. It stimulates people to apply for jobs and hence it is a positive process.

8.2 SOURCES OF RECRUITMENT

Basically there are two sources of recruitment namely internal and external

Internal Sources

Best employees can be found within the organization. When a vacancy arises in the organization, it is offered to an employee who is already on the pay roll. Internal sources include promotion and transfer. When a higher post is given to an employee who deserves that post, it stimulates all other employees of the organization to work hard. The employees can be informed of such a vacancy by internal advertisement.

Transfer : Transfer involves the shifting of an employee from one job to another. At the time of transfer, it is ensured that the employee to be transferred to the new job is capable of performing it. In fact, transfer does not involve any drastic change in the responsibilities and status of the employee. On the other hand, promotion leads to shifting an employee to a higher position carrying higher responsibilities, facilities, status and pay.

Promotion : Many companies follow the practice of filling higher jobs by promoting employees who are considered fit for such positions. Filling vacancies in higher jobs from within the organization has the following merits :

Improves morale : When an employee from inside the organization is given the higher post, it helps in increasing the morale of all employees. Generally every employee expects promotion to a higher post (carrying more status and pay) if he fulfils the requirements.

No error in selection : When an employee is selected from inside, there is no possibility of errors in selection since every company maintains complete record of its employees and can judge them in a better manner.

Promotes loyalty : It promotes loyalty among the employees as they feel secured on account of chances of advancement.

No hasty decision : The chances of hasty decisions are completely eliminated as the existing employees are well tried and can be relied upon.

Economy in training costs : The existing employees are fully aware of the operating procedures and policies of the organization. The existing employees require little training and it results in the economy in training costs.

Self-development : It encourages self-development among the employees since they can look forward to occupy higher posts.

Disadvantages : The following are the disadvantages of internal sources :

It discourages capable persons from outside to join the concern.

It is possible that the requisite number of persons possessing qualifications/experiences skills/attitudes required for the vacant posts may not be available in the organization.

For posts requiring innovations and original thinking, this method of recruitment cannot be followed.

If only seniority is the criterion for promotion then the person filling the vacant post may not be really capable.

In spite of the disadvantages, this is frequently used as a source of recruitment.

External Sources

Every enterprise has to tap external sources for various positions. Running enterprises have also to recruit employees from outside for filling up positions whose specifications cannot be met by internally available employees, and for meeting the additional requirements of manpower. The following external sources of recruitment are commonly used by the enterprises :

Direct Recruitment : An important source of recruitment is direct recruitment by placing a notice on the notice board of the enterprise specifying the details of the jobs available. It is also known as recruitment at factory gate. The practice of direct recruitment is generally followed for filling casual vacancies requiring unskilled workers. Such workers are known as casual or badly workers and they are paid remuneration on daily wage basis.

Unsolicited Applications : Many qualified persons apply for employment to reputed companies on their own initiative. Such applications are known as unsolicited applications. They serve as a good source of manpower. A proper record may be kept of such applications and the candidates may be called for interview whenever the need arises.

In a country like India, where there is large scale unemployment, unemployed persons also contact the employment sections of various organizations to ascertain if they can be casually employed. This source is very useful for recruiting unskilled workers. It does not involve any cost of advertising the vacancies. Whenever regular workers absent themselves in a large number or whenever there is a rush of work, this source of recruitment may be used. This is the cheapest method of getting labour supply on an adhoc basis.

Advertisements : Advertising the job has become a fashion of the day with the large scale enterprises, particularly when the vacancy is for a higher post or when there are a large number of vacancies. This helps in informing the candidates spread over different parts of the country. This method increases the choice of the management. The necessary information about the company, job descriptions and job specifications may be given in the advertisement itself for the benefit of the candidates. Usually, this method brings in a flood of response from quite unsuitable candidates. This increases the cost of selection of employees. Therefore, advertisement copy should be drafted in such a way that only the suitable candidates are tempted to apply.

Employment Agencies : Employment exchanges run by the Government are regarded as a good source of recruitment for unskilled, semi-skilled operative jobs. In some cases, compulsory notification of vacancies to employment exchange is required by law. However, in the technical and professional areas, private agencies and professional bodies appear to be doing most of the work. Employment exchanges and selected private agencies provide a nation-wide service in attempting to match personnel demand and supply. They bring the job givers in contact with the job seekers.

Education Institutions : Jobs in industry have become increasingly varied and complexed to the point where school and college degrees are widely required. That is why, many big organizations maintain a liaison with the colleges, vocational institutes and management institutes for recruitment to various jobs. Recruitment from educational institutions is a well-established practice of thousands of business and other organizations. Organizations which require a large number of clerks or which seek applicants for apprenticeship programmes usually recruit from institutions offering vocational/professional courses.

Labour Contractors : Labour contractors continue to be a source of recruitment in some industries in India. Workers are recruited through labour contractors who are themselves employees of the organization. The disadvantage of this system is that if the contractor himself decides to leave the organization, all the workers employed through him may follow suit. This system of recruitment is losing popularity these days. It has been abolished in the public sector enterprises in India.

Recommendations : Applicants introduced by existing employees, friends and relatives may prove to be a good source of recruitment. Indeed, many employers prefer to take such persons because something about their background is known. When a present employee or a business friend recommends a person, a type of preliminary screening takes place. Some organizations have agreements with the unions of employees to give preference to close relatives of existing or retired employees if their qualifications and experience are suited to the vacant jobs.

Filling a vacancy from external sources has the following advantages:

The employees recruited under this system possess varied and broader experience.

Under this system of recruitment, fresh viewpoints are attracted.

Filling a vacancy through external sources suffers from the following disadvantages :

This system is more expensive. The concern has to make huge expenditure on advertisement, holding of written test, interview, training, etc.

This system of recruitment reduces incentive to good work among the lower cadres.

This system of recruitment results in young men being placed over the older and more experienced persons of the lower services. This causes among them more jealousy.

8.3 THE CONCEPT OF SELECTION

The process of selection leads to employment of persons having the ability and qualifications to perform the jobs which have fallen vacant in an organization. It divides the candidates for employment into two categories, namely, those who will be offered employment and those who will not be. This process is more of 'rejection' since more candidates may be turned away than are hired. That is why, selection is frequently described as a *negative process* in contrast with the positive process of recruitment. The basic purpose of the selection process is choosing right type of candidates to man various positions in the organization. In order to achieve this purpose, a well organized selection procedure involves many steps and at each step more and more information is obtained about the candidates.

Difference between Recruitment and Selection

Recruitment is the process of searching for prospective employees and stimulating them to apply for jobs in the organization. On the other hand, selection means employment of workers or establishing a contractual relationship between the employer and the worker.

Recruitment is a positive process of searching for prospective employees, whereas selection is a negative process because it involves rejection of unsuitable candidates.

The purpose of recruitment is to create a large pool of applicants for the jobs in the organization. But selection aims at eliminating unsuitable candidates and ensuring most competent people for the jobs.

Recruitment is a relatively simple process as the candidates are required to fill in the prescribed forms and deposit with the employer. But selection is a complex and lengthy process under which the candidates have to pass through a number of stages before getting the offer for a job.

Significance of Selection

Selection has become a critical process these days because it requires a heavy investment of money to get right types of people. Induction and training costs are also high. If the right types of persons are not chosen, it will lead to a huge loss of the employer in terms of time, effort and money. Therefore, it is essential to devise a suitable selection procedure. Each step in the selection procedure should help in getting more and more information about the applicant to facilitate decision-making in the area of selection.

Absenteeism and employee turnover are the important problems which are being faced by most of the organizations. The intensity of these problems can be reduced if, in the future, all selections are made carefully so that there are 'round pegs in the round holes'. Whenever unsuitable employees are appointed, the efficiency of the organization goes down. Such employees will shirk work and absent themselves from the work quite often. They may also be compelled to leave their jobs. If this happens, all the expenses incurred on the selection and training of such employees will go waste.

Proper selection and placement of personnel goes a long way towards building up a stable work-force. It keeps the rates of absenteeism and labour turnover low and increase the morale of the employees. If the employees are quite suitable according to the requirements of the jobs, they show higher efficiency and productivity. This enables the organization to achieve its objectives effectively.

8.4 STAGES IN SELECTION PROCEDURE

There can not be a rigid procedure of selection suitable for all types of organizations as shown in Fig. 1. The number of steps in the selection procedure and the sequence of steps vary from organization to organization. For instance, some organizations do not hold preliminary interview, test or screening, whereas in other organizations such as commercial banks, preliminary tests are given to eliminate a large number of unsuitable applicants. Similarly, in some cases, medical examination is given before final selection and in others, medical check up follows final selection. Thus, every organization designs a selection procedure which suits its requirements. However, the main steps which could be incorporated in the selection procedure are discussed below :

Receiving Applications

Screening of Application

Employment Tests

Interview

Background Investigation

Medical Examination

Final Selection

Rejection of

Unsuitable

Candidates

Fig.1: Steps in Selection Procedure

Preliminary Interview : In most of the organizations, the selection programme begins with preliminary interview or screening. The preliminary interview is generally brief and does the job of eliminating the totally unsuitable candidates. The preliminary interview offers advantages not only to the organization, but also to the applicants. If an applicant is eliminated at this stage, the organization will be saved from the expenses of processing him through the remaining steps of the selection procedure and the unsuitable candidate will be saved from the trouble of passing through the long procedure. Preliminary interview may take place across the counter in the organization’s employment office. It may consist of a short exchange of information with respect to organization’s interest in hiring and the candidate's enquiry. It may serve primarily to determine whether it is worthwhile for the applicant to fill in an application blank. Candidates who pass this crude screening are usually asked to fill in the application blank.

Receipt of Applications : Whenever there is a vacancy, it is advertised or enquiries are made from the suitable sources, and applications are received from the candidates. Standard application forms may be drawn up for all jobs and supplied to the candidates on request. The application form is useful for several reasons. It gives a preliminary idea of the candidate to the interviewer and helps him in formulating the questions to be asked from the candidate. The written information about age, qualifications, experience, etc. may prove to be of great value to the interviewers. Forms make the processing of application very easy since there is uniformity of filling the data in the application form.

Screening of Applications : After the applications are received, they are screened by the screening committee and a list is prepared of the candidates to be interviewed. Applicants may be called for interview on some specific criteria like gender, desired age group, experience and qualifications. The number of candidates to be called for interview is normally five to seven times the number of posts to the filled up.

Employment Tests : Employment tests are used to select persons for various jobs. They help in matching the characteristics of individuals with the vacant jobs so as to employ right kinds of personnel. The following types of tests have gained popularity these days :

Intelligence Tests : Intelligence tests are used to judge the mental capacity of the applicant. They evaluate the ability of an individual to understand instructions and make decisions. They are widely used in all types of organizations for the purpose of proper selection.

Aptitude Tests : Aptitude means the potential which an individual has for learning the skills required to do a job efficiently. Aptitude tests measure an applicant's capacity and his potential of development. Aptitude tests are the most promising indices for predicting a worker's success.

Proficiency Tests : Proficiency tests are designed to measure the skills already acquired by the individuals. They are also known as performance, occupational or trade tests. They are used to test the level of knowledge and proficiency acquired by an applicant. A trade test takes a sample of individual's behaviour which is designed as replica of the actual work situation such as typing. A trade test should be differentiated from the aptitude test. An aptitude test measures the potentials of the applicant to learn skills required on a job.

Interest Tests : Interest tests identify patterns of interest in those areas in which the individual shows special concern, fascination and involvement. These tests suggest what types of jobs may be satisfying to the employees. Interest tests are more often used for vocational guidance. They help the individuals in selecting occupations of their interest.

Personality Tests : Personality tests probe for the qualities of the personality as a whole, the combination of aptitude, interest and usual mood and temperature. It is vary difficult to devise and use personality tests because they are concerned with discovering clues to an individual's value system, his emotional reactions, maturity, etc.

Interview : Although application blank and employment tests provide a lot of valuable information about the candidate, yet they do not provide the complete set of information required about the applicant. Hence, interview may be used to secure more information about the candidate. The main purposes of an employment interview are : (i) to find out the suitability of the candidate, (ii) to seek more information about the candidate, and (iii) to give him an accurate picture of the job with details of terms and conditions and some idea of organization's policies. The actual data of the applicant given in the application form may also be checked and more information may be taken from the candidate. This occasion is also utilized for testing the capability and personality of the applicant. Thus, interview affords an opportunity to develop a clear picture of the candidate.

It is customary to have an interview in several stages especially for senior positions. There may be a preliminary interview by the head of the department. The final interview is taken by the interview or selection committee consisting of chairman of the organization, head of department, personnel manager and may be some outside experts. During the interview, the members of the selection committee appraise each candidate according to merits. At the end of interview of each candidate, the chairman consults the members and after a brief discussion finalizes the grading of the candidate. After the completion of interview of all the candidates, a panel is prepared. The number of persons in the panel is generally about two to three times the number of vacancies to be filled up.

Although personal interview is perhaps the most widely used method for selecting the personnel, it has certain limitations too. *Firstly*, it can test only the personality of the candidate and not his skills and ability for the job. *Secondly*, it depends too much on the personal judgement of the interviewer which may not always be accurate. That is why, in most of the organizations, occupational and other tests are given to the candidates before they are called for the final interview.

Medical Examination : The pre-employment physical examination or medical test of a candidate is an important step in the selection procedure. Though in the suggested selection procedure, medical test is located near the end, but this sequence need not be rigid. The organizations may place the medical examination relatively early in the process so as to avoid time and expenditure to be incurred on the selection of medically unfit persons. Some organizations either place the examination relatively early in the selection procedure or they advise the candidates to get themselves examined by a medical expert so as to avoid disappointment at the end.

The objectives of physical examination are : (i) to ascertain the applicant's physical capabilities to meet the job requirements; (ii) to protect the organization against the unwarranted claims under the Workmen's Compensation Act or against law suits for damages; and

to prevent communicable diseases entering the organization. The physical examination should disclose the physical characteristics of the individual that are significant from the standpoint of his efficient performance of the job he may be assigned or of those jobs to which he may reasonable be expected to be transferred or promoted. A qualified medical expert appointed by the organization should certify whether the candidate is physically fit to the requirements of a job. A proper medical examination will ensure higher standards of health and physical fitness of the employees and will reduce the rates of accident, labour turnover and absenteeism.

Background Investigation : A referee is potentially an important source of information about the candidate's ability and personality if he holds a responsible position in some organization or has been the boss or employer of the candidate. Prior to final selection, the prospective employer normally makes an investigation on the references supplied by the applicant and undertakes more or less a thorough search into the candidate's past employment, education, personal reputation, financial condition, police record, etc. However, it is often difficult to persuade a referee to give his opinion frankly. The organization may persuade him to do so by giving an assurance that all information will be treated as strictly confidential.

Final Selection : After a candidate has cleared all the hurdles in the selection procedure, he is formally appointed by issuing him an appointment letter or by concluding with him a service agreement. The appointment letter contains the terms and conditions of employment and pay scale and other benefits associated with the job.

8.5 INDUCTION AND PLACEMENT

Induction : When an individual successfully clears all the steps involved in selection, he is selected. Induction is concerned with the problem of introducing or orienting a new employee to the organization. It consists of familiarizing new employees with their jobs, introduction with his fellow workers, company policies etc. It is considered as a part of the selection process. "A good orientation programme will leave the employee firmly established in the new job, comfortable and relaxed in his relations with other members of the department and content with his position in the firm. Though orientation takes a small amount of time from productive activity, it repays the firm many times over in better personnel relations". (Layman and Gubellini).

There are two phases of induction training programme. The first phase is generally conducted by the personnel department. It is concerned with giving the new employee a friendly welcome briefing him in the matters concerned with the company's background, products, health and welfare plans. He may be taken around the factory and introduced to the security officer, time keeper and cashier. The employee may then be asked to report to the department concerned. The second phase of the induction programme is conducted by the head of the department in which he is to work. The employee is given information regarding production process, work rules, working conditions etc. The employee is then informed about the customs prevalent in the organization such as dress, lunch, refreshments, etc. Good induction is a good business for the firm and a basic desire of most, if not all the new employees. If the new employee is allowed to sink or swim, the adjustment period either is considerably lengthened with consequent losses in productivity, or it is eliminated altogether by resignation, with consequent losses in turnover costs.

Objects of Systematic Induction

To promote a feeling of belongingness and loyalty among the employees.

To provide information to the employee regarding policies of the organization.

To give information to the new employee as to leave rules, location of canteen etc.

To build confidence in the new employee so that he can become an efficient worker.

The success of induction programme mainly depends on the ability of the persons who conduct it. A comprehensive induction programme usually covers the following :

The company and its products.
The geography of the plant.
The structure of the organization and the functions of the various departments.

Terms and conditions of employment, amenities and welfare facilities available.
Standing orders including grievance and disciplinary procedures.
Accident prevention
Personnel policy and source of information.
Working routines and production
Employee's own department and job and how it fits into the general organization.
Organizational culture and ethos

Placement : The candidates selected for appointment are to be offered specific jobs. There should be a perfect matching of the requirements of the job and the abilities/skills of the employee concerned. Only then effective placement will take place. In practice, right placement is not an easy task. It may take a long time before a candidate is placed on the right job. Generally, the candidate is appointed on probation of one year or so. During this period, he is tried on different jobs. If his performance is satisfactory, he will be offered a permanent post and placed on the job for which he is most suitable. He may need some training to do the job better.

Therefore, his training needs must also be identified during the probation period.

If during the probation period, an employee is not found suitable, the management may transfer him to some other job to which he may be expected to do justice. But if the management cannot offer him a job which he can do well, it may sack him or give him time and training to improve himself to do the job better.

LEADERSHIP

11.1 Background

There is a profound difference between manager and leader, and both are essential in a sound management system. To 'manage' means "to bring about, to accomplish, to have charge of or responsibility for, to conduct". On the other hand the 'Leading' is "influencing, guiding in direction, course, action, opinion". The distinction is critical. Managers are people who do things right and leaders are people who do the right thing. In this lesson, you'll learn that leadership is a very complex art that is essential for the success in mission. In fact, your knowledge of effective leadership principles and concepts coupled with their application at your work place may prove to be rewarding both professionally and personally.

Let's start with a simple definition of leadership. Leadership is the process of influencing an organized group towards a common goal. This definition sounds easy, but the application can provide a real challenge.

Your goal as a leader in the organization is to do the best job you can at influencing your people towards a common goal. Since you are dealing with a very diverse group of people, it is important to understand the different approaches to motivate them to meet their goals. Leadership style is the pattern of behaviors you use when you are trying to influence the behaviors of those you are trying to lead. Each leadership style can be identified with a different approach to problem solving and decision-making. Possessing a better understanding of the various leadership styles and their respective developmental levels will help you match a given style for a specific situation. The challenge is to master the ability to change your leadership style for a given situation as the person's development level changes.

How can you help your followers increase their development level? Here are some practical ideas:

Explain to them what you want to get done.

Provide the guidance they might need before they start.

Give them the opportunity to complete the task on their own.

Give them a lot of positive encouragement.

Your goal should be to help your followers increase their competence and commitment to independently accomplish the tasks assigned to them, so that gradually you can begin to use less time-consuming styles and still get high quality results. Your organization depends on positive, effective leaders at all levels to perform the mission. There is no single leadership style that is appropriate in every situation; therefore, for you to be effective leaders you need to learn to understand your environment, your situation and the circumstances to help you act accordingly. Remember, your success as a leader will depend on your assessment of the situation and your ability to communicate what you want in such a way that others will do as you wish - that is the art of leadership.

11.2 What is Leadership

It is difficult to define the term "leadership". However, as a starting point, we may proceed with the workable definition that a leader is one who leads others and is able to carry an individual or a group towards the accomplishment of a common goal. He is able to carry them with him, because he influences their behaviour. He is able to influence their behaviour, because he enjoys some power over them. They are willing to be influenced, because they have certain needs to satisfy in collaboration with him. *French and Raven* have proposed the following bases of power for a person exerting influence:

Legitimate- That the targets of influence, followers or sub-ordinates understand that the power the leader enjoys is legitimate and they should comply with his orders in order to meet their own goals.

Reward-That the followers know that the leader has the power to grant promotions, monetary inducements or other rewards if his orders are complied with.

Coercive- That the followers know that if the leader's orders are not complied with, he has the power to hire, fire, perspire and discharge the followers.

Expert- That the followers know that the leader possesses specialist's knowledge in the field they lack it.

Referent- That the followers feel attracted towards him because of his amiable manners, pleasing personality or they feel that he is well connected with high-ups.

It is apparent then that the first three power bases indicate positional power, which one derives from one's position. The other two indicate personal power, which is based on the individual's own characteristics. In any case, the leader exercises his influence because of one or more of these types of power and obtains compliance from the followers. How far he succeeds in his attempts will depend upon several other factors that we will discuss during the course of this lesson.

Leadership is, therefore, regarded as the process of influencing the activities of an individual or a group in efforts towards goal achievement in a given situation. This process, as *Heresy and Blanchard* suggest, can be explained in the form of the following equation:

L = f (L, F, S,)

That is, the leadership is a function of the leader(L), the follower(F) and other situational variables(S). One who exercises this influence is a leader whether he is a manager in a formal organization, an informal leader in an informal group or the head of a family. It is undoubtedly true that a manager may be a weak leader or a leader may a weak manager, but it is also equally probable that a manager may be a true leader or a leader may be true manager. *A manager who is a true leader as well is always desirable*. Situational variables

include the whole environment like the task, the group, organizational policies, etc.

Leadership Styles

Leadership style is the way a managerial leader applies his influence in getting work done through his subordinates in order to achieve the organizational objectives. The main attitude or belief that influences leadership style is the perceived role of the manager versus the role of the subordinates. It depends upon the role of the leader whether he likes to work more of a colleague, facilitator and decision maker and on the other hand the response of the subordinates would determine the particular style to be in application. Broadly speaking, there are three basic leadership styles: -

Autocratic or Dictatorial Leadership: In this leadership style the leader assumes full responsibility for all actions. Mainly he relies on implicit obedience from the group in following his orders. He determines plans and policies and makes the decision-making a one man show. He maintains very critical and negative relations with his subordinates. He freely uses threats of punishment and penalty for any lack of obedience. This kind of leadership has normally very short life.

Democratic Leadership: In this case, the leader draws ideas and suggestions from his group by discussion, consultation and participation. He secures consensus or unanimity in decision-making. Subordinates are duly encouraged to make any suggestion as a matter of their contribution in decision-making and to enhance their creativity. This kind of leadership style is liked in most civilized organization and has very long life.

Laissez-faire Free Rein Leadership: Quite contrary to autocratic leadership style, in this leadership style the leader depends entirely on his subordinates to establish their own goals and to make their own decisions. He let them plan, organize and proceed. He takes minimum initiative in administration or information. He is there to guide the subordinates if they are in a problem. This kind of leadership is desirable in mainly professional organization and where the employees are self-motivated. Leader works here just as a member of the team. We shall now discuss the roots of such leadership styles i.e. we shall try to understand as to how these different leadership styles have been evolved by the management scholars.

MOTIVATION

INTRODUCTION

Generally, people differ by nature, not only in their ability to perform a specific task but also in their will to do so. People with less ability but lots of strength are able to perform better than people with superior ability and lack of will. Hard work is crucial to success and achievement. Albert Einstein underscored this belief when he said, "genius is 10% inspiration and 90% perspiration. This “wills”

to do is known as motivation. The force of motivation is a dynamic force setting a person into motion-or action. The concept of motivation can be traced back to nearly twenty-three centuries ago in the Greek and Indian writings. The idea that we are motivated to do what brings us the best results for our benefit is found in the early Indian philosophy through such writings as "Charvak". The most ancient concept of "Nirvana", as proposed and propagated by earliest Aryan thinkers and religious scholars, motivates us to be "good" people so that we can achieve the final "oneness with God." The Greek view of motivation has been dominated by the concept of hedonism, which is a view that people seek pleasure and comfort, and avoids pain and discomfort. This view was based upon intuition and common sense that an individual does what he does because he believes that it will give him more pleasure than anything else he might do. This philosophy, though still popular, depends excessively upon rational evaluation and does not take into consideration the effect of instincts or even the value system. Hedonism, based on maximizing personal pleasure cannot explain why some people would sometimes risk their own lives to save others in times of crisis or why volunteers would spend so much of their time in collecting money for charitable causes. However, this view prevailed right up to the eighteenth and, nineteenth centuries and is evident in the social and economical philosophies of such famous men as Adam Smith, Jeremy Bentham and John Stuart Mill. The principles of hedonism seems to be too narrow minded and is empirically insignificant since it does not attempt to evaluate just what the individuals anticipate to be the results of their behaviour and how do they measure pleasure. For example, a person who risked his own life to save another had rationally decided to become a "hero" or did he act on "impulse," believing that it was the right thing to do irrespective of cost or consequences? The principle of hedonism can be more easily explained "after the fact" when the behaviour has already been explained. Thus, even the acts of simple kindness can be explained with the motives of "feeling good" about them or earning the gratefulness of those who have been helped by these acts. Since hedonistic explanations work best in explaining actions after they occur, they cannot be relied upon in predicting behaviour. These limitations of hedonistics

viewpoints brought motivation under different light during the late 1800s and early 1900s. William James and Sigmund Freud argue that instinctive behaviour and unconscious motivation are also important elements in human behaviour and these largely determine an individual's interpretation of, and response to, situations.

Instincts, which are inborn or innate predispositions, which are not consciously rational, can explain certain aspects of\human behaviour. These instincts, which influence human behaviour, include the need for autonomy, curiosity, sociability, sympathy, fear, jealousy, love, dominance, harm avoidance, play, and sex. The large number of identified instincts identifies a variety of possible behaviours. The instinct behaviour is like a reflex action, meant for survival and hence caters primarily to physiological needs. It is not learnt and is not dependent upon the consequences of an action. Most instincts are common to all people and would exhibit similar behaviour under similar circumstances. For example, if somebody has a flat tire while driving, the first instinctive reaction is to get mad. The unconscious motivation, of which an individual is unaware, was brought up by Sigmund Freud who suggested that unconscious motives are primarily sexual and aggressive in nature and even though unconscious, they greatly influence everyday behaviour. These unconscious motives are revealed in dreams, symbolism, slips of speech (known as Freudian slip) and hypnotic suggestions. Both the instinctive motivation and unconscious motivation do not stand the scientific analysis and contemporary psychologists explain behaviour by complex cognitive and environmental interactions. The concept of motivation came under scientific scrutiny during 1930s and has led to formulation of many theories and models that try to scientifically explain the concept of motivation.

12.2 DEFINITIONS OF MOTIVATION

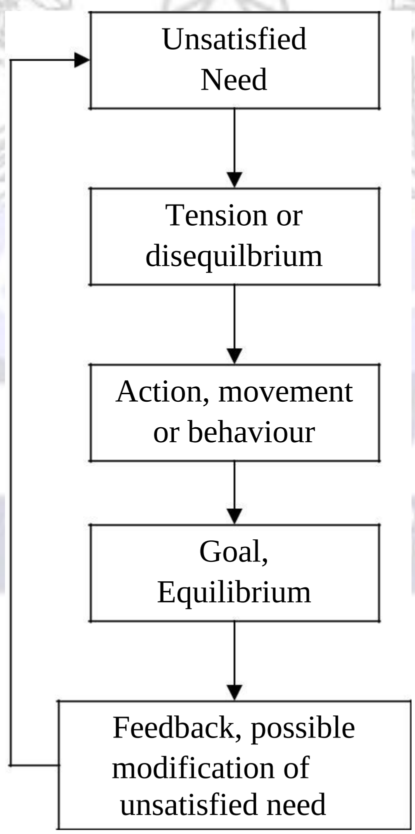
The word motivation is derived from motive, which is defined as an active form of a desire, craving or need, which must be satisfied. All motives are directed towards goals and the needs and desires affect or change your behaviour, which becomes goal oriented. For example, if you ordinarily do not want to work overtime, it is quite likely that at a particular time, you may need more money

(desire) so you may change your behaviour, work overtime (goal oriented behaviour) and satisfy your needs. Viteles defines motivation as: “Motivation represents an unsatisfied need which creates a state of tension or disequilibria, causing the individual to move in a goal directed pattern -towards restoring a state of equilibrium, by satisfying the need.”

12.3 PROCESS OF MOTIVATION

Motivated people are ill constant state of tension. This tension is relieved by drives towards an activity and outcome that is meant to reduce or relieve such tension. The greater the tension, the more activity will, be needed to bring about relief and hence higher the motivation. Thus the basic motivation process can be depicted as follows:

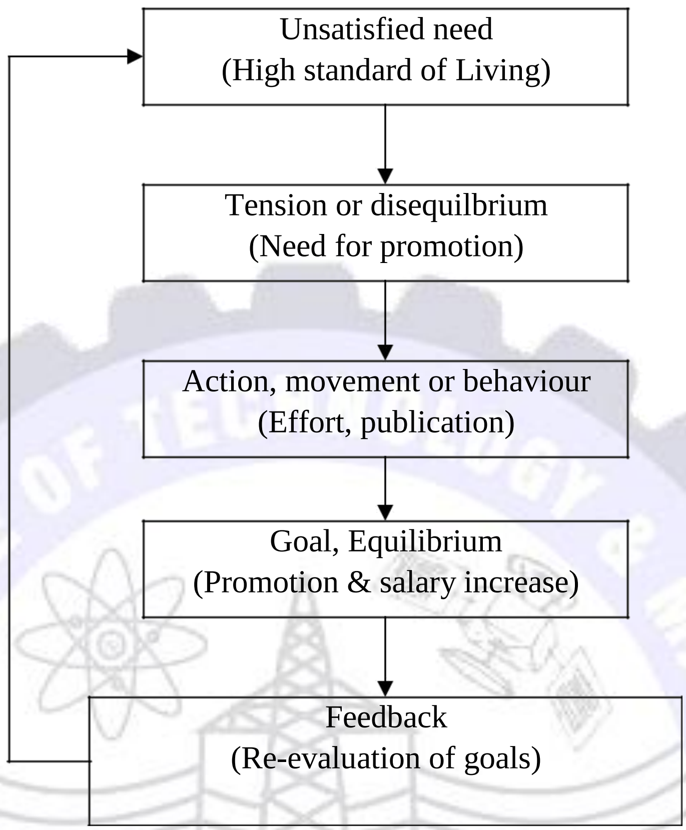
12.3.1 Effort: The amount of effort put into the activity identifies the strength of the person's work-related behaviour. Hard work usually reflects high motivation.



A student who works very hard to get top grades can be referred to as highly motivated. A professor who is engaged in research and publishes many high quality articles is exerting extensive effort relating to his job.

12.3.2 Persistence: Motivation is a permanent and an integral part of a human being. Its second characteristic is persistence in the efforts. Motivation is continuously goal directed so that once a goal is achieved, a higher goal is selected and efforts are exercised towards this higher goal. For example, a professor who publishes simply to get a promotion and then stops or reduces research efforts would not be considered as highly motivated. Accordingly, high motivation requires persistent efforts.

12.3.3 Direction: Persistent hard work determines the quantity of effort while direction determines the quality of the-anticipated output. All efforts are to be directed towards the organizational goal. This would ensure that the persistent effort is actually resulting into accepted organizational outcomes. For example, a quality control inspector is consistently expected to direct his efforts in discovering defects in the produced items so that the organizational goal of high quality output is met. As an example, let us assume that a professor has established a goal for him to get a promotion and monetary raise in order to improve upon his standard of living. Thus the professor will shape his behaviour to achieve that goal. He will thus choose a course of action designed to obtain promotion. This course of action may be five published articles or one published book. He will be highly motivated and will put in persistent efforts in research and publish the desired number of articles or the book. Once the promotion has been obtained the professor will reevaluate his achievement relative' to his initially established objective. If the pay raise is not adequate and there are grounds for further promotion and pay raise, the professor will establish a higher goal and strive towards it. This example fits the basic motivational process as follows:



In the above example, if the motivator (publishing) does not serve the required purpose then the professor will look at other alternatives as motivators such as service to the college and community, student guidance and curriculum development, good interactive relations with peers and superiors. Thus the motivation process involves the following steps.

Analysis of situation: The situation that needs motivational inducement must be sized up so as to ascertain the motivational needs. From organizational behaviour point of view it must be recognized that since the needs of different employees differ both in nature as well as intensity, a composite view of the collective needs of the group is established with appropriate recognition of differences in individual needs.

Selecting and applying appropriate motivators: A list of all devices of motivation is drawn and a selection made of such motivators that motivate different types of people under different circumstances. Proper timing and the extent of motivation are also to be considered. The individual goals should be given adequate attention within the framework of group goals and the organizational goals.

Follow-up: It is important to know that the motivators selected are indeed providing the desired motivation. This can be accomplished by getting and evaluating the feedback. If these motivators are not-showing the optimum effect, then alternative motivators should be selected and applied.

12.4 SOURCES OF MOTIVATION

Experts in the organizational behaviour field have a divided opinion as to whether workers are motivated by factors in the external environment such as rewards or fear or whether motivation is self generated without the application of external factors. It is quite well understood that under the same set of external factors all workers are not equally motivated. Some of these motivational sources are:

12.4.1 Positive Motivation: Positive motivation involves proper recognition of employee, efforts and appreciation of employee contribution towards the organizational goal-achievement. Such motivations improve the standards of performance, lead to good team spirit and pride, a sense of cooperation and a feeling of belonging and happiness. Some of the positive motivators are:

Praise and credit for work done.

A sincere interest in the welfare of subordinates.

Delegation of authority and responsibility to subordinates.

Participation of subordinates in the decision making process.

12.4.2 Negative or Fear Motivation: This motivation is based upon the use of force, power, fear and threats. The fear of punishment or unfavourable consequences affects the behavioural changes. Some examples of negative motivation include the fear of failing in the examination, and fear of being fired or demoted. Fear of failure in the examination induces motivation in many students to work harder and pass the course. Similarly, fear of being fired keeps the workers in the line with the organizational rules and regulations as well as do a satisfactory job. While the fear of punishment and actual punishment has resulted in controlling individual misbehaviour and has contributed towards positive performance in many situations and is necessary and useful in many other situations such as disciplining a child or handling a riot. It is not recommended or considered as a viable alternative in the current business and industrial environment. This is based upon the trend and changes in the workforce including higher level of employee education and extensive employee unionization. However, punishment or fear of it is still the most common technique of behaviour modification or control in today's life. When a child misbehaves, he is still spanked. If a worker does not behave according to the way the organization wants him to behave, he is fired. If a person does not behave as the society and law wants him to behave, he is punished by arrest and jail. All religions threaten punishment in the life hereafter if a person does not behave according to God's and religious rules.

Does the punishment system work? Does it change behaviour? Does the prison system reform the criminal? Does spanking make a "good" child? This area has received considerable attention and has become highly controversial. It has been proposed that while punishment has immediate and short-term effect in affecting and changing behaviour, the long-term effects are highly questionable. A driver who gets fined for running a red light where he is supposed to stop may vow never to do it again at that time, but as the time passes, he will do it again.

In the context of organizational behaviour, no worker likes to be criticized, or threatened with employment termination. Specifically, if the worker is punished for an occasional undesired behaviour, it will have a negative effect on his morale, make him bitter with a hostile 'state of mind, affecting negatively his social interaction as well as his sense of loyalty, perhaps resulting in poor performance and productivity and quality.

12.4.3 Extrinsic Motivation: This type of motivation is induced by external factors, which are primarily financial in nature. It is based upon the assumption that the behaviour, which results in positive rewards, tends to be repeated. However, the reward the desired behaviour should be sufficiently powerful and durable so that it improves the probability of occurrence' of desirable behaviour. Money is probably the most important incentive for positive behaviour since money can be used for a number of other resources. These financial incentives and rewards have been a subject of debate whether they really motivate the employees or simply move them to work and perform. These include higher pay, fringe benefits such as retirement plans, stock options, profit sharing scheme, paid vacation, health and medical insurance, sympathetic supervision and people oriented company policies.

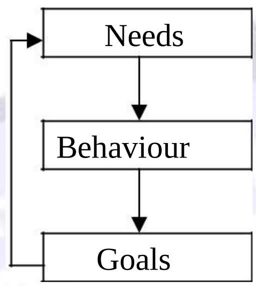
12.4.4 Intrinsic Motivation: Intrinsic motivation stems from feelings of achievement and accomplishment and is concerned with the state of self-actualization in which the satisfaction of accomplishing something worthwhile motivates the employee further so that this motivation is self-generated and is independent of financial rewards. For example, there are many retired doctors who -work free in the hospital because it gives them a sense of accomplishment and satisfaction. Mother Teresa's work in the slums of Calcutta, India, not only motivates the people who work with her but also many others who simply hear about her work and then want to join the team. Similarly, Peace Corps workers work in uncomfortable environments at a minimal pay. Some of the intrinsic motivators are praise, recognition, responsibility, esteem, power, status, challenges and decision-making responsibility.

12.5 THEORIES OF MOTIVATION REGARDING BEHAVIOUR

There are basically two types of theories developed that relate to and define the motivational processes. These are the "content theories" which attempt to determine and specify drives and needs that motivate people to work and "process theories" which attempt to identify the variables that go into motivation and their relationship with each other. These theories are described in greater detail.

The Content Theories of Work Motivation

The content theories have been developed to explain the nature of motivation in terms of types of need that people experience. They attempt to focus on factors within a person that initiate and direct a certain type of behaviour or check certain other type of behaviour. The basic idea underlying such theories is that people have certain fundamental needs, both physiological and psychological in nature, and that they are motivated to engage in activities that would satisfy these needs. Thus the nature of needs establishes the nature of motivation that results in a specific behaviour aimed at reaching the goal of satisfying such needs.



Some of the more important content theories are:

12.5.1 MASLOW'S MODEL

Maslow's "needs hierarchy theory" is probably the most widely used theory of motivation in organizations. Abraham Maslow suggested that people have a complex set of exceptionally strong needs and the behaviour of individuals at a particular moment is usually determined by their strongest need. He developed his model of human motivation in 1943, based upon his own clinical experience and formulated his theory of hierarchical needs by asking the same question, what is it that makes people behave the way they do and made a list of answers from which he developed a pattern. His theory is based upon two assumptions. First those human beings have many needs those are different in nature ranging from the biological needs at the lower level, which is the level of survival, to psychological needs at the upper extreme, which is the level of growth. Second that these needs occur in an order of hierarchy so that lower level needs must be satisfied before higher level needs arise or become motivators. Mahatma Gandhi, the Indian leader, once remarked, "Even God cannot talk to a hungry man except in terms of food. Similarly, there is a quotation from the Holy Guru Granth Sahib, the holy scripture of Sikhs in India when a holy man says to God, "Take your rosary beads away. I cannot worship and meditate on you when I am hungry." This means that if the people's basic needs which are biological in nature are unsatisfied, then their total attention will be focused upon these needs and it will not be possible to communicate with them about other matter. This model of hierarchical needs explains human behaviour in a more dynamic and realistic manner and is primarily based upon people's inner states as a basis for motivation and the environmental conditions do not play any significant role. Maslow postulates five needs basic needs arranged in successive levers. These needs continue to change resulting in change in goes and activities. These five needs are arranged in the form as shown. The first three level needs at the bottom are known as “deficiency” needs, because they must be satisfied in order to ensure the individual's very existence and security and make him fundamentally comfortable. The top two sets of needs are termed "growth" needs because they are concerned with personal growth, development and realization of one’s potential.

These needs are explained in detail as follows:

Physiological needs: The physiological needs form the foundation of the hierarchy and tend to have the highest strength in terms of motivation. These are primarily the needs arising out of physiological or biological tension and they are there to sustain life itself and include the basic needs for food, water, shelter and sex. Sexual need and desire is not to be contused with love, which is at the third level. Once these basic needs are satisfied to the degree needed for the sufficient and comfortable operation of the body, then the other levels of needs become important and start acting as motivators.

Security and Safety needs: Once the physiological needs are gratified, the safety and security need~ become predominant. These are the needs for self-preservation as against physiological needs, which are for survival. These needs a include those of security, stability freedom from anxiety and a structured and ordered environment. These safety and security needs are really provisions against deprivation of satisfaction of physiological needs in the future. It also involves a sense of protection against threats and danger of losing the job in the future. In a civilized society such as ours, a person is usually protected from threats of violence or extremes in climate or fear of material safety, so that the safety and security needs dwell upon economic and job security, life and medical insurance and other protective measures to safeguard the satisfaction of physiological needs in the future which may be unpredictable.

Love and Social needs: After the needs of the body and security are satisfied, then a sense of belonging and acceptance becomes prominent m motivating behaviour. These needs include the needs for love, friendship, affection, and social interaction. We look for an environment where we are understood, respected arid wanted. That is one reason for "polarization" where people of similar background arid beliefs tend to group together. "Love thy neighbor" has perhaps a profound meaning.

Esteem needs: This need for esteem is to attain recognition from others, which would induce a feeling of self-worth and self-confidence in the Individual. It is an urge for achievement, prestige, status and power. Self-respect is the internal recognition. The respect from others is the external recognition and an appreciation of one's individuality as well as his contribution. This would result in self-confidence, independence, status,

reputation and prestige. People then would begin to feel that they are useful and have some positive effect on their surrounding environment.

Self-actualization needs: This last need is the need to develop fully and to realize one's capacities and potentialities to the fullest extent possible, whatever these capacities and potentialities maybe. This is the highest level of need in Maslow’s hierarchy and is activated as a motivator when all other needs have been reasonably fulfilled. At this level, the person seeks challenging work assignments that allow for creativity and opportunities for personal growth and advancement. This need is for soul searching and is inner-oriented. A self-actualized person is creative, independent, content, and spontaneous and has a good perception of reality and he is constantly striving to realize his fun potential. Thus, "what a man ‘can’ be ‘must’ be.”

Maslow's model is a general model in which an individual needs interact with each other to some degree. Needs are not necessarily linear, nor is the order of needs so rigid. The relative dominance of many needs is variable and is continuously shifting. For example, a self-actualized person may shift his priority to social needs and love needs instead of prestige and status, if suddenly there occurs a vacuum due to loss of a loved one. Similarly, a person may not go to the higher need, even when his lower needs are satisfied. It is also likely that a well-prepared elite person may decide to enter a commune where there is overwhelming emphasis on love and affection rather than climb the corporate ladder.

Maslow's theory made management aware that people are motivated by a wide variety of needs and that management must provide an opportunity for the employees to satisfy these needs through creating a physical and conceptual work environment, so that people will be motivated to do their best to achieve organizational goals.

The first level needs in the hierarchy, the physiological needs can be satisfied through such organizational efforts and incentives as adequate wages and salary, acceptable working conditions in order to improve

comfort and avoid fatigue, more leisure time and acceptable work environment in terms of lighting, ventilation, rest rooms, working space, heat and noise level. Some bonuses and other fringe benefits will be highly motivational.

The second level needs of safety and security can be satisfied through management's initiative to provide life insurance, medical insurance, job security, cost of living increments, pension plans, freedom to unionize, and employee protection against automation. Law in the form of minimum wages, unemployment benefits, and welfare benefits provides the economic security to some degree. Similarly, unions protect employees against discrimination and indiscriminate firing.

Since first level physiological needs and second level security needs are primarily met by business, industrial, societal and legal environment, management must take steps to satisfy higher level needs and must establish as to which of these needs are the stronger sources of motivation. When the third level needs of love and affiliation become motivators, then people find an opportunity in their work environment for establishing friendly interpersonal relation-ships. The management can satisfy these needs by:

Providing opportunities for employees to interact society with each other through coffee breaks, lunch facilities and recreational activities such as organized sports programs, company picnics and other social get together. Creating team spirit by keeping work groups informal wherever possible with friendly and supportive supervision.

Conducting periodic meetings with all subordinates to discuss matters pertaining to personal achievements and contributions as well as organizational developments.

The fourth level needs of self-esteem involve a feeling of satisfaction and achievement and recognition for such achievement. The management can take the following steps to satisfy these needs:

esign more challenging tasks and provide positive feedback on performance of employees.
Give recognition and encouragement for performance and contribution and delegate additional authority to subordinates.
Involve subordinates in goal setting and decision-making processes. Provide adequate training and executive development programs to help employees successfully accomplish their goals and increase their competency on their jobs.
Provide some of the symbols for status and respect, such as executive level job title, private secretary, privileged parking, promotion, company car, stock options and write-ups about achievements in the company newspapers.
The fifth and top-level needs of self-actualization long for growth arid creativity and the management can take the following steps to satisfy these needs:
The employees should be given an opportunity to shape their own jobs. Give employees the freedom of expression. This will open the channels of communications further and give the employees an opportunity to get involved. .
Encourage and develop creativity among employees. Creativity is tied in with freedom of expression and freedom of movement.
Maslow believed that from the point of organizational behaviour the management should strive to create an organizational climate, which motivates employees at all, levels of organizational hierarchy. Research has established that top managers generally are more able to satisfy their higher level needs than lower level managers who have more routine jobs. Blue-collar workers who have very little freedom over job operations may not even experience the higher level needs.

12.5.2 ERG THEORY

The ERG need theory, developed by Clayton Alerter is a refinement of Maslow's needs hierarchy. Instead of Maslow's five needs, ERG theory condenses these five needs into three needs. These three needs are those of Existence, Relatedness and-Growth. The E, Rand G is the initials for these needs.

xistence needs: These needs are roughly comparable to the physiological and safety needs of Maslow's model and are satisfied primarily by material incentives. They include all physiological needs of Maslow's model and such safety needs which financial and physical conditions rather than interpersonal relations satisfy. These include the needs for sustenance, shelter and physical and psychological safety from threats to people's existence and well being.

Relatedness needs: Relatedness needs roughly correspond to social and esteem needs in Maslow's hierarchy. These needs are satisfied by personal relationships and social interaction with others. It involves open communication and honest exchange-of thoughts and feelings with other organizational members.

Growth needs: These are the needs to develop and grow and reach the full potential that a person is capable of reaching. They are similar to Maslow's self-actualization needs. These needs are fulfilled by strong personal involvement in the organizational environment and by accepting new opportunities and challenges.

ERG theory differs from Maslow's theory in proposing that people may be motivated by more than one-kind of need at tile same time. While Maslow proposes that in hierarchy of needs, a person will satisfy the lower level needs before he moves up to the next level of needs and will stay at that, need until it is satisfied, ERG theory suggests that if a person is frustrated in satisfying his needs at a given level, he will move back to lower level needs. For example; assume that a manager's existence needs are fully satisfied and he looks for more challenging tasks to satisfy his self-esteem needs. If his efforts are frustrated in meeting these challenges, he will move back to existence needs and may ask for more material benefits.

12.5.3 McCLELLAND'S THEORY OF NEEDS

Since the lower level needs in Maslow's model are generally satisfied by the business, societal and legal systems, they are no longer strong motivators. Studies conducted by Harvard psychologist David McClelland concluded that from the

organizational behaviour point of view the most prominent need is the need for achievement, power and affiliation. The primary motive is the "achievement motive" and is defined as a desire to succeed in competitive situations based upon an established or perceived standard of excellence."

Individuals with a strong "need for achievement" (known as n Ach), ask for, accept and perform, well in challenging tasks which require creativity, ingenuity and hard work. They are constantly preoccupied with a desire for improvement and look for situations in which successful outcomes are directly correlated with their efforts so that they can claim credit for success. They take- moderate and calculated risks and prefer to get quick and precise feedback on their performance. They set more difficult but achievable goals. For themselves, because; success with easily achievable goals hardly provides a sense of achievement. They desire greater pleasure and excitement from solving a complex problem than from financial incentives or simple praise.

The "need for power" (n Paw) is the desire is the desire to affect and control the behaviour of other people and to manipulate the surroundings. Power motivation when applied positively results in successful managers and leaders who prefer democratic style of leadership. Power motivation, applied-negatively tends to create arrogant autocratic leadership. The "need for affiliation" (n Aff) is related to social needs and reflects a desire for friendly and warm relationships with others. Individuals tend to seek affiliation with others who have similar beliefs, backgrounds and outlook on life. This results in information of informal groups and informal organizations. It is evident in social circles also that people mix with people of their own kind. Individuals with high "n Aff" tend to get involved in jobs that require a high amount of interpersonal contact; and relations such as jobs in teaching and public relations. From organizational behaviour point of view, these individuals are highly motivated to perform better in situations where personal support and approval are tied to performance. They tend to avoid conflict and exhibit strong conformity to the wishes of their friends.

12.5.4 HERZBERG'S TWO-FACTOR THEORY

Fredrick Herzberg and his associates developed the two-factor theory in the late 1950s and early 1960s. As part of a study of job satisfaction, Herzberg and his colleagues conducted in-depth interviews with over 200 engineers and accountants in the Pittsburgh area. The researchers felt that a person's relation to his work is a basic one and that his attitude towards work would determine his organization related behaviour. The respondents were required to describe in detail the type of environment in which they felt exceptionally good about their jobs and the type of environment in which they felt bad about their jobs. It seems natural to believe that people who are generally satisfied with their job will be more dedicated to their work and perform it well as compared to those people who are dissatisfied with their jobs. If the logic seems justified then it would be useful to isolate those factors and conditions that produce satisfaction with the job and those factors, which produce dissatisfaction.

The basic questions that were asked in the survey were the following two:

What is it about your job that you like? and

What is it about your job that you dislike?

Based upon these answers it was concluded that there are certain characteristics or factors that tend to be consistently related to job satisfaction and there are other factors that are consistently related to job dissatisfaction. Herzberg named the factors that are related to job satisfaction as motivational factors, which are intrinsic in nature and factors related to job dissatisfaction as maintenance or hygiene 'factors which are extrinsic in nature. These factors are described in detail as follows:

Hygiene factors: Hygiene factors do not motivate people. They simply prevent dissatisfaction and MAINTAIN STATUS QUO. They produce no growth but prevent loss. The absence of these factors leads to job dissatisfaction. The elimination of dissatisfaction does not mean satisfaction and these factors simply maintain a “zero level of motivation.” For example: if a person indicated "low pay" as a cause of dissatisfaction, it would not necessarily identify "”high pay” as a cause of satisfaction. Some of the hygiene factors are:

Wages, salary and other types of employee benefits

Company policies and administration rules that govern the working environment

Interpersonal relations with peers, supervisors and subordinates Cordial relations with all will prevent frustration and dissatisfaction

Working conditions and job security. The job security may be in the form of tenure or a strong union could support it.

Supervisor's technical competence as well as the quality of his supervision. If the supervisor is knowledgeable about the work and is patient with his subordinates and explains and guides them well, the subordinates would not be dissatisfied in this respect.

All the hygiene factors are designed to avoid damage to efficiency or morale and these are not expected to stimulate positive growth. Hawthorne experiments were highly conclusive in suggesting that improvements in working conditions or increments in financial benefits do not contribute to motivated performance. A new plant or upgraded facilities at a plant seldom motivate workers if the workers do not enjoy their work and these physical facilities are no substitute for employee feelings of recognition and achievement.

Motivational factors

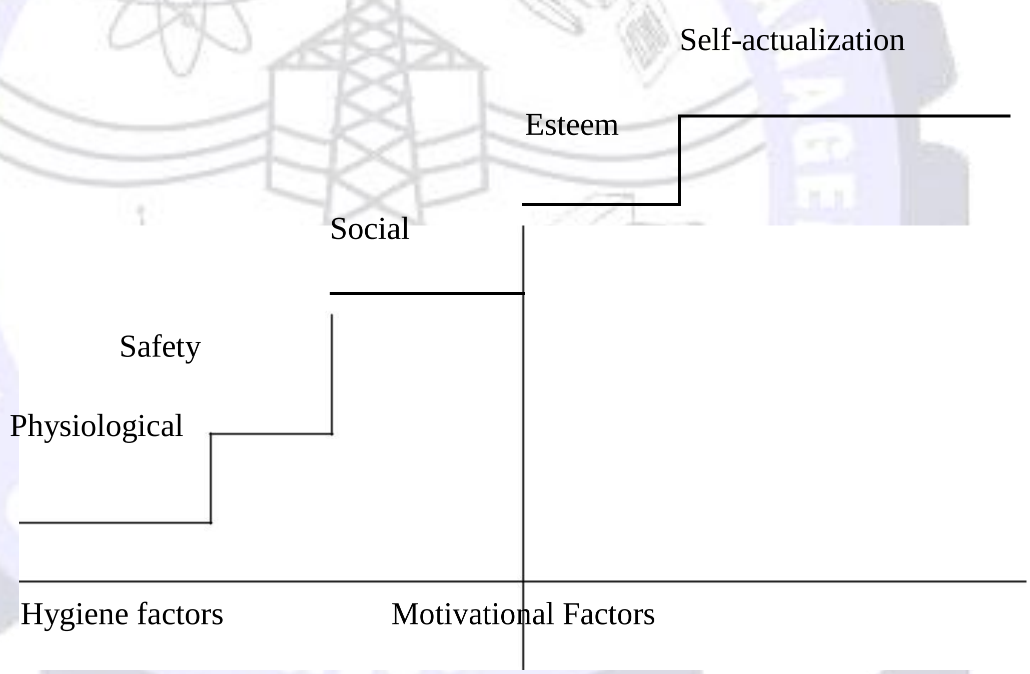
These factors are related to the nature of work (job content) and are intrinsic to the job itself. These factors have a positive influence on morale, satisfaction, efficiency and higher productivity. Some of these factors are:

The job itself: To be motivated, people must like and enjoy their jobs. They become highly committed to goal achievement and do not mind working late hours in order to do what is to be done. Their morale is high as evidenced by lack of absenteeism and tardiness.

Recognition: Proper recognition of an employee's contribution by the management is highly morale boosting. It gives the workers a. feeling of worth and self esteem. It is human nature to be happy when appreciated. Thus, such recognition is highly motivational.

Achievement: A goal achievement gives a great feeling of accomplishment. The goal must be challenging, requiring initiative and creativity. An assembly line worker finishing his routine work hardly gets the feeling of achievement. The opportunities must exist for the meaningful achievement; otherwise workers become sensitized to the environment and begin to find faults with it.

Responsibility: It is an obligation on the part of the employee to carry out the assigned duties satisfactorily. The higher the level of these duties, the more responsible the work would feel and more motivated he would be. It is a good feeling to know that you are considered a person of integrity and



Intelligence to be given a higher responsibility. It is a motivational factor that helps growth.

Growth and advancement: These factors are all interrelated and are positively related to motivation. Job promotions, higher responsibility, participation in central decision-making and executive benefits are all signs of growth and advancement and add to dedication and commitment of employees. The Herzberg's two-factor model is tied in with Maslow's basic model in that Maslow is helpful in identifying needs and Herzberg provides us with directions and incentives that tend to satisfy these needs. Also the hygiene factors in Herzberg's model satisfy the first three levels of Maslow's model of physiological needs, security and safety needs and social needs and social needs and the motivational factors satisfy the last two higher level needs of esteem and self-actualization.

Some researchers do not agree with Herzberg's model as being conclusive, since the results were based primarily on the responses of white collar workers (accountants and engineers) and do not necessarily reflect the 'blue collar workers' opinion who may consider hygiene factors as motivational factors. Some studies have found that the effect of hygiene factors and motivational factors are totally reversed on some people. They are highly motivated by financial rewards, organized supervision, well-defined work rules, pleasant working environment and positive employee 'interaction and do not give much importance to achievement and self-actualization.

Another criticism about Herzberg's two-factor theory dwells upon the method of research and data collection. The theory was developed on the basis of "critical incident" method. According to this method, the respondents were asked to indicate particular incidents, which they felt, were associated with their satisfaction or dissatisfaction with their jobs. This means that the theory is "method bound" and studies that use other" methods for measuring satisfaction and dissatisfaction fail to support the validity of Herzberg's theory.

Furthermore, the theory does not take into consideration individual differences in values and outlook as well as the individual's' age and organizational level. However, this theory has contributed to one management program that has lent itself to the enhancement of motivators. Ii provides valuable guidelines for structuring the jobs in order to include within the job content such factors, which bring about satisfaction.

12.6 THEORIES OF MOTIVATION REGARDING WORK

While "need theories" of motivation concentrate upon "what" motivates persons, "process theories" concentrate upon "how" motivation occurs. These theories identify the variables that go into motivation and their relationship with each other. Some of these theories are explained in more detail as follows:

12.6.1 VROOM'S EXPECTANCY MODEL

The expectancy model is based upon the belief that motivation is determined by the nature of the reward people expect to get as a result of their job performance. The underlying assumption is that a man is a rational being and will try to maximize his perceived value of such rewards. He will choose an alternative that would give him the most benefit. People are highly motivated if they believe that a certain type of behaviour will lead to a certain type of outcome and their extent of personal preference for that type of outcome. There are three important elements in the model. These are:

Expectancy: This is a person's perception of the likelihood that a particular outcome will result from a particular behaviour or action. This likelihood is probabilistic in nature and describes the relationship between an act and its outcome. For example, if a student works hard during the semester, he will expect to do well in the final examination. It is not 100% definite that he will indeed do well in the examination. There is some probability attached to this outcome. Similarly, if a person works hard, he may expect to perform better and increase productivity. For example, a worker works hard and is absolutely certain (expectancy = 1.0) that he can produce an average 15 units a day and 60% certain (expectancy = 0.6) that he can produce a high of 20 units per day. This expectation of outcome is known as "first level" outcome.

Instrumentality: This factor relates to a person's belief and expectation that his performance will lead to a particular desired reward. It is the degree of association of first level outcome of a particular effort to the second level outcome-which is the ultimate reward. For example, working hard may lead to better performance-which is the first level outcome, and it may result in a reward such as salary increase or promotion or both-which is the second level outcome. If a person believes that his high performance will not be recognized or lead" to expected and desired rewards, he will not be motivated to work hard for better output. Similarly, a professor may work had to improve upon his techniques of teaching and communication (first level outcome) in order to get promotion and tenure (second level outcome). Accordingly, instrumentality is the performance-reward relationship.

Valence: Valence is the value a person assigns to his desired reward. He may not be willing to work hard to improve performance if the reward for such improved performance is not what he desires. It is not the actual value of the reward but the perceptual value of the reward in the mind of the worker that is important. A person may be motivated to work hard not to get pay raise but to get recognition and status. Another person may be more interested in job security than status.

Accordingly, according to this model of motivation, the person's level of effort (motivation) depends upon: *Expectancy:* A worker must be confident that his efforts will result in better productivity and that he has the ability to perform the task well. *Instrumentality:* The worker must be confident that such high performance will be instrumental in getting desired rewards. *Valence:* The worker must value these rewards as desired and satisfactory. Hence motivation is related to these three factors as: Motivational Force (M) =Expectancy (E) x lnstrumentality (I) x Valence

(V).

Or M = (E x I x V)

As the relationship suggests, the motivational force will be the highest when expectancy, instrumentality and valence are all high and the motivational value is greatly reduced when anyone or more of expectancy, instrumentality or valence approaches the value of zero.

The management must recognize and determine the situation as it exists and take steps to improve upon these three factors of expectancy, instrumentality and valence for the purpose of behavioural modification so that these three elements achieve the highest value individually. For example, if a worker exhibits a poorly motivated behaviour, it could be due to:

Low effort-performance expectancy. The worker may lack the necessary skills and training in order to believe that his extra efforts will lead to better performance. The management could provide opportunities for training to improve skills in order to improve the relationship between effort and performance.

Low performance-reward instrumentality relationship. The worker may believe that similar performance does not lead to similar' rewards. The reward policy may be inconsistent and may depend upon factors other than simply the performance, which the worker may not be aware of or may not consider fair. Low reward-valence. Since the managers may look at the value of a reward differently than the worker, the management must investigate the desirability of the rewards, which are given on the basis of performance. While monetary benefits may be more desirable for some workers, the need to be formally appreciated may be more valuable rewards for others for similar task oriented activities. The Vroom's model tries to explain as to what factors affect a person's choice of a particular course of action among all available alternatives and why a person would be better motivated towards achievement of certain goals as compared to some other goals. Accordingly, managers must understand and analyze the preferences of particular subordinates in order to design "individualized motivational packages" to meet their needs, keeping in mind that all such packages should be perceived as generally fair by all concerned parties.

12.6.2 EQUITY THEORY

Equity theory is based on the assumption of some researchers that one of the most widely assumed source of job dissatisfaction is the feeling of the employees that they are not being treated fairly by the management or the organizational system. The “Equity theory" has two elements. First, the workers want to get a fair reward for their efforts. This "exchange," meaning reward for efforts, is similar to any other exchange.

If you put in more efforts into-your work, you expect to get out of it more rewards. Second, you would compare your rewards with the rewards of others who put in similar efforts. Imagine that you got your MBA from an Ivy League university and are offered a job for $30,000 per year. However, you believe that this offer is not fair and based upon your qualifications and potential contribution to the company; you believe that $35,000 per year would be more equitable. Suppose you do get $35,000 as you hoped for. This would eliminate the inequity and you are happy. A few days into the job you find out that another person with the same degree and background from the same university was hired at the same time at $40,000 per year. You feel that this is unfair by comparison and thus in your mind a state of inequity exists. This inequity can be a source of dissatisfaction.

Equity theory is based upon the recognition that employees are not only concerned with the rewards that they receive for their efforts but also with the relationship of their rewards with the rewards received by others. They make judgments of equity or inequity between their input and outcomes and the inputs and outcomes of others. For comparison purposes, the inputs can be considered as efforts, skills, education, experience, competence; and outputs can be considered as salary levels, recognition, raises, status and other privileges. When such inequity exists, whether it is perceived or real, employees will feel uneasy about it and will tend to take steps that will reduce or eliminate this inequity. These steps may result in lower or higher productivity, improved or reduced quality of output, increased dedication and loyalty or uncaring attitudes, protests against inequity and voluntary resignation. Equity theory proposes that under-rewarded employees tend to produce less or produce products of inferior equality than equitably rewarded employees, and over-rewarded employees tend to produce more or product of higher quality than equitably rewarded employees. This must be realized that inequity exists when people are either "underpaid" or "overpaid" for similar efforts. However, they are more willing to accept overpayment by justifying such overpayment than by taking steps to reduce this inequity. As formulated by Adams, the equity theory comprises of the following postulates:

Perceived inequity creates a feeling of resentment and tension within individuals.

The extent of this tension reflects the magnitude and type of inequity.

Individuals will be motivated to take steps to reduce this tension.

The greater the extent of perceived inequity the greater is the strength of such motivation.

There are a number of steps that a person can take in order to reduce the tension caused by perceived inequity. It must be understood that inequity exists only in the perception of the individual. It may or may not be real. If people are satisfied in spite of any inequity that might exist or if they can justify inequity by one way or another then in their own perceptions, such inequity does not exist. The following are some of the steps people may take to reduce the extent of such inequity.

They may change their inputs either upwards or downwards to a more equitable level. Overpaid workers may justify overpayment by increased efforts and underpaid workers may reduce their level of efforts and be less interested in work by excessive absenteeism and tardiness.

They may alter their outcome to restore equity. The workers .may demand better pay and better working conditions for the same input either by staging walkouts and strikes or through organized union negotiations.

They can change input-outcome ratio to more favourable and equitable levels by distorting the values of the inputs or outcomes. They may artificially increase the importance of the jobs they are doing in their own minds or decrease the value of their own input by believing that they are not really working very hard. For example if a professor does not get promotion he may justify it by either thinking that "it is not the promotion that counts but helping the students achieves academic excellence" or by believing that "he really did not work very hard in the area of research and publications."

Employees may resign from their jobs. 1Smployees who feel that they have been inequitably treated at a particular job may find another job where they feel that the input-outcome balance is more favourable and equitable for them.

People may change the level of comparison with other employees. In the face of equity, the employees may believe either that other people get better outcomes because they do work harder at it or because they belong to different category with which the comparison is not valid or justified. For example, a professor from Business Administration division who did not get promotion may compare it equitably with another professor from Social Sciences division who did get promotion by believing that the requirements for promotion for both divisions are not the same or that the professor from Social Science division did work harder to get his promotion.

12.6.3 GOAL-SETTING THEORY

Goal setting theory is a relatively applied approach to motivation and is based upon -the assumption that the type as well as the cha1lenge of the goal induces motivation in the individual to achieve such goal. The theory as proposed by Edwin Locke, studies the processes by which people set goals for themselves and then put in efforts in order to achieve them. The quality of performance is generally shaped by how difficult and how specifically defined the goal is:' General goals such as "do your best," do not lend to accurate performance appraisal and proportionate rewards. Specific goals are clear and tend to give a clear direction to the worker, resulting in improved performance. Similarly, difficult goals, once accepted, lead to higher performance.

Goal specificity: A specific goal identifies the target in quantitative terms. This would enable the worker to evaluate his performance and judge as to how he is doing relative to the goal. For example, if a worker is producing 50 units a day, which is the average output, he may set his goal of 60 units a day to be achieved within seven days. The worker can evaluate this output each day and decide whether he is adequately moving towards that goal. Meeting a goal provides the worker with a sense of achievement, pride and personal satisfaction. General goals, such as “we will produce as much as possible,” have little effect on motivation. Specific goals reduce ambiguity and the worker has very clear idea as to what is expected of him.

Goal difficulty: Difficult but feasible goals provide more challenge than easy goals. Reaching an easy target is not competitive and hence hardly exciting. This is particularly true for high need achievers. Goal commitment is independent of whether the goal is set by the worker himself or is assigned by superiors, but depends upon expectations of success and degree of success. Commitment would also depend upon previous rewards for goal achievement.

The most important element of goal setting theory is the acceptance of goal by the workers. Of course, the best way to have the goal accepted by workers is to let them set their own goals within the general organizational guidelines. A goal that one establishes for him becomes an integral part of him. An example is a person's career objective. A person with self-set goals is most likely to strive harder to achieve them. Assigned goals are equally acceptable if these goals are consistent with personal aspirations of workers. Acceptance becomes easier if the workers are encouraged to participate in the goal setting process. Goal acceptance can also be facilitated if the management demonstrates a supportive attitude towards subordinates regarding goal achievement. There is evidence that goal setting, as outlined, improves performance about 90% of the time, and that comparatively high achievers set comparatively more difficult goals and are much more satisfied with intrinsic rewards rather than extrinsic rewards.

12.7 MANAGEMENT BY OBJECTIVES (MBO)

A logical extension of goal setting theory is Management by Objectives, which involves systematic and programmatic goal setting throughout an organization. It is a process by which managers and subordinates work together in identifying goals and setting up objectives and make plans together in order to achieve these objectives. These objectives and goals are consistent with the organizational goals.

George Odiorne has explained the concept of MBO as follows:

The system of management by objectives can be described as a process whereby the superior and subordinate managers of an organization jointly identify its common goals, define each individual's major areas of responsibility in terms of results expected of him and use these measures as guides for operating the unit and assessing, the contribution of each of its members. Also known as Goal Management, MBO is based upon the assumption that involvement leads to commitment and when an employee participates in goal setting as well as setting standards for measurements of performance towards that goal, then the employee will be motivated to perform better and in a manner that directly contributes to the achievement of organizational objectives.

Some of the elements in the MBO process can be described as follows:

Central goal settings: The first basic phase in the MBO process is the defining and clarification of organizational objectives. These are set by the central management and usually in consultation with the other managers. These objectives should be specific and realistic. This process gives the group managers and the top mangers an opportunity to be jointly involved. Once these goals are clearly established, they should be made known to all the members of the organization and be clearly understood by them.

Manager-subordinate Involvement: After the organization goals have been set and defined, the subordinates' work with the managers in setting their individual goals relative to organizational goals. Such joint consultation is important because people become highly motivated in achieving objectives that were set by them to start with. The goals of the subordinates are specific and short range and primarily indicate what the subordinate's unit is capable of achieving in a specified period of time. The subordinate must set goals in consultation with the individuals who comprise his unit. In this manner, everyone gets involved in the goal setting.

Matching, goals and resources: The objectives in themselves do not mean anything unless we have resources and means to achieve those objectives accordingly, management must make sure that the subordinates are provided with necessary tools and materials to effectively achieve these goals. If the goals are precisely set, then the resources requirements can also be precisely measured thus making the resource allocation easier. However, just as in goal setting, the allocation of resources should also be done in consultation with the subordinates.

Freedom of implementation: The manager-subordinate task force should have adequate freedom in deciding on the utilization of resources and the means of achieving the objectives. *As* long as these means are within the larger framework of organizational policies, there should be minimum interference by superiors.

Review and appraisal of performance: There should be periodic review of progress between manager and the subordinates. These reviews would determine if the individual is making satisfactory progress. They will also reveal if any unanticipated problems have developed. They also help the subordinates understand the process of MBO better. They also improve the morale of subordinates since the manager is showing active interest in the subordinate's work and progress. These periodic reviews are necessary since priorities and conditions are constantly changing and these must be periodically monitored.

The concept of MBO is very rich in terms of managerial implications. Managers have a responsibility to assign or set goals in such a manner so as to have the maximum motivational potential. The goals must be tailored to the individual needs and skills, since individuals differ so much in their concept of goals. This would create an optimal performance environment for the employees. When implemented properly MBO has some unique advantages. These are:

Since MBO is result-oriented process and focuses on setting and controlling goals, it encourages managers to do detailed planning. As the planning process is improved, it helps in a better overall management system.

The managers are required to establish measurable targets and standards of performance and priorities for these targets. Since the goals are set in consultation with subordinates, these are generally more difficult and challenging than if the superiors had imposed them. Additionally, since these targets are tailored to the particular abilities of the subordinates, it obtains maximum contribution from them thus providing optimum utility of human resources.

Both the manager and the subordinates know what is expected of them and therefore there is no role ambiguity or confusion.

It makes individuals more aware of company goals. Most often the subordinates are concerned with their own objectives and the environment surrounding them. But with MBO, the subordinates feel proud of being involved in the organizational goals. This improves their morale and commitment.

MBO often highlights the area in which the employees need further training. By taking keen interest in the development of skills and abilities of subordinates, the management provides an opportunity for strengthening' those areas that need further refinement thus leading to career development.

The system of periodic evaluation lets the subordinates know how well they are doing. Since MBO puts strong emphasis on quantifiable objectives, the measurement and appraisal could be more objective, specific and equitable. These appraisal methods are superior to trait evaluation, which is based upon such factors as liability, cooperation, loyalty and self-discipline, since they focus on results and not on some subjective intangible characteristics. This evaluation being more objective can be highly morale boosting.

It improves communication between management and subordinates. This continuous feedback helps clarify any ambiguities, refine and modify any processes or any aspects of goals. Also, MBO is a kind of control mechanism so that if there are any deviations discovered between the actual performance and the goals, these can be regularly and systematically identified, evaluated and corrected.

Some of the **problems and limitations** associated with MBO are as follows:

In the classical structure of our organizations, the authority flows from top to bottom. This creates rigidity and discipline, which generally lead to better performance. Hence the top management is usually reluctant to support the process of MBO in which their subordinates would take equal part. Accordingly, MBO can only succeed if it has the complete support of top management.

Subordinates may dislike MBO. They may be under pressure to get along with the management when setting goals and objectives and these may be set unrealistically high or far too rigid. This may lower their morale and they may become suspicious about the philosophy behind MBO. They may seriously believe that MBO is just another of the management's trick to make the subordinates work harder-and become more dedicated and involved.

The emphasis in MBO system is on quantifying the goals and objectives. It does not leave any ground for subjective goals. Some areas are difficult to quantify and more difficult to evaluate. Thus, MBO rewards productivity at the cost of creativity.

There is considerable paperwork involved and it takes too much of the manager's time. Too many meetings and too many reports add to the manager's responsibility and burden. Some managers may resist the program because of this increased paperwork.

The emphasis is more on short-term goals. Since goals are mostly quantitative in nature, it is difficult to do long range planning. This is so because all the variables affecting the process of planning cannot be accurately forecast over the long run due to continuously changing socioeconomic and technical environment. This difficulty affects the stability of goals.

Most managers may not be sufficiently skilled in interpersonal interaction such as coaching and counseling which is extensively required.

The integration of the MBO system with other systems such as forecasting and budgeting is very poor. This makes the overall functioning of all systems very difficult.

Group goal achievement is more difficult. When goals' of one department' depend upon the goals of another department, cohesion is more difficult to obtain. For example, the production department cannot produce a set quota if it is not sufficiently supplied with raw materials and personnel. Similarly sales department cannot meet its obligation in sales unless production department keeps pace with sales.

It takes a lot of time, perhaps three to five years, to implement the MBO program properly and fully and some research studies have shown that MBO programs can lose their impact and potency as a motivating force over time.

CONTROLLING

14.1 INTRODUCTION

All organisations, business or non-business, face the necessity of coping with, problems of control. Like other managerial functions, the need for control arises to maximise the use of scarce resources and to achieve purposeful behaviour of organisation members. In the planning stage, managers decide how, the resources would be utilised to achieve organisational objectives; at the controlling stage; managers try to visualise whether resources are utilised in the same way as planned. Thus control completes the whole sequence of management process.

4.2 DEFINITION

Control is any process that guides activity towards some predetermined goals. Thus control can be applied in any field such as price control, distribution control, pollution control, etc. However, control as an element of management process can be defined as the process of analysing whether actions are being taken as planned and taking corrective actions to make these to conform to planning. Thus control process tries to find out deviations between planned performance and actual performance and to suggest corrective actions wherever these are needed. For example, Terry has defined control as follows:

"Controlling is determining what is being accomplished, that is evaluating the performance and, if necessary, applying corrected measures so that the performance takes place according to plan."

Based on the definition of control, its following features can be identified:

Control is forward looking because one can control future happenings and not the past. However, on control process always the past performance is measured because no one can measure the outcome of a happening which has not occurred. In the light of these measurements, managers suggest corrective actions for future period.

Control is both an executive process and, from the point of view of the organisations of the system, a result. As an executive process, each manager has to perform control function in the organisation. It is true that according to the level of a manager in the organisation, the nature, scope, and limit of his control function may be different as compared to a manager at other level. The word control is also preceded by an adjective to designate a control problem, such as, quality control, inventory control, production control, or even administrative control. In fact, it is administrative control, which constitutes the most comprehensive control concept. All other types of control may be subsumed under it.

Control is a continuous process. Though managerial control enables the manager to exercise control at the point of action, it follows a definite pattern and timetable, month after month and year after year on-a continuous basis.

A control system is a coordinated-integrated system. This emphasises that, although data collected for one purpose may differ from those with another purpose, these data should be reconciled with one another. In a sense, control system is a single system, but it is more accurate to think of it as a set of interlocking sub-systems.

14.3 CONTROLLING AND OTHER FUNCTIONS

Control is closely related with other functions of management because control may be affected by other functions and may affect other functions too. Often it is said planning is the basis, action is the essence, delegation is the key, and information is the guide for control. This reflects how control is closely related with other functions of management. In fact, managing process is an integrated system and all managerial functions are interrelated and interdependent. When control exists in the organisation, people know: what targets they are striving for, how they are doing in relation to the targets, and what changes are needed to keep their performance at a satisfactory level. The relationship of control with major managerial functions can be described as follows:

Planning as the Basis: Planning is the basis for control in the sense that it provides the entire spectrum on which control function is based. In fact, these two terms are often used interchangeably in the designation of the department, which carries production planning, scheduling, and routing. It emphasises that there is a plan, which directs the behaviour and activities in the organisation. Control measures these behaviour and activities and suggests measures to remove deviation, if any. Control further implies the existence of certain goals and standards. The planning process provides these goals. Control is the result of particular plans, goals, or policies. Thus, planning offers and affects control. Thus, there is a reciprocal relationship between planning and control, as presented in Figure 14.1.

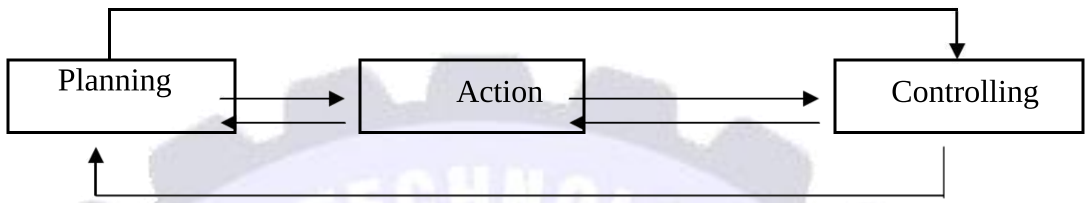


Figure 14.1: Planning and controlling relationships

Thus various elements of planning provide what is intended and expected and the means by which the goals are achieved. They provide a means for reporting back the progress made against the goals, and a general framework for new decisions and actions in an integrated pattern. Properly conceived plan become important elements in implementing effective control.

Action as the Essence: Control basically emphasises what actions can be taken to correct the deviation that may be found between standards and actual results. The whole exercise of managerial process is taken to arrive at organisational objectives set by the planning process. For this purpose, actions and further actions are necessary; each time there may be correction and change in the actions depending upon the information provided by control procedure. Though it is not necessary that each time a corrective action is taken but control ensures the desirability of a particular action. This is important for organisational effectiveness. Thus, in a real sense, control means action to correct a condition found to be in error or action to prevent such a condition from arising and is never achieved without having action as an essential step.

Delegation as the Key: Delegation is the key for control to take place because control action can be taken only by the managers who are responsible for performance but who have authority to get the things done. A manager in the organisation gets authority through delegation and red legation. It does not make sense to make someone responsible for achieving results without delegating him adequate authority. In the absence of adequate authority, a manager is unlikely to take effective steps

for correcting the various deviations located in the process of analysis. Taking of corrective actions may be seen in the context of controllability of a factor effecting the deviation or non-achievement of organisational objectives. Some of these factors are controllable and some are uncontrollable. A controllable factor is one, which can be controlled by an executive action, while the uncontrollable factors lie outside his jurisdiction. A manager's action is likely to be more effective if more factors are controllable by him. He can have better controllability if he has been authorised to take decisions on various matters concerning him and affecting his action. Tile best policy of delegation is the matching of responsibility and authority. It suggests that a manager must have corresponding authority as compared to his responsibility. He has to control the operations, which are exercised by taking action, and action may be taken within the limit of the authority. So the only person who can directly control activities is the one who is directly responsible for them. This is the basic principle for effective organisations.

Information as the Guide: Control action is guided by adequate information from beginning to the end. Management information and management control systems are closely interrelated; the information system is designed on the basis of control system. Every manager in the organisation must have adequate information about his performance, standards, and how he is contributing to the achievement of organisational objectives. There must be a system of information tailored to the specific management needs at every level, both in terms of adequacy and timeliness. Control system ensures that every manager gets adequate information. The criterion for adequacy of information for a manager is his responsibility and authority that is in the context of his responsibility and authority, what type of information a manager needs. This can be determined on the basis of careful analysis of the manager's functions. If the manager is not using any information for taking certain action, the information may be meant for informing him only and not falling within his information requirement. Thus, an effective control system ensures the flow of the information that is required by an executive, nothing more or less. There is another aspect of information for control and other function, that is, the timeliness of information. Ideally speaking, the manager should be supplied the information when he needs it for taking action. For correcting the deviation, timely action is required by the manager concerned. For this purpose, he must have the information at proper time and covering the functioning of a period, which is subject to control. The control system functions effectively on the basis of the information, which is supplied in the organisation. However, the information is used as a guide and on this basis, a manager what action can be taken.

14.3 IMPORTANCE OF CONTROL

Organisations try to achieve their objectives through various actions. From this point of view, all the objectives lead to the achievement of organisational objectives. However, the organisations must also monitor whether they are achieving their objectives or-not. Thus control is an integrated action of an organisation or manager. It offers help in the following directions:

Adjustments in Operations: A control system acts as an adjustment in organisational operations. Every organisation has certain objectives to achieve which becomes the basis for control. It is not only sufficient to have objectives but also to ensure that these objectives are being achieved by various functions. Control provides this clue by finding out whether plans are being observed and suitable progress towards the objectives is being made, and acting, if necessary, to correct any-deviation. This may result into taking actions more suitable for the achievement of organisational objectives.

Policy Verification: Various policies on the organisation generate the need for control. For organisational functioning, managers set certain policies and other planning elements, which later become the basis and reason for control. They become basis in the sense that organisational performance is reviewed in these lights. They also become the reason for control because through these, an organisation tries that its various individuals adhere to such framework. In this process, the organisation and its management can verify the quality of various policies.

3. **Managerial Responsibility:** In every organisation, managerial responsibility is created through assignment of activities to various individuals. This process starts at the top level and goes to the lower levels. However, when a manager assigns some activities to his subordinates, he remains responsible for that portion of activities for their ultimate performance. It is quite natural that when a person is responsible for the performance of his subordinates, he must exercise some control over them. Thus, the control is required because of the very basic nature of the organisation itself. In large organisations, many individuals contribute to the organisational objectives. For efficient performance, they are arranged in hierarchy, forming superior-subordinate relationship throughout the organisation. Since each superior is responsible for the activities of his subordinates also, the control flows throughout the organisation, beginning at the top level, the only difference being nature and scope of control.

Psychological Pressure: Control process puts a psychological pressure on the individuals for better performance. The performance of the individuals is evaluated in the light of targets set for them. A person is likely to put better performance if he is aware that his performance will be evaluated. He may feel pressure to achieve the results according to the standards fixed for him. This is further complemented by the reward and punishment based on the performance. Since the performance measurement is one of the basic elements of the control process, it ensures that every person in the organisation contributes to his maximum ability.

Coordination inaction: Though coordination is the essence of management and is achieved through the proper performance of all managerial functions, control affects this aspect significantly. Control systems are designed in such a way that they focus not only on the operating responsibility of a manager but also on his ultimate responsibility. This forces a manager to coordinate the activities of his subordinates in such a way that each of them contributes positively towards the objectives of the superior. Since this follows throughout the organisation, coordination is achieved in the organisation as a whole.

Organisational Efficiency and Effectiveness: Proper control ensures organisational efficiency and effectiveness. Various factors of control, namely, making managers responsible, motivating them for higher performance, and achieving coordination in their performance, control ensures that the organisation works efficiently. The organisation also moves towards effectiveness because of control system. The organisation is effective if it is able to achieve its objectives. Since control focuses on the achievement of organisational objectives, it necessarily leads to organisational effectiveness. Looking into the various roles that control system plays in the organisation, the management should devise a control system which effectively meets the demands of the organisation: The manager can do this if he is aware of the essential features of effective control system.

14.4 STEPS IN CONTROLLING

The various steps in controlling may broadly be classified into four parts: (i) establishment of control standards; (ii) measurement of performance, (iii) comparison between' performance and standards and the communication, and (iv) correction of deviations from standards.

Establishment of Control Standards: Every function in the organisations begins with plans, which are goals, objectives, or targets to be achieved. In the light of these, standards are established which are criteria against which actual results are measured. For setting standards for control purposes, it is important to identify clearly and precisely the results which are desired. Precision in the statement of these standards is important In many areas, great precision is possible. However, in some areas, standards are less precise. Standards may be precise if they are set in quantities - physical, such as volume of products, man-hour or monetary, such as costs, revenues, and investment. They may also be in other qualitative terms, which measure performance. After setting the standards, it is also important to decide about the level of achievement or performance, which will be regarded as good or satisfactory. There are several characteristics of a particular work that determine good performance. Important characteristics, which should be considered while determining any level of performance as good for some operations are: (i) output, (ii) expense, arid (iii) resources. Expense refers to services or functions, which may be expressed in quantity, for achieving a particular level of output Resources refer to capital expenditure, human resources, etc. After identifying these characteristics the desired level of each characteristic is determined. The desired level of performance should be reasonable and feasible. The level should have some amount of flexibility also, and should be stated in terms of range - maximum and minimum. Control standards are most effective when they are related to the performance of a specific individual, because a particular individual can be made responsible for specific results. However, sometimes accountability for a desired result is not so simply assigned; for example, the decision regarding investment in inventory is affected by purchase, rate of production and sales. In such a situation, where no one person is accountable for the levels of inventories, standards may be set for each step that is being performed by a man.

Measurement of Performance: The second major step in control process is the measurement of performance. The step involves measuring the performance in respect of a work in terms of control standards. The presence of standards implies a corresponding ability to observe and comprehend the nature of existing conditions and to ascertain the degree of control being achieved. The measurement of performance against standards should be on a future basis, so that deviations may be detected in advance of their actual occurrence and avoided by appropriate actions: Appraisal of actual or expected performance becomes an easy task, if standards are properly determined and methods of measuring performance which can be expressed in physical and monetary terms, such as production units, sales volume, profits, etc. can be easily and precisely measurable. The performance, which is qualitative and intangible, such as human relations, employee morale, etc., cannot be measured precisely. For such purposes, techniques like psychological tests and opinion surveys may be applied. Such techniques draw heavily upon intuitive judgement and experience, and these tools are far from exact. According to Petor Drucker, it is very much desirable to have clear and common' measurements in all key areas of business. It is not necessary that measurements are rigidly quantitative. In his opinion, for measuring tangible and intangible performance, measurement must be (i) clear, simple, and rational, (ii) relevant, (iii) direct attention and efforts, and (iv)

reliable, self-announcing, and understandable without complicated interpretation or philosophical discussions.

Comparing Actual, and Standard Performance: The third major step in control process is the comparison of actual and standard performance. It involves two steps: (i) finding out the extent of deviations, and (ii) identifying the causes of such deviations. When adequate standards are developed and actual performance is measured accurately, any variation will be clearly revealed. Management may have information relating to work performance, data, charts, graphs and written reports, besides personal observation to keep itself informed about performance in different segments of the organisation. Such performance is compared with the standard one to find out whether the various segments and individuals of the organisation are progressing in the right direction. When the standards are achieved, no further managerial action is necessary and control process is complete. However, standards may not be achieved in all cases and the extent of variations may differ from case to case. Naturally, management is required to determine whether strict compliance with standards is required or there should be a permissible limit of variation. In fact, there cannot be any uniform practice for determining such variations. Such variations depend upon the type of activity. For example, a very minute variation in engineering products may be significant than a wide variation in other activities. When the deviation between standard and actual performance is beyond the prescribed limit, an analysis is made of the causes of such deviations. For controlling and planning purposes, ascertaining the causes of variations along with computation of variations is important because such analysis helps management in taking up proper control action. The analysis will pinpoint the causes, which are controllable by the person responsible. In such a case, person concerned will take necessary corrective action. However, if the variation is caused by uncontrollable factors, the person concerned cannot be held responsible and he cannot take any action. Measurement of performance, analysis of deviations and their causes may be of no use unless these are communicated to the person who can take corrective action. Such communication is presented generally in the form of a report showing performance standard, actual performance, deviations between those two tolerance limits, and causes for deviations. As soon as possible, reports containing control information should be sent to the person whose performance is being measured and controlled. The underlying philosophy is that the person who is responsible for a job can have a better influence on final results by his own action. A summary of the control report should be given to the superior concerned because the person on the job may either need help of his superior in improving the performance or may need warning for his failure. In addition, other people who may be interested in control reports are (i) executives engaged in formulating new plans; and (ii) staff personnel who are expected to be familiar with control information for giving any advice about the activity under control when approached.

Correction of Deviations: This is the last step in the control process, which requires that actions should be taken to maintain the desired degree of control in the system or operation. An organisation is not a self-regulating system such as thermostat which operates in a state of equilibrium put there by engineering design. In a business organisation this type of automatic control cannot be established because the state of affairs that exists is the result of so many factors in the total environment. Thus, some additional actions are required to maintain the control. Such control action may be (i) review of plans and goals and change therein on the basis of such review; (ii) change in the assignment of tasks; (iii) change in existing techniques of direction; (iv) change in organisation structure; provision for new facilities, etc. In fact, correction of deviation is the step in management control process, which may involve either all or some of the managerial functions. Due to this, many persons hold the view that correcting deviations is not a step in. the control process. It is the stage where other managerial functions are performed. Koontz and O'Donnell have emphasised that the overlap of control function with the other merely demonstrates the unity of the manager's job. It shows the managing process to be an integrated system.

14.5 ESSENTIALS OF EFFECTIVE CONTROL SYSTEM

Control is necessary in every organisation to ensure that everything is going properly. Every manager, therefore, should have an effective and adequate control system to assist him in making sure that events conform to plans. However, control does not work automatically, but it requires certain design. While the basic, principles involved in designing a control system in organisations may be universal; the actual system in an organisation requires some specific design. In this tailoring of Control system, there are certain requirements, which should be kept in mind.

Reflecting Organisational Needs: All control systems and techniques should reflect the jobs they are to perform. There may be several control techniques, which have general applicability, such as, budgeting, costing, etc. However, it should not be assumed that these might be utilised in all situations. The-managers should choose an appropriate tool for control, which helps him in controlling actions according to plans.

Forward Looking: Control should be forward looking. Though many of the controls are instantaneous, they must focus attention as to how future actions can be confirmed with plans. In fact the control system should be such that it provides aid in planning process. This is done in two ways: it draws situations where new planning is needed, and it provides some of the data upon which plans can be based.

Promptness in Reporting Deviation: The success of a thermostat lies in the fact that it points the deviation promptly and takes corrective actions immediately. Similarly, an ideal control system detects deviations promptly arid informs the manager concerned to take timely actions. This is done through designing good appraisal and information systems.

Pointing out Exceptions at Critical Points: Control should point exception at critical points and suggest whether action is to be taken for deviations or not Some deviations in the organisations have any impact while others, though very little in quantity may have great significance. Thus, control system should provide 'information for critical point control and control on exception. The critical point control stresses that effective control requires attention to those factors critical to appraising performance against an individual plan. The control on exception requires that a manager should take corrective action when there is exceptional deviation. The more a manager concentrates his control efforts on exceptions, the more efficient will be the results of his control.

Objectives: The control should be objective, definite, and determinable in a clear and positive way. The standards of measurement should be quantified as far as possible. If they are not quantifiable, such as, training effectiveness, etc. they must be determinable and verifiable. If the performance standard and measurement is not easily determinable, many subjective elements enter into the process, which catch the controller and controlled on wrong tooting.

Flexible: Control system should be flexible so that it remains workable in the case of changed plans, unforeseen circumstances, or outright failures. As Geotz has remarked, a control system should report such failures and should contain sufficient elements of flexibility to maintain managerial control of operations despite such failures. Having alternative plans for various probable situations can provide much flexibility in control. In fact, flexible control is normally achieved through flexible plans.

Economical: Control should be economical and must be worth its costs. Economy is relative, since the benefits vary with the importance of the activity the size of the operation, the expense that might be incurred in the absence of control and the contribution the control system can make. The economy of a control system will depend a great deal on the manager's selecting for control only critical factors in areas important to him. If tailored to the job and the size of the enterprise, control will be economical. A large-sized organisation can afford highly complicated techniques, sophisticated tools of control and more elaborate system of control, but a small-sized organisation cannot afford these because of the cost factor.

Simple: Control system must be simple and understandable so that all managers can use it effectively. Control techniques which are complicated such as complex mathematical formulae, charts, graphs, advanced statistical methods and other techniques fail to communicate the meaning of their control data to the managers who use them. Effective control requires consistency with the position, operational responsibility, ability to understand, and needs of the individuals concerned.

Motivating: Control system should motivate both controller and controlled. While the planning and control are necessary for economical operations, researches in human relations show that planning and control are, more often than not, antagonistic to good human relations. Sometimes, they may even tend to deprive the people in the organisations one of man's basic needs - a sense of powerful and worthwhile accomplishment The design of control system should be such that aims at motivating people by fulfilling their needs.

Reflecting Organisational Pattern: The control should reflect organisational pattern by focusing attention on positions in organisation structure through which deviations are corrected. Organisation structure, a principal vehicle for coordinating the work of people, is also a major means of maintaining control. Thus, in every area of control, it is not enough to know that things are going wrong unless it is known wherein the organisation structure the deviations are occurring. This enables managers to fix up the responsibility and to take corrective actions.

14.6 BEHAVIOURAL IMPLICATIONS OF CONTROL

Though, control should aim at satisfying the needs of the members of the organisation, they often take it otherwise. This may be either because of the adverse real impact of control on them or because of misperception of the impact of control. Thus, while designing the control system, it must be kept in mind that almost everybody in the organisation not only resents the idea of being controlled but also objects to being evaluated. It means the results of the control may not same as anticipated by those who are exercising control. The major behavioural problems of control can be analysed by taking the nature of control, perception of those who are being controlled, and action taken by them.

Nature or Control: Control often puts pressure for engaging in desirable behaviour by those who are subject to control. The basic question is: will they not behave in desirable way if there is no control? Though opinions may differ on this question, often it is recognized that people engage in that behaviour, which provides them satisfaction whether, control or no control. It means if the organisational processes are in tune with the needs of the organisational participants, they can perform well in the absence of control and not in the presence of control. Behavioural scientists have concluded that people try to be self-actualized but the basic problem, which comes in the way, is provided by the organisation itself. They are inherently self-motivated. For example, McGregor believes that more people behave according to the assumptions of Theory Y as compared to Theory X. In such a case, if their behaviour is controlled, it may be counter-productive for the organisation. The results may be against the organisational interests. Thus, the basic nature of control itself against the very basic nature of the people. However, this is not true in all the cases. Many people may still behave according to the assumptions of Theory X and they need rigid control In fact, the best control system may be one which focuses attention on the individual needs also, as discussed earlier, otherwise if will provide more behavioural problems and may be detrimental to the organisation itself.

Perception or People: Another behavioural implication of control is the perception of people who are being controlled. Though perception may be that control is against the nature of people, it is further aggravated by the fact that people perceive it to be for benefit of the organisation but against them. Thus perception may be right or otherwise, that control if brings better result, is shared by organisation alone whereas it may, be brought by the organisational members. The control in most of the cases is used as a pressure tactic for increasing performance. This is true also because people may produce more if they are aware that their performance is being evaluated. However, increased performance is also determined by several other factors, most important or them being how it is shared between the organisation and its members. Thus, if they have positive perception about this aspect also, they will engage in higher performance. In an alternative case, they will take certain actions to thwart the control action. There is another implication of the people's perception about control. The manager may develop some plan for control, but there are many unplanned controls also necessitated by the organisational requirements. Thus unp1anned control is also the part of the organisational control. It is this unplanned control that has more serious repercussion and is more counter-productive. The participants may feel that it is due to improper planning on the part of management. Thus they are controlled not because of their own shortcomings but for the shortcomings of others. Naturally this may be more serious for those who are being controlled.

Actions by Participants: Participants in most of the cases resist control attempt. They will try to escape from the purview of control and may take several actions: (i) they may try to bring behaviour which is satisfying to them but not necessarily satisfying to the organisation; (ii) they may engage in a behaviour which may appear to be in conformity with organisational requirements but actually it is not; and (iii) if these are not possible they may try to engage in behaviour as required by the organisation. In the first case, people may try to overcome the pressure from control through fanning group. People can stand only to a certain amount of pressure. After this point is passed, it becomes intolerable to them and they will try to find out the alternatives. One of the alternatives is the formation of group if the people cannot reduce the pressure individually. Group helps them to absorb much of the pressure and thus relieves the individual personality. It gets rid of the tension generated by the control and people feel more secure by belonging to a group, which can counteract the pressure. Now the question is: does the group disappear if the control pressure is off? The answer is generally in negative because by the time, control pressure is oft, people have socialised and identified with a particular group and the group has become attractive to them in more than one respect. Thus, they are likely to continue to be the members of the group even after the control pressure is off. Another alternative of overcoming the pressure of control is that an individual solves it at his own level. This happens more so if control pressure affects only a few individuals. In such cases, the individuals may engage in a behaviour, which on the surface seems to satisfy organisational needs but actually it is not so. In such cases, they will try to camouflage the information meant for control like providing wrong information or coming in time at the work-place but not quite engaging in meaningful behaviour or looking busy but without doing anything. This situation is also quite counter-productive. If the individuals are notable to go for any of these alternatives. They will fall in line with organisational control attempt. This situation may, however, not be taken as an ideal because it may be counter-productive in the logs run; People may develop alienation to the work and to the organisation which may have adverse affect on their efficiency. Organisation in such cases may lose, not only the efficiency of their members but them also.

14.7 CONTROL AND ORGANISATIONAL FACTORS

The behavioural implications of control, as elaborated above do not mean that control should not be applied in the organisation. In fact, control has many positive aspects, as discussed earlier. The basic necessity is that it should suit die participants to make it more effective. From this point of view, it is imperative that various organisational phenomena should be analysed, which affect the control system. Though, there are many such organisational factors and people are engaged in finding out the answer of this basic question how people can be better controlled for organisational effectiveness, the main factors related directly to control are:

Organisational Rules and Procedures: Most of the organisations prescribe some standing measures for providing guidelines for people's actions in the organisations in the form of policies, rules, and procedures. While these elements provide guidelines to them, they, particularly rules and procedures, prescribe rigidity in action. Thus, they leave very little scope for freedom in action. These rules and procedures also take away initiative and generate alienation. Many times, they may not be able to isolate or sense the factors, which have caused a. particular situation. Thus, there may be tendency to put the blame on those who are not really responsible for a situation. Besides, the rules and procedures create more delay in action and consequently the result. Such a phenomenon is more frustrating to the individuals in the organisation.

Perception Formation: The people's perception is affected by a number of factors, as discussed earlier. In organisational situation, it is affected by the action of management, and the type of relationship between management and employees. The perception of people towards control is a major factor in determining the response to it. Thus, if the perception of people about the control attempt is based on sound organisational climate, mutual trust and belief, there is more likelihood of getting favourable and better response from them. On the other hand, if it is based on general distrust, fear and suspicion, there is always the people resist a possibility that control attempt.

Organisational Communication: The organisation has to design a communication network for carrying the control, information both downward and upward. Through the downward communication, a superior sends the information about what a subordinate is expected to do; the upward communication is used to get control information from the subordinates, that is, what they have done. Besides, these cannels also serve other purposes. Thus, the organisation depends to a large extent for exercising control through communication. If the communication system is not quite effective, it will affect the control system also, to that extent, in communicating what is expected from a subordinate and also how he is performing. Often communication blockade is a major source of confusion and frustration in the minds of the people and they resist control.

Motivational Dynamics: The control is affected by the motivational dynamics of people and how the organisation is going to satisfy the various needs of the people. The motivational dynamics have twofold role in control. First, how the various attempts at control are in time with the needs of the people. Ideal1y speaking, a control system should focus adequately on the needs of the participants and must suit them. It means the control system should be tailor-made and no universal because people differ. Thus, all people cannot be satisfied by the same system. Second, the organisation itself provides motivation or, demotivation to the people to work. Human beings, being gregarious, seek to remain in the organisation. Thus, many of his needs can be satisfied by this phenomenon. However, since organisation, as a collectivity of people, has certain norms of behaviour it becomes demotivation for the people if it is not in accordance with the people. Thus organisational phenomenon of how people are motivated is a crucial factor in control of behaviour of people in the organisation. The various factors discussed above suggest that they actually decide the behavioural implications of control rather than the individual factors alone. Thus real implications may be understood in terms of interaction of individual and organisational factors. While many of the individual factors may be analysed on the lines suggested earlier in the previous part of the text, the organisational factors may be analysed throughout the remaining portion of this part.

14.8 OVERCOMING BEHAVIOURAL PROBLEMS

Though there are many approaches for overcoming behavioural implications of control because of the various factors involved in this basic issue, here a few, important are mentioned in brief. These are as follows:

As far as possible, direct hierarchical pressure should be avoided. This problem can be overcome by structural arrangement.

Management should build co-operation through participation. This is the problem related with setting right organisational climate.

Management should build communication network based on open and two-way communication. This is the problem of communication in the organisation.

For obtaining coordination and co-operation in control, group processes must be strengthened. This is the problem of group dynamics.

Management should reinforce both economic and non-economic needs of the people. This is the problem of motivation.

Management should have long-term perspective in designing control, system, so that frequent and abrupt changes do not take place. This is the problem related with the organisational planning and control.

Many of these issues are being described in this part of the text, while many others have already been discussed in the previous part, and many others will be discussed in other parts of the text. From this point of view, the first basic issue is the means of control.

14.9 CONTROLLING AND MANAGEMENT BY EXCEPTION

One of the most important ways of tailoring controls for efficiency and effectiveness is to make sure that they are designed to point out exception. In other words, by concentrating on exceptions from planned performance, controls based on the time-honoured exception principles allow managers to detect those places: where their attention is required and should be given. This implies the use of management by exception particularly in controlling aspect. Management by exception is a system of identification and communication that signals to the manager when his attention is needed. From this point of view, management by exception can be used in other management processes also though its primary focus revolves round controlling.

Management by exception has six basic ingredients: (i) Measurement assign values to past and present performances. This is necessary because without measurement of some kind, it would be impossible to identify an exception. (ii) Projection analyses those measurements that are meaningful to organisational, objectives and extends them into future expectations. (iii) Selection involves the criteria which management will use to follow progress towards organisational objectives. (iv) Observation stage of management by exception involves measurement of current performance so that managers are aware of the current state of affairs in the organisation. (v) Comparison stage makes comparison of actual and planned performance and identifies the exceptions that require attention and reports the variances to management. (vi) Decision-making prescribes the action that must be taken in order to bring performance back into control or to adjust expectations to reflect changing conditions, or to exploit opportunity. Thus it can be observed that management by exception is inseparable from other management essentials in many ways. However, the major difference lies in the fact that the superior's attention is drawn only in the case of exceptional differences between planned performance and actual performance. In other cases, subordinate manager takes decisions. However, what is-exceptional requires the completion of whole process.

14.9.1 BENEFITS OR MANAGEMENT BY EXCEPTION

There are various areas where percepts of management by exception are used such as statistical control of product quality, economic order quantities and order points for control of inventories and supplies, break-even points for determining operating, levels, trends in ratios of indirect to direct labour used in apportioning overhead, attitude surveys for gauging employee morale, etc. The use of management by exception is prevalent because of the following factors:

- Management by exception saves executives' time because they apply themselves on fewer problems, which are important. Other details of the problems are left to subordinates.
- It concentrates executives' efforts on major problems. Instead of spreading managerial attention across all sorts of problems, it is placed selectively where and when it is needed. Thus it ensures better utilisation' of managerial talents.
- It facilitates better delegation of authority, increases span of management and consequently provides better opportunities for self-motivated personnel in the organisation. It lessens the frequency of decisions at the higher levels of management, which can concentrate on strategic management rather than engaging themselves in operational management.
- Management by exception makes better use of knowledge of trends, history; and available business data. It forces managers to review past history and to study related business data because these are the foundations upon which standards are derived and from which exceptions are noted.
- It identifies crises an<t critical problems and thus avoids uninformed, impulsive pushing of the panic button. It helps in identification of crises because the moment any exceptional deviation occurs, the attention of higher-level managers is drawn. In this way, it also alerts management to

opportunities as well as difficulties.

Management by exception provides qualitative and quantitative yardsticks for judging situations and people. Thus it helps in performance appraisal by providing more objective criteria and provides better motivation to people in the organisation.

It enhances the degree of communication between different segments of an organisation. With its focus on results, it seeks to relate causes, regardless of their place in the organisation. With overall organisational results. As such it encourages exchange of information between functions and also between a function and cost centre or profit centre to which it reports. Degree of communication determines the organisational cohesiveness and leads it to achievement of objectives.

14.10 SCOPE OF CONTROL

For effective control, it is important to know what are the critical areas where control would be exercised. The identification of these areas of control enhances the management to (i) delegate authority and fixing up of responsibility (ii) reduce burden of supervising each activity in detail and (iii) have means of securing satisfactory results. Though controls are needed in every area where performance and results directly and vitally affect the survival and prosperity of the organisation, these areas need to be specifically spelled out. The following discussion points out the problems and methods of control in each major area.

Controls over Policies: Policies are formulated to govern the behaviour and action of personnel in the organisation. These may be written or otherwise, policies are generally controlled through policy manuals, which are generally prepared by top management. Each individual in the organisation is expected to function according to policy manuals.

Control over Organisation: Organisation charts and manuals are used to keep control over organisation structure. Organisation manuals attempt at solving organisational problems and conflicts, making long-range organisational planning possible, enabling rationalisation of the organisation structure, helping in proper designing and clarification of each part of the organisation, and conducting periodic check of facts about organisation practice.

Control over Personnel: Generally, personnel manager or head of the personnel department, whatever his designation may be, keeps control over personnel in the organisation. Sometimes, a personnel committee is constituted to act as ail instrument of control over key personnel.

Control on Wages and Salaries: Control over wages and salaries are done by having programme of job evaluation, and wage and salary analysis. The functions are carried on by personnel and industrial engineering departments. Often wage and salary committee is constituted to provide help to these departments.

Control over Costs: Control over costs is exercised through making comparison between standard costs and actual costs. Standard costs are set in respect of different elements of costs. Cost control is also supplemented by budgetary control system, which includes different types of budgets. Controller's department provides information for setting standard costs, calculating actual costs, and pointing out differences between these two.

Control over Methods and Manpower: Control over methods and manpower is keep to ensure that each individual is working properly and timely. For this purpose, periodic analysis of activities of each department is conducted. The functions performed, methods adopted, and time consumed by every individual is studied to eliminate non-essential functions, methods, and time. Many organisations create separate department or section known as organisation and methods' to keep control over methods and manpower.

Control over Capital Expenditure: Control over capital expenditure is exercised through the system of evaluation of projects, ranking of projects on the basis of their importance, generally on the basis of their earning capacity. A capital budget is prepared for the business as a whole. The budget committee or appropriation committee reviews the budget. For effective control over capital expenditure, there should be a plan to identify the realisation of benefits from capital expenditure and to make comparison with anticipated results. Such comparison is important in the sense that it serves as an important guide for future capital budgeting activities.

Control over Service Departments: Control over service departments is effected either (i) through budgetary control within operating departments, or (ii) through putting the limits upon the amount of service an individual department can ask, or (iii) through authorising the head of service department to evaluate the request for service made by other departments and to use his discretion about the quantum of service to be rendered to a particular department: Sometimes, a combination of these methods may be used.

Control over Line of Products: A committee whose members are drawn from production, sales, and research departments exercise control over line of products. The committee controls through studies about market needs. Efforts are made to simplify and rationalise the line of products.

Control over Research and Development: Control over research and development is exercised in two ways: by providing a budget for research and development and by evaluating each project keeping in view savings, sales, or profit potentialities. Research and development being a highly technical activity is also controlled indirectly. Improving the ability and judgement of the research staff through training programmes and other devices does this.

Control over Foreign Operations: Foreign operations are controlled in the same way as domestic ones. The tools and techniques applied are the same. The only difference is that the chief executive of foreign operations has relatively greater amount of authority.

Control over External Relations: The public relations department regulates external relations. This department may prescribe certain measures to be followed by other departments while dealing with external parties.

Overall Control: Control over each segment of the organisation contributes to overall organisational control. However, some special measures are devised to exercise overall control. This is done through budgetary control project profit and loss account and balance sheet. Integrating and coordinating budgets prepared by each segment prepare a master budget. The budget committee reviews such budget This budget acts as an instrument for overall control.

INTRODUCTION TO ECONOMICS

This chapter discusses the elements of economics and the interaction between its various components. This is followed by an analysis of the need and scope of engineering economics. Later, elements of cost and break-even analysis are presented.

ECONOMICS

Economics is the science that deals with the production and consumption of goods and services and the distribution and rendering of these for human welfare.

The following are the economic goals.

A high level of employment
Price stability
Efficiency
An equitable distribution of income
Growth

Some of the above goals are interdependent. The economic goals are not always complementary; in many cases they are in conflict. For example, any move to have a significant reduction in unemployment will lead to an increase in inflation.

Flow in an Economy

The flow of goods, services, resources and money payments in a simple economy are shown in Fig. 1.1. Households and businesses are the two major entities in a simple economy. Business organizations use various economic resources like land, labour and capital which are provided by households to produce consumer goods and services which will be used by them. Business organizations make payment of money to the households for receiving various resources. The households in turn make payment of money to business organizations for receiving consumer goods and services. This cycle shows the interdependence between the two major entities in a simple economy.

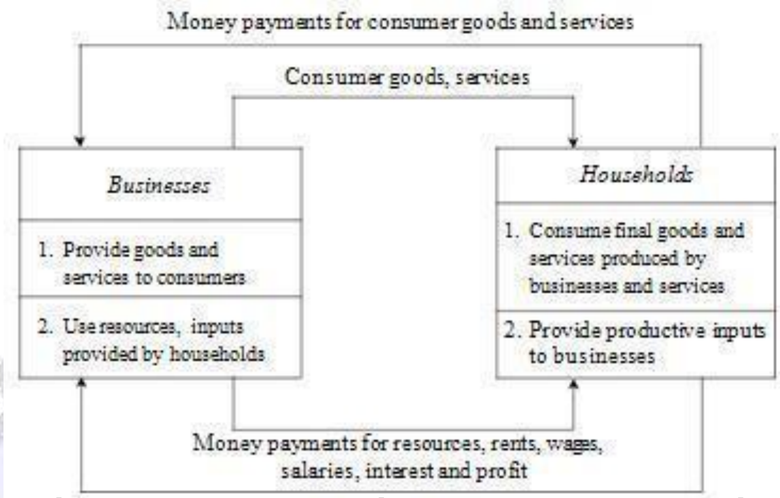


Fig. 1.1 Flow of goods, services, resources and money payments in a simple economy

Definition and Scope of Engineering Economics

As stated earlier, efficient functioning of any business organization would enable it to provide goods/services at a lower price. In the process of managing organizations, the

managers at different levels should take appropriate economic decisions which will help in minimizing investment, operating and maintenance expenditures besides increasing the revenue, savings and other related gains of the organization.

Definition

Engineering economics deals with the methods that enable one to take economic decisions towards minimizing costs and/or maximizing benefits to business organizations.

Scope

The issues that are covered in this book are elementary economic analysis, interest formulae, bases for comparing alternatives, present worth method, future worth method, annual equivalent method, rate of return method, replacement analysis, depreciation, evaluation of public alternatives, inflation adjusted investment decisions, make or buy decisions, inventory control, project management, value engineering, and linear programming.

Law of Supply and Demand

An interesting aspect of the economy is that the demand and supply of a product are interdependent and they are sensitive with respect to the price of that product. The interrelationships between them are shown in Fig. 1.2.

From Fig. 1.2 it is clear that when there is a decrease in the price of a product, thedemand for the product increases and its supply decreases. Also, the product is more in demand and hence the demand of the product increases. At the same time, lowering of the price of the product makes the producers restrain from releasing more quantities of the product in the market. Hence, the supply of the product is decreased. The point of intersection of the supply curve and the demand curve is known as the *equilibrium point*. At the price corresponding to this point, the quantity of supply is equal to the quantity of demand. Hence, this point is called the *equilibrium point*.

Factors influencing demand

The shape of the demand curve is influenced by the following factors:

- Income of the people
- Prices of related goods
- Tastes of consumers

If the income level of the people increases significantly, then their purchasing power will naturally improve. This would definitely shift the demand curve to the north-east direction of Fig. 1.2. A converse situation will shift the demand curve to the south-west direction.

If, for instance, the price of television sets is lowered drastically its demand would naturally go up. As a result, the demand for its associated product, namely VCDs would also increase. Hence, the prices of related goods influence the demand of a product.

Over a period of time, the preference of the people for a particular product may increase, which in turn, will affect its demand. For instance, diabetic people prefer to have sugar-free products. If the incidence of diabetes rises naturally there will be increased demand for sugar-free products.

Fig. 1.2 Demand and supply curve

Factors influencing supply

The shape of the supply curve is affected by the following factors:

- Cost of the inputs
- Technology
- Weather
- Prices of related goods

If the cost of inputs increases, then naturally, the cost of the product will go up. In such a situation, at the prevailing price of the product the profit margin per unit will be less. The producers will then reduce the production quantity, which in turn will affect the supply of the product. For instance, if the prices of fertilizers and cost of labour are increased significantly, in agriculture, the profit margin per bag of paddy will be reduced. So, the farmers will reduce the area of cultivation, and hence the quantity of supply of paddy will be reduced at the prevailing prices of the paddy.

If there is advancement in technology used in the manufacture of the product in the long run, there will be a reduction in the production cost per unit. This will enable the manufacturer to have a greater profit margin per unit at the prevailing price of the product. Hence, the producer will be tempted to supply more quantity to the market.

Weather also has a direct bearing on the supply of products. For example, demand for woolen products will increase during winter. This means the prices of woolen goods will be increased in winter. So, naturally, manufacturers will supply more volume of woolen goods during winter.

Again, take the case of television sets. If the price of TV sets is lowered significantly, then its demand would naturally go up. As a result, the demand for associated products like VCDs would also go up. Over a period of time, this will lead to an increase in the price of VCDs, which would result in more supply of VCDs.

TIME VALUE OF MONEY

If an investor invests a sum of Rs. 100 in a fixed deposit for five years with an interest rate of 15% compounded annually, the accumulated amount at the end of every year will be as shown in Table 1.1.

Table 1.1 Compound Amounts

(amount of deposit = Rs. 100.00)

Year end	Interest (Rs.)	Compound amount (Rs.)
0		100.00
1	15.00	115.00
2	17.25	132.25
3	19.84	152.09
4	22.81	174.90
5	26.24	201.14

The formula to find the future worth in the third column is

$$F = P \times (1 + i)^n$$

where

P = principal amount invested at time 0, F = future amount, i = interest rate compounded annually, n = period of deposit.

The maturity value at the end of the fifth year is Rs. 201.14. This means that the amount Rs. 201.14 at the end of the fifth year is equivalent to Rs. 100.00 at time 0 (i.e. at present). This is diagrammatically shown in Fig. 1.3. This explanation assumes that the inflation is at zero percentage.

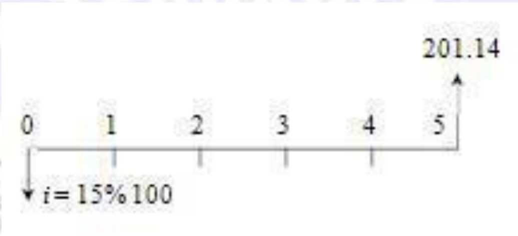


Fig. 1.3 Time value of money.

Alternatively, the above concept may be discussed as follows: If we want Rs. 100.00 at the end of the nth year, what is the amount that we should deposit now at a given interest rate, say 15%? A detailed working is shown in Table 1.2.

Table 1.2 Present worth Amounts

(rate of interest = 15%)

End of year (n)	Present worth	Compound amount after n year(s)
0		100
1	86.96	100
2	75.61	100
3	65.75	100
4	57.18	100
5	49.72	100
6	43.29	100
7	37.59	100
8	32.69	100
9	28.43	100
10	24.72	100

The formula to find the present worth in the second column is

$$P = \frac{F}{(1 + i)^n}$$

From Table 1.2, it is clear that if we want Rs. 100 at the end of the fifth year, we should now deposit an amount of Rs. 49.72. Similarly, if we want Rs. 100.00 at the end of the 10th year, we should now deposit an amount of Rs. 24.72.

Also, this concept can be stated as follows:

A person has received a prize from a finance company during the recent festival contest. But the prize will be given in either of the following two modes:

Spot payment of Rs. 24.72 or

Rs. 100 after 10 years from now (this is based on 15% interest rate compounded annually).

If the prize winner has no better choice that can yield more than 15% interest rate compounded annually, and if 15% compounded annually is the common interest rate paid in all the finance companies, then it makes no difference whether he receives Rs. 24.72 now or Rs. 100 after 10 years.

3. On the other hand, let us assume that the prize winner has his own business whereinhe can get a yield of 24% interest rate (more than 15%) compounded annually, it is better for him to receive the prize money of Rs. 24.72 at present and utilize it in his business. If this option is followed, the equivalent amount for Rs. 24.72 at the end of the 10th year is Rs. 212.45. This example clearly demonstrates the time value of money.

INTEREST FORMULAS

While making investment decisions, computations will be done in many ways. To simplify all these computations, it is extremely important to know how to use interest formulas more effectively. Before discussing the effective application of the interest formulas for investment-decision making, the various interest formulas are presented first.

Interest rate can be classified into *simple interest rate* and *compound interest rate*.

In simple interest, the interest is calculated, based on the initial deposit for every interest period. In this case, calculation of interest on interest is not applicable. In compound interest, the interest for the current period is computed based on the amount (principal plus interest up to the end of the previous period) at the beginning of the current period.

The notations which are used in various interest formulae are as follows:

P = principal amount
n = No. of interest periods
i = interest rate (It may be compounded monthly, quarterly, semiannually or annually) F = future amount at the end of year n
A = equal amount deposited at the end of every interest period
G = uniform amount which will be added/subtracted period after period to/ from theamount of deposit A1 at the end of period 1

Single-Payment Compound Amount

Here, the objective is to find the single future sum (F) of the initial payment (P) made at time 0 after n periods at an interest rate i compounded every period. The cash flow diagram of this situation is shown in Fig.1.4.

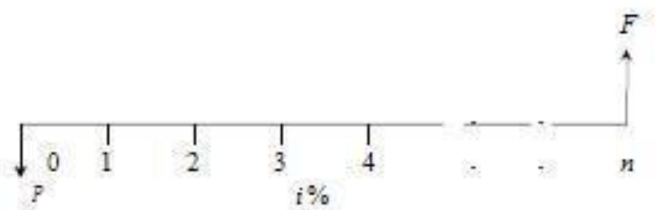


Fig.1.4 Cash flow diagram of single-payment compound amount

The formula to obtain the single-payment compound amount is $F = P(1 + i)^n = P(F/P, i, n)$

where

$(F/P, i, n)$ is called as single-payment compound amount factor.

EXAMPLE 1.1 A person deposits a sum of Rs. 20,000 at the interest rate of 18%compounded annually for 10 years. Find the maturity value after 10 years.

Solution

P = Rs. 20,000

= 18% compounded annually n = 10 years $F = P(1 + i)^n = P(F/P, i, n)$

= 20,000 $(F/P, 18\%, 10)$

=20,000 ´ 5.234 = Rs. 1,04,680

The maturity value of Rs. 20,000 invested now at 18% compounded yearly is equal to Rs. 1,04,680 after 10 years.

Single-Payment Present Worth Amount

Here, the objective is to find the present worth amount (P) of a single future sum (F) which will be received after n periods at an interest rate of i compounded at the end of every interest period.

The corresponding cash flow diagram is shown in Fig. 1.5

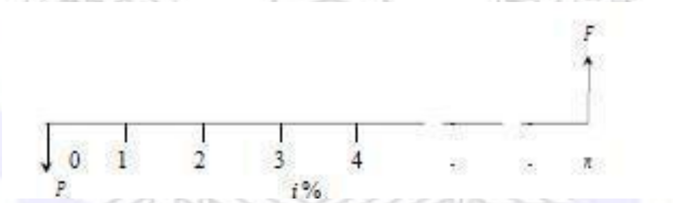


Fig.1.5 Cash flow diagram of single-payment present worth amount

where

$(P/F, i, n)$ is termed as *single-payment present worth factor.*

EXAMPLE 1.2 A person wishes to have a future sum of Rs. 1,00,000 for hisson's educationafter 10 years from now. What is the single-payment that he should deposit now so that he gets the desired amount after 10 years? The bank gives 15% interest rate compounded annually.

Solution

F = Rs. 1,00,000

i = 15%, compounded annually n = 10 years

$= F/(1 + i)^n = F(P/F, i, n)$

1,00,000 $(P/F, 15\%, 10)$

1,00,000 ´ 0.2472

Rs. 24,720

The person has to invest Rs. 24,720 now so that he will get a sum of Rs. 1,00,000 after 10 years at 15% interest rate compounded annually.

Equal-Payment Series Compound Amount

In this type of investment mode, the objective is to find the future worth of *n* equal payments which are made at the end of every interest period till the end of the *n*th interest period at an interest rate of *i* compounded at the end of each interest period. The corresponding cash flow diagram is shown in Fig.1.6

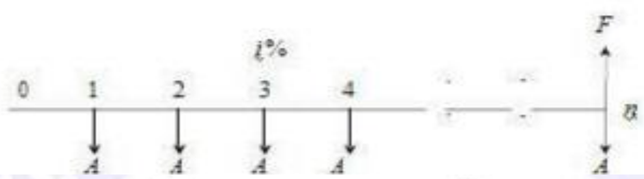


Fig.1.6 Cash flow diagram of equal-payment series compound amount.

In Fig. 1.6,

A = equal amount deposited at the end of each interest period n = No. of interest periods

i = rate of interest

F = single future amount

The formula to get F is

$$F = A\,\frac{(1+i)^n - 1}{i} = A(F/A, i, n)$$

where

$(F/A, i, n)$ is termed as *equal-payment series compound amount factor*.

EXAMPLE 1.3 A person who is now 35 years old is planning for his retired life. He plans toinvest an equal sum of Rs. 10,000 at the end of every year for the next 25 years starting from the end of the next year. The bank gives 20% interest rate, compounded annually. Find the maturity value of his account when he is 60 years old.

Solution

A = Rs. 10,000 n = 25 years i = 20% F = ?

The corresponding cash flow diagram is shown in Fig.1.7

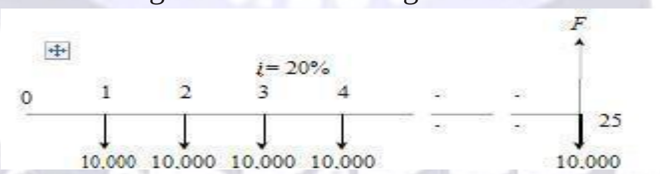


Fig.1.7 Cash flow diagram of equal-payment series compound amount.

$$\begin{aligned} F &= A\,\frac{(1+i)^n - 1}{i} \\ &= A(F/A, i, n) \\ &= 10{,}000(F/A, 20\%, 25) \\ &= 10{,}000 \times 471.981 \\ &= \text{Rs. } 47{,}19{,}810 \end{aligned}$$

The future sum of the annual equal payments after 25 years is equal to Rs. 47,19,810.

Equal-Payment Series Sinking Fund

In this type of investment mode, the objective is to find the equivalent amount (*A*) that should be deposited at the end of every interest period for *n* interest periods to realize a future sum (*F*) at the end of the *n*th interest period at an interest rate of *i*.

The corresponding cash flow diagram is shown in Fig.1.8

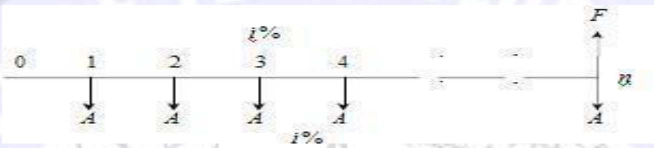


Fig.1.8 Cash flow diagram of equal-payment series sinking fund.

In Fig. 3.6,

A = equal amount to be deposited at the end of each interest period *n* = No. ofinterest periods

i = rate of interest

F = single future amount at the end of the *n*th periodThe formula to get *F* is

$$A = F = F(A/F, i, n) \frac{i}{(1+i)^n - 1}$$

where

(*A*/*F*, *i*, *n*) is called as *equal-payment series sinking fund factor*.

EXAMPLE 1.4 A company has to replace a present facility after 15 years at an outlay of Rs.5,00,000. It plans to deposit an equal amount at the end of every year for the next 15 years at an interest rate of 18% compounded annually. Find the equivalent amount that must be deposited at the end of every year for the next 15 years.

Solution

F = Rs. 5,00,000 *n* = 15 years *i* = 18% *A* = ?

The corresponding cash flow diagram is shown in Fig.1.9

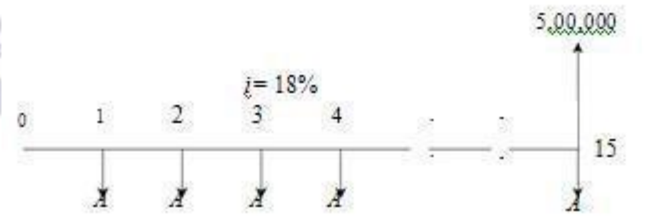


Fig. 1.9 Cash flow diagram of equal-payment series sinking fund.

$$= F(A/F, i, n) \frac{i}{(1+i)^n - 1}$$

5,00,000(*A*/*F*, 18%, 15)

=5,00,000 ´ 0.0164

Rs. 8,200

The annual equal amount which must be deposited for 15 years is Rs. 8,200.

Equal-Payment Series Present Worth Amount

The objective of this mode of investment is to find the present worth of an equal payment made at the end of every interest period for *n* interest periods at an interest rate of *i* compounded at the end of every interest period.

The corresponding cash flow diagram is shown in Fig.1.10 Here,

P= present worth

A = annual equivalent payment i = interest rate

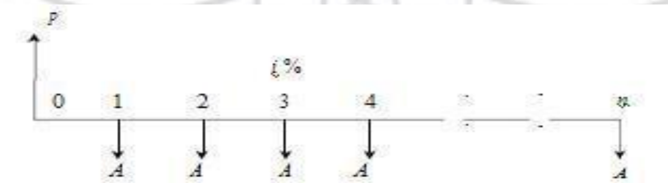
n = No. of interest periods

The formula to compute P is

$$P = A\frac{(1+i)^n - 1}{i(1+i)^n} = A(P/A, i, n)$$

where

(P/A, i, n) is called *equal-payment series present worth factor*.



ig.1.10 Cash flow diagram of equal-payment series present worth amount

EXAMPLE 1.5 A company wants to set up a reserve which will help the company to have anannual equivalent amount of Rs. 10,00,000 for the next 20 years towards its employees welfare measures. The reserve is assumed to grow at the rate of 15% annually. Find the single-payment that must be made now as the reserve amount.

Solution

A = Rs. 10,00,000 i = 15% n = 20 years P = ?

The corresponding cash flow diagram is illustrated in Fig.1.11

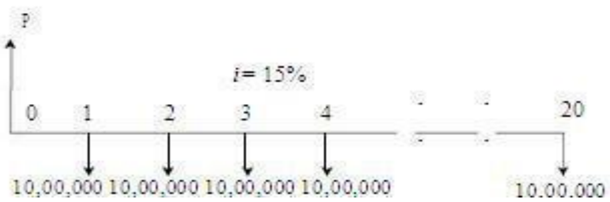


Fig.1.11 Cash flow diagram of equal-payment series present worth amount

=10,00,000 ´ (P/A, 15%, 20)

=10,00,000 ´ 6.2593

=Rs. 62,59,300

The amount of reserve which must be set-up now is equal to Rs. 62,59,300.

Equal-Payment Series Capital Recovery Amount

The objective of this mode of investment is to find the annual equivalent amount (*A*) which is to be recovered at the end of every interest period for *n* interest periods for a loan (*P*) which is sanctioned now at an interest rate of *i* compounded at the end of every interest period (see Fig.1.12).

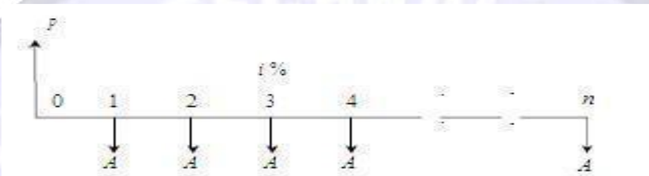


Fig.1.12 Cash flow diagram of equal-payment series capital recovery amount.

In Fig.1.12,

P = present worth (loan amount)

A = annual equivalent payment (recovery amount) *i* = interest rate

n = No. of interest periods

The formula to compute *P* is as follows:

$$A = P\,\frac{i(1+i)^n}{(1+i)^n - 1} = P(A/P, i, n)$$

where,

(*A*/*P*, *i*, *n*) is called *equal-payment series capital recovery factor*.

EXAMPLE 1.6 A bank gives a loan to a company to purchase an equipment worth Rs.10,00,000 at an interest rate of 18% compounded annually. This amount should be repaid in 15 yearly equal installments. Find the installment amount that the company has to pay to the bank.

Solution

P = Rs. 10,00,000 *i* = 18% *n* = 15 years *A* = ?

The corresponding cash flow diagram is shown in Fig.1.13

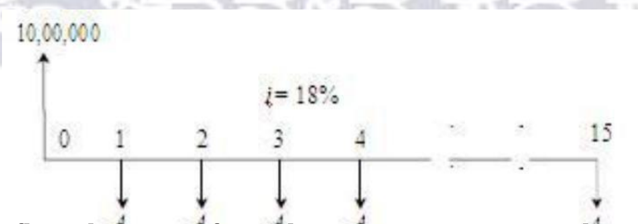


Fig.1.13 Cash flow diagram of equal-payment series capital recovery amount

$$A = P\,\frac{i(1+i)^n}{(1+i)^n - 1} = P(A/P, i, n)$$

$10,00,000 \times (A/P, 18\%, 15) = 10,00,000 \times (0.1964)$
Rs. 1,96,400

The annual equivalent installment to be paid by the company to the bank is Rs. 1,96,400

Uniform Gradient Series Annual Equivalent Amount

The objective of this mode of investment is to find the annual equivalent amount of a series with an amount $A1$ at the end of the first year and wth an equal increment (G) at the end of each of the following $n – 1$ years with an interest rate i compounded annually.

The corresponding cash flow diagram is shown in Fig.1.14

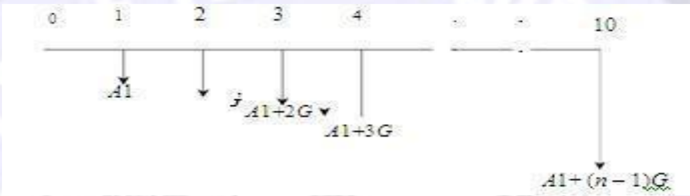


Fig.1.14 Cash flow diagram of uniform gradient series annual equivalent amount The formula to compute A under this situation is

$$A = A1 + G\frac{(1+i)^n - in - 1}{i(1+i)^n - i} = A1 + G(A/G, i, n)$$

where

(A/G, i, n) is called uniform gradient series factor.

EXAMPLE 1.7 A person is planning for his retired life. He has 10 more years of service. Hewould like to deposit 20% of his salary, which is Rs. 4,000, at the end of the first year, and

thereafter he wishes to deposit the amount with an annual increase of Rs. 500 for the next 9 years with an interest rate of 15%. Find the total amount at the end of the 10th year of the above series.

Solution Here,

$A1$ = Rs. 4,000
G = Rs. 500
i = 15%
n = 10 years
A = ?& F = ?

The cash flow diagram is shown in Fig.1.15

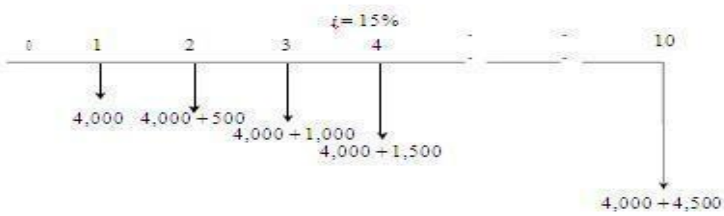


Fig.1.15 Cash flow diagram of uniform gradient series annual equivalent amount

$$= A1 + G\frac{(1 + i)^n - in - 1}{i(1 + i)^n - i}$$

$A1 + G(A/G, i, n)$

$4{,}000 + 500(A/G, 15\%, 10)$

$4{,}000 + 500 \times 3.3832$

Rs. 5,691.60

This is equivalent to paying an equivalent amount of Rs. 5,691.60 at the end of every year for the next 10 years. The future worth sum of this revised series at the end of the 10th year is obtained as follows:

$= A(F/A, i, n)$

$A(F/A, 15\%, 10)$

$= 5{,}691.60(20.304)$

$=$ Rs. 1,15,562.25

At the end of the 10th year, the compound amount of all his payments will be Rs. 1,15,562.25.

PRESENT WORTH COMPARISON

INTRODUCTION

In this method of comparison, the cash flows of each alternative will be reduced to time zero by assuming an interest rate i. Then, depending on the type of decision, the best alternative will be selected by comparing the present worth amounts of the alternatives.

The sign of various amounts at different points in time in a cash flow diagram is to be decided based on the type of the decision problem.

In a cost dominated cash flow diagram, the costs (outflows) will be assigned with positive sign and the profit, revenue, salvages value (all inflows), etc. will be assigned with negative sign.

In a revenue/profit-dominated cash flow diagram, the profit, revenue, salvage value (all inflows to an organization) will be assigned with positive sign. The costs (outflows) will be assigned with negative sign.

In case the decision is to select the alternative with the minimum cost, then the alternative with the least present worth amount will be selected. On the other hand, if the decision is to select the alternative with the maximum profit, then the alternative with the maximum present worth will be selected.

REVENUE-DOMINATED CASH FLOW DIAGRAM

A generalized revenue- dominated cash flow diagram to demonstrate the present worth method of comparison is presented in Fig. 4.1.

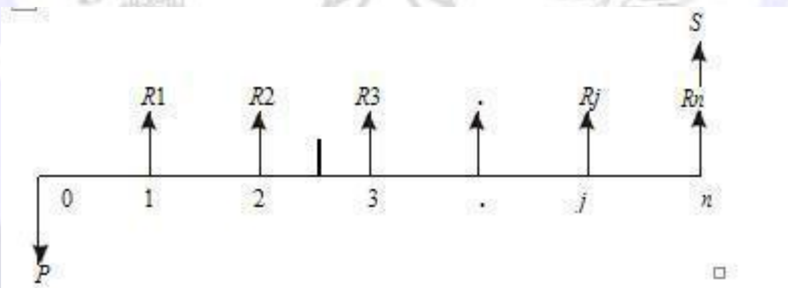


Fig. 4.1 Revenue-dominated cash flow diagram

In Fig. 4.1, P represents an initial investment and Rj the net revenue at the end of the jth year. The interest rate is i, compounded annually. S is the salvage value at the end of the nth year.

To find the present worth of the above cash flow diagram for a given interest rate, the formula is

$$PW(i) = -P + R1[1/(1+i)^1] + R2[1/(1+i)^2] + \dots$$
$$+ Rj[1/(1+i)^j] + Rn[1/(1+i)^n] + S[1/(1+i)^n]$$

In this formula, expenditure is assigned a negative sign and revenues are assigned a positive sign.

If we have some more alternatives which are to be compared with this alternative, then the corresponding present worth amounts are to be computed and compared. Finally, the alternative with the maximum present worth amount should be selected as the best alternative.

COST-DOMINATED CASH FLOW DIAGRAM

A generalized cost-dominated cash flow diagram to demonstrate the present worth method of comparison is presented in Fig. 4.2.

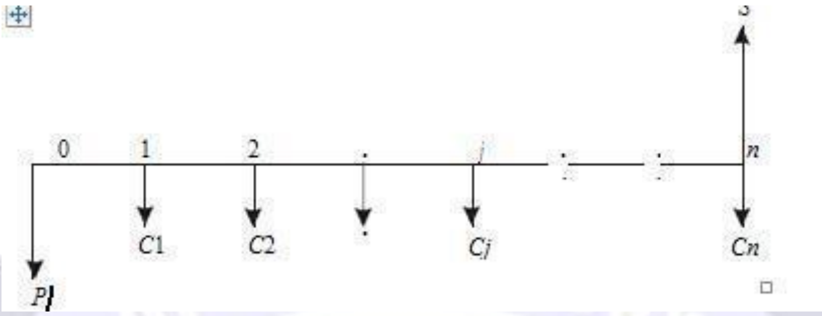


Fig. 4.2 Cost-dominated cash flow diagram

In Fig. 4.2, *P* represents an initial investment, *Cj* the net cost of operation and maintenance at the end of the *j*th year, and *S* the salvage value at the end of the *n*th year.

To compute the present worth amount of the above cash flow diagram for a given interest rate *i*, we have the formula

$$PW(i) = P + C1[1/(1 + i)^1] + C2[1/(1 + i)^2] + \ldots + Cj[1/(1 + i)^j] + Cn[1/(1 + i)^n] - S[1/(1 + i)^n]$$

In the above formula, the expenditure is assigned a positive sign and the revenue a negative sign. If we have some more alternatives which are to be compared with this alternative, then the corresponding present worth amounts are to be computed and compared. Finally, the alternative with the minimum present worth amount should be selected as the best alternative.

EXAMPLES

In this section, the concept of present worth method of comparison applied to the selection of the best alternative is demonstrated with several illustrations.

EXAMPLE 4.1 Alpha Industry is planning to expand its production operation. It hasidentified three different technologies for meeting the goal. The initial outlay and annual revenues with respect to each of the technologies are summarized in Table 4.1. Suggest the best technology which is to be implemented based on the present worth method of comparison assuming 20% interest rate, compounded annually.

Table 4.1

	Initial outlay (Rs.)	*Annual revenue* (Rs.)	*Life* (years)
Technology 1	12,00,000	4,00,000	10
Technology 2	20,00,000	6,00,000	10
Technology 3	18,00,000	5,00,000	10

Solution In all the technologies, the initial outlay is assigned a negative sign and the annualrevenues are assigned a positive sign.

TECHNOLOGY 1

Initial outlay, *P* = Rs. 12,00,000 Annual revenue, *A* = Rs. 4,00,000

Interest rate, *i* = 20%, compounded annually Life of this technology, *n* = 10 years The cash flow diagram of this technology is as shown in Fig. 4.3.

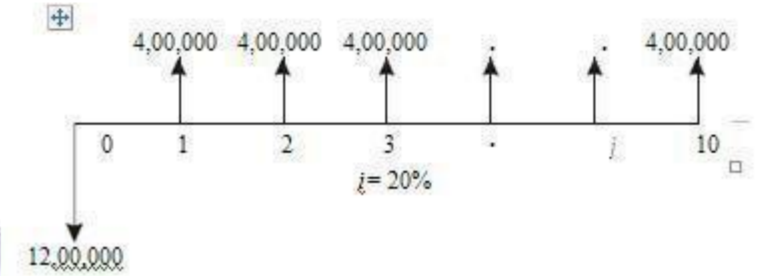


Fig. 4.3 Cash flow diagram for technology 1 The present worth expression for this technology is

PW(20%)1=–12,00,000 + 4,00,000 ´ (*P*/*A*, 20%, 10)

=–12,00,000 + 4,00,000 ´ (4.1925) =–

12,00,000 + 16,77,000

=Rs. 4,77,000

TECHNOLOGY 2

Initial outlay, P = Rs. 20,00,000

Annual revenue, A = Rs. 6,00,000

Interest rate, i = 20%, compounded annually

Life of this technology, n = 10 years

The cash flow diagram of this technology is shown in Fig. 4.4.

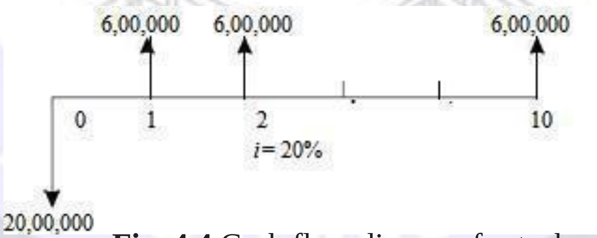


Fig. 4.4 Cash flow diagram for technology 2

The present worth expression for this technology i

PW(20%)2 = – 20,00,000 + 6,00,000 ´ (P/A, 20%, 10)

=– 20,00,000 + 6,00,000 ´ (4.1925)

=– 20,00,000 + 25,15,500 =Rs. 5,15,500

TECHNOLOGY 3

Initial outlay, P = Rs. 18,00,000 Annual revenue, A = Rs. 5,00,000

Interest rate, i = 20%, compounded annually Life of this technology, n = 10 years

The cash flow diagram of this technology is shown in Fig. 4.5.

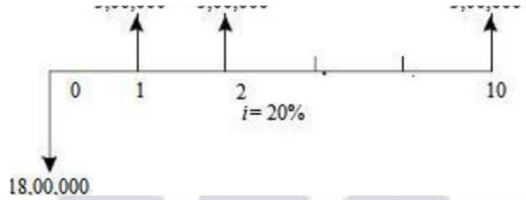


Fig. 4.5 Cash flow diagram for technology 3

The present worth expression for this technology is

PW (20%)3 = –18,00,000 + 5,00,000 ´ (P/A, 20%, 10)

=–18,00,000 + 5,00,000 ´ (4.1925)

=–18,00,000 + 20,96,250

=Rs. 2,96,250

From the above calculations, it is clear that the present worth of technology 2 is the highest among all the technologies. Therefore, technology 2 is suggested for implementation to expand the production

EXAMPLE 4.2 An engineer has two bids for an elevator to be installed in a new building. Thedetails of the bids for the elevators are as follows:

Bid	Engineer's estimates		
	Initial cost (Rs.)	Service life (years)	Annual operations & maintenance cost (Rs.)
Alpha Elevator Inc.	4,50,000	15	27,000
Beta Elevator Inc.	5,40,000	15	28,500

Determine which bid should be accepted, based on the present worth method of comparison assuming 15% interest rate, compounded annually.

Solution

Bid 1: Alpha Elevator Inc.

Initial cost, P = Rs. 4,50,000

Annual operation and maintenance cost, A = Rs. 27,000 Life = 15 years Interest rate, i = 15%, compounded annually.

The cash flow diagram of bid 1 is shown in Fig. 4.6.

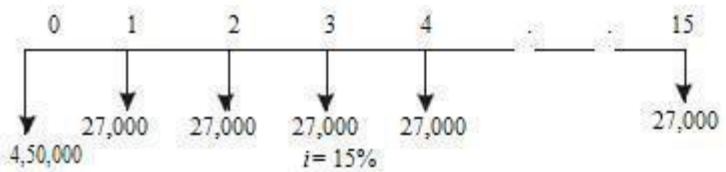


Fig. 4.6 Cash flow diagram for bid 1

The present worth of the above cash flow diagram is computed as follows:

$PW(15\%) = 4{,}50{,}000 + 27{,}000(P/A, 15\%, 15)$
$= 4{,}50{,}000 + 27{,}000$ ´ 5.8474
$= 4{,}50{,}000 + 1{,}57{,}879.80$
$=$ Rs. $6{,}07{,}879.80$

Bid 2: Beta Elevator Inc.

Initial cost, P = Rs. 5,40,000

Annual operation and maintenance cost, A = Rs. 28,500

Life = 15 years

Interest rate, i = 15%, compounded annually.

The cash flow diagram of bid 2 is shown in Fig. 4.7.

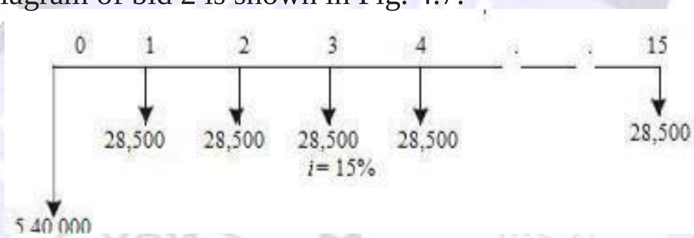


Fig. 4.7 Cash flow diagram for bid 2

The present worth of the above cash flow diagram is computed as follows:

$PW(15\%) = 5{,}40{,}000 + 28{,}500(P/A, 15\%, 15)$
$= 5{,}40{,}000 + 28{,}500$ ´ 5.8474
$= 5{,}40{,}000 + 1{,}66{,}650.90$
$=$ Rs. $7{,}06{,}650.90$

The total present worth cost of bid 1 is less than that of bid 2. Hence, bid 1 is to be selected for implementation. That is, the elevator from Alpha Elevator Inc. is to be purchased and installed in the new building.

EXAMPLE 4.3 Investment proposals A and B have the net cash flows as follows:

Proposal	*End of years*				
	0	1	2	3	4
A (Rs.)	–10,000	3,000	3,000	7,000	6,000
B (Rs.)	–10,000	6,000	6,000	3,000	3,000

Compare the present worth of A with that of B at i = 18%. Which proposal should be selected?

Solution

Present worth of A at i = 18%. The cash flow diagram of proposal A is shown in Fig. 4.8.

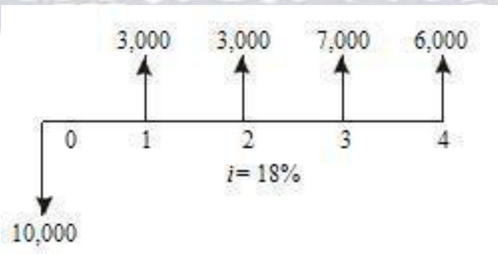
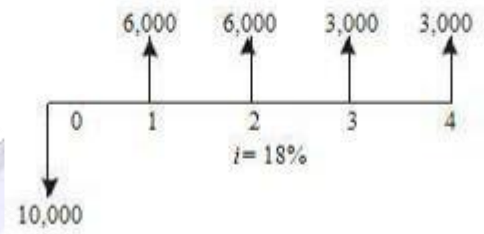


Fig. 4.8 Cash flow diagram for proposal A

The present worth of the above cash flow diagram is computed as

$$PWA(18\%) = –10,000 + 3,000(P/F, 18\%, 1) + 3,000(P/F, 18\%, 2)$$
$$7,000(P/F, 18\%, 3) + 6,000(P/F, 18\%, 4)$$
$$–10,000 + 3,000 (0.8475) + 3,000(0.7182)$$
$$7,000(0.6086) + 6,000(0.5158)$$
$$\text{Rs. } 2,052.10$$

Present worth of B at *i* = 18%. The cash flow diagram of the proposal B is shown in Fig.



The present worth of the above cash flow diagram is calculated as

$$PWB(18\%) = –10,000 + 6,000(P/F, 18\%, 1) + 6,000(P/F, 18\%, 2)$$
$$3,000(P/F, 18\%, 3) + 3,000(P/F, 18\%, 4)$$
$$–10,000 + 6,000(0.8475) + 6,000(0.7182)$$
$$3,000(0.6086) + 3,000(0.5158)$$
$$\text{Rs. } 2,767.40$$

At i = 18%, the present worth of proposal B is higher than that of proposal A. Therefore, select proposal B.

EXAMPLE 4.4 A granite company is planning to buy a fully automated granite cuttingmachine. If it is purchased under down payment, the cost of the machine is Rs. 16,00,000. If it is purchased under installment basis, the company has to pay 25% of the cost at the time of purchase and the remaining amount in 10 annual equal installments of Rs. 2,00,000 each. Suggest the best alternative for the company using the present worth basis at *i* = 18%, compounded annually.

Solution There are two alternatives available for the company:

Down payment of Rs. 16,00,000

Down payment of Rs. 4,00,000 and 10 annual equal installments of Rs. 2,00,000 each

Present worth calculation of the second alternative. The cash flow diagram of the second

$$PWA(18\%) = –10,000 + 3,000(P/F, 18\%, 1) + 3,000(P/F, 18\%, 2)$$
$$+ 7,000(P/F, 18\%, 3) + 6,000(P/F, 18\%, 4)$$
$$= –10,000 + 3,000 (0.8475) + 3,000(0.7182)$$
$$+ 7,000(0.6086) + 6,000(0.5158)$$
$$= \text{Rs. } 2,052.10$$

Present worth of B at *i* = 18%. The cash flow diagram of the proposal B is shown in Fig. 4.9

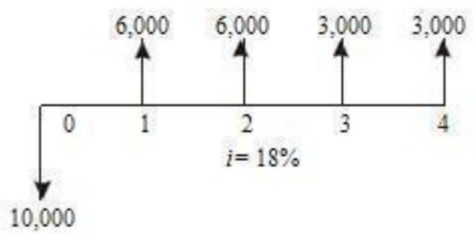


Fig. 4.9 Cash flow diagram for proposal

B The present worth of the above cash flow diagram is calculated as

PWB(18%) = –10,000 + 6,000(P/F, 18%, 1) + 6,000(P/F, 18%, 2)
3,000(P/F, 18%, 3) + 3,000(P/F, 18%, 4)
–10,000 + 6,000(0.8475) + 6,000(0.7182)
3,000(0.6086) + 3,000(0.5158)
Rs. 2,767.40

At i = 18%, the present worth of proposal B is higher than that of proposal A. Therefore, select proposal B.

EXAMPLE 4.4 A granite company is planning to buy a fully automated granite cuttingmachine. If it is purchased under down payment, the cost of the machine is Rs. 16,00,000. If it is purchased under installment basis, the company has to pay 25% of the cost at the time of purchase and the remaining amount in 10 annual equal installments of Rs. 2,00,000 each. Suggest the best alternative for the company using the present worth basis at *i* = 18%, compounded annually.

Solution There are two alternatives available for the company:

Down payment of Rs. 16,00,000

Down payment of Rs. 4,00,000 and 10 annual equal installments of Rs. 2,00,000 each

Present worth calculation of the second alternative. The cash flow diagram of the second

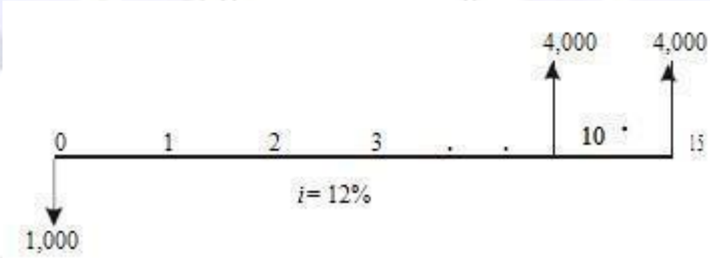


Fig. 4.12 Cash flow diagram for plan 2

The present worth of the above cash flow diagram is computed as

PW(12%) =–1,000 + 4,000(*P*/*F*, 12%, 10) + 4,000(*P*/*F*, 12%, 15)
=–1,000 + 4,000(0.3220) + 4,000(0.1827)
=Rs. 1,018.80

The present worth of plan 1 is more than that of plan 2. Therefore, plan 1 is the best plan from the investor's point of view.

EXAMPLE 4.6 Novel Investment Ltd. accepts Rs. 10,000 at the end of every year for 20 yearsand pays the investor Rs. 8,00,000 at the end of the 20th year. Innovative Investment Ltd. accepts Rs. 10,000 at the end of every year for 20 years and pays the investor Rs. 15,00,000 at the end of the 25th year. Which is the best investment alternative? Use present worth base with i = 12%.

Solution: Novel Investment Ltd's plan.The cash flow diagram of NovelInvestment Ltd's plan isshown in Fig. 4.13.

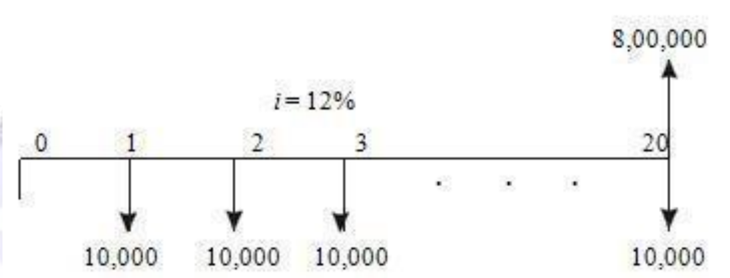


Fig. 4.13 Cash flow diagram for Novel Investment Ltd

The present worth of the above cash flow diagram is computed as

PW(12%) = –10,000(P/A, 12%, 20) + 8,00,000(P/F, 12%, 20)

=–10,000(7.4694) + 8,00,000(0.1037)

Rs. 8,266

Innovative Investment Ltd's plan. The cash flow diagram of the Innovative Investment Ltd's plan is illustrated in Fig. 4.14.

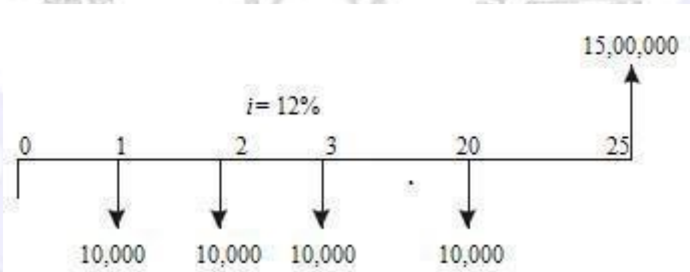


Fig. 4.14 Cash flow diagram for Innovative Investment

Ltd. The present worth of the above cash flow diagram is calculated as

PW(12%) =–10,000(*P*/*A*, 12%, 20) + 15,00,000(*P*/*F*, 12%, 25)

=–10,000(7.4694) + 15,00,000(0.0588)

Rs. 13,506

The present worth of Innovative Investment Ltd's plan is more than that of Novel Investment Ltd's plan. Therefore, Innovative Investment Ltd's plan is the best from investor's point of view.

EXAMPLE 4.7 A small business with an initial outlay of Rs. 12,000 yields Rs. 10,000 duringthe first year of its operation and the yield increases by Rs. 1,000 from its second year of operation up to its 10th year of operation. At the end of the life of the business, the salvage value is zero. Find the present worth of the business by assuming an interest rate of 18%, compounded annually.

Solution

Initial investment, P = Rs. 12,000

Income during the first year, A = Rs. 10,000

Annual increase in income, G = Rs. 1,000

n = 10 years

i = 18%, compounded annually

The cash flow diagram for the small business is depicted in Fig. 4.15.

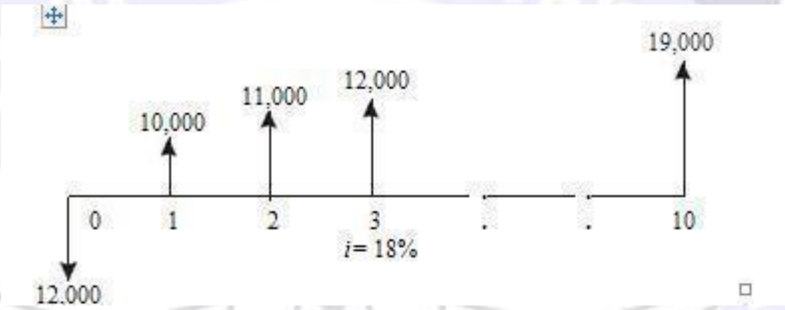


Fig. 4.15 Cash flow diagram for the small business

The equation for the present worth is

PW(18%) = –12,000 + (10,000 + 1,000 ´ (A/G, 18%, 10)) ´ (P/A, 18%, 10) = –12,000 + (10,000 + 1,000 ´ 3.1936) ´ 4.4941

=–12,000 + 59,293.36

=Rs. 47,293.36

The present worth of the small business is Rs. 47,293.36.

ANNUAL EQUIVALENT METHOD

INTRODUCTION

In the annual equivalent method of comparison, first the annual equivalent cost or the revenue of each alternative will be computed. Then the alternative with the maximum annual equivalent revenue in the case of revenue-based comparison or with the minimum annual equivalent cost in the case of cost-based comparison will be selected as the best alternative.

REVENUE-DOMINATED CASH FLOW DIAGRAM

A generalized revenue-dominated cash flow diagram to demonstrate the annual equivalent method of comparison is presented in Fig. 6.1.

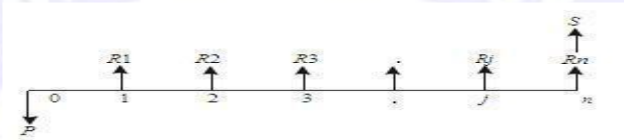


Fig. 6.1 Revenue-dominated cash flow diagram

In Fig. 6.1, *P* represents an initial investment, *Rj* the net revenue at the end of the *j*th year, and *S* the salvage value at the end of the *n*th year.

The first step is to find the net present worth of the cash flow diagram using the following expression for a given interest rate, *i*:

$$PW(i) = -P + R1/(1+i)^1 + R2/(1+i)^2 + \ldots + Rj/(1+i)^j + \ldots + Rn/(1+i)^n + S/(1+i)^n$$

In the above formula, the expenditure is assigned with a negative sign and the revenues are assigned with a positive sign.

In the second step, the annual equivalent revenue is computed using the following formula:

where (A/P, i, n) is called equal payment series capital recovery factor.

If we have some more alternatives which are to be compared with this alternative, then the corresponding annual equivalent revenues are to be computed and compared. Finally, the alternative with the maximum annual equivalent revenue should be selected as the best alternative.

COST-DOMINATED CASH FLOW DIAGRAM

A generalized cost-dominated cash flow diagram to demonstrate the annual equivalent method of comparison is illustrated in Fig. 6.2.

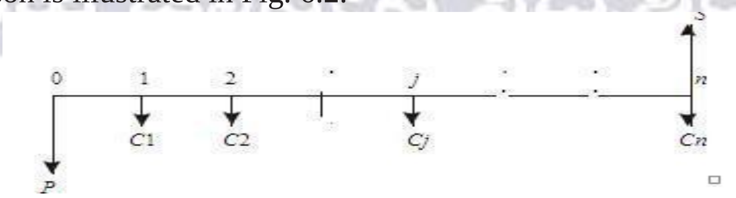


Fig. 6.2 Cost-dominated cash flow diagram

In Fig. 6.2, *P* represents an initial investment, *Cj* the net cost of operation and maintenance at the end of the *j*th year, and *S* the salvage value at the end of the *n*th year.

The first step is to find the net present worth of the cash flow diagram using the following relation for a given interest rate, *i*.

$$PW(i) = P + C1/(1 + i)^1 + C2/(1 + i)^2 + \dots + Cj/(1 + i)^j + \dots + Cn/(1 + i)^n - S/(1 + i)^n$$

In the above formula, each expenditure is assigned with positive sign and the salvage value with negative sign. Then, in the second step, the annual equivalent cost is computed using the following equation:

$$A = PW(i)\frac{i(1 + i)^n}{(1 + i)^n - 1} = PW(i)\,(A/P, i, n)$$

where (*A*/*P*, *i*, *n*) is called as equal-payment series capital recovery factor.

As in the previous case, if we have some more alternatives which are to be compared with this alternative, then the corresponding annual equivalent costs are to be computed and compared. Finally, the alternative with the minimum annual equivalent cost should be selected as the best alternative.

If we have some non-standard cash flow diagram, then we will have to follow the general procedure for converting each and every transaction to time zero and then convert the net present worth into an annual equivalent cost/ revenue depending on the type of the cash flow diagram. Such procedure is to be applied to all the alternatives and finally, the best alternative is to be selected.

ALTERNATE APPROACH

Instead of first finding the present worth and then figuring out the annual equivalent cost/revenue, an alternate method which is as explained below can be used. In each of the cases presented in Sections 6.2 and 6.3, in the first step, one can find the future worth of the cash flow diagram of each of the alternatives. Then, in the second step, the annual equivalent cost/revenue can be obtained by using the equation:

$$A = F\frac{i}{(1 + i)^n - 1} = F(A/F, i, n)$$

where (*A*/*F*, *i*, *n*) is called *equal-payment series sinking fund factor*.

EXAMPLES

EXAMPLE 6.1: A company provides a car to its chief executive. The owner of the company isconcerned about the increasing cost of petrol. The cost per litre of petrol for the first year of operation is Rs. 21. He feels that the cost of petrol will be increasing by Re.1 every year. His experience with his company car indicates that it averages 9 km per litre of petrol. The executive expects to drive an average of 20,000 km each year for the next four years. What is the annual equivalent cost of fuel over this period of time?. If he is offered similar service with the same quality on rental basis at Rs. 60,000 per year, should the owner continue to provide company car for his executive or alternatively provide a rental car to his executive?

Assume i = 18%. If the rental car is preferred, then the company car will find some other use within the company.

Solution

Average number of km run/year = 20,000 km

Number of km/litre of petrol = 9 km

Therefore,

Petrol consumption/year = 20,000/9 = 2222.2 litre

Cost/litre of petrol for the 1st year = Rs. 21

Cost/litre of petrol for the 2nd year = Rs. 21.00 + Re. 1.00 = Rs. 22.00

Cost/litre of petrol for the 3rd year = Rs. 22.00 + Re. 1.00 = Rs. 23.00

Cost/litre of petrol for the 4th year = Rs. 23.00 + Re. 1.00 = Rs. 24.00

Fuel expenditure for 1st year = 2222.2 ´ 21 = Rs. 46,666.20

Fuel expenditure for 2nd year = 2222.2 ´ 22 = Rs. 48,888.40

Fuel expenditure for 3rd year = 2222.2 ´ 23 = Rs. 51,110.60

Fuel expenditure for 4th year = 2222.2 ´ 24 = Rs. 53,332.80

The annual equal increment of the above expenditures is Rs. 2,222.20 (*G*). The cash flow diagram for this situation is depicted in Fig. 6.3.

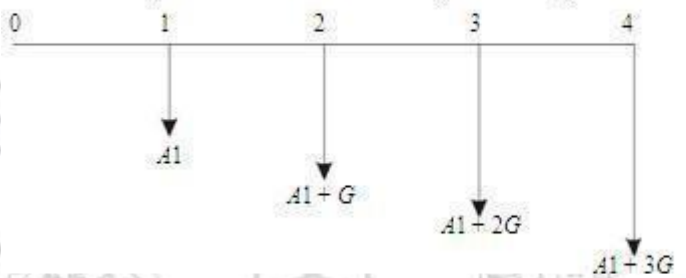


Fig. 6.3 Uniform gradient series cash flow diagram. In Fig. 6.3, *A*1 = Rs. 46,666.20 and *G* = Rs. 2,222.20

= *A*1 + *G*(*A*/*G*, 18%, 4)

=46,666.20 + 2222.2(1.2947)

=Rs. 49,543.28

The proposal of using the company car by spending for petrol by the company will cost an annual equivalent amount of Rs. 49,543.28 for four years. This amount is less than the annual rental value of Rs. 60,000. Therefore, the company should continue to provide its own car to its executive.

EXAMPLE 6.2: A company is planning to purchase an advanced machine centre. Three originalmanufacturers have responded to its tender whose particulars are tabulated as follows:

Manufacturer	Down payment (Rs.)	Yearly equal installment (Rs.)	No. of installments
1	5,00,000	2,00,000	15
2	4,00,000	3,00,000	15
3	6,00,000	1,50,000	15

Determine the best alternative based on the annual equivalent method by assuming *i* = 20%, compounded annually.

Solution Alternative 1

Down payment, P = Rs. 5,00,000

Yearly equal installment, A = Rs. 2,00,000n = 15 years i = 20%, compounded annually The cash flow diagram for manufacturer 1 is shown in Fig. 6.4.

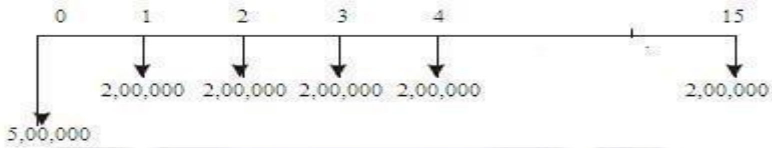


Fig. 6.4 Cash flow diagram for manufacturer 1

The annual equivalent cost expression of the above cash flow diagram is

$AE1(20\%)$ = 5,00,000(A/P, 20%, 15) + 2,00,000

=5,00,000(0.2139) + 2,00,000

=3,06,950

Alternative 2

Down payment, P = Rs. 4,00,000

Yearly equal installment, A = Rs. 3,00,000n = 15 years i = 20%, compounded annually The cash flow diagram for the manufacturer 2 is shown in Fig. 6.5.

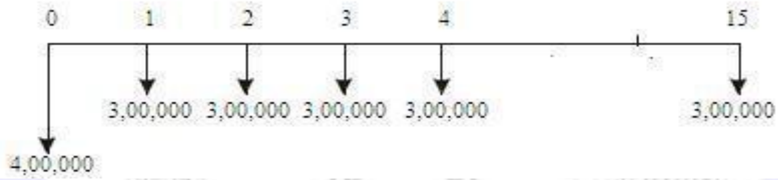


Fig. 6.5 Cash flow diagram for manufacturer 2

The annual equivalent cost expression of the above cash flow diagram

is $AE2(20\%)$ = 4,00,000(A/P, 20%, 15) + 3,00,000

=4,00,000(0.2139) + 3,00,000

Rs. 3,85,560.

Alternative 3

Down payment, P = Rs. 6,00,000

Yearly equal installment, A = Rs. 1,50,000n = 15 years i = 20%, compounded annually The cash flow diagram for manufacturer 3 is shown in Fig. 6.6.

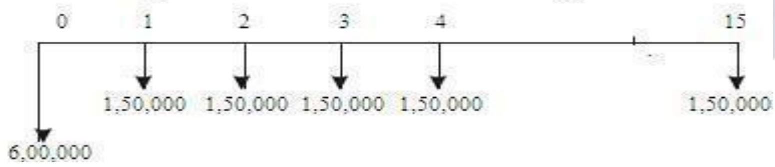


Fig. 6.6 Cash flow diagram for manufacturer 3

The annual equivalent cost expression of the above cash flow diagram

is $AE3(20\%)$ = 6,00,000(A/P, 20%, 15) + 1,50,000

=6,00,000(0.2139) + 1,50,000

Rs. 2,78,340.

The annual equivalent cost of manufacturer 3 is less than that of manufacturer 1 and manufacturer 2. Therefore, the company should buy the advanced machine centre from manufacturer 3

EXAMPLE 6.3: A company invests in one of the two mutually exclusive alternatives. The lifeof both alternatives is estimated to be 5 years with the following investments, annual returns and salvage values.

	Alternative	
	A	B
Investment (Rs.)	–1,50,000	–1,75,000
Annual equal return (Rs.)	+60,000	+70,000
Salvage value (Rs.)	+15,000	+35,000

Determine the best alternative based on the annual equivalent method by assuming i = 25%.

Solution Alternative A

Initial investment, P = Rs. 1,50,000

Annual equal return, A = Rs. 60,000

Salvage value at the end of machine life, S = Rs. 15,000

Life = 5 years

Interest rate, i = 25%, compounded annually

The cash flow diagram for alternative A is shown in Fig. 6.7.

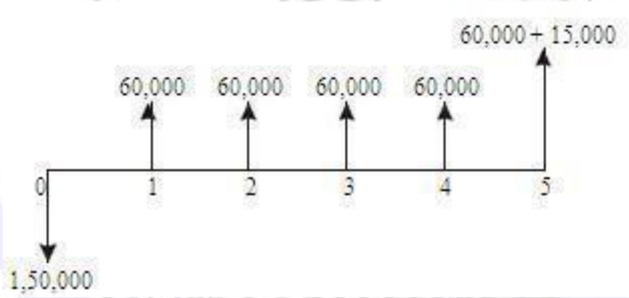


Fig. 6.7 Cash flow diagram for alternative A

The annual equivalent revenue expression of the above cash flow diagram is as follows:

AEA(25%) = –1,50,000(A/P, 25%, 5) + 60,000 + 15,000(A/F, 25%, 5)

=–1,50,000(0.3718) + 60,000 + 15,000(0.1218)

Rs. 6,057

Alternative B

Initial investment, P = Rs. 1,75,000

Annual equal return, A = Rs. 70,000

Salvage value at the end of machine life, S = Rs. 35,000

Life = 5 years

Interest rate, i = 25%, compounded annually

The cash flow diagram for alternative B is shown in Fig. 6.8.

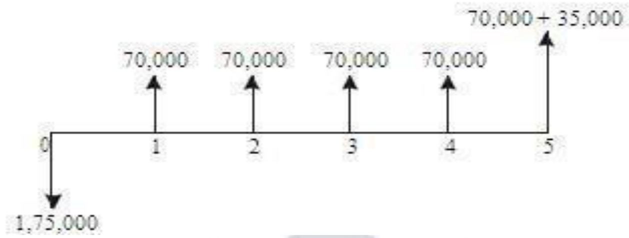


Fig. 6.8 Cash flow diagram for alternative B

The annual equivalent revenue expression of the above cash flow diagram is

$AEB(25\%) = –1,75,000(A/P, 25\%, 5) + 70,000 + 35,000(A/F, 25\%, 5)$

$= –1,75,000(0.3718) + 70,000 + 35,000(0.1218)$

$=$ Rs. 9,198

The annual equivalent net return of alternative B is more than that of alternative A. Thus, the Company should select alternative B.

EXAMPLE 6.4: A certain individual firm desires an economic analysis to determine which ofthe two machines is attractive in a given interval of time. The minimum attractive rate of return for the firm is 15%. The following data are to be used in the analysis:

	Machine X	*Machine Y*
First cost	Rs. 1,50,000	Rs. 2,40,000
Estimated life	12 years	12 years
Salvage value	Rs. 0	Rs 6,00 . 0
Annual maintenance cost	Rs. 0	Rs 4,50 . 0

Which machine would you choose? Base your answer on annual equivalent cost.

Solution Machine X

First cost, P = Rs. 1,50,000 Life, n = 12 years

Estimated salvage value at the end of machine life, S = Rs. 0. Annual maintenance cost, A = Rs. 0.

Interest rate, i = 15%, compounded annually.

The cash flow diagram of machine X is illustrated in Fig. 6.9.

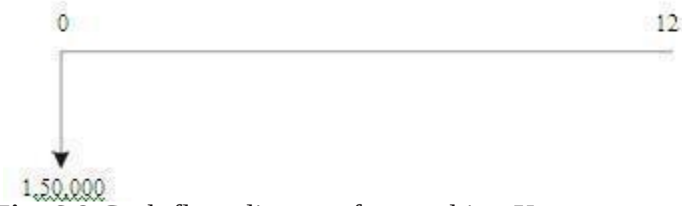


Fig. 6.9 Cash flow diagram for machine X

The annual equivalent cost expression of the above cash flow diagram is

$AE\text{X}(15\%) = 1,50,000(A/P, 15\%, 12)$

$= 1,50,000(0.1845)$

Rs. 27,675

Machine Y

First cost, P = Rs. 2,40,000 Life, n = 12 years

Estimated salvage value at the end of machine life, S = Rs. 60,000 Annual maintenance cost, A = Rs. 4,500

Interest rate, i = 15%, compounded annually.

The cash flow diagram of machine Y is depicted in Fig. 6.10.

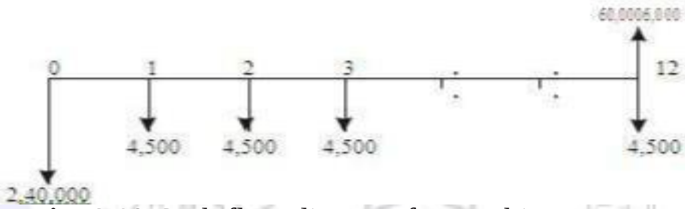


Fig. 6.10 Cash flow diagram for machine Y

The annual equivalent cost expression of the above cash flow diagram

is $AE\text{Y}(15\%) = 2,40,000(A/P, 15\%, 12) + 4,500 – 6,000(A/F, 15\%, 12)$

$= 2,40,000(0.1845) + 4,500 – 6,000(0.0345)$

Rs. 48,573

The annual equivalent cost of machine X is less than that of machine Y. So, machine X is the more cost effective machine.

RATE OF RETURN METHOD

INTRODUCTION

The rate of return of a cash flow pattern is the interest rate at which the present worth of that cash flow pattern reduces to zero. In this method of comparison, the rate of return for each alternative is computed. Then the alternative which has the highest rate of return is selected as the best alternative.

In this type of analysis, the expenditures are always assigned with a negative sign and the revenues/inflows are assigned with a positive sign.

A generalized cash flow diagram to demonstrate the rate of return method of comparison is presented in Fig. 7.1.

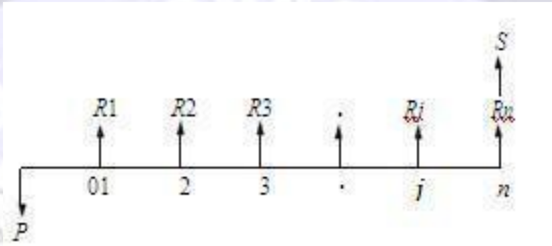


Fig. 7.1 Generalized cash flow diagram

In the above cash flow diagram, P represents an initial investment, Rj the net revenue at the end of the jth year, and S the salvage value at the end of the nth year.

The first step is to find the net present worth of the cash flow diagram using the following expression at a given interest rate, i.

$$PW(i) = -P + R1/(1+i)^1 + R2/(1+i)^2 + \ldots + Rj/(1+i)^j + \ldots + Rn/(1+i)^n + S/(1+i)^n$$

Now, the above function is to be evaluated for different values of i until the present worth function reduces to zero, as shown in Fig. 7.2.

In the figure, the present worth goes on decreasing when the interest rate is increased. The value of i at which the present worth curve cuts the X-axis is the rate of return of the given proposal/project. It will be very difficult to find the exact value of i at which the present worth function reduces to zero.

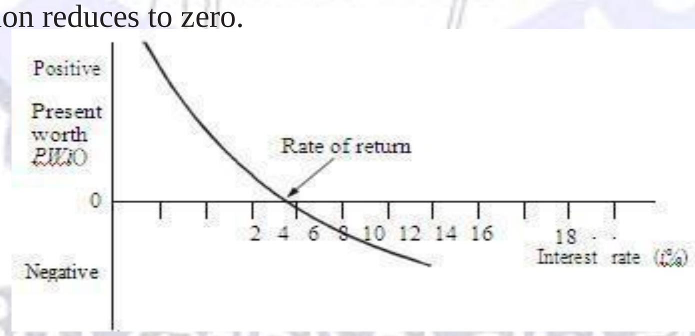


Fig. 7.2 Present worth function graph.

So, one has to start with an intuitive value of i and check whether the present worth function is positive. If so, increase the value of i until PW(i) becomes negative. Then, the rate of return is determined by interpolation method in the range of values of i for which the sign of the present worth function changes from positive to negative.

7.2 EXAMPLES

In this section, the concept of rate of return calculation is demonstrated with suitable examples.

EXAMPLE 7.1 A person is planning a new business. The initial outlay and cash flow pattern forthe new business are as listed below. The expected life of the business is five years. Find the rate of return for the new business.

Period	0	1	2	3	4	5
Cash flow (Rs.)	–1,00,000	30,000	30,000	30,000	30,000	30,000

Solution

Initial investment = Rs. 1,00,000 Annual equal revenue =
Rs. 30,000 Life = 5 years
The cash flow diagram for this situation is illustrated in Fig. 7.3.

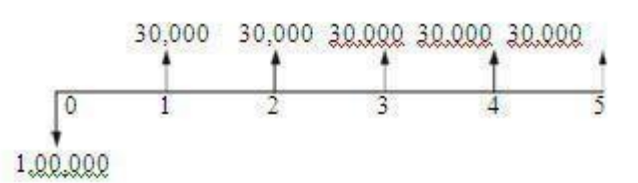


Fig. 7.3 Cash flow diagram

The present worth function for the business is

PW(i) = –1,00,000 + 30,000(P/A, i, 5)

When i = 10%,

PW(10%) = –1,00,000 + 30,000(P/A, 10%, 5)
=–1,00,000 + 30,000(3.7908)
Rs. 13,724.

When i = 15%,

PW(15%) = –1,00,000 + 30,000(P/A, 15%, 5)
–1,00,000 + 30,000(3.3522)
Rs. 566.

When i = 18%,

PW(18%) = –1,00,000 + 30,000(P/A, 18%, 5)
–1,00,000 + 30,000(3.1272)
Rs. – 6,184

$$i = 15\% + \frac{566-0}{566-(-6184)} \times (3\%)$$

=15% + 0.252%
=15.252%

Therefore, the rate of return for the new business is 15.252%.

EXAMPLE 7.2 A Company is trying to diversify its business in a new product line. The life ofthe project is 10 years with no salvage value at the end of its life. The initial outlay of the project is Rs. 20,00,000. The annual net profit is Rs. 3,50,000. Find the rate of return for the new business.

Solution

Life of the product line (n) = 10 years

Initial outlay = Rs. 20,00,000

Annual net profit = Rs. 3,50,000

Scrap value after 10 years = 0

The cash flow diagram for this situation is shown in Fig. 7.4.

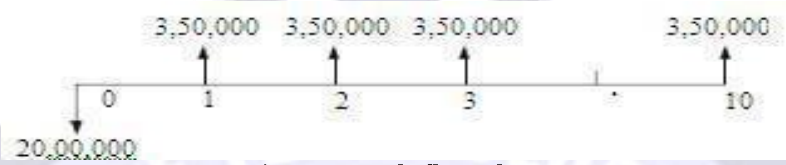


Fig. 7.4 Cash flow diagram

The formula for the net present worth function of the situation is

PW(i) = –20,00,000 + 3,50,000(P/A, i, 10)

When i = 10%,

PW(10%) = –20,00,000 + 3,50,000(P/A, 10%, 10)

=–20,00,000 + 3,50,000(6.1446)

Rs. 1,50,610.

When i = 12%,

PW(12%) = –20,00,000 + 3,50,000(P/A, 12%, 10) = –20,00,000 + 3,50,000(5.6502)

$i = 10\% +$ 1,50,610 − (−22 , 430) (2%)

= 11.74 %

Therefore, the rate of return of the new product line is 11.74%

EXAMPLE 7.3 A firm has identified three mutually exclusive investment proposals whosedetails are given below. The life of all the three alternatives is estimated to be five years with negligible salvage value. The minimum attractive rate of return for the firm is 12%.

	Alternative		
	A1	*A2*	*A3*
Investment	Rs. 1,50,000	Rs. 2,10,000	Rs. 2,55,000
Annual net income	Rs. 45,570	Rs. 58,260	Rs. 69,000

Solution Calculation of rate of return for alternative A1

Initial outlay = Rs. 1,50,000

Annual profit = Rs. 45,570

Life = 5 years

The cash flow diagram for alternative A1 is shown in Fig. 7.5.

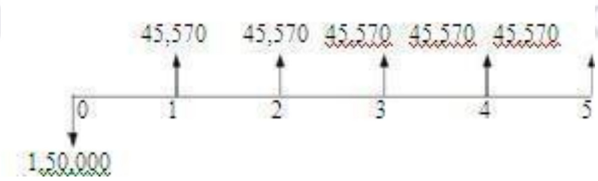


Fig. 7.5 Cash flow diagram for alternative A1.

The formula for the net present worth of alternative A1 is given as

PW(i) = –1,50,000 + 45,570(P/A, i, 5)

When i = 10%,

PW(10%) = –1,50,000 + 45,570(P/A, 10%, 5)

= –1,50,000 + 45,570(3.7908)

Rs. 22,746.76

When i = 12%,

PW(12%) = –1,50,000 + 45,570(P/A, 12%, 5)

–1,50,000 + 45,570(3.6048)

Rs. 14,270.74

When i = 15%,

PW(15%) = –1,50,000 + 45,570(P/A, 15%, 5)

=–1,50,000 + 45,570(3.3522)

Rs. 2,759.75

When i = 18%,

PW(18%) = –1,50,000 + 45,570(P/A, 18%, 5)

–1,50,000 + 45,570(3.1272)

Rs. –7,493.50

$$i = 15\% + \frac{2,759.75 - 0}{2,759.75 - (-7,493.50)} \times (3\%)$$

=15% + 0.81%

=15.81%

Calculation of rate of return for alternative A2

Initial outlay = Rs. 2,10,000

Annual profit = Rs. 58,260

Life of alternative A2 = 5 years

The cash flow diagram for alternative A2 is shown in Fig. 7.6.

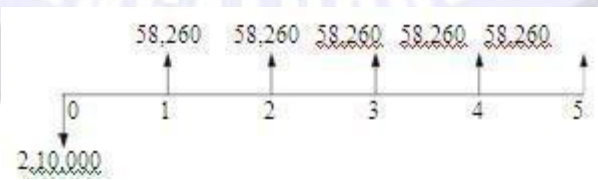


Fig. 7.6 Cash flow diagram for alternative A2

The formula for the net present worth of this alternative is

PW(i) = –2,10,000 + 58,260(P/A, i, 5) When i = 12%,

PW(12%) = –2,10,000 + 58,260(P/A, 12%, 5)

=–2,10,000 + 58,260(3.6048)

Rs. 15.65

When i = 13%,

PW(13%) = –2,10,000 + 58,260(P/A, 13%, 5)

–2,10,000 + 58,260(3.5172)

Rs. –5,087.93

Therefore, the rate of return of alternative A2 is

$$= 12\% + \frac{15.65 - 0}{15.65 - (-5,087.93)} \times (1\%) = 12\% + 0\%$$

$$= 12\%$$

Calculation of rate of return for alternative A3

Initial outlay = Rs. 2,55,000

Annual profit = Rs. 69,000

Life of alternative A3 = 5 years

The cash flow diagram for alternative A3 is depicted in Fig. 7.7.

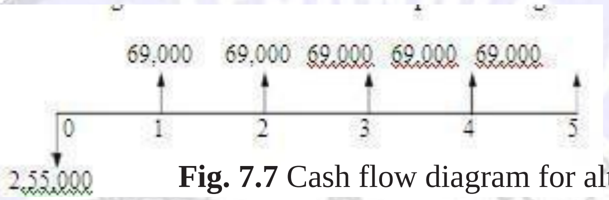


Fig. 7.7 Cash flow diagram for alternative A3

The formula for the net present worth of this alternative A3 is

PW(i) = –2,55,000 + 69,000(P/A, i, 5) When i = 11%,

PW(11%) = – 2,55,000 + 69,000(P/A, 11%, 5)

=– 2,55,000 + 69,000(3.6959)

=Rs. 17.1

When i = 12%,

PW(12%) = – 2,55,000 + 69,000(P/A, 12%, 5)

=– 2,55,000 + 69,000(3.6048)

=Rs. – 6,268.80

Therefore, the rate of return for alternative A3 is

$$i = 11\% + \frac{17.1 - 0}{17.1 - (-6,268.80)} \times 1\%$$

$$= 11\%$$

The rates of return for the three alternatives are now tabulated.

Alternative	*A1*	*A2*	*A3*
Rate of return	15.81%	12%	11%

From the above data, it is clear that the rate of return for alternative A3 is less than the minimum attractive rate of return of 12%. So, it should not be considered for comparison. The remaining two alternatives are qualified for consideration. Among the alternatives A1 and A2, the rate of return of alternative A1 is greater than that of alternative A2. Hence, alternative A1 should be selected.

EXAMPLE 7.4 For the cash flow diagram shown in Fig. 7.8, compute the rate of return. Theamounts are in rupees.

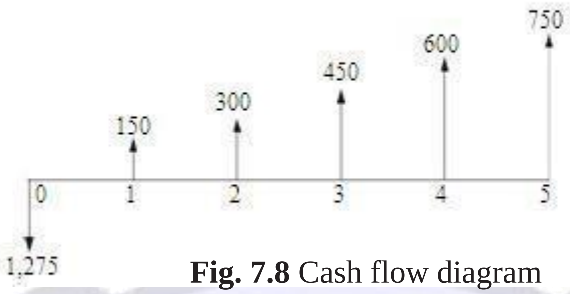


Fig. 7.8 Cash flow diagram

Solution For the positive cash flows of the problem,

A1 = Rs. 150, G = Rs. 150

The annual equivalent of the positive cash flows of the uniform gradient series is given

by A = A1 + G(A/G, i, n)

= 150 + 150(A/G, i, 5)

The formula for the present worth of the whole diagram = –1,275 + [150 + 150(A/G, i, 5)] ´ (P/A, i, 5)

PW(10%) = –1,275 + [150 + 150(A/G, 10%, 5)] ´ (P/A, 10%, 5)

=–1,275 + [150 + 150(1.8101)] ´ (3.7908)

=Rs. 322.88

PW(12%) = –1,275 + [150 + 150(A/G, 12%, 5)] ´ (P/A, 12%, 5)

=–1,275 + [150 + 150(1.7746)] ´ (3.6048)

=Rs. 225.28

PW(15%) = –1,275 + [150 + 150(A/G, 15%, 5)] ´ (P/A, 15%, 5)

=–1,275 + [150 + 150(1.7228)] ´ (3.3522)

Rs. 94.11

PW(18%) = –1,275 + [150 + 150(A/G, 18%, 5)] ´ (P/A, 18%, 5)

=–1,275 + [150 + 150(1.6728)] ´ (3.1272)

=Rs. –21.24

Therefore, the rate of return for the cash flow diagram is 94 .11 − 0

i = 15% + 94.11 − (−21. 24) ´ 3%= 15% + 2.45% = 17.45%

ESTIMATING AND COSTING

INTRODUCTION:

Costing can be called as a specialized branch of accounting which deals with classification,recording, allocation and control of costs. It is the technique and process of ascertaining costs (ICWA, England definition). In common terms costing can be defined as the process of determining actual cost of an item after adding different expenses incurred to bring it to the final form, ready for marketing. With the help of estimating and costing, a manufacturer finds out the total cost of each article he makes and fixes the selling price of the article in order to make a definite profit. Cost data provide a basis for important decisions on pricing, product mix, product design, process improvement and technology acquisition. Poor decisions in these areas can severely impair the ability of the company to compete.

Estimation is the assessment of the total cost in manufacturing a product even before it ismanufactured. One must have a sound knowledge of material, labour, processing costs, quality and quantity of material required, selection of manufacturing method, manufacturing time required, etc. in order to do a proper estimation. The engineer must be able to state the probable cost at the stage when only sketch plans are drawn. If the available funds are known, the designer has to work backwards i.e. will have to design the building/product which may be constructed within the available sum.

Estimation involves the computation of the quantities required and expenses likely to be incurred in the construction of a work. The amount estimated should be sufficient to cover the probable expenditure on the work without revision by reason of minor unanticipated contingencies, but it should not be so excessive as to permit of extravagance in execution.

The essentials of an estimate are:

(a). The drawings – plans, elevations and sections of the work;

(b). Specifications indicating the nature and class of work and materials to be employed;

(c). The local rates at which different types of work can be executed. The designs of an engineer will be of little use of he is not able to give an idea of cost.

NEED FOR ESTIMATING AND COSTING:

Following points illustrate the need for estimation and costing:

For determining the cost of production: Estimating and costing provides reliable data regarding expenditure on materials, wages and other things which helps in determining the cost of production precisely.

For controlling the costs: It provides the cost for each product, process, job, department etc., which helps in identifying profitable and non-profitable areas in the organization. This guides the management to take corrective measures of their non-profitable activities. It helps in reducing the total manufacturing cost. It helps to reduce material wastages and control labour wages.

For fixing selling price: Costing provides information for fixing the selling price of the product. The cost and volume of production, profit and break-even analysis serves as a basis for determining the selling price of the product.

For preparing the quotations and submitting tenders: A quotation is the information regarding the selling price of a product or service offered to a prospective buyer. A tender is the information regarding the selling price given to a prospective buyer, but given in a sealed envelope. The principles of costing help immensely in preparing quotations and submitting tenders.

For specific managerial decisions: Costing provides invaluable information for taking the managerial decisions like – make or buy, whether to own fixed assets or buy them, whether to replace the existing machinery before its useful life, etc. Costing also provides information on wage incentive plans, cost control measures for materials and supplies, budget and budgetary control, etc.

It helps in formulating the policies of the concern for changing prices of the products.

It helps in making the product more economical by incorporating suitable changes in the design.

ESTIMATING PROCEDURE:

(i). Production planning department:

(a). Decides the specification of the product to be manufactured.

(b). Make out the drawings:

Lays down the method of manufacturing and required operations Machines to beused Labour rates Accuracy and finish required

Prepare a list of components of the product Make or buy decision (ii). Determine the material cost

(iii). Determine the time required for various operations (iv). Determine labour cost (v). Determine prime cost = Direct expenses + direct material cost + direct labour cost

(vi). Determine factory overheads, depreciation, maintenance and insurance cost, power cost, etc.

(vii). Determine the administrative overheads (viii). Determine the packing and delivery charge

(ix). Determine the total cost

(x). Determine the selling price = total cost + profit (xi). Decide the discount allowed to the distributors (xii). Decide delivery time

COMPONENTS OR ELEMENTS OF COST:

The total cost of a product is the sum of several elementary costs that are involved in its manufacture. The major costs in manufacturing a product consist of:

Material cost

(a). Direct material cost (b). Indirect material cost

2.Labour cost

(a). Direct labour cost (b). Indirect labour cost

3.Expenses

(a). Direct expenses (b). Indirect expenses or overheads or on cost

Figure 1 shows the elements of product cost.

Direct material cost:

It is the cost of materials with which the product is made of. In other words, it is the cost of materials which are processed through various stages to form a part of the product or thewhole product itself. Example: mild steel rods for making shafts, sheet metal for making cupboards, etc.

Indirect material cost:

It is the cost of materials which are essentially needed for helping the direct materials to be converted into finished products. It includes the cost of materials that are necessary for the production process, but are not directly used in the product itself. Example: cost of grease, lubricating oil, coolant, cotton waste, etc.

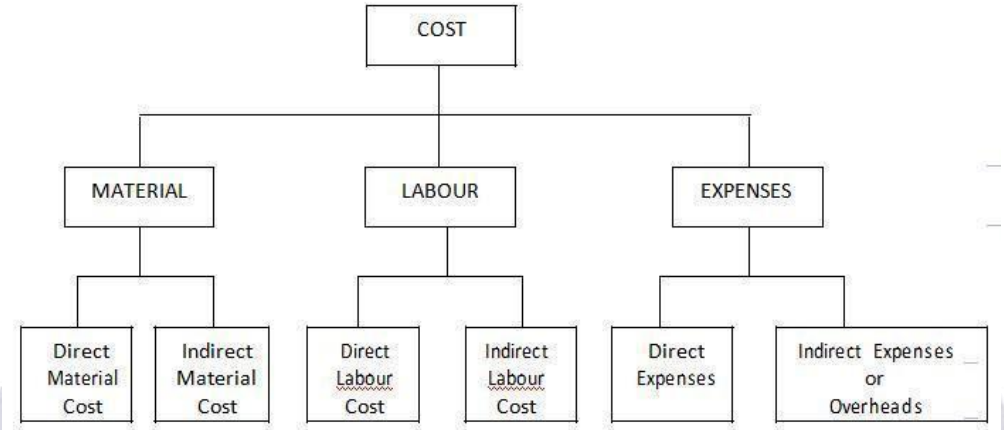


Figure 1: Elements of Product cost

Calculation of material cost:

The method is as follows:

- Calculate the volume of each component by applying mensuration. Volume of the material is calculated after adding due allowance for machining purpose on those sides which need machining.
- Calculate the total volume of the product by adding all the volumes of components.
- Determine the weight of the material by multiplying total volume and density of the material.
- Determine the cost of the material by multiplying cost per unit weight with the total volume of the material required.

Direct labour cost:

Direct or productive labours are the workers who actually involve either manually or with the aid of machines in manufacturing components using different materials. The nature of their duties is such that their wages may be directly related to the job they are manufacturing. Direct labour include the workers operating various production machines in machine shop, welding shop, fitting shop, assembly shop, etc.

Direct labour cost consists of wages paid to the workers directly engaged in the manufacturing of a product. It also includes the wages paid to the workers engaged in handling the product within the department. Example: wages paid to the machinist, turner, fitter, welder, moulder, etc.

Indirect labour cost:

It consists of wages paid to the workers who are indirectly helpful for the production. In other words, it is the wages paid to the labourwho help the direct labour in performing their duties. Indirect labour cost cannot be associated directly to a particular job, but are charged on the whole log of products produced in the plant during a particular period. Example: wages paid to supervisor, inspector, sweeper, helper, loader, watchman, store keeper, crane driver, etc.

Calculation of Direct labour cost:

For calculating the labour cost, the estimator should know about the types of tools and machines required operations to be carried out to bring the raw material into final product. He should consult the production department to get the details on the estimated time for each operation. Some of the time estimates are given below:

Set up time: It is the time required to set and fix the tools and jobs on the machine. It includes time to study drawings, blue prints, to set machines, to study job, etc. It is independent of the number of jobs produced.

Operation time or cutting time or floor to floor time: It is the time required to carry out specific operations on machines. It includes both work handling and machining times.

Tear-down time: It is the time considered from the moment, the last operation has been completed.

Miscellaneous allowances:

Personal allowances: It is the time allowance given to a worker to attend his personal needs. It is about 5% of the total working time.

Fatigue allowances: Excessive and continuous work, improper illumination, excessive machine noise, etc. lead to fatigue. To maintain the efficiency of the worker, about 5% of the total working time is allotted as fatigue allowance.

Tool changing and grinding allowances: It is the time allowance given to remove the tool from holder, to fix another tool, etc. It is nearly 5-10% of the total working time.

Measurement and checking allowances: It includes time taken for measuring and checking different dimensions of the product. It is generally taken as 2-3% of the total working time.

Other allowances: They include time taken for periodic cleaning, oiling and lubrication, procuring inventory, disposing scraps and surplus stocks, etc. This allowance may sometimes as high as 15-20% of the operation time.

Expenses:

Apart from direct material cost and direct labour cost, there are several other expenditures involved in the manufacture of a product. They are known as expenses. They include building rent, depreciation charges of plant and factory building, administrative, selling and distribution expenses, etc.

Direct expenses:

These are the expenses which are directly charged to a particular job and are incurred for that specific job only. Direct expenses are identified and allocated to persons and materials involved in that job. Example: cost of preparing designs and drawings, cost of manufacturing jigs and fixtures for a particular product, cost of patterns, moulding boxes, dies, cost of consultancy charges for the design and manufacture of a specific product, etc.

Indirect expenses:

They are also called as overheads, on-costs, indirect charges or burden. These expenses cannot be charged directly to a particular product manufactured. All expenses other than the direct material cost, direct labour cost and direct expenses are considered as indirect expenses.

Indirect expenses can be classified as given below:

Production or Factory overheads:

They include all the expenditure made on the actual operation of the product in the plant like indirect material and indirect labour. They are also known as works on cost.

Some of the expenses charged under factory overheads are as follows:

i. Cost of indirect materials or consumables such as grease, coolants, cotton waste, etc.
Indirect labour wages paid to foreman, inspectors, sweepers, helpers, watchman, etc.
Factory rent and lighting, water, fuel, power, internal transport, maintenance charges.
Insurance of plant and factory.
Depreciation on machinery, factory, plant.
Stationery consumed in the factory.
Works canteen and labour welfare activities expenses.

Administrative expenses:

These expenses include the following:

i. Salaries to MD, GM, personal manager, medical officer, finance manager, secretary and staff.
Expenses incurred on legal, banking and audit charges.
Telephone, telegraph, postal charges.
Printing and stationary for office.
Office rent, repair and depreciation charges.
Office lighting and power charges.
Insurance of office building and equipment.

Salaries of sales manager, sales representatives, agents
Cost of advertisement and publicity.
Travelling expenses, commission and other facilities to salesman.
Showroom expenses.
Packing, loading and unloading expenses and carriage charges.
Printing of pricelist and catalogue.
Expenses for the preparation of quotations and tenders.
Insurance for finished goods, showrooms, goods in transit and in godowns.
Delivery van maintenance, repair, depreciation and running expenses.
Entertainment expenses, telephone and postal expenditure of sales department.
Rebate to customers, legal charges incurred for debt recovery.
Salaries to store keepers, stores officers and their assistants.

R & D overheads:

These expenses include the following:

i. Salaries to R & D staff.
ii. Costs of R & D equipments and activities, etc.

SELLING PRICE OF THE PRODUCT:

The selling price of the product is derived as shown below:

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rime cost or Direct cost: It is the sum of all direct costs.

Prime cost or Direct cost = Direct material cost + Direct labour cost + Direct Expenses

b).**Factory cost or Works cost:** It consists of prime cost and factory expenses.

Factory cost or Works cost = Prime cost + factory expenses (production overheads) c).

Office cost or Manufacturing cost or Production cost or Grosscost:

It consists of factory and administrative overheads.

Office cost or Gross cost = Factory cost + Office and Administrative overheads d).

Total cost or Selling cost:

It consists of office cost and selling and distribution expenses.

Total cost or selling cost = Office cost or Gross cost + selling and distribution overheads e). **Selling Price:**

The customers buy the product by paying the price which is known as selling price. It consists of total cost and profit.

Selling price = Total cost + Profit

Figure 2 shows the various elements of cost and determination of selling price of a product.

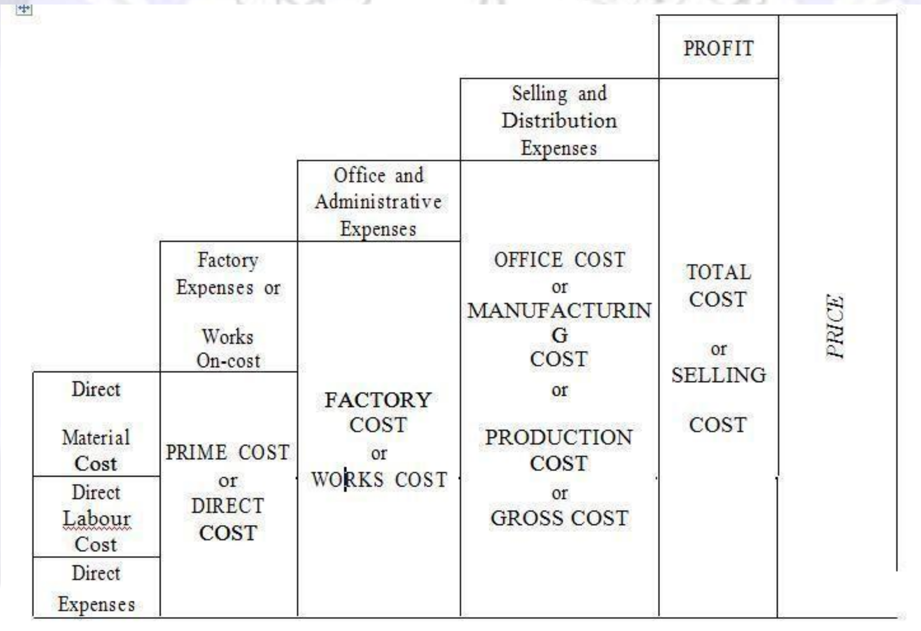

Figure 2: Determination of selling price of the product

FIXED and VARIABLE COSTS:

Fixed costs remain constant irrespective of the volume of production. They remain the same whether the production is smaller, larger or nil. Examples for fixed costs are: costs on land, building, salaries to top management, rent of building and insurance, depreciation, taxes on property, interest on the invested capital, etc.

Variable costs vary with the volume of production. Variable costs are the function of the output. Higher the production, higher will be the production costs. Variable costs become zero when the production is stopped. Prime costs are generally variable costs. Examples for variable costs are: power or fuel consumed costs of raw materials, labour, packing costs, transportation of finished goods, etc.

ALLOCATION OF OVERHEADS:

Once the total overheads are determined, the next step is to allocate this cost over the production. The variation of overheads with production volume should be essentially known from economical aspect of running the firm. Different methods of allocating overheads are as follows:

Percentage on Prime cost:

The total overhead or on-cost is expressed as a percentage of prime cost. This percentage is charged on each job being manufactured.

This method is more suitable when both direct material and direct labour costs are almost same and where only one type of product is being manufactured.

Percentage on-cost = [Total overheads/Prime cost] x 100

This method does not consider the fact that the material cost has nothing to do with the overheads and the products which require more manufacturing time should have more overhead expenses.

Percentage on direct material cost:

The allocation of overhead is based on the total direct material cost. This method is suitable when the material cost has the major share as in foundries or mines.

Percentage on-cost = [Total overheads/Total direct material cost] x 100

Percentage on direct labour cost:

The allocation of overhead is based on the total direct labour cost. This method is suitable where production is mainly carried out manually (by hand).

Percentage on-cost = [Total overheads/Total direct labour cost] x 100

Man hour or Labour hour rate:

On-cost is expressed in terms of total direct man hour or labour hour spent to finish a job.

Man hour rate = [Total overheads/Total direct man hours or labour hours spent]

Machine hour rate:

On-cost is expressed based on the total productive machine hours. The total overheads are distributed over a group of similar machines as explained below:

Building rents, taxes, insurance, lighting charges, indirect material and labour costs aredistributed based on the floor area occupied by the machines. Power consumed and depreciation charges are measured separately.

The expenses of wages paid for the machine idle periods is separately charged from the profit and loss account and not considered in the overheads.

Machine hour rate = [Total overheads/Total productive machine hours]

Combination of man hour and machine hour rate:

It is the combination of man hour and machine hour rate methods. In industries both man and machine should coordinate to finish a job. Whenever a machine is used, machine hour rate is applied and whenever work is done by hand, man hour rate is used.

Unit rate method or production unit basis method:

Cost allocation is done based on number of units produced. This method is applied where only one type of production is carried out.

Overheads per unit = [Total overheads/Quantity of production]

METHOD OF COSTING:

The methods of costing that are commonly used to assist the determination of selling price of a product are listed below. The method differs according to the nature of business and types of products manufactured.

i. Job costing and Order costing iv. Departmental costing

Operating cost method

Job costing or Order costing:

It is concerned with finding the cost of each individual job and then fixing the selling price based on it. Each job has to be planned and its cost is determined separately. The method is adopted in job order industries, special purpose machine units, ship building, fabrication and structural construction, etc.

Process costing:

This method is employed when a standard product is made which involves a sequence of processes. It indicates the cost of a product at different stages as it passes through various processes or departments. It is used in industries like chemical, paper mills, oil refineries, paint and cement manufacturing, etc. By-products and their cost of disposal should also be taken into account while calculating the cost of each manufacturing process and the subsequent selling price.

Operating cost:

This method is used in firms providing utility services like transport, water and electricity boards, railways and airways, etc. The cost is determined on the basis of operating expenses and charges are made in terms of per km, per litre, per kWh, etc.

Departmental costing:

This method is used in industries like steel and automobile, where each department produces independently one or more components. The actual expenditures of each department on various products is entered on a separate cost sheet and the costing of each department is separately undertaken.

Unit cost:

This method is adopted by single product manufacturers who make products such as bricks, cement, milk, etc, than a variety of products. Costing is done on per unit basis.

MARGINAL COST:

Marginal cost of a product is the cost of producing an additional unit of that product. It is an extra cost incurred for every unit increase in production. It is assumed that fixed costs remain unchanged by increasing output by one more unit; marginal cost of a product will consists of the variable costs only. Let the cost of producing 20 units of a product be Rs. 10000 and the cost of producing 21 units of the same product be Rs. 10045, then the marginal cost of producing the 21^{st} unit is Rs. 45.

MARGINAL REVENUE:

Marginal revenue of a product is the incremental revenue of selling an additional unit of that product. Let the revenue of selling 20 units of a product be Rs. 15000 and the revenue of selling 21 units of the same product be Rs. 15085, then the marginal revenue of selling the 21^{st} unit is Rs. 85.

SUNK COST:

This is known as the past cost of an equipment or asset. Assume that an equipment has been purchased for Rs. 100000 about three years back. If it is considered for replacement, then its present value will not be equal to Rs. 100000. Instead, its present market value should be taken as the present value of the equipment for further analysis. So, the purchase value of the equipment in the past is known as its sunk cost.

OPPORTUNITY COST or ALTERNATIVE COST:

In practice, if an alternative X is selected from a set of competing alternatives (X,Y), then the Corresponding investment in the selected alternative is not available for any other purpose. If the same money is invested in some other alternative Y, it may fetch some return. Since the money invested in the selected alternative X, one has to forego the return from the other alternative Y. the amount that is foregone by not investing in the other alternative Y is known as opportunity cost of the selected alternative X. So the opportunity cost of an alternative is the return that will be foregone by not investing the same money in other alternative.

OPERATING and MAINTENANCE & ALTERATION COSTS:

Operating costs are incurred in operating the facility throughout its operational life and involve such commitments such as facility supervision, labour for common services, indirect materials, tools and fixture, management overhead, associated space provision costs and support services, facility cleaning and functional use cost, etc. facility operating expenditures can be treated as a direct or indirect variable cost.

Maintenance and alteration costs are incurred to maintain facility at its designed (or updated) utilization and performance level with an acceptable degree of reliability. It include costs related to scheduled and unscheduled repairs and replacements, downtime costs of lost production during preventive maintenance, cost of drop in performance levels of aging components, spares inventory, depreciation, taxes, etc. Maintenance and alterations costs can be treated as either fixed or variable costs.

STANDARD COSTING:

It is a predetermined or budgeted cost which is calculated from management standards of efficient operation and economical expenditures. Standard costs are built upon theoretical desired standards that an industry is capable of attaining under practical and professional operating conditions. The standards are decided by using past experiences and with the help of time and motion study, process charts, therbligs, etc.

Standard cost represents the best estimate that can be made of; what cost should be for material, labour and overheads after eliminating inefficiencies and waste. Standard costing is an important activity to determine the efficiency of cost controlling in an industry. The actual cost is compared with the standard cost to find the differences which is commonly known as variance. If the actual cost is more than the standard cost, corrective measures are taken to reduce the cost of production.

Standard costs are calculated separately for each cost element like material, labour, overheads, etc. The actual costs incurred are then calculated. Standard costs are compared with the actual costs to find out the difference called variance. The variances are analyzed to find out the reasons. The analysis results are then conveyed to the management for further actions.

Standard cost detects wastage of time, material and labour, helps in formulating policies, fixing selling price, controlling costs and budgeting. It also helps in establishing efficiency of each department as well as that of entire organization.

Standard costing depends more on theory than on practicalities. It cannot accurately take into account the miscellaneous expenditure. It is not suited to industries that produce non-standardized products. Moreover, it is difficult to choose appropriate standards for each cost centre.

FIRST COST: It is same as Prime cost.

BREAK EVEN ANALYSIS:

It is an algebraic or graphical model which relates costs and revenues for different volumes of production. The main aim of break even analysis is to find the cut-off production volume from where a firm will make profit. It clearly demarcates the line between profit and loss. Some of the important assumptions to be made in the break even analysis are as follows:

(i). All costs (fixed or variable) and volumes are known.
(ii). There exists a linear relationship between cost and volume.
(iii). Production matches sales quantity i.e. all output can be sold.

TERMINOLOGY IN BREAK-EVEN ANALYSIS:

Fixed cost (FC):

It doesn't change with production volume or output. For example: cost of land and buildings, salaries of top management, insurance, depreciation, taxes on property, equipment, etc.

Variable cost (VC):

It changes depending on the output volume. For example: cost of raw materials, labour, transportation charges, packaging cost, etc.

If s is the selling price per unit, v is the variable cost per unit, FC is the fixed cost per period, Q is the volume of production, then,

Total Sales Revenue (sales) of the firm, S = s.Q in Rupees.

Total cost (TC):

It is the sum of Fixed cost (FC) and variable cost (VC).

TC = Total variable cost + Fixed cost = v.Q + FC

Profit = Total Sales Revenue–Total Cost = Total Sales Revenue–(Fixed cost +Variable cost)
i.e. Profit = s.Q – (FC + v.Q)

Break-even Quantity, QB.E.P= Fixed cost/ (selling price per unit–Variable costper unit)

QB.E.P (in units) = FC/s-v

Break-even sales revenue =[Fixed cost/(selling price/unit–Variable cost/unit)].

(Sellingprice/unit) S B.E.P (in Rs) = [FC/s-v].s

Contribution:

It is the difference between total sales revenue and the total variable costs. For maximum profit, contribution should be always higher than fixed cost.

Contribution = total sales revenue – total variable cost = S – v. Q Contribution/unit = selling price/unit – variable cost/unit = s – v

Margin of safety:

It is the sales revenue over and above break-even sales revenue. It can also be defined as the difference between actual output of a plant to the break-even output. Higher margin of safety means more profit and lower margin of safety means less profit.
Margin of safety (in Rs) = actual sales revenue – break-even sales revenue

[Profit/contribution]. Sales revenue

Margin of safety = [(actual output – break even output)/actual output].100 Margin of safety as a percent of sales revenue = (Margin of safety/sales revenue).100

Angle of incidence, θ:

It is the angle between the sales revenue line and the total cost line. It is represented by θ. Higher the angle of incidence, higher profit to the company. This usually happens when the Break-even point is at a lower level.

Profit/Volume ratio (P/V Ratio):

It is the ratio of contribution to the total sales revenue or turnover of the company. It is used tomeasure profitability of different products. Naturally, higher the P/V ratio, higher is the profit.
P/V ratio = [Contribution/ total sales revenue] .100

[(total sales revenue – total variable costs)/total sales revenue].100 Also, Break-even point (BEP) = Fixed cost/(P/V ratio)

Margin of safety = Profit/(P/V ratio)

LIFE CYCLE COSTING:

A study that gives special attention to both direct and indirect cash flows over the complete life of a project or product is called life cycle costing (LCC). It mean entire period from specifications to final disposal of the product. The intent of LCC is to direct attention to factors that might be overlooked – especially inputs that occur during the inception stage, to get a project underway, and activities associated with the termination phase.

LCC is expected to reduce the total cost by selecting the correct designs and components to minimize the total cost of service, not only the first cost. For instance, additional expenditures for the preliminary design might lower operating costs and thereby reduce total costs.

Expenditures during the life of most projects roughly follow the pattern shown in figure 4. The first stage –design- accounts for research, engineering design, administration and financing costs. The development stage takes the basic plan and converts it to hardware or services through charges for fabrication, installation, delivery, training, trial runs and material purchases. After the process is established, operating costs required to keep it going include personnel, consumable supplies, overhead, maintenance and services.

Design to cost is a variation of LCC that sets a limit on the total life time cost and forces designers to work backward from the disposal phase to the operating expenses through production costs and finally to initial design charges.

Projects, products and systems of a similar nature tend to share common life cycle patterns. Studies of military hardware systems show that approximately two-thirds of life cycle costs are firmly established during the design stage.

DEPRECIATION

The word “depreciation” means *decrease* in value of any physical asset with the passage of time.

(or)

Depreciation is the process of allocating the acquisition cost of the tangible assets less salvage value, if any, in a systematic and a rational manner over the estimated life of the asset.

Inflation is the rate of increase in the prices of goods per period. In other words, Inflation may be defined as a sustained rise in the general price level, it is an economic condition where there is a rise in prices resulting in the fall in the purchasing power of money.

A budget is a financial plan for a defined period of time, usually a year. This plan includes approximate costs, revenues during a specific period and reflects future financial conditions

causes of depreciation

- Wear and tear
- Obsolescence
- Depletion
- Lapse of time

Annuity method is particularly applicable to those assets whose cost is heavy and life is long and fixed, e.g. leasehold property, land and building etc.

depreciation on fixed assets

- To show the correct financial position
- To show the assets in the balance sheet at their true value
- Important to work for the replacement and renewal of assets
- It act as a source of internally generated finance
- To calculate the profits for tax purposes
- To decide the buy or sell the assets

declining balance method of depreciation

In this method of depreciation, a constant percentage of the book value of the previous period of the asset will be charged as the depreciation amount for the current period. This approach is a more realistic approach, since the depreciation charge decreases with the life of the asset which matches with the earning potential of the asset. The book value at the end of the life of the asset may not be exactly equal to the salvage value of the asset. This is a major limitation of this approach

reasons for inflation

- Unmanageable demand in economy for goods and service

- Increase in input costs
- Deficit induced inflation
- Rachet inflation

Straight Line Method of Depreciation

In this method of depreciation, a fixed sum is charged as the depreciation amount throughout the lifetime of an asset such that the accumulated sum at the end of the life of the asset is exactly equal to the purchase value of the asset. Here, we make an important assumption that inflation is absent.

Declining balance method of depreciation

In this method of depreciation, a constant percentage of the book value of the previous period of the asset will be charged as the depreciation amount for the current period. This approach is a more realistic approach, since the depreciation charge decreases with the life of the asset which matches with the earning potential of the asset.

various types of depreciation

- Straight line method of depreciation
- Declining balance method of depreciation
- Sum of the years-digits method of depreciation
- Sinking-fund method of depreciation
- Service output method of depreciation

sinking fund

Sinking fund is the amount, in which amount is invested elsewhere other than in the business itself, and the interest will be earned on the fund.

1. **A machine costs Rs. 5,00,000. Its annual operation cost during the first year is Rs. 40,000 and it increases by Rs. 5,000 every year thereafter. The maintenance cost during the first year is Rs. 60,000 and it increases by Rs. 6,000 every year thereafter. The resale value of the machine is Rs. 4,00,000 at the end of the first year and it decreases by Rs. 50,000 every year thereafter. Assume an interest rate (discounting factor) of 20%.**

Solution

The method of finding the economic life of the machine with a discounting factor of 20% at zero inflation rate is summarized in Table. From the table it is clear that the total annual equivalent cost is minimum if the machine is used for 14 years. Hence, the economic life of the machine is 14 years.

Table 11.2 Determination of Economic Life of the Machine without Inflation

End of year (*n*) (1)	*Operation cost* (2) (Rs.)	*Maintenance cost* (3) (Rs.)	*Operation & maint. cost* (2) + (3) (4) (Rs.)	*P/F, i, n* (i = 20%) (5)	*Present worth of column 4* (4) × (5) (6) (Rs.)	*Cumulative of column* (6) (7) (Rs.)	*Salvage value* (*S*) (8) (Rs.)	*Present worth of salvage value* (8) × (5) (9) (Rs.)	*Total present worth* 5,00,000 + *Column* 7 – 9 (10) (Rs.)	*A/P, i, n* (i = 20%) (11)	*Annual equivalent amount* (10) × (11) (12) (Rs.)
1	40,000	60,000	1,00,000	0.8333	83,330.00	83,330.00	4,00,000	3,33,320.00	2,50,010.00	1.2000	3,00,012.00
2	45,000	66,000	1,11,000	0.6945	77,089.50	1,60,419.50	3,50,000	2,43,075.00	4,17,344.50	0.6546	2,73,193.70
3	50,000	72,000	1,22,000	0.5787	70,601.40	2,31,020.90	3,00,000	1,73,610.00	5,57,410.90	0.4747	2,64,602.90
4	55,000	78,000	1,33,000	0.4823	64,145.90	2,95,166.80	2,50,000	1,20,575.00	6,74,591.80	0.3863	2,60,594.80
5	60,000	84,000	1,44,000	0.4019	57,873.60	3,53,040.40	2,00,000	80,380.00	7,72,660.40	0.3344	2,58,377.60
6	65,000	90,000	1,55,000	0.3349	51,909.50	4,04,949.90	1,50,000	50,235.00	8,54,714.90	0.3007	2,57,012.70
7	70,000	96,000	1,66,000	0.2791	46,330.60	4,51,280.50	1,00,000	27,910.00	9,23,370.50	0.2774	2,56,142.90
8	75,000	1,02,000	1,77,000	0.2326	41,170.20	4,92,450.70	50,000	11,630.00	9,80,820.70	0.2606	2,55,601.80
9	80,000	1,08,000	1,88,000	0.1938	36,434.40	5,28,885.10	0	0.00	10,28,885.00	0.2481	2,55,266.30
10	85,000	1,14,000	1,99,000	0.1615	32,138.50	5,61,023.60	0	0.00	10,61,023.00	0.2385	2,53,054.10
11	90,000	1,20,000	2,10,000	0.1346	28,266.00	5,89,289.60	0	0.00	10,89,289.00	0.2311	2,51,734.80
12	95,000	1,26,000	2,21,000	0.1122	24,796.20	6,14,085.80	0	0.00	11,14,085.00	0.2253	2,51,003.50
13	1,00,000	1,32,000	2,32,000	0.0935	21,692.00	6,35,777.80	0	0.00	11,35,777.00	0.2206	2,50,552.50
14	1,05,000	1,38,000	2,43,000	0.0779	18,929.70	6,54,707.50	0	0.00	11,54,707.00	0.2169	2,50,456.00***
15	1,10,000	1,44,000	2,54,000	0.0649	16,484.60	6,71,192.10	0	0.00	11,71,192.00	0.2139	2,50,517.90

***Total annual equivalent cost is minimum if the machine is used for 14 years.

2. **A company has purchased an equipment whose first cost is Rs. 1,00,000 with an estimated life of eight years. The estimated salvage value of the equipment at the end of its lifetime is Rs. 20,000. Determine the depreciation charge and book value at the end of various years using the straight line method of depreciation and demonstrate the calculations of the declining balance method of depreciation by assuming 0.2 for *K*.(16 marks) (A/M '17)**

Solution

Straight line method of depreciation

P = Rs. 1,00,000

F = Rs. 20,000

n = 8 years

Dt = (*P* – *F*)/*n*

= (1,00,000 – 20,000)/8

= Rs. 10,000

Bt = *P* – *t* x (*P* – *F*)/*n*

*B*5 = 1,00,000 – 5 x (1,00,000 – 20,000)/8

= Rs. 50,000

In this method of depreciation, the value of *Dt* is the same for all the years. The calculations pertaining to *Bt* for different values of *t* are summarized in Table

Table 9.1 D_t and B_t Values under Straight line Method of Depreciation

End of year (t)	*Depreciation* (D_t)	*Book value* ($B_t = B_{t-1} - D_t$)
0		1,00,000
1	10,000	90,000
2	10,000	80,000
3	10,000	70,000
4	10,000	60,000
5	10,000	50,000
6	10,000	40,000
7	10,000	30,000
8	10,000	20,000

If we are interested in computing *Dt* and *Bt* for a specific period (*t*), the formulae can be used. In this approach, it should be noted that the depreciation is the same for all the periods.

Declining balance method of depreciation

P = Rs. 1,00,000

F = Rs. 20,000

n = 8 years

K = 0.2

The calculations pertaining to *Dt* and *Bt* for different values of *t* are summarized in Table using the following formulae:

Dt = *K* x

Bt–1 *Bt* =

Bt–1 –

Dt

Dt = *K*(1 – *K*)*t* –1 x *P*

*D*5 = 0.2(1 – 0.2)4 x 1,00,000

= Rs. 8,192

$Bt = (1 – K)t \times P$

$B5 = (1 – 0.2)5 \times 1,00,000$

= Rs. 32,768

End of year (n)	Depreciation (D_t)	Book value (B_t)
0		1,00,000.00
1	20,000.00	80,000.00
2	16,000.00	64,000.00
3	12,800.00	51,200.00
4	10,240.00	40,960.00
5	8,192.00	32,768.00
6	6,553.60	26,214.40
7	5,242.88	20,971.52
8	4,194.30	16,777.22

If we are interested in computing *Dt* and *Bt* for a specific period *t*, the respective formulae can be used.

3. **Discuss the different methods of calculation of depreciation (16 marks) (N/D '17) Methods of depreciation**

There are several methods of accounting depreciation fund. These are as follows:

1. Straight line method of depreciation
2. Declining balance method of depreciation
3. Sum of the years-digits method of depreciation
4. Sinking-fund method of depreciation
5. Service output method of depreciation These are now discussed in detail.

Straight Line Method of Depreciation

In this method of depreciation, a fixed sum is charged as the depreciation amount throughout the lifetime of an asset such that the accumulated sum at the end of the life of the asset is exactly equal to the purchase value of the asset. Here, we make an important assumption that inflation is absent.

Let P = first cost of the asset,

F = salvage value of the asset,

n = life of the asset,

Bt = book value of the asset at the end of the period t, Dt = depreciation amount for the period t.

The formulae for depreciation and book value are as follows:

$Dt = (P – F)/n$

$Bt = Bt–1 – Dt = P – t \times [(P – F)/n]$

Declining Balance Method of Depreciation

In this method of depreciation, a constant percentage of the book value of the previous period of the asset will be charged as the depreciation amount for the current period. This approach is a more realistic approach, since the depreciation charge decreases with the life of the asset which matches with the earning potential of the asset. The book value at the end of the life of the asset may not be exactly equal to the salvage value of the asset. This is a major limitation of this approach.

Let

P = first cost of the asset,

F = salvage value of the asset,

n = life of the asset,

Bt = book value of the asset at the end of the

period t, K = a fixed percentage, and

Dt = depreciation amount at the end of the period t.

The formulae for depreciation and book value are as follows:

$Dt = K \times Bt\text{-}1$

$Bt = Bt–1 – Dt = Bt–1 – K \times Bt–1$

$= (1 – K) \times Bt–1$

The formulae for depreciation and book value in terms of P are as follows:

$Dt = K(1 – K)t–$

$1 \times P$ $Bt = (1 –$

$K)t \times P$

While availing income-tax exception for the depreciation amount paid in each year, the rate K is limited to at the most $2/n$. If this rate is used, then the corresponding approach is called the *double declining balance method of depreciation.*

Sum-of-the-Years-Digits Method of Depreciation

In this method of depreciation also, it is assumed that the book value of the asset decreases at a decreasing rate. If the asset has a life of eight years, first the sum of the years is computed as

Sum of the years = 1 + 2 + 3 + 4 + 5 + 6 + 7 + 8 = 36 = $n(n + 1)/2$

The rate of depreciation charge for the first year is assumed as the highest and then it decreases. The rates of depreciation for the years 1–8, respectively are as follows: 8/36, 7/36, 6/36, 5/36, 4/36, 3/36, 2/36, and 1/36.

For any year, the depreciation is calculated by multiplying the corresponding rate of depreciation with $(P – F)$.

Dt = Rate x

$(P – F)$ Bt=

$Bt–1 – Dt$

The formulae for Dt and Bt for a specific year t are as follows:

$$D_t = \frac{n - t + 1}{n(n + 1)/2}\,(P - F)$$

$$B_t = (P - F)\,\frac{(n - t)}{n}\,\frac{(n - t + 1)}{(n + 1)} + F$$

Sinking Fund Method of Depreciation

In this method of depreciation, the book value decreases at increasing rates with respect to the life of the asset.

Let P = first cost of the asset,

F = salvage value of the asset,

n = life of the asset,

i = rate of return compounded annually,

A = the annual equivalent amount,

Bt = the book value of the asset at the end of the period t, and

Dt = the depreciation amount at the end of the period t.

The loss in value of the asset ($P - F$) is made available an the form of cumulative depreciation amount at the end of the life of the asset by setting up an equal depreciation amount (A) at the end of each period during the lifetime of the asset.

$A = (P - F)$ x $[A/F, i, n]$

The fixed sum depreciated at the end of every time period earns an interest at the rate of i% compounded annually, and hence the actual depreciation amount will be in the increasing manner with respect to the time period.

A generalized formula for Dt is

$Dt = (P - F)$ x $(A/F, i, n)$ x $(F/P, i, t - 1)$

The formula to calculate the book value at the end of period t is

$Bt = P - (P - F) (A/F, i, n) (F/A, i, t)$

The above two formulae are very useful if we have to calculate Dt and Bt for any specific period. If we calculate Dt and Bt for all the periods, then the tabular approach would be better.

Service Output Method of Depreciation

In some situations, it may not be realistic to compute depreciation based on time period. In such cases, the depreciation is computed based on service rendered by an asset.

Let P = first cost of the asset

F = salvage value of the asset

X = maximum capacity of service of the asset during its lifetime

x = quantity of service rendered in a period.

Then, the depreciation is defined per unit of service

rendered: Depreciation/unit of service = $(P - F)/X$

Depreciation for x units of service in a period = $[(P - F)/X]$