

Evolution of Management

WORK OF LEADING MANAGEMENT SCIENTISTS

The principles of management can be traced back many centuries but there had been no continuous historical development of management theories over all these years. An attempt to study some of the contributions made in management thoughts has been discussed in this chapter.

Henry L. Gantt (1866 - 1919)

Taylor ideas were further strengthened and developed by Gantt and Gilbreth. Among the chief contributors of Gantt are :

(i) **Graphic Chart.** It helps in showing daily progress of production and thus facilitating production planning and control.

(ii) **Emphasis on the human element.** It emphasises the respect for human nature and the development of latent potential of workers. Its amounts to directing their development instead of driving them.

(iii) **Industrial democracy.** It amounts the organisation of industry in such a way that each individual has an equal opportunity to function at his highest capacity.

(iv) **Social responsibilities.** It emphasises that the business system must accept its social responsibility and devote itself primarily to service. Gantt also brought out that the resultant responsibility of management is to teach and train workers to become more skilled, for better work habits and more dependability.

The Neo-classical theory. The theory emphasis human relations movement. Mary Parker deals with the human factor. Elton Mayo and Roeth's Berges pioneered the human relations movement. In this new ear they proceeded on the frame work of the classical thinkers but introduced many new elements, specially in the area of leadership, group psychology, human relations and organisational integration. The Neo-classical theory anticipated some of the recent trends as evident in the behavioural approaches.

Mary Parker Follett (1808 - 1933)

Marry area of contribution has been the psychological foundations of all human activity and the emotional reactions in the working of human groups. She contended that none can become a ful person unless he cecomies a member of a group. Follett major areas of contribution are :

- (i) **Removal of conflicts.** There are areas of removing conflicts are *viz.* Domination ; Compromise and Integration. It has been observed that integration as the best alternative of meeting the real needs of both the parties.
- (ii) Participation of workers
- (iii) Group--They regarded group more than a mere collection of individuals.
- (iv) Leadership
- (v) The law of situation
- (vi) Management as a profession
- (vii) Co-ordination
- (viii) Authority.

Follett evolved ideas and theories which have stood the test of time and change which are stimulating the thinking of managers. According to Follett "Men can discover his true nature can reach greater heights, can release his own creative powers, gains his true freedom only through powers of the group.

F.W. Taylor's Principles of Scientific Management (1880--1930)

Management has always faced with the problem of selecting various concepts from all these areas and integrating them in the process of decisions making regarding the major policies and day to day operations. During the 19th century, the efforts of managers had been to cope up with their environments and to organise and operate in those environments. During the first one third of the century the attempt was to rationalise the way work was done. The emphasis was to increase the productivity of the goods and services produced. After the World War II there was a considerable change in the working conditions of the working men. The working men began to demand that work environment should meet part of their social needs in addition to the basic needs. Then emerged the phase of human relations and the focus was on man's social needs the way of meeting them to increase productivity. But in late 1960's it became clear that knowledge on which the management is based is no longer adequate even for the basic areas there emerged needs for new knowledge particularly referred to productivity organisation structure, job design and management of people

Concepts of Management

Following are the nine important concepts highlighting the present concepts of management :

- (i) Scientific management a key to productivity.
- (ii) Decentralisation for quicker decisions and better control.
- (iii) Personnel Management as a means of selecting people into organisation.
- (iv) Manager's development programmes to train managers how to meet the needs of tomorrow.
- (v) Management accounting--a foundation for managerial decision.
- (vi) Marketing.
- (vii) Long range planning.
- (viii) Role of operational research in management decision making.
- (ix) Financial Management for effective utilisation of money resources in the organisation.

Development of Management Science

Thus the process of development of management science can be studied under four heads.

- (a) Taylor Scientific approach to management.
- (b) Henry Fayol's human relations approach.
- (c) Modern human relations approach.
- (d) Behavioural science approach.

Fredric Taylor was a pioneer who propounded scientific principles of management as the result of his keen research in different areas of industrial activity. Before scientific management workers were completely dominated by their superiors and the relationship was based on social caste and autocracy. This was a stage when everything was determined on the basis of authority. This period came to an end when French Revolution gave the cry for fraternity, liberty and equality. In scientific management we take into account as many variables as possible and try to co-relate in rational manner.

Fredric Taylor was born in 1856 in a well to do family of Philadelphia although not a brilliant student, but had the quality of seriousness of purpose and hard work. At the Phillips Academy, he paid the price of serious impairment of vision because of too much study in kerosene light and was advised by doctors not to do anything involving close study. In 1874 he began as apprentice pattern making in a small workshop in Philadelphia. Attracted by the reputation of Midvale Steel he applied for a job in Midvale Steel Company. This job was for an ordinary labourer. Within a period of eight years he progressed through the stages of ordinary labourer to time keeper, machinist, gang boss, foreman, assistant engineer to chief engineer of the works. He completed his technical qualifications by taking a Master's degree in engineering at the Stevens Institute through evening study. Taylor not only had original ideas in the field of management but he had acquired a technical excellence in the field of engineering which itself would have brought him an enduring place in the history of engineering. Taylor left the Bethlehem Steel Company in 1901 and devoted the rest of his life to spread an understanding of his fundamental ideas.

Scientific Management is not any efficiency device, not a new scheme of paying men. It is not holding a stop watch on a man and writing things down about him, it is not time and motion study nor an analysis of the movements of men. In its essence, scientific management involves a complete mental revolution on the part of the work man engaged in any particular setablishment. It involves an equally complete mental revolution on the part of those on the management's side. This new technique of managing involved following two major elements *viz*: 1. Discovery by experiment the best way of performing and the proper time for every operation and every component unit of an operation in the light of the best material, tool, machine manipulation of tool or machine. 2. The division of labour as between management and workers. The great gains in productivity occurring from this technique of management came not from greater exertion on the part of workers but from elimination of wastages of worker's time, machine time through delays of misapplied efforts, failure in coordination of quantities and so forth etc.

Taylor was thoughtful and systematic in his approach and he advocated the replacement of rules of thumb with more carefully thoughtful guide-lines to action. The collection of data

to-support decisions rather than reliance on casual judgements. Taylor had the following specific principles :

- (a) The elimination of waste effort.
- (b) Emphasis on fitting workers to particular tasks.
- (c) Greater care in training workers to the specific requirements of their jobs.
- (d) Greater specialization of work activities.
- (e) The establishment of standards for performance.

Improvement of Various Operations

Managers can always improve various operations by a simple reflection in the way in which the work is being done and there is always a room for improvement. In association with Carl Barth, who was a better mathematician, Taylor developed a slide rule on which any foreman could calculate various variables for any job. It was apparent that many of the delays and interruptions in work were the consequences of faulty planning. *The main aim of scientific management was to maximise the production and efficiency of each worker and to design a system which would maximise the carrying of workers and employers.* The scientific management do not take into account the informal relationship existing in the organisation which have its own structure. This concept gave birth to **Human Relation Approach (1930--1950)**

Taylor advocated a philosophy of management under which management would undertake the basic responsibility of planning and control and prescribe the rules laws and formulas to guide the actual operations by man and machines, so as to help employer to produce at lower costs giving more remuneration to workers. Taylor contended that workers should not be left to choose their own method of producing, and developing their skills on and their own. Management should evolve laws of standard work and rules for work measurement. Standardisation, Simplification, Time and Motion studies, functional Foremanship, Production Planning and Control, piece-Wage System of Payment on differential basis, were the main ideas enunciated by Taylor.

Criticism

Taylor's concept of Management attracted following criticism.

1. Taylor's emphasis on extreme specialisation is considered unrealistic. His advocacy of first class men with developed skills raised an expectation that each worker should be an extraordinarily talented. The standards of efficiency evolved as result of time and motion studies etc. were conceived to too high, beyond the calibre and capacity of an average workers.
2. Taylor ignored human elements. He thought man as a cog in the wheel. His emphasis on efficiency at all costs turned the workers into mere machine.
3. In Taylorism the workers are speeded up without fundamental improvements in factory layout, production methods, tool-design, training etc.
4. Worker's wages would not be increased in direct proportion to the additional productivity exhibited by the workers.

Gilbreths. Frank Gilbreth and his wife Lillian Gilbreth made memorable contribution to improvement of working methods. He contended that it would be essential to find out the best way to perform a particular job with marked efficiency and least exertion. He developed a

unique technique of speed work. Speed-work however, did not refer to hurrying with the work but economising the time-sequence by eliminating unnecessary time-sequence and exhausting motions and methods of doing a work.

Best Method

The best method is that which implies least motions. Worker should not waste his energy and effort in moving his body unnecessarily. He advocated rhythm in work with balanced movement of concerned members of the body while at job. His work analysis indicated 17 basic elements in working on any job. These elements were termed as 'therbligs'. To improve operational efficiency workers should be guided to develop balanced rhythmic motions. Gilbreth also introduced the use of micromotion study. In such studies, the operations were recorded on a film alongwith time values ascertained from a clock set up within the camera's focus. By this method he could analyse minute subdivisions of manufacturing activity. The present concept of scientific management is that the old methods are ineffective in giving proper direction or the utilisation of material and human resources for productive ends. Hence a new set of ideas are needed for orderly organisation of complex industrial activities.

Sequence of Scientific Method

Scientific method is comprised of following sequences :

- (i) Identifying the problem and objectives.
- (ii) Defining the objective and problems.
- (iii) Collection of data on the problem and the objectives.
- (iv) Analysis and interpretation of the data.
- (v) Consideration of alternatives.
- (vi) Formulate tentative conclusions about tackling the problem.
- (vii) Taking up selected action on the basis of conclusion and testing the results.
- (viii) Reviewing and evaluating the results and introducing any corrective action if necessary.
- (ix) Framing 'laws and models' to serve as a guide to planning and execution.

Scientific management has been viewed as a systematic approach to conduct the enterprise on the basis of observation experimentation, rational conclusions or decisions rather than depending on conventional methods based on trial and error.

Henry Fayol. A French industrialist, developed a general theory of management in all aspects of business of an undertaking. Fayol identified the following functions of management:

- (a) Planning policies ; programmes and procedures.
- (b) Organisation based on hierarchy of authority.
- (c) Commanding means directing the business in order to gain optimum return from all workers.
- (d) Co-ordination, signifying harmony in activities of the organization and to facilitate its working.
- (e) Control, meant to rectify the errors of the functionaries of organisation and to ensure that such errors do not reoccur.

Six Categories of Work

Fayol divided all the work carried out in business enterprises into six categories :

1. Technical activities (production, manufactures etc.).
2. Commercial activities (buying, selling, personnel and industrial relation).
3. Financial activities. (To have optimum use of capital).
4. Security Activities (Protection of property and persons).
5. Managerial activities (Planning, organising commanding directing co-ordination control, communication motivation and leadership).

According to Fayal the managerial activities consisted of drawing a plan of action, building up a dual structure-material and human to organise activities, unifying all activities and efforts through co-ordination and ensuring conformity of work to establish rules and express command.

Principles of Management

Fayol also laid down the following principles of general management.

1. Division of labour
2. Authority and responsibility
3. Discipline
4. Unity of command
5. Unity of management
6. Subordination of industrial interest to the common good
7. Remuneration
8. Centralisation
9. Hierarchy
10. Order of team members.
11. Justice
12. Stability of tenure
13. Initiative
14. Sense of union.

1. **Division of Labour.** It is a law of nature. That is each man can develop special skills. The purpose of division of labour is to attain more and better returns from the same amount of effort.

2. **Authority and Responsibility.** Authority is the power to give orders and expect obedience. It is derived from one's personal qualities such as intelligence, knowledge, moral attitudes, skills, and leadership and calls for both statutory and personal authority. Responsibility is inseparable from authority. It follows whenever authority is exercised, the man with authority carries responsibility for his decisions and actions.

3. **Discipline.** The agreement between an enterprise and its employees calls for obedience, diligence, energy, co-operative attitudes.

4. **Unity of Command.** Authority to give instructions to an employee must be limited to one man. If this rule is broken, authority will be weakened. An employee must know whom to give instructions, and he must not be confused by having to follow the instructions of several people who have authority.

5. **Unity of Management.** There should be only one plan and one manager directing all operations.

6. **Subordination to Industrial Interests to the Common Good.** In any undertaking the interests of single member, or of some of the members of the team, must not take precedence over the interests of the enterprise as a whole.

7. **Remuneration of the Team Members.** Fair rewards for work done must be offered to all members of the organisation.

8. **Centralisation.** Like division of labour, centralisation is one of the natural principle of organisation. In all organisations it is present to some degree. The question is : To what extent in a given enterprise will it be most advantageously adopted ?

9. **Hierarchy.** The line of command extends downward in order of rank from the top of the organisation through all levels of authority to the lowest employee. It is the channel through which all official communications travel.

10. **Order.** Order in an organisation calls for "A place for everyone and everyone in his place". When the order of persons is clearly well established the function may be easily identified in relation to the whole.

11. **Justice (Equity).** The employees will put all their devotion and good intentions to work for the common effect if they are treated with friendliness and justice.

12. **Stability of tenure.** An organisation need employees who will stay with it. Such employees help the organisation to achieve stability.

13. **Initiative.** Providing opportunity to subordinates to exercise their initiative which gives them, satisfaction.

14. **Sense of Union (Esprit de corps).** Harmony and unity in the enterprise are source of strength. That is why modern management tries to bring the individual members of an organisation to work themselves as a team.