

### **CLASSICAL THEORY**

Prof. Charles Babbage, James Watt Junior and Mathew Robinson Boulton, Robert Owen, Henry Robinson Towne and Rowntree were, no doubt, pioneers of management thought. But, the impact of their contributions on the industry as a whole was meager. The real beginning of the science of management did not occur until the last decade of the 19th century. During this period, stalwarts like F.W. Taylor, H.L. Gantt, Emerson, Frank and Lillian Gilberth etc., laid the foundation of management, which in due course, came to be known as scientific management. F.W. Taylor and Henry Fayol are generally regarded as the founders of scientific management and administrative management and both provided the bases for science and art of management.

#### **Features of Management in the Classical Period:**

1. It was closely associated with the industrial revolution and the rise of large-scale enterprise.
2. Classical organization and management theory is based on contributions from a number of sources. They are scientific management, Administrative management theory, bureaucratic model, and micro-economics and public administration.
3. Management thought focused on job content division of labour, standardization, simplification and specialization and scientific approach towards organization.

### **TAYLOR'S SCIENTIFIC MANAGEMENT**

Frederick Winslow Taylor is known as the founder of scientific management. He was the first to recognize and emphasize the need for adopting a scientific approach to the task of managing an enterprise. He started his career as an apprentice machinist in Philadelphia, USA and rose to be the chief engineer at the Midvale Engineering Works and later on served with the Bethlehem Works where he experimented with his ideas and made the contribution to the management theory for which he is so well known. He tried to diagnose the causes of low efficiency in industry and came to the conclusion that much of waste and inefficiency is due to the lack of order and system in the methods of management. He found that the management was usually ignorant of the amount of work that could be done by a worker in a day as also the best method of doing the job. As a result, it remained largely at the mercy of the workers who deliberately shirked work.

He therefore, suggested that those responsible for management should adopt a scientific approach in their work, and make use of “scientific method” for achieving higher efficiency.

The scientific method consists essentially of:

1. Observation
2. Measurement
3. Experimentation and
4. Inference.

He advocated a thorough planning of the job by the management and emphasized the necessity of perfect understanding and co-operation between the management and the workers both for the enlargement of profits and the use of scientific investigation and knowledge in industrial work. He summed up his approach in these words:

- Science, not rule of thumb
- Harmony, not discord
- Co-operation, not individualism
- Maximum output, in place of restricted output
- The development of each man to his greatest efficiency and prosperity.

**Elements of Scientific Management:**

The techniques which Taylor regarded as its essential elements or features may be classified as under:

1. Scientific Task and Rate-setting, work improvement, etc.
2. Planning the Task.
3. Vocational Selection and Training
4. Standardization (of working conditions, material equipment etc.)
5. Specialization
6. Mental Revolution.

### **1. Scientific Task and Rate-Setting (Work Study):**

Work study may be defined as the systematic, objective and critical examination of all the factors governing the operational efficiency of any specified activity in order to effect improvement. Work study includes.

#### **i. Methods Study:**

The management should try to ensure that the plant is laid out in the best manner and is equipped with the best tools and machinery. The possibilities of eliminating or combining certain operations may be studied.

#### **ii. Motion Study:**

It is a study of the movement, of an operator (or even of a machine) in performing an operation with the purpose of eliminating useless motions.

#### **iii. Time Study (Work Measurement):**

The basic purpose of time study is to determine the proper time for performing the operation. Such study may be conducted after the motion study. Both time study and motion study help in determining the best method of doing a job and the standard time allowed for it.

#### **iv. Fatigue Study:**

If, a standard task is set without providing for measures to eliminate fatigue, it may either be beyond the workers or the workers may over strain themselves to attain it. It is necessary, therefore, to regulate the working hours and provide for rest pauses at scientifically determined intervals.

#### **v. Rate-Setting:**

Taylor recommended the differential piece wage system, under which workers performing the standard task within prescribed time are paid a much higher rate per unit than inefficient workers who are not able to come up to the standard set.

### **2. Planning the Task:**

Having set the task which an average worker must strive to perform to get wages at the higher piece-rate, necessary steps have to be taken to plan the production thoroughly so that there is no bottlenecks and the work goes on systematically.

### **3. Selection and Training:**

Scientific Management requires a radical change in the methods and procedures of selecting workers. It is therefore necessary to entrust the task of selection to a central personnel department. The procedure of selection will also have to be systematised. Proper attention has also to be devoted to the training of the workers in the correct methods of work.

### **4. Standardization:**

Standardization may be introduced in respect of the following.

#### **i. Tools and Equipment:**

By standardization is meant the process of bringing about uniformity. The management must select and store standard tools and implements which will be nearly the best or the best of their kind.

#### **ii. Speed:**

There is usually an optimum speed for every machine. If it is exceeded, it is likely to result in damage to machinery.

#### **iii. Conditions of Work:**

To attain standard performance, the maintenance of standard conditions of ventilation, heating, cooling, humidity, floor space, safety etc., is very essential.

#### **iv. Materials:**

The efficiency of a worker depends on the quality of materials and the method of handling materials.

### **5. Specialization:**

Scientific management will not be complete without the introduction of specialization. Under this plan, the two functions of 'planning' and 'doing' are separated in the organization of the plant. The 'functional foremen' are specialists who join their heads to give thought to the planning of the performance of operations in the workshop. Taylor suggested eight functional foremen under his scheme of functional foremanship.

#### **i. The Route Clerk:**

To lay down the sequence of operations and instruct the workers concerned about it.

**ii. The Instruction Card Clerk:**

To prepare detailed instructions regarding different aspects of work.

**iii. The Time and Cost Clerk:**

To send all information relating to their pay to the workers and to secure proper returns of work from them.

**iv. The Shop Disciplinarian:**

To deal with cases of breach of discipline and absenteeism.

**v. The Gang Boss:**

To assemble and set up tools and machines and to teach the workers to make all their personal motions in the quickest and best way.

**vi. The Speed Boss:**

To ensure that machines are run at their best speeds and proper tools are used by the workers.

**vii. The Repair Boss:**

To ensure that each worker keeps his machine in good order and maintains cleanliness around him and his machines.

**viii. The Inspector:**

To show to the worker how to do the work.

**6. Mental Revolution:**

At present, industry is divided into two groups – management and labour. The major problem between these two groups is the division of surplus. The management wants the maximum possible share of the surplus as profit; the workers want, as large share in the form of wages. Taylor has in mind the enormous gain that arises from higher productivity. Such gains can be shared both by the management and workers in the form of increased profits and increased wages.

**Benefits of Scientific Management:**

Taylor's ideas, research and recommendations brought into focus technological, human and organizational issues in industrial management. Benefits of Taylor's scientific management included wider scope for specialization, accurate planning, timely delivery, standardized methods, better quality, lesser costs, minimum wastage of materials, time and energy and cordial relations between management and workers. According to Gilbreths, the main benefits of scientific management are "conservation and savings, making an adequate use of every one's energy of any type that is expended". The benefits of scientific management are:-

1. Replacement of traditional rule of thumb method by scientific techniques.
2. Proper selection and training of workers.
3. Incentive wages to the workers for higher production.
4. Elimination of wastes and rationalization of system of control.
5. Standardization of tools, equipment, materials and work methods.
6. Detailed instructions and constant guidance of the workers.
7. Establishment of harmonious relationship between the workers.
8. Better utilization of various resources.
9. Satisfaction of the needs of the customers by providing higher quality products at lower prices.

**Criticism**

**1. Worker's Criticism:**

**i. Speeding up of Workers:**

Scientific Management is only a device to speed up the workers without much regard for their health and well-being.

**ii. Loss of Individual Worker's Initiative:**

Scientific Management reduces workers to automatic machine by taking away from them the function of thinking.

**iii. Problem of Monotony:**

By separating the function of planning and thinking from that of doing, Scientific Management reduces work to mere routine.

**iv. Reduction of Employment:**

Scientific Management creates unemployment and hits the workers hard.

**v. Weakening of Trade Unions:**

Under Scientific Management, the important issues of wages and working conditions are decided by the management through scientific investigation and the trade unions may have little say in the matter.

**vi. Exploitation of Workers:**

Scientific Management improves productivity through the agency of workers and yet they are given a very small share of the benefit of such improvement.

**2. Employer's Criticism:**

**i. Heavy Investment:**

It requires too heavy an investment. The employer has to meet the extra cost of the planning department though the foreman in this department do not work in the workshop and directly contribute towards higher production.

**ii. Loss due to Re-organization:**

The introduction of Scientific Management requires a virtual reorganization of the whole set-up of the industrial unit. Work may have to be suspended to complete such re-organization.

**iii. Unsuitable for Small Scale Firms:**

Various measures like the establishment of a separate personnel department and the conducting of time and motion studies are too expensive for a small or modest size industrial unit.

**Contributions of Scientific Management:**

Chief among these are:

1. Emphasis on rational thinking on the part of management.
2. Focus on the need for better methods of industrial work through systematic study and research.
3. Emphasis on planning and control of production.
4. Development of Cost Accounting.
5. Development of incentive plans of wage payment based on systematic study of work.
6. Focus on need for a separate Personnel Department.
7. Focus on the problem of fatigue and rest in industrial work.

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