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# Theories of Management

Scientific Management

By

F.W Taylor

Magnifying Brains



1856 - 1915



# Background of F.W. Taylor

- F.W. Taylor (Frederick Winslow Taylor) was an American mechanical engineer who sought to improve industrial efficiency.
- He was also known as the first management consultant.
- In 1878, he joined Midvale steel works as machine-shop laborer.
- At Midvale he was quickly promoted to time clerk, journeymen machinist, gang boss over the lathe hands, machine shop foreman, research director and finally chief engineer.
- He is known as **“Father of scientific management”** and **“Father of industrial engineering”**.

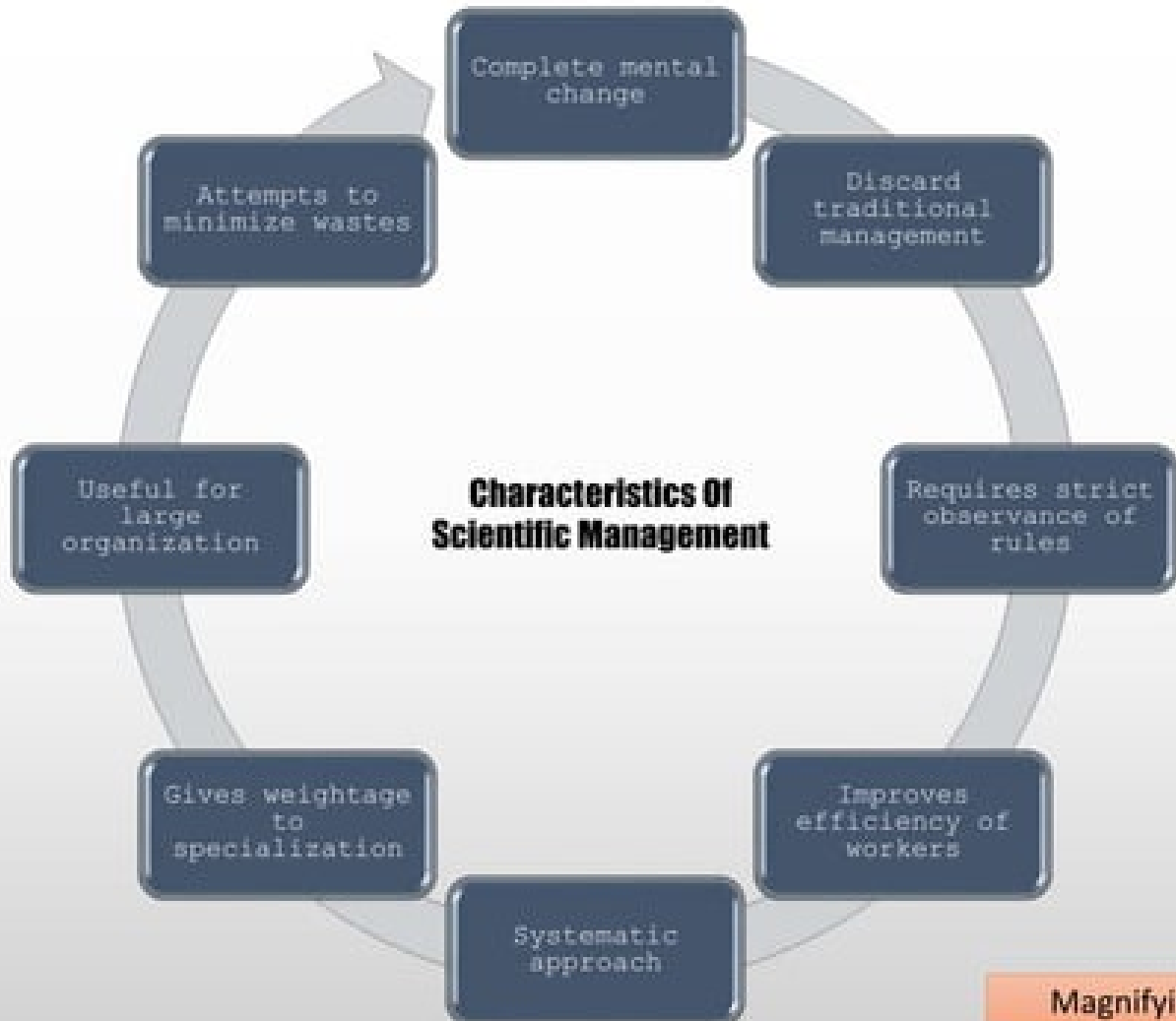


# What is Scientific Management?

- Scientific management is a theory of management that **analyzes and synthesizes** workflows. It's main objective is improving **economic efficiency**, especially labor productivity.
- There are two words under Scientific Management - **Scientific and management**. Scientific means '**augmentation of specific knowledge**' and management means '**Systematic management**' i.e. an appropriate manner of getting things done by others to achieve certain goals.
- He firmly believes that the real interests of **both (workers and owners)** are one and the same because the **wealth of the owners cannot go on for a long time without the prosperity of the workers**. It cannot be done, so it is possible that the laborer should be given what he wants - high wages and the owner should be given what he wants - low labor cost.
- He tried to find out **effective work standards** against which the worker's efficiency and performance can be judged in order to enhance the productivity of the worker.



**Characteristics Of Scientific Management**



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## Characteristics of Scientific Management

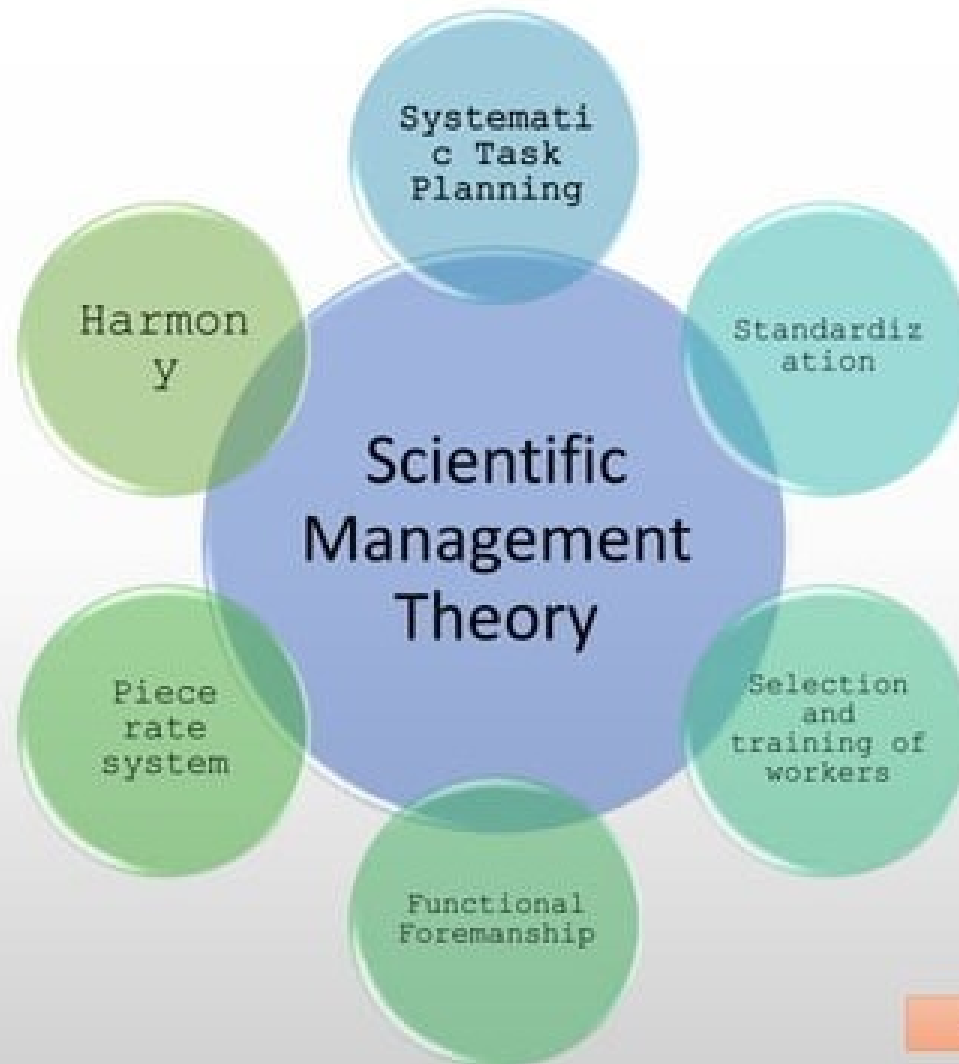
- In scientific management, the various tasks are carried out in certain ways by **definite planning**.
- **Rules and principles** are made after observing and analyzing facts in relation to various events and circumstances etc.
- Special emphasis is given to **human relations**, because no institute can get the support of employees in the absence of good human relations.
- Under scientific management, raw materials, physical and human **resources are used optimally** in a planned manner. Both the parties start aiming for more and better production targets rather than merely chasing higher profits.
- Workers are given work as per their merit and **motivational wages** are given to encourage them.



# Characteristics of Scientific Management

- The same **work is divided** into different parts and assigned to different labor groups, so that production takes place on a large scale and austerity is maintained.
- In scientific management, due to the standard of each work, the work is done effectively.
- Personal interest is considered paramount rather than social interest.
- In scientific management, attempts are made to create a spirit of cooperation in place of conflict between capital and labor.
- The rights and responsibilities of various employees working in the institute are determined.





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# Scientific Task Planning

- It is first determined what work is to be done by the workers? How much work can be expected from a skilled worker? Thus, under scientific management, standardized work is determined which is completed by an average worker in standardized conditions. Taylor called it 'A Proper Day's Work'.
- It Involves finding the amount of work which an average worker can perform during a day under normal conditions.
- Time and motion studies have been developed for this purpose.
- The task need to be designed scientifically and not by rule of thumb. It aims at eliminating unnecessary and wasteful motions and finding out the minimum time required to do the job.



## □ Time study

The time taken to complete a task and to keep a record of it from time to time is called 'time study'. According to Kimball and Kimball - "As an element of an industrial work, the art of observing time and keeping records can be defined as time study."

## □ Motion Study

The higher speed in any labor body when any action will take much more time to do it. Also, the worker will experience more fatigue. Therefore, by eliminating unnecessary motions on a scientific basis, the work should be completed at the appropriate time without fatigue.

## □ Fatigue Study

Fatigue is experienced by the emphasis on muscle in doing work. Taylor studied and tried to find out by which method it is possible to minimize the fatigue of the labor and maximize the production? The scientific management emphasizes that the work load on the labor should be such that it does not experience fatigue.



# Standardization

- In order to increase the efficiency of the employees as well as organization, it is important to set standards in advance to decide work procedures, working conditions, quality parameters and time schedules.
- Standardization reduces production costs, improves production methods and varieties, and also increases the efficiency of workers.



## Scientific selection and training workers

- It involves finding the right person for the right job by matching the capabilities for the worker with the nature of the job.
- Lack of scientific selection affects the efficiency of workers and their morale. Every laborer should be given work according to his efficiency and ability.
- Person should be selected according to the work and work according to the person. After selection of skilled workers, they should also be given training. In modern times, it has become necessary to train employees as the importance of labor division and specialization increases.



# Functional Foremanship

- Different departments need to be controlled by respective supervisors within a factory. These supervisors are functional specialists who plan and provide relevant advice to the workers.
- This helps to differentiate planning from the doing function.
- Taylor recognized 'functional foremanship' under the scientific method. Under the functional foremanship, the management and the functions of the employees are divided according to the method. Thus, this organization is based on the principle of division of labor and specialization. Each person is assigned the same task in which he is an expert.



## Differential Piece rate system

- 'Motivational wages' means that workers who completed the assigned work in a stipulated time are paid a higher rate of wages and those who do not do the work assigned in the stipulated time are given relatively lower wages. According to scientific management, a higher salary increases efficiency.
- Wage incentives were provided to motivate workers. Wages would depend on the piece work distribution of gains between employers and employees.



## Harmony and not discord

- Employees and employers need to work in mutual cooperation with each other for the well being of the organization as a whole.
- It becomes possible by (a) sharing a part of surplus with workers (b) training of employees, (c) division of work (d) team spirit (e) positive attitude (f) sense of discipline (g) sincerity etc.
- For example, in most of the Japanese companies, paternalistic style of management is in practice and there is complete openness between workers and the management. Usually, workers don't go on the strike but, if at all they do so, they just wear a black badge and work even more than the normal hours just to impress upon the management that their focus is on their demands as well as organisational objectives.



Any questions?





Thank You