The History of Management: Frederick Winslow Taylor: The Father of Modern Management

Overview

Quaker, law school candidate, engineering student, sight-impaired worker, machinist, steel laborer—these all describe the early beginnings of Frederick Winslow Taylor, the man who developed the revolutionary theories that would lead to vast improvements in modern methods of mass production. The management practices that he put forth are the basis for many of the innovations that grew out of the industrial revolution, allowing for reductions in costs, increases in productivity, and improvements for employee safety.

Early History

Born on March 20, 1856 in Philadelphia, PA, Frederick Winslow Taylor was the son of wealthy, liberal parents. His father, Franklin, was a Princeton Law graduate. His mother, Emily Annette, was an abolitionist and feminist. Some say that his mother ran an underground railroad for runaway slaves. In contrast with this seemingly liberal lifestyle, the Taylor's were also Quakers. They ran a formal household with strict parenting. They believed children were to be seen and not heard.

As a youth, Taylor was compulsive and was constantly analyzing and measuring so that he could come up with better ways of doing things. He was very self-disciplined and was constantly mediating disagreements between his classmates. As an early teen, he suffered from nightmares and invented a sleeping harness that would keep him on his stomach while he slept. His hope was that this device would help him to sleep in peace and avoid waking his parents.

Taylor attended Philips Academy, a college prep school in Exeter, NH. While there, he was accepted to Harvard. It was at this point that his eyesight began to fail, and in 1873, he became a machinist's apprentice at the Enterprise Hydraulic Works in Philadelphia. In 1878, Taylor took a job as a machine shop laborer at the Midvale Steel Company. While there, he went to school at night and earned a degree in engineering at the Stevens Institute of Technology. He was only 25 years old.

Taylor's first job at Midvale was as a shop clerk. He was quickly promoted to machinist and rapidly worked his way up to becoming chief draftsman. He was with the company only six years when he became research director and then chief engineer. This was where he first began to study and observe worker productivity.

It is interesting to note that Taylor's theories began to take shape soon after the Civil War at a time when the Industrial Revolution had gained tremendous momentum. Manufacturing was on the rise with company owners offering few safety measures and little in the way of wage incentives for workers. As a result, injuries frequently occurred, productivity was inconsistent, and workers saw no need to be diligent in their efforts. These observations of how work was done and the quantities produced led Taylor to his theories of management.

Taylorism Takes Shape

The premise of Taylor's theory of management is that the right challenge for the right worker will result in increased productivity. Paying an employee more for increased production will encourage the worker to produce more; pay the worker, not the job.

While at Midvale, Taylor conducted time and motion studies. He evaluated a job and broke it down into its individual components and tasks. He then eliminated unnecessary motions and implemented more efficient ones, giving employees quotas based on this new process. The workers who met these quotas would be paid more than those who did not meet their quotas. As a result, productivity doubled. His process for evaluating workflow was ahead of its time, later becoming widely known as *production management*.

Taylor continued to observe manufacturing processes, studying every detail involved in the relationship between workers, the equipment they operated, and potential output. These observations, coupled with scientific evaluation, later became Taylor's *Principles of Scientific Management,* published in 1911. In this book, he compiled all of the concepts and ideas he developed over the years from the streamlining work that he carried out at many different companies. We will continue this discussion of the various companies he worked at and the projects that he consulted on later in the reading.

Application of Scientific Management Methods

Here are Taylor's four principles of Scientific Management:

1. replace traditional rule-of-thumb approaches with methods based on a scientific study of the tasks;
2. scientifically select, train, and develop each worker rather than passively leaving the workers to train themselves;
3. coordinate with workers to ensure that the scientifically developed methods are being followed; and
4. divide work nearly equally between managers and workers so that the managers apply scientific management principles to planning the work and the workers actually perform the tasks as directed.

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As stated earlier, the application of these principles resulted in increased productivity in whatever situation they were used. Eventually, Henry Ford would put Taylor's methods and theories to work in his factories in what would come to be the modern assembly line.

Not surprisingly, many of Taylor's ideas were not properly applied by employers, unions, and managers.

- Employers felt that they could use Taylor's methods to get their workers to produce more for less pay.
- Unions cautioned that their workers now had to complete their tasks too quickly.
- Managers believed that their authority was being usurped.

His proposals were met with much criticism and reluctance. After widespread failures in the interpretation and implementation of Taylor's theories, production levels and the overall quality of work declined across the board at several leading manufacturing facilities. Many people unjustly held Taylor responsible for these failures. However most of this criticism was short lived—once his theories and practices were properly put to use, most, if not all of the businesses that adopted these new policies saw rapid growth.

In 1890 Taylor became General Manager at the Manufacturing Investment Company. A few years later, he became a consulting engineer to the company's management. He was 37 years old at the time. He later consulted at the Simonds Roller Bearing Company and then at the Bethlehem Steel Company, which became his most important consulting client. At each of these organizations, he promoted his time and motion studies, and he sought to increase productivity while decreasing excess activities and trimming costs.

His work at Bethlehem Steel resulted in the creation of a modern cost accounting system, a reduction in the number of yard workers, and an increase in the number of clerical and administrative staff members—all resulting in cost-savings and increased production. Unfortunately, these changes ruffled feathers within Bethlehem Steel's management. He was fired in May, 1901.

Taylor's Inventions

Taylor's observations and attention to detail had benefits beyond the management processes he designed. While at Bethlehem Steel, he and Maunsel White co-developed the Taylor-White process, a method for tempering steel. This invention earned Taylor international attention.

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He also designed and constructed the largest successful steam hammer ever built in the United States. While he excelled at math and science, Taylor was also an excellent athlete. He designed and patented a spoon-shaped tennis racquet that earned him the 1881 doubles championship, with his partner Clarence C. Clark, at the U.S. Lawn Tennis Association in Newport, RI.

Over his lifetime, Taylor had applied for approximately one hundred patents for his various inventions. He received a personal gold medal at the Paris exposition in 1900 for his process of treating high speed tool steels. This invention was also later recognized by the Franklin Institute in Philadelphia, earning him the prestigious Elliott Cresson gold medal in 1902.

Taylor's Later Years

In the latter part of his life, Taylor was unhappy with the reception that his theories continued to receive. He felt that managers, employees, and unions did not understand his principles, while many imitators tried to copy his works. Additionally, his wife was ill and required his constant attention. In March of 1915, while traveling in the Mid-west, he contracted influenza. He was sent to a hospital in Philadelphia, where he passed away the day after his 59th birthday.

While Taylor's theories may have been misunderstood or misapplied throughout most of his lifetime, they remain a major factor in modern day management and scientific engineering. An application of Taylor's Scientific Management theories—the assembly line—is evident in today's car manufacturing processes and in the production of computers. Fast-food restaurants, such as McDonald's, use Taylor's methods for greater efficiency in repetitive tasks. In fact, Taylor's theories will be seen in any work environment where efficiency is of prime importance. His principles continue to be studied, evaluated, debated, and improved upon.

Summary

- Born in 1856, even as a youth, Frederick Winslow Taylor was an observer of time and motion.
- Though highly intelligent, he became a machinist when his eyesight began to fail in 1873.
- He developed his theories of time, motion, and how to improve productivity while observing factory workers.
- Taylor is known as the Father of Scientific Management.

- He emphasized focusing on workers' abilities to complete a task and not the task itself.
- His work led to the modern day assembly line.
- Taylor's inventions included steel-tempering machinery, a steam hammer, and a tennis racquet with which he won the US Lawn Tennis Association double championship.
- Taylor's scientific management theories continue to be applied across the globe.

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