

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

Overview

Quaker, compulsive teen, prep school student, law school candidate, engineering student, sight-impaired worker, machinist, steel laborer—these describe the early beginnings of Frederick Winslow Taylor, the man who developed the revolutionary theories that would lead to modern methods of mass production as well as management practices for reducing costs and increasing productivity.

In this reading, we will explore Taylor's progression from a self-disciplined child of wealthy and liberal parents to the man who would become known as the Father of Scientific Management.

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 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 counting and measuring so that he could come up with better ways of doing things. He was self-disciplined, tried to find ways of avoiding conflict, and sought to work out any disagreements with his contemporaries. 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 sleep peacefully.

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 after the Civil War when the Industrial Revolution had gained tremendous momentum. Manufacturing was

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on the rise with company owners offering few safety measures and little in the way of wage incentives for workers. As a result, injuries 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 work he did at many different companies. We will continue this discussion of the various companies he worked at and the projects he consulted on later in this reading.

Application of Scientific Management Methods

Here are Taylor's four principles of Scientific Management:

1. replace rule-of-thumb methods 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. cooperate with the 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 stated earlier, application of these principles resulted in increased productivity in whatever situation they were used. Additionally, Henry Ford put Taylor's methods and theories to work in his factories in the modern assembly line.

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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 felt their workers now had to complete their tasks more quickly. Managers felt that their authority was being usurped. As a result of incorrect application of Taylor's theories, production and the quality of work both declined. Another reason why people reacted so strongly to his views was that, generally, people do not like change. However, once the benefits of his theories and practices were put into place and the results became evident, there was more acceptance of his ideas.

Taylor became General Manager at the Manufacturing Investment Company in 1890. 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 cutting costs.

His work at Bethlehem Steel resulted in the development 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 caused many disputes with 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.

He also designed and constructed the largest successful steam hammer ever built in the United States. While good 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 attention. As a result, Taylor himself became ill. In March of 1915, while traveling in the Mid-west, he contracted influenza. He was sent to a hospital in Philadelphia, where he died the day after his 59th birthday.

While Taylor's theories may have been misunderstood or misapplied at the time, 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 became known as the Father of Scientific Management.
- His theories 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 today.

