

Scientific Management Theory and the Ford Motor Company

Overview

During the early 20th century, Frederick Winslow Taylor developed a number of management and organizational theories that led to significant breakthroughs in business practices. Since that era, levels of industrial manufacturing have grown exponentially throughout much of the world. Taylor's ideas have dramatically shaped modern methods of mass production and structural organization.

Around the same time that Taylor started experimenting with his theories, the prominent businessman Henry Ford was hard at work developing several of his now infamous automobiles. Ford named these cars alphabetically from A to S. According to *The Case Files: Henry Ford*, published by The Franklin Institute, Ford's most successful car was the Model T, which began production in 1908 (The Franklin Institute) – just a few years before Taylor published his seminal work, *Principles of Scientific Management*, in 1911. Implementing Taylor's theories, Ford Motor Company ultimately produced over 15 million Model Ts between 1908 and 1927 (ibid). As you will explore in greater detail later in this reading, Henry Ford's ambitious production efforts decreased the cost of production, which allowed for lower prices in the market place. Ford's goal was to create "a motor car for the great multitude" (ibid) and make automobile travel available and affordable for everyone. "When I'm through," he said, "just about everyone will have one" (ibid).

In this reading, we will explore how Frederick Winslow Taylor's scientific management theory enabled Ford to develop the assembly line and successfully realize his goal of bringing car travel to the masses.

Early History

In 1903, Henry Ford formed a business partnership with Alexander Malcomson, a coal dealer based in Detroit (The Franklin Institute). Together, they launched the Ford Motor Company, which drew from a diverse network of auto parts suppliers and manufacturers in order to mass-produce automobiles (ibid). At the close of its first year in production, the growing company netted \$36,000 (ibid).

In those early days of automobile manufacturing, during the assembly stage the body of the car would be fixed into a stationary position as workers brought and added individual parts and to the vehicle (The Franklin Institute). Each car was produced by teams of skilled laborers, and, working together, these groups collectively spent over 12 hours building each car (EyeWitness to History, 2005). This process was very expensive and time-consuming, thus making it impossible

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for Ford to mass-produce his cars at affordable prices. Ford soon sought ways to streamline this process and produce a larger volume of vehicles in a shorter amount of time. Ultimately, Ford hired management theorist Frederick Winslow Taylor to help map out possible solutions (The Franklin Institute).

Henry Ford Hires Frederick Winslow Taylor

Taylor's management theory was founded on the principle that individual workers would be more productive if they were assigned tasks that were properly suited to their personal capabilities and strengths. Taylor further argued that the elimination of unnecessary physical movement by workers would result in increased productivity. In the early days of 1908, the Model T was just coming into production. At that time the price of a Model T was \$825 (EyeWitness to History, 2005). The model T was popular among consumers, and by the end of 1908—the car's first year on the market—Ford had sold well over 10,000 units (ibid).

Even so, during that same year, Ford hired Taylor to observe his workers and determine the most-efficient and time-saving methods for increasing the company's productivity (The Franklin Institute). Ford studied Taylor's observations and, as 1908 progressed, began to incorporate Taylor's scientific management theory into his production techniques. Ford's first step was to evaluate the individual parts that were required to build the automobile—from the smallest to the largest components. Implementing Taylor's theory during the assembly stage, Ford determined that the larger parts of the car should remain stationary, while the smaller parts should be brought to the vehicle as needed. This strategy sped up the production process significantly, but not enough to meet Ford's ultimate goal of producing cars at peak levels of efficiency (ibid).

To further reduce his cars' building time, Ford had his laborers remain stationary in an assembly line as the body of the car was moved through individual workstations. Workers would pull the car, by rope, through one workstation after another, allowing each worker to perform his specified task before moving the car to the next station. This process was repeated until the car's construction was complete (EyeWitness to History, 2005).

As Ford continued to observe his new production process, he found even more areas that could be improved upon. For example, he noticed that certain tasks took longer on average to complete than others, leading him to recalibrate tooling methods in other areas to compensate for the longer wait times. Ford continued to improve and streamline the process, and by 1913 he introduced a completely power-driven assembly line in his newly opened factory in Highland Park, Michigan (The Franklin Institute). After only a few short years, Ford had managed to bring the average time of production for a Model T down to 93 minutes, and as

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a consequence was able to lower the price down to \$575. By 1914, Ford had captured 48% of the automobile market (EyeWitness to History, 2005).

Cars for the Masses

Ford's entrepreneurial spirit knew no bounds—having realized that drastic reductions in prices would translate to a greater share of the automobile market (and thus higher profitability), he quickly moved to bring the prices of his motor carriages down to manageable levels that even the workers in his factories could afford. In the early days of 1914, Ford raised the wages that he was paying his workers from \$2.83 for a 9-hour day to \$5.00 for an 8-hour day (The Franklin Institute). As a result, Ford greatly improved worker morale and further grew his potential customer base. By 1924 the successes of Ford's practices were obvious, after just 16 years of implementing Taylor's scientific approach he had managed skillfully sell over 10 million cars (ibid).

The advancement of Ford's auto assembly line produced high quality vehicles at affordable prices which drew in customers from all walks of life. His assembly-line practices eventually spread to manufacturing processes across all industries, forever changing the ways in which products were mass-produced (Hutchison, 2005).

Conclusion

Henry Ford and Frederick Winslow Taylor's engineering breakthrough could not have come at a better time for the auto industry. Ford recognized the benefits that Taylor could bring to his operations and took full advantage of his expertise and strategies. As a result, the auto industry has continued to thrive throughout the 20th and 21st centuries, making use of new efficiencies and cost reductions, and leading to regular improvements to manufacturing processes across all industries.

Summary

- The assembly-line process enabled Ford to produce cars more quickly, and at more affordable rates.
- By 1924, as a result of his advanced production methods, Ford had sold 10 million Model Ts.
- Ford's assembly line resulted in a mass-market demand for automobiles and changed mass-manufacturing processes across many products and industries.

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