

# Henry ford's evolution of automobiles

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" It is doubtful if any mechanical invention in the history of the world has influenced in the same length of time the lives of so many people in an important way as the motor car. " So writes an American historian, thinking of the automobile alone. But it does not stand-alone. It was the automobile factory that introduced mass production, a process that has changed the lineaments of our economic and social life more profoundly than any other single element in the recent history of civilization. Nearly everyone has heard of this process, yet few have any detailed or exact knowledge of its inception and development.

Enter Henry Ford. The true answers of what inspired this Michigan farmer to develop a production process that was so simple, effective and efficient it changed the entire course of history. In this report, we will present a brief history of the era in which Henry Ford lived, the background from which he came, and important management trends he followed. It is hard to summarize the era in which Henry Ford lived. Chiefly because he changed the entire tone of the era in which he lived, making his career a transitional period. We will begin with the world before Ford. In the mid-latter part of the eighteenth century (c. 1760-c. 1895), the United States was still tending its wounds from the aftermath of the Civil War.

It was a time of rebuilding, reorganizing and a time to accept change. The country's figureheads were also changing. When the most respected of men were generals, soldiers, presidents, and war-painted warriors, combat bravery was a greatly revered trait. However when the dust and smoke of war cleared, the public's attention naturally shifted back to home life. The

transition occurred when the position of bravery in the public eye changed from a warrior's bravery, to an entrepreneur's type of bravery.

An undeniable part of home life and living is what tools are used to make a home or farm function. This is where the gaze shifted toward men like Edison for inventing the light bulb and standardizing the use of electricity. Well over one hundred years later, what home is complete without electricity? And (back to our focus) what home is complete without an automobile? Naturally many inventors influenced this time in history. Take for example three boys who grew up on several of the farms in Worcester County, Massachusetts.

At thirteen, Tom Blanchard invents an apple-parer; at eighteen he works in a tack factory, and is soon inventing a tack-counting machine, then a tack-making machine. Before long he is one of the masters of the Springfield Arsenal. Elias Howe liked to tinker with the grain mill on his father's farm, an occupation fitting his rural life. At sixteen he became an apprentice in a Lowell factory for making textile machinery - his sewing machine lay just ahead.

Eli Whitney combines farm chores and forge work; restlessly ambitious, he saves money to attend Yale - with what result we all know. The farm is a sound teacher of ingenuity and elementary mechanical skills. Before long however its lessons are ended, and the youth whose imagination is fired by railroads, steamboats, cotton mills, machine shops, and gun factories looks to a larger sphere. " 2 Henry Ford was born on July 30, 1863 in the Detroit, Michigan area. He was the oldest of six children born to William and Mary

Litogot O" Hern Ford, and the grandson of Irish immigrants who had arrived in America in 1847. The entire family worked on the family farm and Ford was raised with intentions of taking over the family farm when he grew up.

He had an intelligent, inquisitive nature and was energized by the huge growth of industry occurring in the Detroit area. " 3He was also an avid experimenter. At age nine, in one of his first experiments, he theorized the power of steam. To prove the nature of this phenomenon, he plugged the spout of one of his mother" s delicate teapots, and set it to a boil. And to the great joy of the young, giggly theorist (and dismay of his mother), the explosion sent pieces of glass and boiling water crashing around the kitchen! Miraculously the young observer was left untouched!

This result is eerily reminiscent of the effect Ford would have on the industrial revolution in times to come. As he grew up his father allowed him to " tinker" with many of the tools on the farm. Ford" s mother called him a " born mechanic" and provided him with darning needles and corset stays to make into tools for his watch repair work. Probably the most dramatic event in Henry Ford" s life happened in 1876 at age thirteen. While riding with his father in a wagon, they saw a steam engine travelling along the road under its own power. Ford jumped off the wagon and excitedly began to question the driver about this remarkable engine.

Used for stationary purposes such as sawing wood, the engine had been mounted on wheels to propel itself. The engineer explained all about the machine and even let Ford fire the engine and run it. " Ford later said, 'That

showed me that I was by instinct an engineer. "" 4 The seed was planted that there could be a self-propelled vehicle and that thought would haunt his imagination for years. Although he yearned to go to Detroit and work in the machine shops, Ford stayed on the farm helping his family until he was seventeen. Then, with his father's blessing, he moved to Detroit and started working at the Michigan Car Company for \$1. 0 a day.

He was fired shortly thereafter after angering the older employees by making repairs in a ? hour instead of the usual five hours. By 1882 Ford had left Detroit and used the family farm as his address as he traveled around from job to job. In 1885, at a party, he met Clara Jane Bryant. They married April 11, 1888 and their only child, Edsel, named after his boyhood friend Edsel Ruddiman, was born November 6, 1893. Ford had never given up his dream of a " horseless carriage. " Whenever he had a spare moment he read about gas engines and experimented in his own workshop.

By 1891 he and Clara had moved back to Detroit and Ford began working for Detroit Edison Illuminating Company. Ford's Quadricycle (his first automobile) was ready for a try-out in 1896. It frightened the horses and caused many a protest, but it ran. It was through working at the Detroit Edison Illuminating Company that Ford met Thomas Edison. " At a convention Ford was introduced to Edison as 'The young fellow who" s made a gas car. "" 5 After discussing his ideas with the great inventor, Ford was glad to hear that Edison thought his ideas had merit. Edison told him, 'Young man, you have it, a self-contained unit carrying its own fuel.

Keep at it! "" 6 The meeting with Thomas Edison gave Henry Ford fresh inspiration and his spirit was renewed by the famous inventor" s words of encouragement. By 1899 Ford had produced an operable car that was written up in the Detroit Journals. Ford was described as a " mechanical engineer. " Eventually his work developing automobiles conflicted with his position at the Detroit Edison Illuminating Company. Even though the company was well pleased with his work and offered him the General Superintendent position, they asked him to make a choice.

Could he give up his " hobby" of automobile building and devote himself to the company? Ford made the decision. He wanted to make automobiles. After some false starts, on June 16, 1903, with ten investors plus Ford" s patents, knowledge and engine, Henry Ford incorporated the Ford Motor Company. After years of hard, pioneering work, Ford Motor Company produced its ninth and most successful-thus-far automobile, the world famous Model T. It was first marketed in October 1908 and the company dominated sales for the next eighteen years.

Because of his development of the assembly line used to mass-produce automobiles, Ford sold more than one half of the cars in the industry in 1918-1919 and 1921-1925. The Model T, or Tin Lizzie, was a hard working, sturdy, commonplace car. Ford" s dream had come true. " I will build a motor car for the great multitude... constructed of the best materials, by the best men to be hired, after the simplest designs that modern engineering can devise... so low in price that no man making a good salary will be unable to

own one and enjoy with his family the blessing of hours of pleasure in God" s great open spaces.

Henry Ford and Thomas Edison had become the best of friends. They admired and respected each other. In 1916 Henry Ford purchased Mangoes, the home next door to his friend Edison" s Seminole Lodge, so that he and Clara could vacation there while the Edisons were down. The two families enjoyed their time away from it all in the tropical serenity of Fort Myers, Florida. Camping expeditions into the Everglades, with Harvey Firestone and his family, plus naturalist John Burroughs, became a special treat. Henry Ford died April 7, 1947. Editorial tributes were favorable to Henry Ford.

He was praised as a patriot, philanthropist, philosopher, reformer, economist, and teacher and depicted as a symbol of individualism and productive genius. " 8 During his career, particularly in the early 1900" s, Ford methods of management were seen as being very innovative. " He was a student of the modern management methods that were emerging at the time. For example, he was familiar with the work of Frederick Taylor, the driving force behind the new principles of scientific management and the use of time and motion studies to increase job efficiency. " 9Frederick Taylor truly used a scientific approach to management.

He took each element of management and production and examined it under great scrutiny. He also observed how each portion of the entire production process worked together as a team. His purpose was to refine each element and bring them together under the least amount of functional friction. " For

example, Taylor took aside the worker element and discovered that most of them were soldiering. Soldiering is deliberately working at less than full capacity. " 10 Upon resolving this problem, the worker element now has less functional friction will perform better for the team.

More relevant to Ford's case was Taylor's time-and-motion study. This study sharply examined how a worker performed a task. It followed each motion that the worker went through to accomplish a task and then tried to simplify each task by removing steps and/or refining them so that the job could be done faster and with less effort. This proved to be the most revealing of Frederick's studies as it allowed work to be done at a much faster rate and in some cases quadrupled production! Ford strongly believed in Taylor's scientific approach and custom fit his production team to perform at the greatest capacity.

Having taken influence from Taylor's time-and-motion study, Ford devised his true masterpiece, the assembly line. This, being the most vital part of production for any mass-produced product, could more than quadruple output with far less labor, and much less skill required for each job. Ford immediately recognized the potential for output of his new company, and upon the earnings its first profits, the company began to expand. This expansion of the Ford Motor Company, accredited to Ford's innovative management approach, would set a trend that swept the world for many years to come.



Being the first company to adopt the method of mass production gave Ford Motor Company such a powerful head start that it dominated the automobile industry for the next twenty years. As far as Henry Ford's role in his company he was both a figurehead and a liaison. Following his massive success in the auto-industry, Henry Ford began to take part in politics. He also began to donate money to charitable organizations and became a familiar face at important dedication ceremonies around the country. His 1918 run for senate and his dedication ceremonies, i. . (1929 Edison Institute of Technology) identify him as a figurehead for the Ford Motor Company. However, Ford always kept an eye and an ear on other rising companies and other changing trends in industry. This greatly aided him in staying on top of the automobile industry for so long.

This would make Ford also a liaison in his company. Ford however did not deal with his workforce directly. " He hired Harry Bennett as head of the infamous Ford Service Department to maintain control over his rapidly expanding following of workers. 11 Ford's indirect management of his workers would therefore disqualify him from the leader role in his company, making him a figurehead/liasion type manager. Henry Ford's life falls into a very small category of lives known as revolutionaries. He was not simply and inevitable product of his time. He was original and revolutionary. He defied precedent and never once allowed the impossibilities of the past to limit the possibilities of the future. And above all he was a true patriot to the growth of the human race.