

Whenever you see a highline traveling across the countryside, you will see that it usually carries three wires thanks to Tesla's idea.

The higher managers in Continental Edison quickly noticed Tesla's advanced knowledge and understanding of engineering and physics and were sending him around France and Germany to troubleshoot all manner of problems for the company. After two years of being a star, Tesla was transferred to the US in 1884. He spent six months working with Edison's attempts to use his direct current system in increasingly complex and difficult ways. Finally Tesla quit in disgust. Legend has it that Thomas Edison promised Tesla a substantial bonus if he could fix a major flaw in Edison's generators. When Tesla redesigned them and solved the problem, the legend says that Edison refused to live up to his bargain. Or it could simply have been that Tesla was tired of trying to make Edison's technology work when other technologies were superior. We really don't know. This marked the beginning of a bitter rivalry between Tesla and Edison that would leave a huge mark on the world's economy.

Tesla founded his first company in 1885 to make arc lights for street lamps. While it succeeded in making practical products, the market was not yet ready for Tesla's technology causing the company to shut down soon thereafter, leaving Tesla penniless. For a while, Nikola dug ditches for \$2/day just to feed himself. But he did not stay down for long.

In 1887, he found new backers and formed the Tesla Electric Company. This new company was to use his AC and Polyphase ideas to create generators, motors and other equipment. In other words, the company was to back Tesla's creativity, not simply create products for a specific market.

Almost immediately, Tesla invented what is now known as the three-phase induction motor. This is the grandfather to most electrical motors we encounter and was one of the first truly practical electric motors. He licensed the idea to his friend George Westinghouse for \$1.50 per horsepower. Teaming up with Westinghouse, Tesla's ideas for huge generating plants transferring power over long distances to homes and factories miles away became true. Soon Westinghouse owed Tesla millions of dollars.

Thomas Edison's system was never widely adopted. However, Edison tried to market his solution as safer and better. This further deepened the divide between the two inventors.

Tesla spent the remainder of his productive years experimenting and developing new technologies. His pioneering research in many areas was not fully recognized in his lifetime. For example, Tesla is the real inventor of radio. Marconi, who received the patent for radio at the time, used Tesla designed equipment. Eventually, the US Supreme court ruled that Tesla was the real inventor of radio.

Similarly, Tesla invented a new type of turbine which is very efficient but even today few people understand how it works or even why.

Tesla experimented with radioactivity and X-Rays, including taking an X-Ray picture of his own hand.

Finally, he was enamored with the idea of broadcasting electrical power without wires. He spent many years working on ways to broadcast electrical power around the world. Many of his experiments were misunderstood. Today there are still rumors and legends of his work with ‘death rays’ and ‘attempts to talk to other planets.’

Today we remember Tesla for his vision of the electrified future and his inventions which brought it about.

Unfortunately, Tesla was a very bad businessman. During an economic downturn in 1907, George Westinghouse’s financiers forced him to renegotiate his royalty with Tesla. At that point, Tesla was owed a huge amount of money – enough to make him the richest person on the planet several times over. And the popularity of Tesla’s technology was such that he would likely be the first billionaire. Tesla instead tore up the agreement and allowed Westinghouse to avoid paying royalties, instead accepting a small token payment.

In Tesla’s final years, he lived alone in a small hotel room on a tiny pension. His bad business practices and tendency to take high risks left him broke. He died early in World War II, almost forgotten.

Every time you use a computer or a cell phone you use technologies Tesla invented. In fact, each time you turn on a light or use an electric motor, you use something which came from Tesla. In many ways, Tesla invented much of the modern world.