

The war of the currents

■ Thomas Edison

The “war of the currents” saw the competition between two of the most well-known American inventors of the modern age, **Thomas Edison** and **Nikola Tesla**.

Edison **patented** inventions such as the phonograph, the kinetoscope, and the incandescent light bulb. To create the conditions for the light bulbs to be used, in 1881 he also designed a network for the distribution of electric current and, in 1882, thanks to financial support of some investors, he managed to light up a small **city block** in Manhattan.

His network distributed electricity in the form of direct current at very low voltage; for this reason, it was totally safe for humans. However, distributing electricity at low voltage caused a lot of dispersion along the power lines; the solution to this problem was brought to Edison’s attention by a Serbian engineer, Nikola Tesla, who immigrated to America in 1884.

■ Tesla and the spread of alternating current

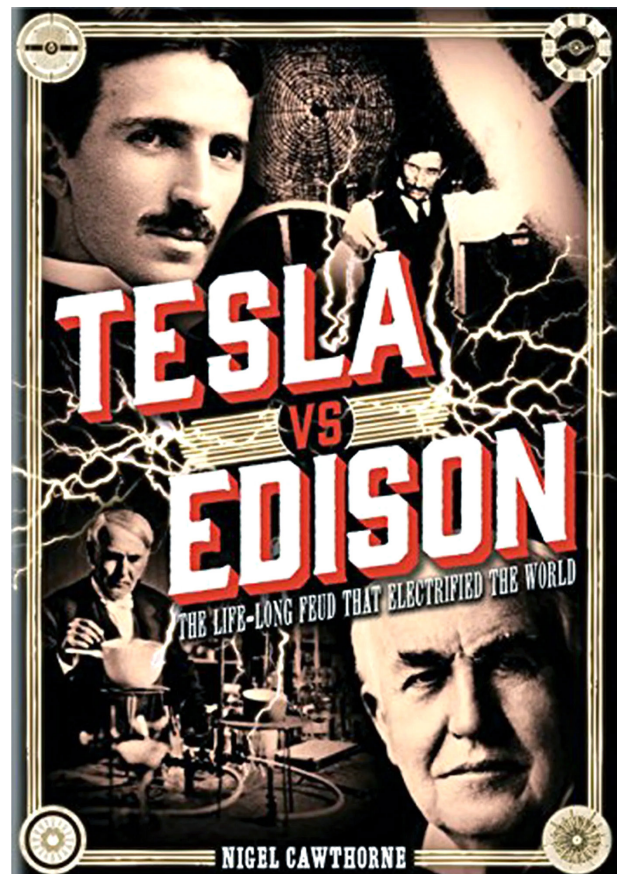
Nikola Tesla was a supporter of Edison’s work: he was even **hired** by Edison’s company to improve the design of his dynamo, which generated direct current. However, Tesla was strongly convinced that alternating current was much more suitable to be transmitted over long distances. He got in touch with George Westinghouse, whose company had recently bought a newly-invented transformer which could increase or decrease the voltage of alternating current and solve the problem of power losses, which were reduced by transmission at high voltage. In 1887 and 1888, Tesla and Westinghouse started building the first alternating current power station and were able to deliver electricity farther and more cheaply. Edison was afraid of losing his **incomes**; for this reason, he started a war against Tesla and Westinghouse to show that direct current was safer than alternating one.

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Edison tried all means to show people that alternating current was dangerous. He took advantage of people’s ignorance and suspicion towards electricity and organised public demonstrations to show that alternating current could kill them. To do so he executed dogs, cats and even a horse to show that big animals could be killed by alternating current. However, it was soon realised that alternating current was not dangerous if high voltage lines were kept away from people and that the development of transmission lines over long distances was possible only by using alternating current.

city block: *isolato*
to hire: *assumere*

income: *guadagno*
to patent: *brevettare*



1 Read the sentences and decide if they refer to Edison (E), Tesla (T) or Westinghouse.

- | | E | T | W | | E | T | W |
|---|--------------------------|--------------------------|--------------------------|--|--------------------------|--------------------------|--------------------------|
| 1. He designed the first networks for the electricity distribution. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 6. He firmly believed in the superiority of AC for long distance transmission. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. He was of Serbian origin. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 7. He exploited people's ignorance for his economic purposes. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. He hired Tesla to improve the dynamo. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 8. Together with Tesla, he built the first AC power lines. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. His company bought a new device, the transformer. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | | |
| 5. He brought electric light to a borough of Manhattan. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | | |

2 Complete the text with the correct option.

In 1884, engineer Nikola Tesla was hired **1. from /** by Thomas Edison's headquarters **2. in / at** New York City. Tesla idolised Edison, **3. and / but** the two had one fundamental disagreement: Edison favoured DC (direct current), in **4. who / which** electricity flows in one direction, while Tesla believed **5. in / on** AC, or alternating current, in which electricity can flow in **6. some / any** direction. Their partnership turned into a rivalry when Tesla offered **7. to / *** improve Edison's DC motor and generator; a delighted Edison offered 50,000 dollars if he succeeded. After months of work Tesla did, but Edison dismissed the offer **8. because of / as** a joke. Tesla promptly resigned and went to work **9. for / at** Edison's competitor, Westinghouse. Edison and Westinghouse battled over what

type of electricity was more efficient. In the end, direct current's inability to travel long distances **10. but / and** transfer to higher voltages made alternating current the standard for distributing electricity to the world.

Adapted from: <https://www.youtube.com/watch?v=wigXYgnaCfl> - The rift between Tesla and Edison – AC vs. DC posted by One Minute History

