

Top Ten Technology Disappointments

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Videophones, holograms, and Esperanto are just a few of the innovations that haven't made the impact that many expected. They may have failed completely, exist now only in niche markets, or remain in the laboratory. History records so many technology disappointments that there won't be widespread agreement on which are the biggest, but here is one version of the top 10 technologies that have failed to deliver on their promises.

1. **Nuclear power.** Experts in the 1950s predicted nuclear-powered everything—not only trains and ships but cars and airplanes as well. Electricity would be too cheap to meter, weather would be controllable, and nuclear bombs would dig canals and carve harbors.
2. **Any replacement for the gasoline engine.** The internal combustion engine was designed in 1876. By the early 1900s, it had shaken off its competitors to become the standard car engine. Turbines, rotary engines, battery-powered electric motors, and other more recent competitors have also failed to dislodge it. Hydrogen-driven fuel cells are a new possibility, but keep in mind that fuel cells were first demonstrated in 1839, and the cheapest source of hydrogen is still fossil fuels. Another is the hybrid car. This design gives a nice improvement in efficiency, but remember that the energy to drive the car still comes (directly or indirectly) from gasoline.
3. **Space travel.** Our moon bases, tourist trips to space stations, and visits to Mars are long overdue. Though it has produced some impressive science, the space program hasn't done much to change the life of the average person.
4. **The metric system.** The failure of the metric system to take hold in the US is a good example of the social challenges that can face an innovation. Metric makes sense, it is already taught in school, and it costs little to implement—and yet Americans still have not discarded their comfortable but clumsy English units in daily life. Among the nations of the world, the US shares this status with only Liberia and Burma.
5. **Artificial Intelligence (AI).** In 1997, a computer won a match against the world's best chess player—finally. This milestone had been repeatedly predicted to be ten years away since the 1950s. Robots may work in factories, but they still don't work with people. Even the natural language interface is available only in very limited domains. AI has consistently overpromised and underdelivered.
6. **Smart homes.** A home in which all appliances could be controlled from interfaces around the house has been predicted since the 1970s. Is the garage door up? Is the oven on? You could find out from your bedroom or from work and control them if necessary. Unlike AI, solving the technical challenges isn't especially difficult, but finding a market has been.

7. **Smart highways.** For decades, futurists have imagined cars that could drive themselves. Preserving the convenience of the private car, providing more safety and better fuel economy, and leaving the driver free to work, daydream, or even sleep is a compelling idea. Unfortunately, it remains a World's Fair dream.
8. **Extremes of workplace change.** In the early 1900s, society fretted that technology would turn workers into slaves to the assembly line. Remember Charlie Chaplin in the movie *Modern Times*? Half a century later, we worried instead about an overabundance of leisure time. Work hours since 1900 had dropped dramatically, and many speculated about how we would handle the windfall. Predictions have been frequently wrong.
9. **Supersonic passenger travel.** In the centenary year after the Wright brothers' first flight, the Concorde supersonic airplane was retired. Though the Concorde was launched in 1976, supersonic passenger travel has never been an important means of travel. In fact, passenger aircraft haven't become much faster than the first jet airliners in the 1950s.
10. **Solar power.** Though solar power keeps popping up as an exciting new energy source, the science behind solar cells has been known since 1839. It's sobering to realize that fossil fuels have been the most important energy source to the industrialized world for roughly 200 years.