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10 Tech Breakthroughs We Only Have Because of War

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War! What is it good for? Well, actually, technology. Throughout history, war has been a catalyst for technological innovation, often accelerating the development and deployment of technologies that have later found widespread civilian applications. While the primary aim of these innovations was to gain a strategic or tactical advantage, many of these breakthroughs have profoundly transformed civilian life, science, and industry. Here are ten things war gave us, despite sunken costs.

1. Radar

Radar technology, essential for detecting the presence, direction, and speed of aircraft and ships, saw significant development during World War II. The need to detect incoming enemy aircraft and naval vessels led to rapid advancements in radar technology by the Allies and Axis powers alike. Post-war, radar technology found applications in aviation, weather forecasting, air traffic control, and even space exploration. Its development has had lasting impacts on both civilian and military operations globally.

2. The Internet

The origins of the Internet can be traced back to the Cold War era, particularly with the creation of ARPANET by the U.S. Department of Defence's Advanced Research Projects Agency (ARPA) in the late 1960s. ARPANET was designed to ensure reliable communication in the event of a nuclear attack, featuring a decentralised network structure. This foundational technology eventually evolved into the modern Internet, revolutionising global communication, commerce, and information sharing.

3. Jet Engines

The development of jet engines was significantly advanced during World War II as nations sought faster and more efficient aircraft. The Germans, with their Messerschmitt Me 262, and the British, with the Gloster Meteor, led early innovations. These advancements continued post-war, leading to the development of commercial jet airliners, which transformed global travel by drastically reducing flight times and making air travel more accessible to the masses.

4. Nuclear Energy

The Manhattan Project, a secret U.S. initiative during World War II, culminated in the development of the atomic bomb. While its primary aim was to create a devastating weapon, the project also laid the groundwork for the development of nuclear energy for peaceful purposes. Post-war, nuclear reactors have been used to generate electricity, power submarines, and conduct scientific research, significantly influencing energy policy and capabilities worldwide.

5. Computers

The exigencies of World War II drove significant advancements in computing technology. Notable among these was the development of the Colossus, the world's first programmable digital computer, used by British cryptanalysts to break German codes. Similarly, the ENIAC, developed in the U.S., was initially designed to calculate artillery firing tables. These early computers paved the way for the rapid development of computing technology, leading to the modern computer and the information age.

6. Penicillin

While penicillin was discovered by Alexander Fleming in 1928, its mass production and widespread use were driven by the needs of World War II. The Allied forces required effective treatments for infected wounds and diseases, leading to a concerted effort to produce penicillin on an industrial scale. This breakthrough in antibiotics has since revolutionised medicine, saving countless lives and forming the basis for the development of other antibiotics.

7. GPS (Global Positioning System)

The Global Positioning System (GPS) was developed by the U.S. Department of Defence during the Cold War to provide precise navigation and timing information for military operations. The system became fully operational in the 1990s and was subsequently made available for civilian use. Today, GPS is integral to numerous applications, including navigation, telecommunications, emergency response, and logistics, profoundly impacting daily life and commerce.

8. Drones (Unmanned Aerial Vehicles)

The use of drones or unmanned aerial vehicles (UAVs) has its roots in military applications. Initially developed for reconnaissance and surveillance, drones have evolved to include combat and logistical roles. The technological advancements made in military drones have since been adapted for civilian uses, including aerial photography, agriculture, environmental monitoring, and delivery services, highlighting their versatility and utility.

9. Microwave Ovens

Microwave technology, which uses electromagnetic waves to heat food, was discovered during World War II while developing radar technology. Percy Spencer, an engineer working on radar, noticed that microwaves could heat food quickly. This led to the development of the first microwave oven, marketed in 1947. Microwave ovens have since become a staple in kitchens worldwide, revolutionizing cooking and food preparation.

10. Synthetic Rubber

During World War II, the Axis powers cut off the Allies' access to natural rubber, which was crucial for military vehicles and equipment. In response, significant efforts were made to develop synthetic rubber. These efforts were successful, leading to the widespread production and use of synthetic rubber, which is now used in countless products, including tires, industrial materials, and consumer goods.

War sucks. Clearly. But the intense and competitive research done during war can continue to benefit society long after guns have been silenced. Maybe there is a way to artificially simulate wartime environments so our scientists can have the incentive and resources they need to develop and deliver. So yes, it is good for nothing, except rubber, radar, energy, ovens, drones, jets, computers, the internet, and a few other things.