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**The Impact of Technology on Society**

Technology has become an inseparable part of human society over decades, influencing nearly every aspect of our lives. From communication to healthcare education to entertainment, technology has revolutionized the way we live, work, and interact with one another. While it has brought about numerous benefits, it has also posed challenges and raised concerns about its impact on society. “Just over 20 years ago, the dotcom bubble burst, causing the stocks of many tech firms to tumble”. Some companies, like Amazon, quickly recovered their value – but many others were left in ruins. In the two decades since this crash, technology has advanced in many ways.

Many more people are online today than they were at the start of the millennium. Looking at broadband access, in 2000, just half of Americans had broadband access at home. Today, that number sits at more than 90%.

This broadband expansion was certainly not just an American phenomenon. Similar growth can be seen on a global scale; while less than 7% of the world was online in 2000, today over half the global population has access to the internet.

Similar trends can be seen in cellphone use. At the start of the 2000s, there were 740 million cell phone subscriptions worldwide. Two decades later, that number has surpassed 8 billion, meaning there are now more cellphones in the world than people.

At the same time, technology was also becoming more personal and portable. Apple sold its first iPod in 2001, and six years later it introduced the iPhone, which ushered in a new era of personal technology. These changes led to a world in which technology touches nearly everything we do.

Technology has changed major sectors over the past 20 years, including media, climate action and healthcare. The World Economic Forum’s Technology Pioneers, which just celebrated its 20th anniversary, gives us insight how emerging tech leaders have influenced and responded to these changes.

**Positive Impacts of Technology on Society:**

The advent of technology has heralded an era of unprecedented connectivity and communication. Social media platforms, messaging apps, and email have revolutionized interpersonal relationships, enabling instantaneous communication across vast distances. These digital tools have facilitated the exchange of ideas, cultures, and knowledge, fostering global understanding and collaboration.

Furthermore, technology has revolutionized healthcare, leading to improved diagnosis, treatment, and patient care. Advanced medical imaging technologies, robotic surgery, and telemedicine have enhanced medical practices, enabling healthcare professionals to deliver more precise and efficient services. Wearable devices and health-tracking apps empower individuals to take proactive measures towards managing their health, promoting overall well-being and preventive care.

In the realm of education, technology has transformed traditional teaching methods, making learning more accessible, interactive, and personalized. E-learning platforms, educational apps, and online resources provide students with flexible learning experiences, catering to diverse learning styles and needs. Virtual reality (VR) and augmented reality (AR) technologies offer immersive simulations that facilitate better comprehension of complex concepts, revolutionizing the educational landscape.

Moreover, technology drives economic growth and fosters innovation, propelling societies towards prosperity and advancement. Industries such as information technology, biotechnology, and renewable energy have thrived due to technological breakthroughs, creating new opportunities for job creation and economic development. Automation and artificial intelligence (AI) have streamlined processes across various sectors, increasing productivity and competitiveness on a global scale.

**Negative Impacts of Technology on Society:**

Despite its numerous benefits, technology also presents significant challenges and risks to society. One of the foremost concerns is the rise of social isolation and disconnect in an increasingly digitized world. While technology enables connectivity, excessive reliance on digital communication channels has led to a decline in face-to-face interactions and a sense of disconnection from real-world relationships.

Furthermore, the pervasive use of technology has raised health concerns, particularly regarding digital addiction and sedentary lifestyles. Excessive screen time has been linked to various health issues, including obesity, musculoskeletal disorders, and sleep disturbances. Digital addiction, characterized by compulsive use of technology, has emerged as a prevalent issue, particularly among younger demographics, leading to adverse effects on mental health and well-being.

Additionally, technology has contributed to job displacement and economic inequality, particularly through automation and AI-driven advancements. While these technologies have enhanced productivity, they have also led to the loss of jobs in certain sectors and widened the gap between skilled and unskilled labor. Moreover, the digital divide, characterized by disparities in access to technology and digital literacy, perpetuates socioeconomic inequalities, further marginalizing vulnerable populations.

**Alternative Media consumption**

The past 20 years have greatly shaped how and where we consume media. In the early 2000s, many tech firms were still focused on expanding communication for work through advanced bandwidth for video streaming and other media consumption that is common today.

Following on from these first new media options, new communities and alternative media came the massive growth of social media. In 2004, fewer than 1 million, people were on Myspace; Facebook had not even launched. By 2018, Facebook had more 2.26 billion users with other sites also growing to hundreds of millions of users.

While these new online communities and communication channels have offered great spaces for alternative voices, their increased use has also brought issues of increased disinformation and polarization.

Today, many tech start-ups are focused on preserving these online media spaces while also mitigating the disinformation which can come with them. Recently, some Tech Pioneers have also approached this issue, including TruePic– which focuses on photo identification – and Two Hat, which is developing AI-powered content moderation for social media.

**Climate change and green tech**

Many scientists today are looking to technology to lead us towards a carbon-neutral world. Though renewed attention is being given to climate change today, these efforts to find a solution through technology is not new. In 2001, green tech offered a new investment opportunity for tech investors after the crash, leading to a boom of investing in renewable energy start-ups including Bloom Energy, a Technology Pioneer in 2010.

In the past two decades, tech start-ups have only expanded their climate focus. Many today are focuses on initiatives far beyond clean energy to slow the impact of climate change.

Different start-ups, including Carbon Engineering and Climeworks from this year’s Technology Pioneers, have started to roll out carbon capture technology. These technologies remove CO2 from the air directly, enabling scientists to alleviate some of the damage from fossil fuels which have already been burned.

Another expanding area for young tech firms today is food systems innovation. Many firms, like Aleph Farms and Air Protein, are creating innovative meat and dairy alternatives that are much greener than their traditional counterparts.

**Biotech and Healthcare**

The early 2000s also saw the culmination of a biotech boom that had started in the mid-1990s. Many firms focused on advancing biotechnologies through enhanced tech research.

An early Technology Pioneer, Actelion Pharmaceuticals was one of these companies. Actelion’s tech researched the single layer of cells separating every blood vessel from the blood stream. Like many other biotech firms at the time, their focus was on precise disease and treatment research.

While many tech firms today still focus on disease and treatment research, many others have been focusing on healthcare delivery. Telehealth has been on the rise in recent years, with many young tech expanding virtual healthcare options. New technologies such as virtual visits, chatbots are being used to delivery healthcare to individuals, especially during Covid-19.

Many companies are also focusing their healthcare tech on patients, rather than doctors. For example Ada, a symptom checker app, used to be designed for doctor’s use but has now shifted its language and interface to prioritize giving patients information on their symptoms. Other companies, like 7 cups, are focused are offering mental healthcare support directly to their users without through their app instead of going through existing offices.

The past two decades have seen healthcare tech get much more personal and use tech for care delivery, not just advancing medical research.

In the early 2000s, many companies were at the start of their recovery from the bursting dotcom bubble. Since then, we’ve seen a large expansion in the way tech innovators approach areas such as new media, climate change, healthcare delivery and more.

In conclusion, the impact of technology on society is undeniable, representing a double-edged sword with both positive and negative consequences. Throughout history, technological advancements have transformed the way we live, work, and interact with one another, ushering in an era of unprecedented connectivity, convenience, and innovation. From improved communication and healthcare to enhanced education and economic growth, technology has revolutionized virtually every aspect of human existence, offering countless opportunities for progress and development.

However, alongside its myriad benefits, technology has also engendered significant challenges and concerns. Social isolation, digital addiction, job displacement, economic inequality, privacy breaches, and cybersecurity threats are among the myriad issues that underscore the complex interplay between technology and society. Moreover, the rapid pace of technological change often outstrips society's ability to adapt, exacerbating existing disparities and generating new ethical dilemmas.

As we stand at the precipice of an increasingly digitized future, it is imperative that we approach technological innovation with a critical eye and a keen awareness of its broader societal implications. While technological progress is inevitable, it must be accompanied by thoughtful deliberation, ethical considerations, and proactive measures to mitigate its negative impacts. This necessitates collaboration among governments, industry leaders, educators, policymakers, and civil society to ensure that technology is harnessed for the greater good of humanity.

Moreover, fostering digital literacy, promoting equitable access to technology, and prioritizing human-centered design principles are essential steps in creating a more inclusive and sustainable technological future. By empowering individuals with the knowledge, skills, and resources to navigate the digital landscape responsibly, we can cultivate a society that harnesses the transformative power of technology while safeguarding human dignity, rights, and values.

In essence, the relationship between technology and society is dynamic and multifaceted, characterized by both promise and peril. As we navigate the complexities of the digital age, let us strive to harness the potential of technology as a force for positive change, while remaining vigilant against its unintended consequences. Only through collective action and foresight can we ensure that technology serves as a tool for enhancing human flourishing and advancing the collective welfare of society as a whole.

Reference

[19 Potential Negative Effects of Technology | Digital Detox](https://www.digitaldetox.com/blog/the-19-negative-effects-of-technology-in-2019/)

[On the Agenda / Davos Agenda | World Economic Forum (weforum.org)](https://www.weforum.org/agenda/davos-agenda/)

The [Impact of Digital Technologies | United Nations](https://www.un.org/en/un75/impact-digital-technologies)

[Technological Change - Our World in Data](https://ourworldindata.org/technological-change)

[by Max Roser, Hannah Ritchie and Edouard Mathieu](https://ourworldindata.org/team)

[7 Technologies That Changed The World | upGrad blog](https://www.upgrad.com/blog/7-technologies-that-changed-the-world/)

Max Roser, Hannah Ritchie and Edouard Mathieu (2023) - "Technological Change". Published online at OurWorldInData.org. Retrieved from: 'https://ourworldindata.org/technological-change' [Online Resource]