
The Technology Revolution

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Ideas

Revolutions are the by-products of new ideas. New ideas in the fields of physics, theology, philosophy, politics, agriculture, sociology, and engineering incited revolutions that have transformed how we conceive of our place in the universe, how we regard our place in society, how we travel from location to location, how we grow food, how we manufacture goods, how we educate ourselves, how we communicate with others, how we wage war, and how we maintain the peace. Ideas that bring about revolutions are typically characterized as ones whose time has come. Ironically, it can take many years for a new idea to become sufficiently accepted and popularized before being recognized as one whose time has come.

Today's most widespread and far-reaching revolution is a technology revolution. Technology, in one form or another, has been around for a long time, and the word's definition has grown and its meaning to us has changed over the years. The word technology comes from the Greek word *technologia*, which is defined as the systematic treatment of an art. Common use of the word today includes the categorization of products, services, and methodologies into high technology (high tech), low technology (low tech), and no technology (no tech). When most of us interact with or talk about technology today, it's of the high-tech variety, which involves the use or production of computers or other sophisticated electronic devices. It is our use of these devices that is responsible for today's technology revolution.

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Today's technology revolution, however, would have never happened were it not for the creation of the Internet. The Internet, which was a by-product of the technology race that followed the launching of the world's first satellite, Sputnik I, by the Soviet Union, provided the necessary catalyst — in the form of a computer network — to transform these high-tech devices from isolated productivity tools into communication nodes on the new electronic frontier called cyberspace. The technology revolution of the Internet derives from the simple and fundamental idea that computers and other electronic devices should be able to communicate with one another, share resources, and share information. And because the Internet is a global network, the technology revolution it incited is a global revolution.

The Internet's technology revolution is being delivered to us on computerized devices that can be commonly found in our homes and places of work, in our local libraries, schools, and community centers, in our cars, alongside highways, and at city intersections, and in our pockets, knapsacks, briefcases, and handbags. These devices take the form of microprocessor chips that are now integral to many of the products we buy, including such things as toys, appliances, and automobiles. They are, however, more immediately recognizable in the form of laptop and desktop personal computers, cellular telephones and personal digital assistants, and a wide variety of other networked computer devices that send, receive, and store information. These devices — and the Internet that interconnects them — are transforming how we communicate, how we share resources and information, how we work, how we play, how we educate ourselves and our children, how we form communities, and how we live our lives.

Impact, Perils, and Promise

The impact of the Internet is evident all around us. References to the Internet in the form of Internet addresses — like the devices we use to connect to the Internet — are difficult to avoid. Less obvious, but more profound changes can be discerned in the impact of the Internet's technology on our behavior, desires, and expectations. The Internet's impact can also be found in such things as the handling (and mishandling) of our personal

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information, the creation of new business enterprises known as dot coms, and the emergence of a new type of social division — named the digital divide — that distinguishes those who use the technology from those who do not.

The perils of using the Internet, like references to the Internet, are also difficult to avoid. These perils take many forms, such as the frequent security threats of computer viruses, worms, and trojan horses, the limited ability to protect information from theft and abuse, and exposure to undesirable and offensive information. Every individual and organization that uses the Internet is a potential target. These perils affect children and adults, novice and experienced users. They damage computer systems, destroy information, invade our privacy, and cost all of us a lot of money to remove, recover from, and defend against.

The promise of the Internet, unlike its perils, is different things to different people. How we use the Internet and the interest we take in its technology varies considerably from one individual to the next. The same is true of our expectations of what the technology can offer us and the extent of its impact on our lives. The promise of the Internet to any one individual will be affected by that individual's age, place of residence, employment, understanding of the technology, physical abilities or disabilities, and any number of other factors. For example, the availability of Internet access will mean something very different to someone with a physical disability that prohibits that person from leaving home than it will to someone capable of traveling to work, visiting a grocery store, and attending a meeting in person. The Internet's promise can be found in its amazing potential to empower the individual, which is why it will always be different things to different people.

This book explores the impact of the Internet's technology revolution, and it examines some of the perils introduced by our widespread acceptance of the Internet's technology and the promise that this technology holds for our future. The purpose of this book is not to provide comprehensive coverage of subjects related to our use of the Internet. Instead, its purpose is to introduce several select subjects that are most responsible for shaping the composition of today's Internet and, accordingly, may have the greatest bearing on how the Internet will change in the near future.

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This book presents how the Internet's technology is being used and abused, where this technology may be heading, and what every Internet user should understand about what this technology can and cannot do. It is hoped that this book will prompt users of the Internet to pause and think about how they are using the technology in light of the risks to the privacy and security of their information. Another hope is that it will foster an appreciation for what this new technology is capable of creating for each of us and for the world in which we live.