

# TECHNOLOGY FEARS AND SCAPEGOATS

40 MYTHS  
ABOUT PRIVACY,  
JOBS, AI,  
AND TODAY'S  
INNOVATION  
ECONOMY

ROBERT D. ATKINSON  
DAVID MOSCHELLA



# Technology Fears and Scapegoats

“To build a better future, we have to believe in a better future. This means reversing today’s anti-tech mindset and restoring America’s faith in scientific advancement. This book does both.”

—Marc Andreessen, *Founder of Netscape and Cofounder of Andreessen-Horowitz*

“Atkinson and Moschella deliver a much-needed reminder that technology, data and innovation can be critical ingredients for solving society’s biggest problems - from accelerating a clean energy revolution, delivering a more equitable healthcare system, to a more open and dynamic economy that rewards entrepreneurship.”

—Aneesh Chopra, *President of CareJourney, former US Chief Technology Officer, and author of Innovative State*

“Debates over AI and digital media swing between utopian (technology will cure everything!) and dystopian (too many uncontrollable harms!). Luckily, this insightful new book helps experts and the public alike find the research-based middle ground beyond the hype at both extremes: how to embrace the opportunities while reducing the hazards.”

—Rosabeth Moss Kanter, *Ernest L. Arbuckle Professor of Business Administration at Harvard Business School and author of Think Outside the Building*

“This is an excellent collection of essays on U.S. technology actions, policies, and proposals. I strongly endorse this book. It is ideal for wide audiences, and I believe universities and high schools will greatly benefit from the chapters included.”

—Albert N. Link, *Virginia Batte Phillips Distinguished Professor of Economics at University of North Carolina at Greensboro, Series Editor of Palgrave Advances in the Economics of Innovation and Technology, and coauthor of Innovative Activity in Minority-Owned and Women-Owned Business*

“It’s odd that we need a book defending technology and debunking today’s many myths. Odd because so much good comes from advances in science and technology. But there are so many complaints about tech these days that debunk we must, and Rob and David do it very well.”

—Robert Metcalfe, *inventor of Ethernet and Winner of the 2022 Turing Award*

“Technological progress is our best hope for a future of peace and prosperity, especially in changing the trajectory of climate change. Fortunately, there are a wide array of technologies that can help people achieve those hopes. Unfortunately, there are also a large number of myths that diminish public support for those

technologies. Atkinson and Moschella take these myths head on. *Technology Fears and Scapegoats* is a profound antidote to pessimism about the future and opens the door to a brighter day.”

—Peter Schwartz, *Chief Future Officer at Salesforce and author of The Art of the Long View*

“Atkinson and Moschella have written an important book on something that should matter to every American: success and innovation in our tech industry. They tackle hard questions head on and provide deep insight.”

—Dan Scheinman, *technology executive, investor, and advisor*

“Throughout history, emerging technologies have been blamed for societal ills. Recently, we’ve seen the shift from Techlash around social media to hysteria over ‘human extinction from AI.’ Making sweeping negative generalizations based on inconclusive evidence is easy. Adding scary media narratives on top of it is even easier. The hard task is debunking them. *Technology Fears and Scapegoats* does an excellent job of battling well-known misconceptions. It’s, therefore, a must-read for policymakers.”

—Nirit Weiss-Blatt, *author of The Techlash and Tech Crisis Communication*

Robert D. Atkinson · David Moschella

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40 Myths About Privacy, Jobs, AI, and  
Today's Innovation Economy

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At the *Information Technology and Innovation Foundation*, we try to think critically and independently about technology and its economic and societal impact. Sometimes this means being in the minority while almost everyone else is conveying safe answers, the party line, and/or the conventional wisdom. To challenge entrenched assumptions across a broad range of topics you need people with specialized expertise who are willing to take a non-partisan stand. We want to thank everyone at ITIF who contributed to the research, analysis, and opinions in this book, especially Daniel Castro, Nigel Cory, Jessica Dine, Ashley Johnson, Robin Gaster, and Trelysa Long.

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Robert D. Atkinson  
David Moschella

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# Introduction: The Roots and Risks of Today's Techno-Mythologies

Technological innovation is the most important factor determining not only America's future, but the world's. For the last 200 years, innovation has powered dramatic increases in living standards and the quality of life. Given twenty-first-century challenges such as economic inequality, climate change, aging populations, government indebtedness, resource shortages, lagging productivity, and intensifying global competition, this progress must continue. Only technology can deliver the necessary growth, productivity, and scale to create a world with higher wages, clean and inexpensive energy, advanced health care, 24\*7 support for the elderly, enhanced education for the young, and so much more.

Who wouldn't want this future? Well, as it turns out, a lot of people. The biggest barrier to achieving today's technological imperative is the growing animus against an innovation-driven future. This animus can be seen in the many falsehoods that demonize advanced technology and the people and companies that bring it to market. Today's conventional wisdom holds that technology destroys privacy, spreads misinformation, undermines trust and democracy, eliminates jobs, discriminates by race and gender, increases inequality, rips off consumer, harms children, and even threatens the human race. Companies are also routinely attacked for a wide range of alleged market failures, including excess profits, a shrinking middle class, overly concentrated industries, and monopoly pricing power.

Unless these, and many other, fears are exposed as the myths, exaggerations, and scapegoats they are, it will be increasingly difficult for the West to restore the kind of optimism and spirit needed for a robust innovation ecosystem. This book seeks to support this restoration by identifying and

debunking 40 prominent myths that stand in the way of a technology-enhanced future.

## The Innovation Formula

The recipe for hi-tech innovation is no secret. History has shown that the key ingredients are: science and engineering research, STEM and entrepreneurial skills, effective mass education, modern infrastructure, and the success of technology firms of all sizes, including large, dominant ones. Innovation also requires smart, supportive government policies that put accelerating the rate of progress at the center of economic thinking. Unfortunately, this formula often seems to better describe modern China than today's United States.

Both innovation and innovation policy must be grounded on a bedrock of aspiration and optimism. If society sees innovation as a necessary force for good, and government as a key enabler, there will be better innovation policies and more innovation. But if the dominant narrative is that technology is an out-of-control force for harm, there will be detrimental policies and less innovation. This latter situation is where the United States and many other Western nations find themselves today. Important technologies such as AI, robotics, analytics, satellites, drones, sensors, personalization, facial recognition, speech syntheses, advanced cryptography, algorithms, automated operations, and genetic profiling are seen as inherently suspect and problematic. Like Gulliver, they are threats to be tied down, not the likely pillars of an advanced technological society.

These attitudes reduce both the enthusiasm for innovation and the efforts by government needed to spur it. Too often, America has shifted its focus from delivering technological wonders to preventing "harmful" change. This mindset has led to technology bans, counter-productive taxes, overly stringent and conflicting federal and state regulations, excessive approval cycles, limitations on data usage, resistance to automation, under-utilization of domestic resources, foreign dependencies, efforts to block mergers and acquisitions, unwarranted antitrust charges, extensive litigation, slower adoption, project delays, cost overruns, and an overall fear of the future. Once widely seen as a savior of humanity, technology is increasingly used as a scapegoat for just about every societal ill. The knowledge of Athena now gets treated more like the curse of Eris, the goddess of discord.

These overly negative attitudes are leading America to increasingly retreat from the future, at risk of ceding important innovation areas to its global rivals. While Chinese leader Xi Jinping proclaims: "The Internet Age will

promote the development of human life, production and productivity,” President Biden, reflecting the view of many Western leaders, recently wrote with regard to artificial intelligence: “We must be clear eyed and vigilant about the threats.”<sup>1</sup> Unless such narratives are rejected and replaced with more hopeful ones of the kind that enabled the West to become the most advanced region in the world, we can expect slower rates of progress, declining competitiveness and the eventual loss of global leadership.

Such a loss risks transforming America into a different kind of nation: fearful, static, and increasingly angry. In this sense, technological pessimism and opposition is like a dry rot eating away at the foundations of the West. Today, it is most advanced in Europe, but it has also spread widely across the United States. America needs to clean out the rot and return to its much more optimistic, dynamic, and appreciative technology roots.

This book seeks to defend the essential value of technology and rebalance a series of debates that have become almost completely one-sided. Each chapter examines a common myth, explains why it is either wrong or significantly overstated, and describes what the real situation is. We don't pretend that this one work can defuse today's negative narratives. These *techno-mythologies* are too deeply embedded in the popular consciousness, repeated endlessly by anti-tech advocacy groups, the elites, and a mass media that often uses scaremongering and misinformation to attract “eyeballs.” Bad news, after all, still sells.<sup>2</sup>

Likewise, this isn't to say that tech companies and their innovations are a panacea, and that there are no problems or role for regulators. This is not a call for a libertarian free-for-all. Many of the promises of the information age such as the transformation of health care, education, and transportation have yet to be fulfilled; criticism of tech company shortcomings and business practices is sometimes warranted, and there are important support and oversight roles for the state. But when technology's detractors are so blinded by hostility that they exaggerate the downsides and ignore the many things these companies do right, their critiques cease to be part of a productive debate, and take on the character of an angry mob. Perhaps even more importantly, by blaming so many societal problems on technology, it's all too easy to avoid the real drivers of polarization, distrust, manufacturing job losses, inequality, and many other current maladies.

We hope that this book can serve as a corrective for those who are open to a more positive and balanced perspective on technology's impact on society. More broadly, we believe this work can help America and the West rediscover what used to be a deep-seated optimism about innovation, progress and the future, as well as the role of government in promoting it. For if the West

drifts too far from these roots, at a fundamental level it will cease to be the West as we have known it since the Enlightenment—a place and an attitude that mostly welcomes change and progress.

## Familiar Tech Fears

Zog probably objected to Grog's discovery of fire because it would lead to less demand for fur, and that the invention of the wheel would undermine the importance of physical strength. Socrates complained that writing was a poor way to communicate knowledge. Religious leaders warned about the printing press, and translating from Latin. The Luddites smashed textile machines. An 1861 article argued that the telegraph was a step down from steamer ships carrying mail because "it has led to no improvement."<sup>3</sup> An 1897 article about cameras stated that "photographs are made to lie."<sup>4</sup> Doctors worried that bicycling could lead to insanity in women.<sup>5</sup> Radio waves were said to cause hurricanes.<sup>6</sup> Experts warned that television would lead to the end of privacy.<sup>7</sup> In 1981, we were told that Sony's "Walkman" devices were "mind altering."<sup>8</sup> And in 2020, we were warned that 5G cell towers and Covid-19 cases were related.<sup>9</sup>

In hindsight, these techno-panics are amusing and seem like human nature: "What were these people thinking?" Hopefully in 30 to 40 years, the myths we describe in this book will be seen as similarly silly. How could so many educated people possibly believe that AI would destroy human worth? Where did we get the idea that Big Tech exploits low-income nations by providing free services? Why did we think that personalized information services are a bad idea? What made us expect private companies to tell us what is true and what is false? How could so many experts have believed that technology would soon lead to the *end of work*?

But Western societies are very different today than they were 40 years ago. They are less optimistic, more fearful, and more divided. Anti-technology forces are also much stronger and institutionalized, with financial support from well-endowed foundations and wealthy former tech entrepreneurs. Ideological extremes—which thrive on myths the way the *National Inquirer* thrives on celebrity gossip—are much wider and more entrenched. In short, today's anti-tech headwinds are powerful.



## America's Pro-Technology Past

For most of U.S. history, the narrative about technology was not only positive, it was often ecstatic. Americans of earlier generations remembered all too well the hardships of the past; they mostly saw technology as a blessing, and celebrated both inventors and the companies that employed them. There was a deep belief in the United States in the inevitability, and desirability, of economic and technological progress. Indeed, the enlightenment era was largely built on this idea. As Harvard Economist Benjamin Friedman wrote in *The Moral Consequences of Economic Growth*, “the idea that progress, including worldly progress, not only existed, but was inevitable, was a major step toward Enlightenment thinking.”<sup>10</sup>

The historian Merritt Roe Smith highlights a sample of books from the 1860s to the early 1900s with titles such as:

- *Eighty Years' Progress of the United States* (1861).
- *Triumphs and Wonders of the 19th Century, the True Mirror of a Phenomenal Era* (1901).
- *The Marvels of Modern Mechanism and Their Relations to Social Benefit* (1901).
- *Our Wonderful Progress; The World's Triumphant Knowledge and Works* (1902).
- *The Wonder Book of Knowledge, the Marvels of Modern Industry and Invention* (1919).
- *Modern Wonder Workers; A Popular History of American Invention* (1924).

This optimistic outlook was reflected not just in story, song, and mass media, but in the writings of leading intellectuals who celebrated the notion of progress and saw technology as a force for liberation and enlightenment. Economist Benjamin Anderson wrote in the 1930s that, “on no account, must we retard or interfere with the most rapid utilization of new inventions.”<sup>11</sup>

Importantly, it wasn't just capitalist intellectuals who saw the potential of new technologies. Socialist Jack London warned the working man: “Let us not destroy these wonderful machines that produce efficiently and cheaply. Let us control them. Let us profit by their efficiency and cheapness. Let us run them by ourselves. That, gentlemen, is socialism.”<sup>12</sup> Socialists, communists, and others on the left embraced technology because they believed that liberation could come about only when the problem of production had been

solved, and that could only be achieved through mechanization and innovation. Even the Catholic Church praised the wonders of technology. In 1967, Pope Paul VI stated:

The introduction of industrialization, which is necessary for economic growth and human progress, is both a sign of development and a spur to it. By dint of intelligent thought and hard work, man gradually uncovers the hidden laws of nature and learns to make better use of natural resources. As he takes control over his way of life, he is stimulated to undertake new investigations and fresh discoveries, to take prudent risks and launch new ventures, to act responsibly and give of himself unselfishly.<sup>13</sup>

Compare this to a recent complaint from Pope Francis:

Artificial intelligence and the latest technological innovations start with the notion of a human being with no limits, whose abilities and possibilities can be infinitely expanded thanks to technology. In this way, the technocratic paradigm monstrously feeds upon itself.<sup>14</sup>

He goes on to state:

It is chilling to realize that the capacities expanded by technology have given those with the knowledge and especially the economic resources to use them, an impressive dominance over the whole of humanity and the entire world.

Of course, the most enthusiastic of these earlier writings tended to come before the Great Depression and two catastrophic world wars, and it was inevitable that any utopian views of technology would erode over time. As Robert Friedel wrote in *A Culture of Improvement: Technology and the Western Millennium*, “The 1970s saw a confluence of forces that collectively cast into doubt the ascendent culture of improvement.”<sup>15</sup> These forces included environmental damage, fear of big business power, doubts about corporate life, global and national inequalities, racial divisions, nuclear weapons, and many other concerns. Nevertheless, technological optimism, especially in America, persisted until the second half of the 2010s.

## How Myths Harm Innovation

Today’s concerns about artificial intelligence (AI) are illustrative of this loss of faith and confidence. Long the Holy Grail of computer science, AI services such as ChatGPT haven’t been celebrated for their many potential benefits

in science, software, language translation, the arts, and countless other areas; they have mostly triggered a barrage of attacks. AI is racially biased; AI will destroy millions of jobs; AI will kill copyright; AI will undermine democracy; and even that AI is an existential threat to humanity. Given these accusations, anyone getting a Ph.D. in AI must sometimes feel like they're developing nuclear weapons or toxic chemicals. Similarly, when most of the messages around a technology are negative, policymakers don't wonder how they can utilize it, they think about how they should shackle it.

Like AI, many other myths stem from fear. If you fear the loss of privacy, you will be less keen on building the healthcare databases that make new insights possible. If you believe that Big Data biases are inevitable, you will be less tolerant of the early errors that most innovations come with. If you believe the Internet mostly harms teenagers, you might discourage them from learning valuable digital skills, or be less supportive of using computers in and out of the classroom.

Other myths distort policy priorities. If small business is seen as the font of innovation, then policymakers should favor less efficient smaller firms over more efficient larger ones. If automation kills jobs, then governments should develop schemes that tax automation equipment. If productivity gains don't benefit workers, why pursue them? If inequality is out of control, then we should focus on redistribution, not growth. If big is inherently bad, we should break up technology firms regardless of their consumer benefits. If the technology industry is seen as dominated by white males, we devalue the essential contributions of people from India, Asia, and elsewhere, often in America on temporary, and hence revocable, visas.

Still other myths stem from a sense of complacency. If we have all the technologies we need to address climate change, then government should force organizations and individuals to adopt them, instead of developing better and cheaper solutions. If "technology is changing the world as never before" and "China copies but doesn't innovate," there is no need to accelerate innovation, as we are doing just fine already. If you believe that America can get all the IT skills it needs from India, you will be less worried about the decline of America's STEM education.

Finally, some myths are targeted not against innovation, per se, but against government playing an active role to spur it. The views that "government R&D crowds out more productive private sector R&D," and that "industrial policy is not the American way" are both historically wrong and limit support for advanced technology development programs and policies.

## Negativity's Roots

So how did all this misinformation about technology, technology firms, and technology policy come about? Why now? Why in America? How did we reach a situation where one of the great innovators of all time is viscerally disliked by so many Americans. In just twenty years, Elon Musk has revitalized the American car, space, solar, and battery industries, used his satellite network to provide vital services to Ukraine, and helped launch OpenAI, all while pushing the frontiers of robotics, brain implants, and space exploration. Yet because many people disapprove of his political views, his very un-CEO-like outspokenness, and/or his turbulent efforts to change the former Twitter into a new X, his extraordinary contributions are minimized and his reputation routinely vilified.

Readers of sufficient age will recall that there was virtually no opposition to the Internet and its leaders when it was first rolled out commercially in the 1990s. It was widely seen as both positive and transformative. *The New York Times'* John Markoff wrote in 1993:

Forget Elaine's. The Internet is currently the world's most fashionable rendezvous. WHO USES IT: Well-known nerds like Steve Jobs and William Gates, pop folks like Todd Rundgren and Billy Idol, cyberpunks and yuppies, your mom.<sup>16</sup>

This sort of gushing was commonplace, and similar to that of a century ago, complete with many enthusiastic books about the wonders of the coming Information Age. Although one could argue that there was little initial opposition because people didn't see the dark side of the Internet which would only emerge later, this view is unconvincing. AI is at a similarly early stage of development, and yet it is already widely demonized, so there must be something additional going on. While it was the 2016 election of Donald Trump that released the full fury of anti-tech forces, the ten dynamics below laid the necessary groundwork.

### 1. *Diverse Resentments*

It's only human nature that the extraordinary success of Silicon Valley has led to various resentments. Many people resent the great riches of a handful of individuals and the millions of very high-paying office jobs the technology world has created. Traditional media can't help but resent the way new media now dominates the advertising industry, putting existential pressures on many once powerful firms. Book publishers resent their dependence on Amazon,

and the fact that books are less influential than they used to be. Older workers resent the wild success of people barely out of their teens. Politicians and governments resent that they no longer control the dissemination of information. Many citizens without technological skills resent feeling unappreciated. Citizens around the world resent the fact that, outside of China, American tech companies are so dominant. While these same groups enjoy technology's many benefits, there is an underlying unease more than open to technology critiques.

## 2. *The Need for Scapegoats*

Technology is now blamed for a wide range of societal problems. As tech-lash scholar Nirit Weiss-Blatt writes “Silicon Valley—once the golden child of American industry—has become a villain.”<sup>17</sup> But as this book will show, technology is not the main cause of polarization, distrust, loss of faith in elections, stagnant wages, or the decline in manufacturing. Such claims are mostly a form of scapegoating for a society fundamentally divided on issues such as abortion, immigration, taxes, school choice, police reform, trade, affirmative action, Covid-19 mandates, judicial fairness, support for Ukraine, and much more. It's much easier to blame these divisions on the impact of technology than recognize that America's distrust mostly stems from real institutional failures—be it the wars in Iraq and Afghanistan; unchecked globalization; spiraling national debt; abuses by the police, religious institutions, athletic coaches, the Boy Scouts and other guardians; rising crime; failing schools; media biases; open borders, inflation, and more. Blaming Tech is the easy way out.

## 3. *Free-Market Ideologies*

Some myths are mostly rooted in philosophy, an overarching belief system so strong that everything is filtered through it. For example, the myth that “industrial policy is not the American way” stems from the dominance, at least on the political right, of the view that free markets are inherently superior to public/private partnerships. Never mind that U.S. state and federal governments have implemented industrial policies since before the Constitutional Convention and they have been a major reason for America's techno-economic dominance.<sup>18</sup> This laissez-faire view can easily lead to the false beliefs that China's reliance on a strong and engaged state is either destined to fail or a form of cheating.

#### 4. *First-Order Thinking*

Type into Google the words “AI impact on jobs,” and you will see many links warning of mass unemployment. But this misunderstanding comes from only considering first-order effects. Of course, a company adopting technology to reduce costs will often find that it can produce more output with the same or fewer workers. Unfortunately, for many observers, including many journalists and academics, that’s as far as they go with their analysis: Automation leads to fewer jobs, especially in the most immediately affected localities.

But as has been true since at least the emergence of agriculture, when a technology boosts labor productivity, yes, fewer workers might be needed, but because that product or service now costs less, consumers save money, which they can spend something else. If making a car is cheaper because of robotics, people might spend the savings on home improvement or a long-desired boat. If a law firm uses AI to boost productivity and employs fewer legal assistants, legal services can cost less, and people can spend those savings on things like going out to dinner.

These second-order effects explain why even though U.S. labor productivity has increased by more than sevenfold over the last 120 years, the unemployment rate is near an all-time low.<sup>19</sup> Fears that ATM machines, self-service gas stations, self-checkout grocery stores, camera-based toll booths, industrial robots, software, and other forms of automation would result in mass unemployment have proved unwarranted. While *globalization* has led to many job losses, we will show that *automation* is actually part of the higher employment and higher-wage solution, not the problem.

This kind of first-order thinking permeates tech myths: If companies reduce workers, profits must go up, ignoring the second-order effect of competition driving down prices. If a web site places a targeted ad based on your Internet activity, your privacy must be violated, ignoring the second-order reality that neither the advertiser nor the company knows your information, only an algorithm does.

#### 5. *Entrenched Groupthink*

Many myths have gained their strength and endurance through the power of “groupthink.” The term was first introduced in 1971 in *Psychology Today* by psychologist Irving Janis. Janis had studied group decision-making under conditions of stress and found that:

... individuals tend to refrain from expressing doubts and judgments or disagreeing with the consensus. In the interest of making a decision that furthers their group cause, members may also ignore ethical or moral consequences. While it is often invoked at the level of geopolitics or within business organizations, groupthink can also refer to subtler processes of social or ideological conformity.<sup>20</sup>

In other words, groupthink is pervasive because it's easier for people to go along with the dominant narrative, and because challenging that narrative can have real personal costs. In many organizations, it can mean being passed over for promotion because one is not seen as a *team player*. As a professional, it can mean being quietly ignored by one's peers. Because someone doesn't hold the "right" views, it's not a good idea to invite them to submit an article, speak on a panel, or come to a roundtable lunch.

This speaks to a central challenge facing the United States. Whether for an individual, a company, or a nation, progress depends on the ability to challenge the status quo. Yet adherence to many of these anti-tech myths is now required for acceptance into polite society. We all *know* that AI is biased. We all *know* that big companies have gotten too powerful and industries too concentrated. We all know that U.S. broadband services lag the modern world. We all *know* that social media is the cause of political polarization. These and similar assertions are no longer seriously debated; they are barely even allowed to be debated. They are the accepted wisdom that elites (and anyone who seeks to be accepted into the elite class) must hold.

## 6. *The Hype Cycle in Reverse*

Originally coined by Gartner, the key idea is that most new technologies go through phases. After a major new technology is introduced, there is often a phase of "Inflated Expectations" when the technology is seen as game-changing in its potential. No recent innovation has seen a higher peak of expectations than AI and ChatGPT. After years of disappointment, AI is now widely seen as a world-shattering innovation.

In earlier years, technology hype was mostly about the benefits of a new innovation, but today it's more about the potential downsides. As one tech journal wrote: "When a technology is subject to overhype, it is easy for policymakers to assume vast and unexpected impacts, many of which could be or likely will be, negative."<sup>21</sup> If policymakers are inclined to take a precautionary-principle approach (believing that any potential harms must be regulated before any harms might actually occur), technology hype is regulatory rocket fuel. If you believe that AI will take over the world, as opposed

to being yet another remarkable and useful innovation, then you will be inclined to bring the regulatory hammer down sooner than later, as suggested by President Biden's October 30, 2023, AI executive order.<sup>22</sup>

### 7. *Anti-Capitalist Longings*

Some of the most damaging myths stem from a deep-seated rejection of the Western capitalist system, and a desire to replace it with something more stable, small-firm dominated, and egalitarian. But to justify such an agenda, anti-capitalists must first convince voters that the current system is failing: Corporations are socially irresponsible; prices and profits are too high; beneficial innovations are too rare; privacy is too unprotected; worker wages are too low; etc. They must paint a picture of big firms, particularly in technologically advanced industries, as harming both consumers and small businesses via their single-minded drive to accumulate wealth and power at the expense of "the people."

Although most of these claims are wrong, or at best overstated, that does not stop them from being recycled on social media, in the press, at conferences, and in Congressional hearings, thus laying the groundwork for a set of anti-corporate beliefs and policies that, if implemented, will result in lower economic growth, less innovation, reduced U.S. competitiveness, and fewer opportunities for disadvantaged Americans. The simple reality is that Hi-Tech and Big Tech are often inseparable. You can't really have one without the other.

### 8. *Advocacy Funding Imbalances*

For much of the twentieth century, organized labor was the major countervailing force to large corporations. But as the role of organized labor, particularly in the private sector, shrank, the new countervailing force has come from an amalgam of single-issue groups organized around causes such as the environment, poverty, gender, intellectual property, race, privacy, civil liberties, monopoly power, inequality, and the like. The growth of these groups has been fueled by the dramatic growth of left-leaning foundations, and the enormous personal wealth of liberal individuals seeking to "change capitalism" and perhaps *atone* for the sin of getting so wealthy.

According to *The Giving Review*, none of the largest 15 foundations "is principally dedicated to funding recipients pursuing conservative principles or policies. On the contrary, many of these foundations, especially those



with policy-related program interests, are clearly dedicated to just the opposite.”<sup>23</sup> The authors found that “right-leaning groups’ revenues totaled just under \$2.2 billion in 2014, but left-leaning groups’ totaled more than \$7.4 billion.”<sup>24</sup> The gap has almost certainly widened since then.

Similarly, the philanthropy consultancy, Blue Tent, has identified over 200 left-leaning foundations in America.<sup>25</sup> These include groups that reject copyright enforcement, seek to hold tech firms “accountable,” promote technology *justice*, protect individual privacy, oppose new technologies such as facial recognition and AI, highlight “power imbalances,” want to break up large firms, and regulate large telecom providers to bridge various digital divides. The Ford Foundation alone has funded nearly 100 non-profit advocacy groups focused on “public interest technology.”<sup>26</sup>

These organizations mostly refuse to fund any work that doesn’t advance their “cause;” while they are not new, their number, scope, and influence have increased significantly. As such, they provide a constant drum beat against technology and corporations, and vocal support for policies that rein them in. And in contrast to what most people might think, the technology industry spends relatively little money defending itself. According to Open Secrets, the Internet industry ranked just 13th in lobbying spending in 2022, behind hospitals, electric utilities, and real estate. Technology industry spending is less than \$100 million, with Telecom Services spending another \$118 million.<sup>27</sup>

## 9. *Purveyors of Doom*

In contrast to the pro-technology books of the past, *fear of the future* is now the main technology book genre. The titles of the ten works below are typical and are seemingly coming with increasing frequency:

- *The End of Work: The Decline of the Global Labor Force and the Dawn of the Post-Market Era* (1994).
- *Spychips: How Major Corporations and Government Plan to Track Your Every Purchase and Watch Your Every Move* (2005).
- *The Net Delusion—The Dark Side of Internet Freedom* (2011).
- *Our Final Invention: Artificial Intelligence and the End of the Human Era* (2013).
- *The Rise of the Robots: Technology and the Threat of Mass Unemployment* (2016).
- *Ten Arguments for Deleting Your Social Media Accounts Right Now* (2018).

- *The Age of Surveillance Capitalism- The Fight For a Human Future At the New Frontier of Power* (2019).
- *The Shallows: What the Internet is Doing to Our Brains* (2020).
- *Disinformation: The Nature of Facts and Lies in the Post-Truth Era* (2022).
- *Technofeudalism: What Killed Capitalism* (2023).

These and many other books and articles have relentlessly laid the intellectual foundation for the techlash. To the extent that there is a significant counternarrative promoting technology innovation, it mostly comes from consultants writing books about how IT can transform business operations. These works are widely read by corporate leaders and managers, but their impact on academia, policymakers, the media, and the general public has been minimal.

This fear of the future mindset explains why Silicon Valley VC Marc Andreessen's recent "Techno-Optimist" Manifesto was met with such widespread derision.<sup>28</sup> The *Washington Post* called it a "self-serving cry for help."<sup>29</sup> The *Financial Times* declares that "unrestrained technological 'accelerationism' is a bad idea."<sup>30</sup> And *Current Affairs* doesn't mince words, telling us that, "'Techno-Optimism' is Not Something You Should Believe In," because it "simply justifies elite power and promotes indifference to human suffering."<sup>31</sup> Clearly, Andreessen, with toxic statements like, "Technology is the glory of human ambition and achievement, the spearhead of progress, and the realization of our potential," must not only be debated, but ridiculed. This is the nature of today's opposition, and this is why digital technology, and technology more generally, needs defending.

## 10. *Own Goals*

As noted earlier, the tech industry is not blameless. When NSA contractor Edward Snowden leaked classified information to the media that disclosed that the NSA and other government intelligence agencies had secretly required tech companies to turn over information on its users, many online enthusiasts were shocked.<sup>32</sup> When Cambridge Analytica improperly used Facebook data to target U.S. voters, it fed into the election manipulation narrative. When the major tech companies worked closely with the Biden Administration to control information about Covid-19, trust in open and free online speech was damaged.

There have also been numerous hi-tech scandals—especially the fraud at Theranos and FTX, and the pyramid schemes of many cryptocurrencies and NFTs. Likewise, the tech industry has been unable to fully prevent

serious problems such as ransomware, identity theft, malware, denial-of-service attacks, bullying, and children's access to inappropriate content. It can and must do better. Perhaps most troubling, America's technology giants have allowed themselves to become highly dependent on both an increasingly powerful China and an increasingly vulnerable Taiwan. Restoring America's faith in technology innovation will require real progress in all of these areas.

## Trump as the Tipping Point

Although all ten of these factors had been simmering for some time, it was the 2016 election of Donald Trump that moved anti-tech forces to center stage.

In the early 2010s, when the Arab Spring uprisings occurred, the Internet was still seen as a liberating force. The media gushed about Iran's "Twitter Revolution," Egypt's "Facebook Revolution," and Syria's "YouTube uprising."<sup>33</sup> In 2010, *Time* featured Mark Zuckerberg as its "Man of the Year" for "connecting people, mapping social relations, creating a new system of exchanging information, and changing how we all live our lives."<sup>34</sup>

Similarly, Netflix was "killing piracy."<sup>35</sup> Spotify would let users stream songs for free.<sup>36</sup> Google had "amazing people," and its founding fathers were among the world's top "tech geniuses."<sup>37</sup> In 2011, the world mourned the loss of Steve Jobs, who had launched the "magical" smartphone.<sup>38</sup> Amazon was seen as providing more choice and convenience to tens of millions of consumers.<sup>39</sup> Massive open online courses were democratizing education.<sup>40</sup> Technologies and Big Tech were widely seen as catalysts for positive and needed change, similar to the progress of earlier eras.<sup>41</sup> President Obama was seen as the first tech-savvy president, early on sporting a Blackberry.

However, when Trump was elected in 2016, it all turned. Trump's victory was such a punch in the face to the elites, especially liberals, that it had to be explained, not as the will of the people, but as a dangerous new form of mass manipulation. The fact that Trump had such a huge social media presence further inflamed this view, as did the many exaggerated claims about the impact of Russian bots and misinformation on the 2016 election (The Brexit vote in the UK, also in 2016, raised many similar concerns and resentments across Europe, made easier by the fact that the leading social media firms were virtually all American).

Rather than acknowledging that many voters were understandably unhappy with forever wars, the 2008 financial crash, the loss of manufacturing jobs, radical cultural changes, and ever-increasing government

spending and power, it was much easier to claim that social media is the problem. As Dr. Nirit Weiss-Blatt, a researcher who has studied the techlash writes:

There were years and years of ‘build-up’ for the flip, but the flip itself was in the pivotal moment of Donald Trump’s victory and the post-presidential election reckoning that followed it. The main discussion was the role of social media in helping him win the election.<sup>42</sup>

In other words, if it wasn’t for social media, Trump never would have won. Tech gave us Trump, so tech must be punished! This became the dominant mindset and narrative of the 2016–2022 period in the media, in Congress, and with much of the liberal-leaning public. Whatever one thinks of President Trump, it seems undeniable that hostility to his victory turbo-charged the full range of anti-tech accusations. Long-familiar, but previously manageable, concerns about technology’s effects on privacy, monopoly power, trust, equity, speech, polarization, and children were now widely described as growing threats to the social order, even democracy itself. The Covid-19 pandemic further aggravated many of these claims and dynamics, turning much of the political right against technology too. There have been very few defenders.

Hopefully, 2022 marked the peak of the techlash. With Covid-19 seemingly receding and the challenge from China becoming more serious every day, a growing number of policymakers are showing signs of recognizing that this is no time to be weakening many of America’s strongest firms. While the eventual impact of the CHIPS and Science Act remains to be seen, its passage is evidence that the national mindset may be changing for the better. Nevertheless, the myths and misinformation described in this book are still pervasive and still need to be confronted. The balance of media and policy discussion is still overwhelmingly negative.

## Why Us? Why Two?

This book seeks to rebut the principal charges against both the impact of modern technologies and the companies that provide them in a systematic and non-partisan manner. In each chapter, we will challenge one of the 40 most prominent myths—not because we are instinctive contrarians but because we believe that technological innovation is the single most important factor for human progress, and that these false beliefs are significant barriers to American prosperity and competitiveness. Our goal is to restore a sense of

balance that counters the excesses of recent years and supports the view that America turns against advanced technology at its peril.

We decided to do this book together because of our long friendship, our shared perspectives, and especially the vast range of topics to be covered. One of us (Atkinson) has focused on technology and economic policy for his entire career, from work at the National Institute of Standards and Technology (NIST) and the Congressional Office of Technology Assessment (OTA), to founding and leading the world's top-ranked science and technology think tank, the Information Technology and Innovation Foundation (ITIF). Rob has taken the lead on most of this book's economic and policy chapters.

In contrast, Moschella has spent his career in the private sector, leading research at one of the world's largest IT market consultancies (IDC) and elsewhere, while working closely with global IT suppliers and enterprise customers alike. His books and research have focused on the changing nature of technology industry competition, be it from new technologies, Japan in the 1980s, China today, or, more speculatively, India in the 2030s. He also writes extensively about technology's impact on business, consumers, and society. David has been advocating the need to better defend the digital world since 2017 and has taken the lead on most of the cultural and international competition chapters (The primary author is initialed at the end of each chapter).

Both of us remain technology optimists. We admire the hard work and struggles of scientists, engineers, and entrepreneurs seeking to crack the code of change and deliver products and services that make our lives better. We are concerned that so much of today's conventional wisdom is simply wrong, and find it hard to understand how so many smart people can believe that technology is not making the world a much better place. But for those who think otherwise, we hope this book spurs an informed and open debate. Is this too much to ask? We shall see.

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