How Tech Populism is Undermining Innovation

BY ROBERT D. ATKINSON, DANIEL CASTRO, AND ALAN MCQUINN | APRIL 2015

Populist politics have hijacked the debate over many technology issues. The problem is not just that populist policies are wrong, but that populists' use of fear, distrust, and confusion are detrimental to objective policy debates and undermine the public good.

There was a time when technology policy was a game of "inside baseball" played mostly by wonks from government agencies, legislative committees, think tanks, and the business community. They brought sober, technical expertise and took a methodical approach to advancing the public interest on complex issues such as intellectual property rights in the digital era or electronic surveillance of telecommunications networks.[1] But those days are gone. Tech policy debates now are increasingly likely to be shaped by angry, populist uprisings—as when a stunning four million submissions flooded into the Federal Communications Commission in response to its request for public comment on the issue of net neutrality; or when a loose coalition of protesters staged a dramatic blackout of popular websites in January 2012 to halt legislation that was intended to curb online piracy.[2]

Populism is nothing new.[3] It is deeply rooted in U.S. political thought, from essayist Ralph Waldo Emerson's writings on individualism to philosopher William James' reactions against the emerging industrial economy.[4] As a political doctrine, it has ebbed and flowed with varying degrees of influence through much of America's history, generally pitting the rights and powers of common people against those perceived to be privileged elites.[5] Populism has gained followers among those who embrace an ethos of self-interest over social responsibility, and it has found a new target in the technologies that are increasingly ubiquitous in the economy and everyday life.[6] Technology policy discussions have thus

morphed into emotionally charged battlefields where sound bites and slogans trump facts and reason. This phenomenon is undermining effective innovation policy and slowing the pace of innovation progress. This paper examines eight tech policy issues that mark the trend, and it argues that an alternative philosophy of tech progressivism can provide a better path for policymakers and public stakeholders alike.

TECH POPULISM VERSUS TECH PROGRESSIVISM

Populism draws its strength from individuals' fears, misunderstandings, or distrust, appealing to the prejudices of crowds and relying on demagoguery, distortion, and groupthink. Tech populists focus on maximizing self-interest and personal freedom, even if it comes at the expense of broader public interests. While tech populists are not necessarily anti-technology, many perversely oppose certain technologies because they do not trust societal institutions to establish or enforce reasonable controls over their use. The populist view is that elites, especially big business and big government, will prevent useful rules from being established—or, if those rules are established, will find ways to bypass them at the expense of the broader public. They distrust the private sector because they believe corporations are driven purely by profit, and they distrust the public sector because they believe government is ineffectual and overbearing. As a result, they decry even the most pragmatic of policy solutions.

Progressivism, in contrast, is based on an American tradition of civic dialogue and rational debate that focuses on how policy can drive the overall public interest and economic growth.[7] Whereas tech populism thrives on speculation and emotion, tech progressivism is committed to rational thought and policy proposals based on facts and logic. It endorses the idea that it is possible to develop a set of rules to both foster and govern technological innovation, and once these rules are put in place, trust the system to rein in those who abuse it. Adherents of tech progressivism would not fear imagined or hypothetical harms, but focus their energy on mitigating realistic ones while maximizing innovation. Tech progressivism embraces science and technology as fundamental drivers of societal progress, seeks to maximize the benefits of innovation for all of society, and recognizes a well-run government and a thriving business community as key enablers of a healthy society. As shown in figure 1, the differences between populism and progressivism are substantial.

Tech Populism	Tech Progressivism
Appeals to emotion	Appeals to reason
Motivated by self-interest	Motivated by societal benefit
Distrusts the system	Trusts the system
Focuses on possible downsides	Focuses on benefits of progress
Distrusts government and business	Sees business and government as extensions of collective action benefiting society
Sees problems as "us versus them"	Sees problems as opportunities to work together

Figure 1: The differences between populism and progressivism

Populism's deep-rooted distrust of corporations and government makes constructive policymaking almost impossible. For example, tech populists frequently do not support technologies that might impact consumer privacy—such as technology to enable vehicle miles traveled (VMT) fees so governments can align the taxes drivers pay with their actual usage—even when strict rules are proposed to guarantee user privacy. Or more recently, tech populists have contended that public commitments by Internet service providers not to block legal content are a sham. Populists believe, even in the absence of evidence, that corporations and government will surreptitiously violate any rules put in place. This type of systemic distrust cannot easily be reasoned with, and it is extremely toxic to practical policy debates.[8]

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Populism and progressivism have different goals. Tech populists base their support or opposition for a policy almost entirely on how it affects them personally.[9] (Can they, for example, keep watching illegally downloaded movies for free? Can they avoid getting a ticket for running a red light?) However, by focusing entirely on maximizing their own interests, populists overlook the wider impact of policy on society. As historian James Lincoln Collier notes, "A nation in which most people cannot even occasionally put the good of the whole society above their own immediate gratification is bound to grow steadily worse."[10] In contrast, progressive solutions strive for balance, seeking policy options that take into account competing interests and maximize the benefits for all Americans. This means considering not only the first-order effects of any policy, but also the second-order ones. (For example, how does digital piracy cut into jobs for sound engineers, set designers, and video game programmers? How do tickets for running red lights make our roads safer and reduce fatalities?) Progressivism strives to find solutions that consider both the interests of individuals and society.

Populism comes from the left and right. On the left, it usually supports policies that limit the ability of businesses to innovate by creating an activist government to proactively police the private sector through command-and-control dictates. On the right, it usually supports policies that constrain government and its ability to use technology to provide services or protect the public, on the theory that such policies are big-government overreach. To enlist supporters, tech populists frame debates in hyperbolic terms, arguing they are "fights for the future" or that corporate elites are out to "break the Internet."[11] For example, populist pundits contend that "net neutrality is the last hope of American democracy."[12] These ideas are easy to condense into one-liners or crisp YouTube videos that resonate in a media environment that thrives on 140-character attention-grabbing messages.

Ironically, populist policies often hurt the ones they ostensibly are trying to protect. For example, banning cell phone locking would mean a reduction in discounted smart phones, hurting low-income consumers the most. Likewise, discouraging online behavioral tracking would likely lead to more fee-based Internet sites and mobile apps, something wealthier consumers might be able to pay for but lower-income consumers might not. Tech populism also diverts policymakers' time and effort away from other important issues. For example, the telecom policy community has spent years debating net neutrality while largely ignoring the fact that almost 30 percent of households—disproportionally represented by low-income individuals and minorities—do not own a computer and lack

core digital literacy skills. As a result of the populist focus on net neutrality, the issue of the digital divide has gotten little attention and even less action.

To be clear, the problem with technology policy debates is not that they have become more open and participatory, but rather that many, if not most of those who are choosing to engage in these debates do so from a position of fear, anger, or misunderstanding. Populists see policy debates as battles between "us" versus "them," rather than an opportunity for collective problem-solving. Tech policy debates would be much improved if this reactionary tech populism were replaced with a new, more forward-looking tech progressivism that is guided by pragmatism and reason and that champions technological innovation as a fundamental force for progress and good. Such a doctrine would attract support from both the right and the left, among those who optimistically look to the future and embrace roles for both government and the private sector in accelerating societal progress.

TECH POLICY DEBATES

Tech populism has crept into many policy debates. Rooting out its influence will require an understanding of its current impact and of how it has led some policymakers astray. This paper examines some of the most pervasive populist ideas in tech policy and suggests a progressive alternative for each.

Net Neutrality

As discussed above, the ongoing net neutrality debate undoubtedly represents one of the clearest examples of tech policy gone awry due to populist pressure. Net neutrality can be rather hard to pin down, but it is often described as the principle that Internet service providers (ISPs) should treat all content and applications equally regardless of their source, without favoring or blocking any particular product or service.[13] This principle was made concrete in the Federal Communication Commission's 2010 Open Internet rules, which included transparency requirements and prohibitions on blocking and discrimination. It is important to note that almost all users, companies, and regulators agree on the high-level principles of the open Internet imbued in the term net neutrality—that ISPs should not set up tollbooths to degrade traffic for those online services unwilling to pay additional fees— but often disagree about the appropriate policy to implement them.

Tech populists claim that ISPs will block consumers' access to certain websites or slow down that service to extract additional fees from consumers or online edge providers. Many of these groups have grabbed hold of the idea that ISPs are going to "cable-ize" the Internet by divvying up access to websites like cable companies that bundle series of television networks together into sales packages.[14] Indeed, populists widely tweeted and circulated figure 2 on the Internet to make the argument that that if the FCC does not strictly regulate ISPs, consumers would be forced to pay more money if they wish to access particular websites.

Figure 2: Mock "Cable-ized" Internet Advertising Sheet.[15]

These populist fears ramped up to a fever pitch after FCC Chairman Tom Wheeler proposed a set of rules to reassert the FCC's authority over net neutrality issues after the 2010 Open Internet Rules were struck down in court.[16] Wheeler's initial plan sought to promote the open Internet while allowing for some "commercially reasonable" connection agreements where the Commission deemed appropriate to allow network innovation and better consumer experiences, especially with latency sensitive traffic.[17] This approach would use the FCC's existing authority without reclassifying broadband (something populists began pushing for after the court's decision) from a lightly regulated information services to a heavily regulated public utility, similar to the regime that regulated the railroads of the nineteenth century or telephones of the twentieth century (see figure 3). Unfortunately, Chairman Wheeler's proposal was met with a wave of misinformation and populist fear-mongering (some of it stemming from reactions to a monologue by late-night comedian John Oliver), most of which played off of popular distrust of large ISPs, rather than an attempt to drive good policymaking.[18]

Fearful of the imagined power that ISPs could wield with commercially reasonable deals, consumer protection groups have spread panic that the Internet as it exists today is about to end. Many of these groups branded commercially reasonable deals as an Internet "fast-lane," where everyone else operating on the "slow lane" would be left in the dust. For example, one of the groups, Free Press, described the FCC chairman's plan as a "proposal [that] authorizes Internet service providers (ISPs) to discriminate against content and create slow lanes for all those who don't pay special fees."[19] Free Press never actually presented evidence of its claims, nor did it offer explanations of how the rule change could allow this to happen. Indeed, Free Press and similar groups have waged a remarkably successful campaign, transforming what should have been a narrow question of the appropriate jurisdiction for net neutrality regulations into a full-blown battle to "save the Internet."[20] And one reason tech populists have been so successful, is that with very few exceptions, few

in the media ever took the time to really understand the complexity of the issues, often providing a megaphone for populist ideas while suppressing or equivocating their fact-based counterpoints.[21]

Figure 3: 1892 Omaha Populist Party poster calling for nationalization of the railroads and telegraph.[22]

After four million FCC comments and an address by President Barack Obama supporting the populist position that the FCC treat broadband and the Internet as a public utility, Chairman Wheeler released rules moving the FCC away from his original progressive proposal to one reflecting the populist movement.[23] As the chairman's capitulation illustrates, the recent net neutrality discussion has been driven by populist fervor, rather than by reasoned analysis of the technological and economic facts. However, it is important to note that the President's populist proposal was also met with misinformation and rhetoric from the populist right. After the President's statement, Senator Ted Cruz called the proposed utility-style regulations "Obamacare for the Internet," a statement that also disregarded the facts of the debate.[24]

But how would utility-style Internet regulations—where each bit is treated equally— actually change the Internet? How would commercially reasonable connection agreements for better service (e.g., lower latency) affect normal Internet usage? The technology that populists wish to ban in this case is quality of service on the Internet, i.e. technology that would allow ISPs to enter into an agreement with an online service to deliver better connectivity to the users of services that need better connectivity to operate properly, resulting in a better experience for those customers. Populists believe that all bits on the Internet should be treated equally, even if applications using these bits are inherently

different (e.g., email has different network needs than a telephone call over the Internet). They fear possible connection agreements because they think ISPs will use them as a means to slow down everyone else's connection to exact more fees from online services, even though such actions easily could be banned without banning all differentiated services. This belief ignores the FCC's role, outlined in the FCC chairman's initial progressive rules, in serving as a stopgap to prevent this type of commercially unreasonable behavior.

A progressive approach to the regulation of broadband network management is needed to protect against consumer harm, but this need not come at the cost of allowing flexibility for innovations and new technologies.[25] A balanced approach to net neutrality can ensure the best outcomes in quality of service on the Internet. The FCC should have the statutory teeth to protect consumers against discrimination, blocking, and throttling of online services. But net neutrality rules should not force ISPs into a regime that bars them from innovating or allowing third parties to voluntarily pay for prioritized service, especially for applications that currently do poorly on the best-efforts Internet. Similarly, rules should allow for flexible business arrangements like zero rating plans where cell phone consumers can use certain apps without these apps counting against their monthly data usage. Such arrangements are likely to benefit low-income cell phone users. Policymakers should look to light-touch regulations that arm the FCC with the ability to regulate against unreasonable agreements or actions by ISPs while allowing innovations that benefit consumers and businesses. In essence, the FCC should have adopted Chairman Wheelers' initial progressive proposal, not his latest populist one.

Do Not Track for Online Behavioral Advertising

The Internet offers a virtually unlimited amount of free content and services to users, including email, social networks, news, and entertainment. For the most part, companies are able to provide these services at no charge because of advertising, the predominant funding mechanism for online content and services. In order to better target advertisements to individual users and earn more money from ads to improve services, companies often track users' behavior and place ads based on that behavior. Many populists ignore the benefits of online advertising to consumers, calling for new rules or technologies that would have the impact of limiting much of the free content and many services on the Internet to guarantee users a greater level of privacy.

In large part because of their focus on self-interest rather than broader social benefits, populists rail against online tracking, data mining, and other uses of personal information. David Lazarus, a reporter for the *Los Angeles Times*, summarized these ideas succinctly when he wrote, "Today let's look at whether your name, address, birth date and other sensitive data can be reasonably considered yours in an age when we've all been reduced to computer bits, and when personal info has become a commodity to be bought and sold by marketers and merchants."[26] Many populist arguments encourage the belief that users are losing their online privacy and are being hurt by the services that require personal data to properly function. "Businesses will often treat such information as assets," says Marc Rotenberg of the Electronic Privacy Information Center, adding, "Companies won't say it directly in their privacy policies, but they want people to concede that when you give the company your information, the company owns it and can do what it wants with it."[27] This

sentiment suggests that companies that gather user information are guilty of harm simply by gathering it, ignoring the fact that users opt-in to these services, and can often opt-out at any time, and that, for the most part, the information is used for innocuous purposes like targeting relevant ads.

One prominent issue for tech populists is "Do Not Track"—a single mechanism to opt-out of all online profiling for targeted advertising. [28] The Do Not Track idea first appeared in 2007 when a coalition of consumer privacy groups—including the Center for Democracy and Technology (CDT), the Electronic Frontiers Foundation (EFF), and the World Privacy Forum—started advocating for it to reduce the use of targeted ad-serving technologies. [29] These groups have continued to push the idea, including through legislation, that ad-supported online services should build mechanisms to allow users to opt out of receiving targeted ads. [30] The EFF states on its website, "The pervasiveness of online tracking is a threat to the privacy of our online reading and communications," and, "Do Not Track is a unique and powerful way of dealing with the problem of online tracking. It provides users with a voice—so they can tell companies whether or not they want to be tracked online." [31] CDT has also advocated for similar mechanisms to protect consumers from "new behavioral advertising models." [32] This position appeals to populist who fail to consider the broader implications of limiting targeted online advertising, such as reducing the advertising revenue available to pay for free content and services for consumers. [33] In addition, since advertisers would know less about their audiences, users would see an increase in the amount of irrelevant and unwanted advertising they receive. Without targeted online advertising, more companies would have to charge a fee to access their content and services. While some would welcome this tradeoff, it would make it more difficult for low-income individuals to access these services. [34]

Rather than supporting efforts that might roll back the benefits of targeted online advertising, the progressive approach would be to encourage industry self-regulation, an effort that is already underway. [35] In December 2007, the FTC released a proposed set of rules for industry self-regulation, and in response the Digital Advertising Alliance (DAA) set about creating its own set of principles based upon this report. [36] By 2010, the DAA had codified these principles, and developed an "Ad Choices" icon as part of an educational effort to better inform consumers about adverting practices. [37] Then in May 2011, the DAA, the better Business Bureau, and the Direct Marketing Association partnered to develop an enforcement program for compliance to this self-regulatory program. [38] The FTC can now hold these businesses responsible for their stated advertising practices by pursuing penalties against infringing companies. [39] This example shows the value of a well-functioning, self-regulatory environment to protect and educate consumers.

Digital Copyright

As copyrighted content, such as software, music, videos, games, books, and other media, are increasingly delivered online, many Internet users download or stream pirated content from websites and peer-to-peer networks. Despite the fact that Internet users can now get access to legal content through an ever-growing array of legal services, some individuals still engage in online piracy and many tech populists support their right to consume content without paying the content owners. [40]

Tech populists rose to prominence in the digital copyright policy debate after a series of proposed laws ignited their ire. These bills, including the Stop Online Privacy Act (SOPA) and the Preventing Real Online Threats to Economic Creativity and Theft of Intellectual Property Act (PROTECT IP Act or PIPA), used many of the same enforcement mechanisms—although they also had many important differences—to crack down on online privacy and counterfeiting, and were ostensibly targeted at foreign websites.[41] While not perfect, these bills became the target of considerable controversy, much of it driven by false or misleading information that decried any proposed limitations on illegal online activities as the first step to totalitarian repression that would "break the Internet."[42] The movement resulted in thousands of letters to Congress and an Internet blackout in which several websites showed their support by temporarily taking down their services.[43] These bills subsequently died in Congress. Regardless of one's stance on these bills, PIPA and SOPA faced demagoguery that ignored the nuances of the issue at hand and became a catalyst for the tech populism movement, preventing any kind of reasonable compromise between the two major sides of the debate (Internet firms and content firms).

Tacit support for online piracy is born out of the fear of corrupt government and big business and often involves accusations that the government is in the pocket of "Big Hollywood." Many efforts by content firms to fight back against theft of their intellectual property are met with aggressive responses that make it difficult to rationally discuss the issue at hand. "Hollywood hates your freedom," writes Christopher Mims, a contributing editor for the *MIT Technology Review.* "It clings to an antediluvian notion of how media should be created and distributed."[44] In 2012, former House Republican Study Committee (RSC) staffer Derek Khanna added kindling to the fire when he wrote a policy memo in which he argued that copyright infringement fines are too steep and punitive copyright awards should be subject to federal tort reform; he also advocated that the terms for copyright renewal be strictly limited.[45] Populists embraced Khanna's memo, especially because this was now purportedly proof that even conservatives, who traditionally defended property rights, were now on the side of the populists.[46] They have continued to argue for weakening the protections of copyrighted material.[47]

Populists support weakening copyright protections because they focus almost exclusively on how they personally benefit from weaker laws, ignoring the tangible, economic harms brought by copyright infringement. For example, as a 2010 report from the Government Accountability Office notes, the economic impact of intellectual property infringement is "sizeable."[48] This impact is not abating. According to one study, the amount of infringing bandwidth used to download illegal copies of pirated content rose by 159.3 percent between 2010 and 2012.[49] The report also found that approximately 327 million Internet users "explicitly sought" illegal content in January 2013 alone, which represents almost 26 percent of the total Internet users online in the area that the report surveyed.[50] Additionally, the increase in pirated content comes with other dangers. One study estimated that malware deliberately loaded into pirated software could cost businesses $491 billion in 2014.[51]

The tech progressive response would be to fight for reasonable copyright enforcement, understanding that downloading digital content without paying for it is not a victimless

crime; and to support policies that protect content creators from those seeking to illegally benefit from their works. Tech progressives would recognize that better enforcement of online copyright would ultimately help consumers because it would help enable the creation of new content. The progressive solution to this debate is not about giving more power to "big Hollywood" than to Internet platforms, it is about striking a balance between the need for Internet platforms to be able to innovate and support free speech on the Internet and the right of copyright holders to maintain copyright protections. These efforts should be built on upholding strong copyright penalties while allowing Internet platforms to take down infringing content and ISPs to warn infringers. This can be seen in policies such as the Copyright Alert System (CAS)—a voluntary collaboration between Internet service providers and copyright holders—which was created to enhance enforcement of digital copyright laws and reduce the incidence of infringement.[52] Similarly, Internet platforms such as search engines should do their part to reduce piracy. One example of this is Google, which in 2014 published its new report entitled *How Google Fights Piracy*, in which it details the steps it has taken to downgrade infringing sites from upper search results, remove common infringing terms from autocomplete in queries, and promote authorized sources of content in their place.[53]

Connected Cars, Vehicle Miles Traveled Taxes, and Usage-based Car Insurance

Tech populism has manifested itself in several transportation issues mostly related to devices designed to embed intelligence in vehicles, not only for driver convenience but also for tax and insurance purposes. Populists fear that by equipping vehicles with computers capable of recording geolocation data or miles traveled would erode individual privacy and expose sensitive travel information to the world. In some, but not most cases, this is a valid concern. The idea that the government or businesses could know someone's location at any given moment, or the routes they take to go home or to work is disconcerting. However, many of these systems, including vehicle miles traveled (VMT) tax systems, can be designed so that the government never gets access to traveler information. For other systems, there are common-sense protections that can be put in place to address consumer concerns. This section will focus on the populist arguments and progressive solutions for three technologies: vehicle-to-vehicle (V2V) technology for connected cars, vehicle miles traveled (VMT) taxes, and usage based insurance (UBI).

AT&T has predicted that by 2017 ten million cars will be connected to each other and share important safety information such as road conditions and traffic information.[54] Tech populists have voiced a number of objections to the so-called "Internet of Cars," and they have sought to stall or ban the technology over privacy concerns. When California approved Google to test its automated vehicles on California highways, one consumer privacy group wrote, "We oppose the legislation as it is currently drafted because of the substantial privacy risks it poses if there are not protections from what Google is best known for: the collection and use of voluminous personal information about us and our movements…"[55] In addition, some populists fear government gaining access to vehicle data. John Whitehead, founder of the Rutherford Institute, a nonprofit civil liberties organization, writes, "…these black boxes and V2V transmitters, which will not only track a variety of data, including speed, direction, location, the number of miles traveled, and seatbelt use, but will also transmit this data to other drivers, *including the police*, are

little more than Trojan Horses, stealth attacks on our last shreds of privacy, sold to us as safety measures for the sake of the greater good, all the while poised to wreak havoc on our lives."[56]

Vehicle miles traveled (VMT) tax systems would use in-vehicle computers to tax motorists based on the miles they have traveled as an alternative to the fuel tax—which many believe is in need of an overhaul due to the rise of more fuel-efficient cars and the need to adjust prices to other factors, such as road congestion.[57] Populists on both the right and left believe these systems may lead to surveillance by the government. For example, Jack Kenny of the *New American* writes, "…to have a Global Positioning System or some such device in every car to track each motorist's comings and goings has overtones of an Orwellian 'Big Brother' government, watching your every move and knowing where you are at all times."[58] Consumer privacy groups have also jumped on this bandwagon. Peter Eckersley of the Electronic Frontier Foundation writes, "If you think about it, you'll realize that your location history indicates where you sleep, where you work, who you sleep with, who you go to business meetings with, where you go to church, what political meetings you attend, what nightclubs you go to. These facts about people are astonishingly sensitive and we don't want to build a permanent tracking system for those by accident."[59] As discussed below, some of these objections stem from a fundamental misunderstanding of how these VMT systems work, as they are not designed to share geolocation data with the government.

Finally, UBI insurance acts as an opt-in, pay-as-you-drive insurance program whereby the costs of car insurance depends on a variety of factors, including type of vehicle used, the time of travel, distance, driving behavior, and location.[60] UBI technology raises similar populist objections, instead aimed at businesses, which could share sensitive location information. Nate Cardozo, an attorney with the Electronic Frontier Foundation, said, "Automakers are not required to disclose that information, and there's no federal mandate for it."[61] Cardozo believes that UBI technology, which sends data in real time to insurers, represent a privacy risk because the driver has "no way of finding out" whether or not this data is being shared with third parties.[62] Similarly, in an article criticizing UBI's data generating ability, Ron Lieber, a financial columnist at the *New York Times*, argues that these systems will deposit vast amounts of data about "complete driver histories into a central industry database" that would follow drivers who shopped for new auto insurance policies.[63]

Before examining the privacy risks associated with these technologies, it is important to first recognize their societal benefits, something tech populists largely dismiss or ignore. For instance, connected cars could help cities and states cut down on congestion and improve safety. A 2013 Dutch traffic study shows that by automatically sharing data with a central traffic authority—such as acceleration, braking and GPS information—a network of connected cars can diagnose and fix traffic and safety issues.[64] Additionally, VMT offers an opportunity to move to a more rational road pricing system, where drivers pay the true cost of driving, leading to more efficient use of our roads and highways. UBI insurance programs could allow insurers to price premiums more fairly, increasing affordability for

lower-risk drivers, and giving drivers control of their premium costs by allowing them to reduce the number of miles they drive or by adopting safer driving habits.[65]

The progressive response to these problems would be to support solutions that maximize these benefits while protecting consumer privacy. For example, cars with V2V technology will not need to share data with government entities. For data that might be shared with a government entity, such as data sent to smart roadway infrastructure, policymakers can craft laws that limit potentially invasive uses of it and that uphold civil liberties and require that data be anonymized. If this data is ever used in unauthorized ways, then civil liberties groups who monitor these types of activities can alert the public and curb this unlawful activity. Similarly, the progressive solution to privacy concerns with VMT technology would be to make sure VMT systems are designed with privacy protections in mind. For example, VMT systems should be designed in such a way that sensitive data never leave the on-board computer and the only information transmitted to the government is the amount of tax due and collected.[66] The information would be scrubbed each time the payment information is transmitted when the driver goes to the gas pump; the private trip information would be deleted permanently. For UBI, the current self-regulatory system works to protect privacy because it is opt-in, and users who do not wish to have their information tracked can simply not use UBI-based insurance plans. These progressive, pragmatic approaches to V2V, UBI and VMT can protect privacy for motorists, while offering enhanced customer and societal benefits. Once again, the progressive's rational and informed approach to technology policy issues shows that concerns can be dealt with while preserving the benefits of technology.

Commercial Drones

In late 2013, Amazon's CEO Jeff Bezos announced that his company would be creating unmanned aircraft systems (UAS), commonly referred to as drones, to deliver small packages directly to its customers.[67] Since that announcement, there has been a lively debate about integrating these devices into the U.S. airspace. In fact, in anticipation of the 2014 holiday season, the Federal Aviation Administration (FAA) launched an awareness campaign to prompt people who received drones in their stockings to pay attention to common-sense safety standards and avoid passenger planes.[68] In addition, the FAA has granted several exemptions to businesses using this technology, including television and movie companies, and oil and gas companies.[69] Wide-spread commercial drone use is likely still some years away as the FAA finalizes its drone rules ahead of its September 2015 deadline. However, like the initial fears in the early 1900s that cheap, easy-to-use cameras would spell the end of privacy, fears that drones will be used to spy on Americans have been sparked by populists.

When many people think of drones, they imagine the controversial technology being used by the U.S. military in far-off combat zones. Understandably, no one wants these types of aircraft in U.S. airspace. However, some still equate commercial drones (see figure 4) to this battlefield technology—not in regard to combat but rather in regard to surveillance. Populists see drones as an opportunity for both the government and the private sector to spy on citizens more than ever before. "The prospect of routine aerial surveillance is on the near horizon and would profoundly change the character of public life in the United

States," said Christopher Calabrese, formerly of the American Civil Liberty Union (ACLU). "It could, if unchecked by appropriate legal protections, bring our country a large step closer to a 'surveillance society' in which every move is monitored, tracked, recorded, and scrutinized by the authorities."[70]

In a similar sensationalist tone, several websites accuse the Environmental Protection Agency of using the type of aerial drones that kill terrorists overseas to spy on Midwest cattle farmers.[71] This claim, which turned out to be false, was quickly amplified by conservative web sites, Fox News channel, endless tweets, and the claims of four Congressmen; it was even featured on Comedy Central's "The Daily Show."[72] This example shows that populist fervor spreads fast, and the idea of military drones in U.S. skies is still alive and well in the populist psyche. They believe these rumors because they expect them to be true.

While drones may raise some legitimate concerns of possible privacy violations, they also could provide significant economic and consumer benefits. The prospect of commercial drones offers new opportunities for society, from improvements in productivity to new business models. Many industries have been clamoring for the use of these small devices to cut their costs and improve their upkeep and efficiency. For example, power companies have begun using drones to inspect their lines in remote or hard-to-reach areas.[73] Drones can even allow farmers with large farms to pinpoint areas that are sprouting weeds, saving them up to 80 percent per acre on herbicide in the process.[74] There are many other examples of the utility of these devices, from their use for movie cinematography to drone journalism. However, this technology is not without its threats. Beyond the aforementioned privacy concerns, the safety of people on the ground as well as in manned aircraft should be paramount when creating regulations that allow these devices into the U.S. airspace.

Tech progressives understand that every type of technology has the potential to be abused, so a set of societal norms, criminal penalties, or regulatory frameworks need to be put in place to reduce the chance of that happening.

Instead of listening to appeals to ban or severely limit this technology, tech progressives would work to establish rules to address public safety and privacy concerns while capturing the potential benefits of these new technologies. This technology should be properly regulated to control the amount of information that the government can collect with drones on its citizens, thereby reducing privacy concerns, while promoting safety. Tech progressives would understand that every type of technology has the potential to be abused, so a set of societal norms, criminal penalties, or regulatory frameworks need to be put in place to reduce the chance of that happening. These rules should balance the need of safety and privacy with rules that promote innovation.

Manufacturing and Service Robots

Automation has helped the economy increase productivity and output. One example is the recently installed fleet of robots that Amazon brought to ten of its fulfillment centers throughout the United States.[75] These machines are designed to help streamline the warehouse workers' jobs by bringing the items to be shipped directly to them for packing.[76] While machines such as these improve productivity, some observers view them as a threat to jobs. In fact, the loss of U.S. jobs to robots is a populist idea that has become prevalent

in popular culture, showcased in a myriad of places including the cover of *Wired* magazine, *60 Minutes*, the *Daily Show*, and *South Park*.[77]

Ever since the Great Recession, populists have become increasingly vocal in blaming automation for the high unemployment rate, not understanding that job loss is due to a downturn in consumer demand. Focusing only on individual workers who might lose their jobs, they largely ignore the positives—including increased productivity and better living standards—that robots and automation bring to society. "Automation is Voldemort: the terrifying force nobody is willing to name. Oh sure, we talk about it now and then, but usually in passing," said Jerry Michalski, the founder of REX, a "think and do tank" that writes about economics issues.[78] Other populist notions stem from the fear that the speed of technological change may rapidly increase income inequality. "There will be a labor market in the service sector for non-routine tasks that can be performed interchangeably by just about anyone—and these will not pay a living wage—and there will be some new opportunities created for complex non-routine work, but the gains at this top of the labor market will not be offset by losses in the middle and gains of terrible jobs at the bottom," said Justin Reich, a fellow at Harvard University's Berkman Center for Internet and Society, adding "The middle is moving to the bottom."[79]

It is true that as technology continues to progress, machines will continue to take on jobs that used to be performed by humans, just as it has done for the last 300 years. But populists in particular assume there is a "lump of labor," or a finite amount of work to be done, so for them automation will undoubtable supplant workers and increase the number of unemployed. In reality, the savings from increased productivity cycles back through the economy to create demand that turns into more jobs. Yet populists would slow down deployment of robots that may replace human workers, subsequently lowering the rate of productivity and growth. This represents a fix that might benefit a few individual workers in the short run, but one that will lower the growth in overall standards of living in the long run. Populists justify their opposition to productivity-enhancing tools by asserting—wrongly as it turns out—that the fruits of productivity growth only go to the wealthy one-percenters.[80] Moreover, this is a highly reactionary solution to the onset of automation, no more likely to succeed than the destruction of textile machines at the hands of nineteenth-century artisans.[81]

These populist ideas have been proven wrong over and over again, as workers have transitioned from agriculture to manufacturing to services jobs. Instead of seeking to limit automation, progressives should strive to promote it, while at the same time ensuring that all workers have the tools they need to transition to new jobs. Tech progressives would understand that historically, increased productivity does not lead to fewer jobs and that the savings from productivity gains inevitably flow back into the economy, creating demand for more jobs.[82] At the same time, some individual workers can be hurt. Therefore, progressives support creating a robust support system for workers who do lose their jobs to technologies. This means a robust social "trampoline" (rather than a safety net) that includes a more generous and nationalized unemployment insurance system, universal access to affordable health care services, and better policies and programs to help workers gain the skills they need for the next economy. For example, Denmark has pioneered a

labor policy known as "flexicurity" which encourages a dynamic job market while providing workers security from long-term unemployment.[83]

Red Light and Speed Cameras

Red light cameras and speed cameras capture the image of cars that illegally cross an intersection through a red light or travel well over the speed limit. These images can then be used as evidence by authorities to enforce traffic laws and fine violators. However, according to the Insurance Institute for Highway Safety, the number of U.S. communities using red-light cameras has fallen 13 percent since the end of 2012 (a decrease of about seventy communities).[84] During that time period, there was a 19 percent increase in the adoption of speed cameras (which have been introduced into twenty-two additional communities since the end of 2011).[85] The fall of the former and slow growth of the latter reflects the populist opposition to these devices, which has led to camera bans in Arizona, New York's Nassau County, and twenty-four communities in New Jersey, amongst others.[86]

With their exclusive focus on the self over society, populists ignore the safety and efficiency benefits of red light cameras.

With their exclusive focus on the self over society, populists ignore the safety and efficiency benefits of red light cameras, which not only reduce accidents but also allow police officers to focus on more important public safety issues. Rather, they rally people to their cause by focusing on the public dislike of traffic citations and fear of big brother government. John Bowman, the communications director for the National Motorists Association, argues that policies allowing speed cameras for traffic enforcement "seriously infringe on the rights of the driving public, harm the economies of communities that adopt it, and shift the emphasis of traffic enforcement from safety to a for-profit enterprise driven by ticket quotas."[87] Similarly, former U.S. House Majority Leader Dick Armey once condemned the practice of installing red light cameras, saying, "This is a full-scale surveillance system. Do we really want a society where one cannot walk down the street without Big Brother tracking our every move?"[88] Populist fears like these have driven cities like Albany, New York to restrict their speed enforcement program to only a handful of cameras, and reduce their hours of operation 6 a.m. to 6 p.m., which is outside the period of time when three-quarters of fatal speeding-related crashes occur.[89]

While these technologies can theoretically result in government overreach (as virtually any technology can), they are not without their numerous benefits, one of which is added safety. For example, on average, a vehicle injures or kills a pedestrian in New York City every two hours, and many of these deaths happen because the car striking the pedestrian was going too fast.[90] In a *New York Times* op-ed, Tom Vanderbilt, a visiting scholar at New York University, explains that if the speed at which a car strikes a pedestrian rises from thirty m.p.h. to forty m.p.h., the chance of that victim's death rises 40 percent.[91] Vanderbilt argues that speed cameras can act as a psychological deterrent to speeding, reducing collisions, and casualties, an argument supported by a number of studies.[92] One study found that in areas with camera sites, collisions are reduced by between 5 and 69 percent, injuries by between 12 and 65 percent, and deaths by between 17 and 71 percent.[93] Another study in 2007 by the City of Dallas found that total crashes were reduced by 30 percent in seventeen of the camera sites within two years of implementation and by 23 percent in the other forty-three sites within eighteen months

of implementation.[94] Moreover, populists fail to recognize that traffic fines are not a cost to society, but simply a transfer payment from law breakers to law-abiding citizens.

In contrast to populist rhetoric, progressives should look beyond the individual's dislike of receiving tickets and consider the net impact of these cameras on communities. The progressive solution is to allow for cameras to be used by communities to increase safety on roadways, but to put limitations in place to make sure they are not abused, such as to unfairly generate tax revenue from safe drivers or engage in unnecessary surveillance. For example, progressives would agree that red light and speed cameras should not be used to track the day-to-day movements of citizens.

Cell Phone Unlocking

In January 2013, the issue of cell phone unlocking gained national attention when the Library of Congress decided to nullify copyright exemptions for technologies that unlock cellphones.[95] This effectively made unlocking cellphones—altering the phone in a way to allow it to work on a network other than the carrier that it was initially purchased from—illegal. At the time, some but not all carriers allowed users to unlock their phones once their contracts expired.[96] Users who wished to unlock their phones sooner or without permission of the carrier would run a computer program to unlock their phone in a process referred to as "jail-breaking". Many people believed that not allowing people to unlock those phones was tantamount to extortion by the carriers and limited consumer freedom.

Tech populists pounced on this deeply unpopular decision. Sina Khanifar, an entrepreneur and activist from San Francisco, filed a petition on the White House's "We the People" site.[97] The petition read: "Consumers will be forced to pay exorbitant roaming fees to make calls while traveling abroad. It reduces consumer choice, and decreases the resale value of devices that consumers have paid for in full."[98] This petition garnered over 114,000 signatories and in response Congress created a bill to limit cell phone locking.[99] Former RSC staffer Derek Khanna also turned his attention to this issue, writing an op-ed in the *Atlantic* in which he branded this cell phone unlocking decree "the most ridiculous law of 2013" and asked "When as a society did we learn to accept the federal government having such Orwellian power?" On August 1, 2014, the President signed the "Unlocking Consumer Choice and Wireless Competition Act" into law, permitting users to once again unlock their phones.[100]

As with many issues demagogued by tech populists, this issue is not as black and white as it seems. Carriers have many reasons to want to block contracted customers from unlocking their phones. Allowing carriers to choose whether they offer locked or unlocked phones gives them incentives to subsidize phones, which in turn gives cheaper access to these devices to the consumer—a key factor in affordability for low-income consumers. Carriers may be far less likely to give a consumer a $500 phone for $100 if that person can unlock their phone and change carriers. Furthermore, consumers could still purchase unlocked phones at market value if they did not want to opt-in to service plans, or they could choose a carrier with policies more to their liking.

In contrast to the tech populists, tech progressives would take a more nuanced view of the situation and consider the benefits for consumers of allowing carriers to choose whether or not to lock their products. This includes allowing carriers to give more phone subsidies, resulting in greater access to phones for low-income populations. Even if many consumers would prefer to unlock their own phone and pay a bit more, tech progressives would recognize that some people might have different preferences. A progressive solution would allow carriers to sell both locked and unlocked phones. It would also require carriers to be fully transparent about their terms of service to consumers before they make a sale. Before they sign their contract or buy their phone, consumers should explicitly know the terms and conditions of their deal, and know when and how their phone could be eligible to be unlocked. The free market and the consumer's ability to understand and choose his or her own plan should dictate when and if he or she purchases a locked phone, not preemptive legislation.

CONCLUSION

As this report has shown, populist politics have hijacked the debate over many technology issues. The problem is not just that populist policy proposals are wrong, but that populists' use of fear, distrust, and confusion are detrimental to objective policy debates and undermine the public good. With its over-the-top rhetoric and dismissiveness of rational arguments, populism stifles healthy debate on critical issues and distracts from advancing the interests of average Americans. If the United States is going to get tech policy right, it will need to turn its back on reactionary tech populism and embrace a more forward-looking tech progressivism.

The first step is for policymakers in both legislative and executive bodies to be vigilant for signs of demagoguery. Twenty years ago, Congress could rely on the Office of Technology Assessment (OTA) to evaluate these complex technology policy questions by bringing together key stakeholders, carefully deliberating, and then explaining to Congress the nuances of complex issues and the implications of different policy choices. Now, with OTA long gone, policymakers rely on many sources, including tech populists, to understand technology issues. Policymakers must therefore be on alert for claims that lack depth or substance, and they must evaluate policy options on their merits not merely on their initial popularity.

Second, policymakers should be careful not to overestimate the political power of populist activists. While some elected officials may be reluctant to rebuke populist ideas following the large-scale mobilization of activists during the SOPA and net neutrality debates, these activists have had little to no impact on elections.[101] Populism ultimately fails because at the end of the day citizens want policies that not only sound appealing at first blush, but that actually work over the long term. Policymakers will likely find more success leading the charge toward innovation and progress, than blindly chasing the loyalties of digital mobs.

Tech progressivism offers a path forward for both parties. Policymakers should embrace government regulation to provide community benefits, but narrowly craft rules to mitigate specific harms. They should respect the power of markets and the innovativeness of the

With its over-the-top rhetoric and dismissiveness of rational arguments, populism stifles healthy debate on critical issues and distracts from advancing the interests of average Americans.

private sector by engaging in light-touch regulation so as to not stall much-needed innovation. And they should evaluate technology issues holistically and objectively to develop pragmatic policy solutions. By adopting the tenets of tech progressivism, policymakers can encourage innovation, productivity and broad-based growth, while also protecting individual rights, fostering a free and open Internet for all, and advancing the public good.

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ABOUT THE AUTHORS

Robert Atkinson is president of the Information Technology and Innovation Foundation. He is also author of Innovation Economics: The Race for Global Advantage (Yale, 2012) and *The Past And Future Of America's Economy: Long Waves Of Innovation That Power Cycles Of Growth* (Edward Elgar, 2005). Dr. Atkinson received his Ph.D. in City and Regional Planning from the University of North Carolina at Chapel Hill in 1989.

Daniel Castro is vice president of the Information Technology and Innovation Foundation. His research interests include health IT, data privacy, e-commerce, e-government, electronic voting, information security, and accessibility. Before joining ITIF, Mr. Castro worked as an IT analyst at the Government Accountability Office (GAO) where he audited IT security and management controls at various government agencies. He has a B.S. in Foreign Service from Georgetown University and an M.S. in Information Security Technology and Management from Carnegie Mellon University.

Alan McQuinn is a Research Assistant with The Information Technology and Innovation Foundation. Prior to joining ITIF, Mr. McQuinn was a telecommunications fellow for Congresswoman Anna Eshoo and an intern for the Federal Communications Commission in the Office of Legislative Affairs. He got his B.S. in Political Communications and Public Relations from the University of Texas at Austin.

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