



How Broadband Populists Are Pushing for Government-Run Internet One Step at a Time

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Heated debates about discrete issues such as net neutrality, broadband privacy, and set-top box competition are subcomponents of a broader strategic debate about what kind of broadband system America should have.

To most observers of U.S. broadband policy, it would seem that the regular and increasingly heated debates in this area are about an evolving set of discrete issues: net neutrality, broadband privacy, set-top box competition, usage-based pricing, mergers, municipal broadband, international rankings, and so on. As each issue emerges, the factions take their positions—companies fighting for their firms’ advantage, “public interest” groups working for more regulation, free market advocates working for less, and some moderate academics and think tanks taking more nuanced and varied positions. But at a higher level, these debates are about more than the specific issue at hand; they are subcomponents of a broader debate about the kind of broadband system America should have. One side wants to keep on the path that has brought America to where it is today: a lightly regulated industry made up of competing private companies. Another side, made up of most public interest groups and many liberal academics, rejects this, advocating instead for a heavily regulated, utility-like industry at minimum and ideally a government-owned system made up largely of municipally owned networks. The Information Technology and Innovation Foundation (ITIF) firmly believes the former model—lightly regulated competition—is the superior one. But if we are to get broadband policy right going forward, it’s this broader strategic issue we need to identify and debate, not just narrow tactical matters.

The loose coalition of self-described “progressives” pushing to change the structure of America’s broadband industry, a group we term “broadband populists,” is unified in its disdain for a lightly regulated private structure, with many preferring government-owned and operated networks. Despite this unifying interest, broadband populists have a variety of ideological underpinnings. Sometimes they talk about policy like reconstructed liberal New Dealers, at other times they sound like cooperative, self-reliant utopian localists, and still others, like socialist revolutionaries.

In the Roosevelt administration, liberal New Dealers rejected the rising socialist threat but wanted businesses, especially utilities, to be heavily regulated.¹ Today, some broadband populists channel this same view, seeing broadband as akin to roads and water pipes—natural utilities that the private sector can operate, but with government calling the shots. Law professor and liberal advocate Susan Crawford, like a modern-day Ida Tarbell, argues that when it comes to broadband, “America needs to move to a utility model.”² Ben Scott, former policy director of the advocacy group Free Press, proclaimed in 2009 that “[i]ncreasingly the Internet is no longer a commercial service, it’s an infrastructure. . . . What we’re witnessing at the FCC now is the logical next step which is we are going to create a regulatory framework for the Internet which recognizes it is an infrastructure now and not just a commercial service.”³

A second line of thought follows Eugene Debs and the various socialists and populists who advocated for government to take over production in many industries; today’s netroots populists want to do the same for broadband. Liberal journalist and blogger Matt Yglesias tweets that the “US could benefit from a few doses of socialism: ‘postal’ banking, municipal broadband, electrical utilities . . .” Robert McChesney, founder of Free Press and former co-editor of the socialist journal *Monthly Review*, has stated, “What we want to have in the U.S. and in every society is an Internet that is not private property, but a public utility. We want an Internet that you don’t pay a penny to use.”⁴ In Susan Crawford’s more candid moments, she says that “by treating fiber as just like the street grid, or the tree canopy, or electricity, or clean water, it’s part of what the city provides, in order for the free market to flourish above it. I mean, the only way to do that is for the city to be deeply involved in the control and ownership of that infrastructure.”⁵

Finally, a third narrative calls to mind the 19th-century utopian Fourierian cooperatists who advocated for intentional, local cooperatives.⁶ Many broadband populists reflect this Fourierian view when they assert that broadband is part of the fabric of local life and should be owned by local governments or even better by self-governed neighborhood cooperatives. The New America Foundation’s Open Technology Institute often espouses this view, seeing broadband as something that shouldn’t even rely on government, that individuals and neighborhood associations can provide on their own. They write, “[C]ommunity-led networks around the world are already demonstrating a similar decentralized, cooperative ‘common-pool resource’ approach to designing and building networked communications technologies. This is not simply a fusion of private (corporate) and public (government) forces, but rather relies on community leadership, skills, and

expertise.”⁷ David Isenberg, the organizer of an annual gathering of broadband populists called Freedom to Connect Conference, writes, “Structural separation is the ‘single payer rule’ of networks ...” and that “it is the only long-term enforceable, sustainable way to save the Internet and to preserve our investments in community broadband networks.”⁸

On the surface, many broadband populists present their case in instrumental terms: Broadband as a utility, either privately or publically owned, would be superior to the current market-based system because it would deliver lower prices and better services. But at its heart, their argument doesn’t depend on the relative performance of either system; it’s grounded in an ideological conviction about who should own and control this key communications infrastructure. For them, lightly regulated, for-profit corporations have no place in America’s broadband infrastructure, even if it could be demonstrated (which it can) that they deliver superior broadband performance. Many broadband populists are not motivated by pragmatics, but instead by an anticorporate, antimarket animus. For example, Christopher Mitchell of the Institute for Self-Reliance reflects this underlying desire of the broadband populists when he says, “We really want to decentralize power. That’s the end goal.”⁹

Broadband populists are motivated more by their distrust of corporations than an honest assessment of what industry structure best supports the flourishing of exactly those values they wish to promote.

The broadband populists, regardless of their particular sect, do everything they can to present this broader debate as a series of individual, tactical skirmishes over hot-button issues (such as protecting net neutrality, limiting the ability of ISPs to monetize information, zero rating and usage based pricing, fighting mergers, etc.) because they know that if the debate were about the strategic choice—private-sector broadband versus government-controlled broadband—most Americans, consumers and experts alike, would favor the former model, not the latter. Recognizing the unlikelihood of nationalizing existing broadband infrastructure, broadband populists’ tactics on individual issues are generally in the service of their broader and longer-term strategic goal of moving the industry to a regulated-utility model and ideally to full-blown government ownership.

This line of thinking, where incremental broadband policy “victories” further the ultimate goal of government ownership, is clearly expressed in a recent *Boston Review* essay by Brooklyn Law School professor and New America Foundation Fellow K. Sabeel Rahman, arguing for expanding the public utility model to online platforms. He writes that the FCC’s order (which he calls a “ruling”) classifying broadband as a common carrier:

[R]epresents a tentative first step toward the creation of an outright public utility. While reclassifying ISPs as common carriers avoids full-blown imposition of rate regulations, the ruling also paves the way for municipally owned and operated broadband, which may enhance the negotiating positions of municipal governments trying to craft new franchise agreements with ISPs.¹⁰

Susan Crawford is also quite clear in her view of net neutrality as a politically expedient stepping stone to full government ownership. In a blog post titled “The Limits of Net Neutrality,” she writes that while she is “just as hardcore about net neutrality as anyone,” and celebrates the Title II classification, “it’s only a beginning, and stopping here would be

a mistake. It's a temporizing approach to a deeper, structural dilemma: how much power to give the private providers of what should be a utility service."¹¹ She goes on to describe the next steps after the Title II order was upheld at the D.C. Circuit:

Now that the courts have given the FCC authority to regulate internet access, it's time to exercise that authority. The optimal U.S. approach: put in place city-owned (and, ultimately, federally regulated) conduits that reach all houses and businesses, or at least get very close to them, and fill them with city-owned dark fiber.¹²

Broadband populists like Crawford are also well aware that to advance their agenda requires softening up the terrain with a full-scale assault on the integrity and viability of the private-sector, competitive, and innovation-based ISP model. That is why they work so hard to distort data to purportedly show that the United States is falling behind other nations in broadband, that there is not enough competition, that prices and profits are too high, that providers have nefarious motivations (to block legal websites at their whim); that broadband is a fundamental human right that only government can serve, etc. These arguments and claims need to be seen for what they are: propaganda designed to discredit the current model so that the preferred model of government or even community-run networks becomes the dominant one.

In short, the populist case against the market-based model is not grounded in an analysis of outcomes or performance. It is strategic, in service of a broader political and economic goal, which in turn is based on ideological preference for one structure over another. Thus, broadband populists' advocacy for or against particular policies (e.g., net neutrality, muni broadband, mergers, Title II coverage, privacy, set-top boxes, Wi-Fi) is based, despite their rhetoric about protecting consumers, on advancing one and only one goal: limiting the viability of the private-sector, competition-based model by restricting revenue, adding costs, and spurring government-provided alternatives.

The problem with this approach is that populists are motivated more by their visceral distrust of corporations than an empirical assessment of what industry structure best supports the goals most Americans want from ISPs: efficiency, innovation, quality, reasonable prices, and adequate coverage. And by obscuring the real nature of the strategic debate at hand, policymakers may not foresee the long-term implications of individual tactical decisions.

ARGUMENTS AGAINST THE PRIVATE-SECTOR, COMPETITIVE MODEL

Judging by their words and actions, broadband populists know that their best chance of attaining their long-term goal of government ownership of communications infrastructure is not to seek that end immediately but rather to win tactical battles. Individual issues are chosen and shaped on the one hand to achieve rules and regulations that constrain private sector broadband business models—for example, regulating broadband under Title II—while on the other hand supporting the emergence of government alternatives, such as municipal broadband or cooperatively maintained Wi-Fi networks.

Winning these tactical battles depends on softening up the ground through a long intellectual assault designed to call into question the efficacy of the private-sector model. Absent nagging doubt over private-sector success, political support to constrain the private model and enable the public one will be fleeting.

Law professor Tim Wu, in explaining how broadband populists prevailed in their fight to have broadband classified as a Title II communications service, said, “Most true revolution is styled as a counter-revolution.”¹³ In other words, the community sought to present their arguments as if they were preserving the status quo (free speech, openness, etc.) rather than engaging in a dramatic change, that is weakening of the for-profit business model. Perhaps the most acute example of this is the framing of the recent Title II fight as “reclassification,” as if it were a return to normalcy, despite the fact that neither wireless nor cable broadband ever was legally classified as a telecommunications service under Title II, and DSL only for a relatively short period of time.

Coupled with a push for regulations that constrain the private-broadband business model, broadband populists have attempted to normalize government-owned networks through a never-ending and relentless campaign to paint U.S. broadband performance in the worst possible terms: Prices and profits are too high, speeds too low, coverage too limited, etc. In other words, the private-sector model fails. Toward that end, they make a variety of claims.

These arguments and claims need to be seen for what they are: propaganda designed to discredit the current model so that the preferred model of government or community-run networks becomes dominant.

Claim 1: America is far behind other nations in broadband and getting worse.

There is a cottage industry of reports decrying how far the United States is falling behind in broadband. If the populists can make it appear that other nations, presumably ones with a more government-directed open-access models or even government-owned networks, are more successful than the United States, then it creates doubt about the U.S. industrial organization of intermodal competition (i.e., competition among cable, telephony, and wireless broadband). But there are always several problems with these claims. These reports usually involve significant exaggeration, making general policy proclamations based on cherry-picking foreign fiber networks of limited geographic scope. They also often rely on advertised speed data, which puts U.S. firms at a disadvantage rankings-wise because U.S. networks consistently deliver on what is advertised; this is not so in foreign countries.¹⁴ Furthermore, these reports do not recognize the unique geographic and demographic conditions of America: in particular, that the United States is a much more suburban and rural nation and has much higher rates of poverty than the other OECD nations that it is compared with.¹⁵

Susan Crawford provides a case in point of exaggeration. In her jeremiad of a book, *Captive Audience*, she claims that U.S. speeds ranked only the 22nd-fastest in the world.¹⁶ In fact, at the time she wrote this, Akamai rankings (which uses a highly accurate analytics platform) had America at number nine in the world for download speed.¹⁷ Ninth is no reason to rest on our laurels, but not the failure populists depict, and certainly doesn't justify a radical change in policy. Robert Reich, in his attempt to lay the intellectual groundwork for broadband as a utility, makes even wilder claims, lamenting that “the

United States ha[s] some of the slowest [broadband] speeds,” among advanced nations. This simply isn’t true, and Reich offers no support for his assertion.¹⁸

The latest Akamai data has the United States ranking 12th in average speed, just 10 Mbps behind South Korea, the nation with the fastest average download speed in the world.¹⁹ Potentially contributing to the slide from 9th to 12th is the fact that Akamai continues to assess only data from connections using Internet Protocol version 4 (IPv4) for its speed comparisons. The company has been attempting to include IPv6 data in its metrics, but the process has proven more complicated than expected.²⁰ This means that consumers using newer operating systems, newer networking equipment, and the latest access technologies are systematically excluded from Akamai measurements. The United States has been a leader in IPv6 adoption, hovering between third and fifth best (here, the top spot belongs to Belgium), so it will be interesting to see if there is any significant movement in U.S. speed rankings once IPv6 data is included.²¹

According to FCC data, measured average download speeds in the United States have quadrupled in the past five years, and increased by nearly 30 percent in the last year alone.²² Quadrupling output is plainly inconsistent with claims of rapacious monopolies constraining supply.

Figure 1: Ranking of percentage of connections over 15 Mbps²³

Rank	% Connections Over 15 Mbps—U.S. States	% Connections Over 15 Mbps—Global
1	Delaware – 58%	South Korea – 61%
2	Rhode Island – 58%	Hong Kong – 49%
3	New Jersey – 55%	Norway – 48%
4	Washington, D.C. – 55%	Singapore – 46%
5	Massachusetts – 54%	Japan – 46%
6	Maryland – 53%	Sweden – 43%
7	Virginia – 50%	Switzerland – 42%
8	New York – 49%	Netherlands – 41%
9	Pennsylvania – 45%	Latvia – 40%
10	Connecticut – 44%	United States – 39%

More important than raw download speed is the percentage of connections above a certain threshold speed. After a certain data rate, measurements are less about the ability for citizens to leverage broadband to productive ends and more about how many simultaneous video streams of what resolution an average household can run. The United States claims a respectable 10th place on the percent of connections above 15 Mbps. Compare individual

U.S. states to other countries, sometimes a better comparison in terms of population and density, and the “falling behind” mantra quickly falls apart.

The point is not that we have “won” the broadband game—with 61 percent of U.S. connections under 15 Mbps, certainly there is still work to be done (note 39 percent are less than 10 Mbps and only 12 percent of U.S. connections are less than 4 Mbps).²⁴ The point is that when U.S. states with policies and geographies amenable to broadband deployment stack up competitively against Hong Kong, one of the most densely populated places on the planet, it is hard to see a failure that justifies radical policy changes.

The data are clear: There is nothing justifying a fundamental shift away from facilities-based competition to highly regulated or government-operated broadband.²⁵ The data indicates that “facilities-based competition has served as the primary driver of investments in upgrading broadband networks.”²⁶ Likely the best way for the United States to jump up the international rankings would be more generous programs to support digital literacy and massive subsidies to build or upgrade networks in high cost rural areas.

Claim 2: U.S. broadband prices are excessive because of monopoly power.

In order to justify public ownership of broadband networks, broadband populists attempt to convince the public, the media, and policymakers that U.S. broadband prices are excessive because of excessive profits. Robert Reich writes that “Americans pay more for broadband ... than the citizens of any other advanced nation” because competition is limited and profits are excessive.²⁷ Both claims are wrong.

Some may be surprised by the fact that the United States has some of the lowest entry-level broadband prices in the world. The International Telecommunications Union of the United Nations has consistently ranked the United States as the third-best country for entry-level broadband prices, with low-speed broadband clocking in at 0.35 percent of gross national income per capita.²⁸

The European Commission, as a part of its Digital Single Market initiative, commissioned a study on retail broadband access prices performed by the Van Dijk consultancy.²⁹ The survey compared normalized broadband prices of 28 EU countries, Japan, Canada, and a sample of U.S. states. The data (reproduced below) show the United States in line with Japan and Canada at lower speed tiers, and cheaper than Canada, where costs of deployment are high and revenue bases similarly dispersed.

Although the United States has unusually low entry-level pricing, higher-speed tiers are indeed more expensive than average. This progressive pricing—whereby wealthier Americans pay more for the fastest speeds, essentially subsidizing cheaper, entry-level broadband—is something you would expect broadband progressives to embrace.

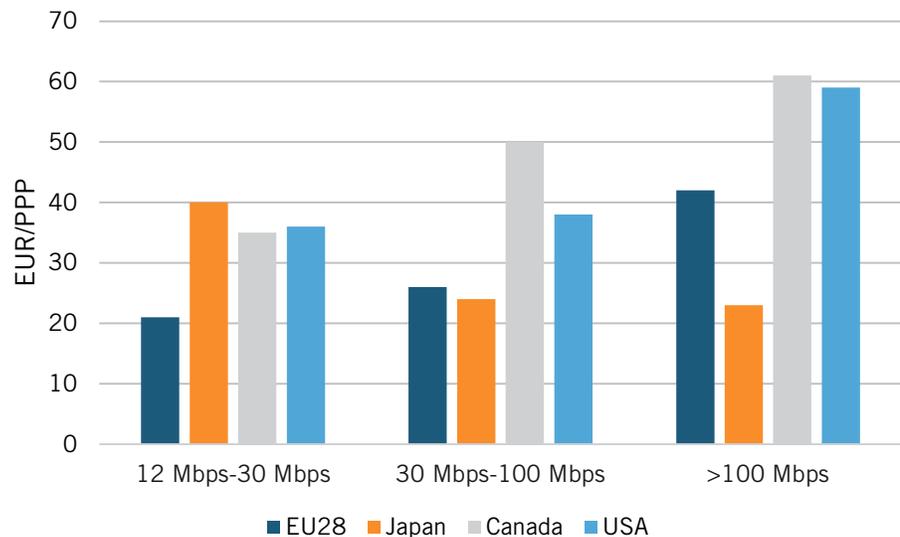
One reason U.S. prices for high-speed broadband are not the lowest is that U.S. costs are among the highest. At a high level, the ability to profitably deploy, operate, and upgrade a broadband service depends on two factors: geographic density and share of households adopting. Higher density and higher adoption means reduced costs per customer and

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increased revenues per home passed. On both factors, America has real challenges that other broadband leaders do not face.

It costs significantly more to provide broadband service to American suburbs and rural areas than it does to high-rise-dwelling Hong Kong, Japanese, Korean, and Singaporean populations. The fact that much of the U.S. population lives in detached single-family homes, instead of high-rise multi-dwelling units, dramatically changes the economics of broadband deployment.

Figure 2: Least expensive stand-alone broadband offering by speed tier³⁰



The United States ranks 28th in the OECD on urbanicity—a metric combining the population living in cities and the population density of cities themselves.³¹ Only Australia has less-dense cities than the United States, which is a more revealing measure than top-level population density (because unpopulated areas do not need broadband).³² This is noteworthy because Australia is actually pursuing the model espoused by many broadband populists—full structural separation, with government ownership of the underlying infrastructure and retail competition on top.

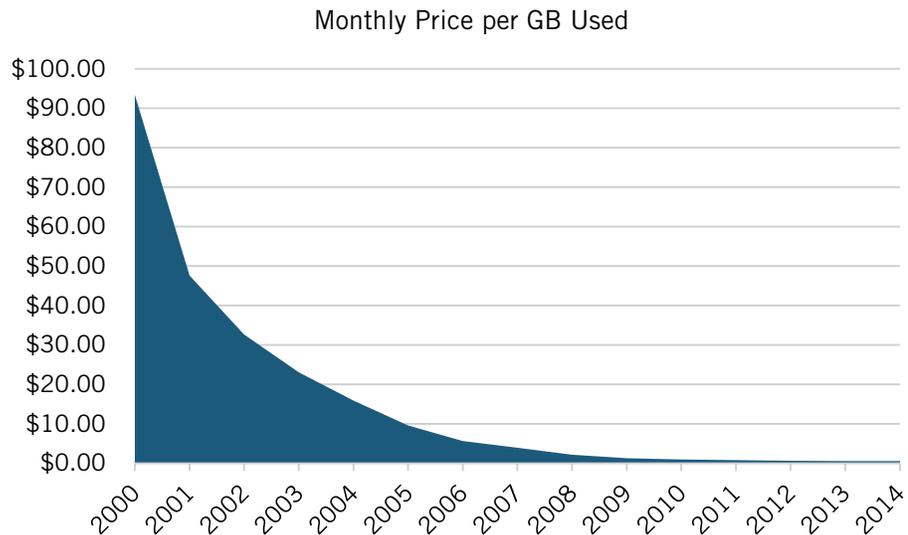
Australia’s open-access wholesale National Broadband Network (NBN) is by all accounts far behind its deployment schedule, with higher costs and lower uptake forcing a significant scaling-back of initial plans.³³ The low uptake of NBN services makes it difficult to draw conclusions, but, on average, Australia continues to have relatively high prices and low speeds compared with other countries.³⁴ One residential broadband pricing scorecard has the United States and Australia about even for the price of higher-speed broadband, but ranks the United States 10th and Australia 75th when it comes to entry-level broadband.³⁵ This evidence suggests that open-access, government-funded fiber networks like those proposed by populists are no cure for the tough economics of suburban sprawl.

In 2012, corporate profit rates for the broadband industry, on both a return-on-equity basis and net margin, were 30 percent below the S&P 500 average.

Many of the reports and blogs claiming Americans have costlier and slower broadband have severe methodological problems. Often these reports, such as the New America Foundation’s Open Technology Institute (OTI) report, “Cost of Connectivity,” cherry-pick specific cities to compare, touting new fiber builds in some cities, and ignoring limited rural capacity.³⁶ Another problem is continued reliance on advertised, rather than actual speeds. This makes for poor international comparisons; on average, U.S. fixed broadband providers over-deliver advertised speeds, whereas Europeans actually receive, on average, about 75 percent of advertised speeds, according to SamKnows measurements.³⁷ Even given these methodological problems, the “Cost of Connectivity” report shows municipal broadband offerings, where those networks are operating successfully, as offering consumers similar speeds and similar prices as incumbent providers.³⁸ On the other hand, some of the best speeds and prices, according to OTI, are where Google Fiber has been deployed—actually supporting the argument for continuing facilities-based competition.

Adoption challenges in the United States also play a part in broadband economics, in large part because of the significant share of low-income households in America, many with low levels of literacy. This leads broadband adoption to be lower than in other nations, when controlling for broadband network deployment. When both these factors are taken into account, they show that the cost of providing broadband per person are much higher for U.S. providers compared with countries with higher speeds. But that doesn’t stop the populists’ claim that the problem is monopoly and that if we simply had more retail competitors as they do in Europe (though they have little intermodal competition), prices would fall and service quality would increase.

Figure 3: Monthly price per GB used³⁹



In a 2015 note to investors, New Street Research argued that broadband was mis-priced and should be more expensive relative to cable companies’ video offerings.⁴⁰ While the price of an average broadband connection has remained relatively steady, analysts pointed to the increase in output in the form of higher speeds.⁴¹ This increase in broadband speeds

has allowed consumers much more productive uses of broadband over 15 years, with the cost per GB consumed falling by 99 percent.⁴²

This dramatic increase in consumer value somehow gets lost in the discussion of broadband prices. Some complain that there is no “Moore’s Law” equivalent for broadband prices—if you look at consumption, there is something close.⁴³

Populists argue “future-proofed” fiber, purified of the profit motive, would best serve the public. They claim U.S. broadband providers rake in too much profit, but intentionally obfuscate reality on this point. Consider Susan Crawford’s oft-repeated claim that cable profit margins are 90 percent. This claim stems from an observation of investment analyst Craig Moffet, who in 2013 pointed out that the gross margins on cable broadband are considerably higher (around 80 to 90 percent) than on the traditional cable video offering (where they are more like 60 percent).⁴⁴ Free Press frequently claims that “broadband is very profitable with operating income margins for cable ISPs currently above 60 percent and rising.”⁴⁵

These claims willfully ignore that gross or operating margins are precise financial metrics and a very poor measure of profitability in high fixed-cost industries. Gross margins disregard the investment and expenditures necessary before a company is able to offer a product.⁴⁶ If you ignore fixed costs in a capital-intensive industry, profits certainly will look high. Moffet’s point was a narrow one: that cable TV is costlier to offer than broadband when operators have to purchase video rights. If profit were so high, not only would investors would be pouring money into these companies to share in the returns, but new entrants would be strongly incented to quickly steal market share. It is easy to misrepresent financial information when broadband providers make investments in their plant, pushing fiber deeper into the network, that are recouped over 10 or more years.

Looking at other metrics, return on cable investment is more like 4 to 11 percent, which is why Wall Street investors tend to think of incumbent broadband providers as relatively safe, conservative investments.⁴⁷ In fact, in 2012, corporate profit rates for the broadband industry, on both a return-on-equity basis and net margin, were 30 percent *below* the S&P 500 average.⁴⁸ Likewise, according to the U.S. Census Bureau, after-tax profits in the cable and telecommunications industry were below the profits rates in manufacturing and the information sector.⁴⁹ This is hardly evidence of monopoly profits.⁵⁰

Claim 3: Deployment is too limited.

Not only are speeds supposedly low and prices high, but the broadband populists also decry private-sector providers for focusing more on profits and less on deploying broadband to areas that truly need it.

Some broadband populists simply confuse deployment and adoption, complaining that 30 percent of Americans are not served. In fact, while about 30 percent of U.S. adults don’t subscribe to broadband at home, it’s not because broadband companies don’t make the service available. Instead, they don’t buy the service, largely because they have little interest

in it, cannot afford it, or have low levels of digital and language literacy.⁵¹ The digital divide is not a problem of deployment: Fixed broadband of least 10 Mbps is available to 96 percent of the population, 25 Mbps to 90 percent, and satellite to 100 percent.⁵²

But even those who don't confuse deployment with adoption are quick to criticize broadband companies for not serving more of the nation—notably rural areas where there are fewer choices at higher speeds. This argument conveniently ignores a number of key factors. First, the areas not served are ones where revenues are lower than costs. If providers deploy broadband networks in areas where they will not receive enough revenue to cover costs and the government does not provide subsidies, then prices will have to go up for everyone else (although the populists believe that profits are so high in the industry that these losses can be covered by lower profits). This points to the real reason why some other nations have higher-speed broadband. With the exception of Australia and perhaps Canada, no other nation has such a high share of its households living in sparsely populated, hard-to-serve areas. Second, most other nations have provided much more generous government subsidies to private-sector providers to deploy broadband in high-cost areas.

By the Wheeler standard, it appears that not a single nation on earth has broadband.

In order to sustain the narrative that America's private-sector broadband providers are not deploying widely enough, the Federal Communication Commission itself recently invented a new tactic: simply move the goal posts and claim that only broadband faster than 25 Mbps qualifies as broadband. Former FCC Chairman Tom Wheeler gave a speech arguing that “[a] 25 Mbps connection is fast becoming ‘table stakes’ in 21st century communications,” with the implication that anything less than 25 Mbps is not really broadband.⁵³

This is an odd sort of statement, as it appears to be based not on any real analysis, but simply on the chairman's opinion.⁵⁴ Moreover, if sub-25 Internet connections are not really broadband, what does this mean in terms of which nations have broadband? According to Akamai's *State of Internet* report, at the time of Wheeler's redefinition, the average broadband speed in Korea (the nation with the fastest broadband) was just 25.3 Mbps, and only 66 percent of broadband connections in Korea are faster than 15 Mbps, with 37 and 33 percent in Hong Kong and Japan respectively. And these are three nations/regions that have among the highest urban population densities in the world and have provided among the largest subsidies to deploy high-speed broadband. By the Wheeler standard, it appears that not a single nation on earth has broadband.

But even if we evaluate broadband progress under this stilted metric, by the FCC's own numbers in its Broadband Progress Reports, the United States went from having 55 million Americans living in areas unserved by “broadband” in 2015 to 34 million lacking access to 25 Mbps in 2016.⁵⁵ That's a narrowing of areas unserved by “broadband” by nearly 40 percent in a single year, down to only 10 percent of the population without access to a wired 25 Mbps connection.⁵⁶

Broadband populists attempt to sully the private-sector model by holding up gigabit-capable networks as the techno-utopian goal we all should be enjoying.

Surely, it is important to have ambitious goals as a country, and there is progress still to be made, especially in rural areas. But we're never going to bring wired broadband connections of the 25 Mbps variety to every corner of rural America without massive subsidies, so the goal should be to deploy appropriate technologies at a reasonable subsidy level. Other countries recognize this fact: A competitive telecom industry is not going to provide ultra-high-speed broadband where it is wildly uneconomical to do so. But telecom regulators in other countries typically take an objective analysis of the economics and look to where targeted subsidies make sense.

Finally, the broadband populists attempt to sully the private-sector model by holding up gigabit-capable networks as the techno-utopian goal we all should be enjoying. The Institute of Self Reliance has a headline titled "National Cooperative Month: Celebrate Gigabit Cooperatives."⁵⁷ Public Knowledge's Harold Feld writes that "[t]he few locales in the United States that qualify as 'Gigabit cities'—where the Internet can be accessed at 1 gigabit a second—have seen almost immediate economic and social benefits."⁵⁸

But why stop at a gig? Why not 10? The City of Chattanooga's publicly owned electric utility brags that it now offers a 10-gig service (subsidized by the federal government), for the low price of only \$299 a month.

This is needed because, according to the city, "10,000 Mbps of Internet speed, that's enough bandwidth to stream 1,754 online movies all at the same time—in HD—from a single Internet connection without experiencing any buffering or lag time."⁵⁹ So this service is quite useful if you want to host 1,754 friends to stream separate high-definition movies, but otherwise not particularly more useful than 50 or 100 Mbps, given current and anticipated applications.⁶⁰

By holding up this kind of gold-plated network as the baseline of what is needed, broadband populists can decry the "slow speeds" America enjoys from private providers. But it's completely unclear what these speeds would be used for. It's akin to spending lavishly to rebuild our Interstate system so cars could drive 12,000 miles an hour safely, except that no car exists that could take advantage of those roads. In other words, there are simply no residential applications that need this much speed. Netflix is encoding 4K resolution videos at 15 Mbps, just 1.5 percent of gigabit speeds.⁶¹ This is not to say that a few gigabit testbeds are not worthwhile, since developers may one day discover applications that can take advantage of this capacity, but to paint this as a national imperative is a gross misplacement of priorities.

Claim 4: Private broadband incentivizes network discrimination.

Perhaps the loudest charge leveled by broadband populists against the private-sector model is that for-profit broadband providers will unfairly discriminate against traffic flowing over their networks, either because they are profit-hungry monopolists or because they want to limit speech for political reasons. This is a harder argument to rebut because it is completely speculative.

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 similarly regardless of their source, without favoring or blocking any particular product or service. This is an effective framing for populists because it does two things: First, it raises fears that private providers cannot be trusted—and if regulation is implemented, as discussed below, it constrains them, making them weaker competitors. Second, it also reinforces in the mind of policymakers and the public that broadband is just a dumb pipe that anyone can set up and run, even a local neighborhood co-op. No need for ongoing, technologically sophisticated innovation, which only providers with scale have the capabilities to undertake. As such, net neutrality is the perfect argument for populists to advance.

But as with their all their arguments, the reality is different than their claims. First, with the exception of one case by a small, independent telco, there have been no cases of anticompetitive network blocking of content or applications—and that instance was quickly resolved after the FCC spoke out against it. Second, all the major ISPs have voluntarily agreed not to block or degrade legal content.

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.

Third, network discrimination—treating some types of packets differently than others—can, if applied properly, make the Internet work better for all users. For example, if all carriers gave priority to latency-sensitive traffic, such as telepresence videos, while deprioritizing traffic such as email, everyone’s Internet experience would be better. Finally, the FCC had clear authority under Section 706 of the Telecommunications Act to limit potential abuse by carriers, and did not need to adopt the more regulatory and investment-limiting Title II approach they chose, under intense pressure from broadband populists.

Tech populists claim that ISPs will block consumers’ access to certain websites or slow 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. The FCC initially planned to promote the open Internet while allowing for some “commercially reasonable” agreements where appropriate, to allow network innovation and better user experience with latency-sensitive traffic. This approach could have used the FCC’s existing authority without reclassifying broadband from a lightly regulated information service to a heavily regulated public utility, similar to the regime that regulated the railroads of the 19th century or telephones of the 20th century. Unfortunately, Chairman Wheeler’s proposal was met with a wave of misinformation and populist fearmongering (some of it stemming from reactions to a monologue by late-night comedian John Oliver), most of which played off popular distrust of large ISPs, rather than attempting to drive good policymaking.

Figure 4: Mock “cable-ized” Internet advertising sheet⁶²

The figure displays a grid of 12 mock advertisements for a 'cable-ized' Internet service. Each advertisement is a rectangular box with a distinct color and contains logos for various services, a price tag, and a brief description of the included content.

- Top Row:**
 - TELCO ADSL:** \$29.95. Includes 500 MB of free transfers to non-peering websites at full speed. Limited to 7.28 Kbps thereafter.
 - Streaming Services:** \$10. Includes free Hulu subscription, YouTube, Hulu, tv.com, Joost, Netflix, and ESPN. Includes exclusive content from your favourite networks. Hollywood \$10 after September.
- Second Row:**
 - Search & Social:** \$5. Includes a massive extra 1000 MB transfer to non-peering sites. Limited to 256 Kbps thereafter. Services include Google, Blogger, Ask, Yahoo! Search, Bing, WordPress.com, Flickr, YouTube, and Wikimedia.
 - Social Networks:** \$0. All social networks. All your friends. Includes all your dating sites. Services include Twitter, Facebook, AOL, Bebo, MSN, Myspace.com, Yahoo!, and Friendster.
- Third Row:**
 - International:** \$5. Includes the top 200 services from over 30 countries. Services include Baidu, Яндекc, BBC, and Indiatimes.
 - Music:** \$10. Listen to your favourite music. Includes three months of emusic. Services include Last.fm, Pandora, Spotify, and Rhapsody.
- Fourth Row:**
 - News:** \$5. News Freak? Get your fix. Includes free online access to your local news site. Services include Digg, The New York Times, The Wall Street Journal, Los Angeles Times, The Huffington Post, MSNbc, and Fox News.
 - Marketplace:** \$5. Save money. Shop online. All your favourite things, secure and fast. Includes Internet Banking from over 20 financial institutions. Services include Amazon.com, Newegg, PayPal, Overstock.com, Skype, and eBay.
- Fifth Row:**
 - Playground:** \$5. Gamer? We hear you. Unwind, relax and play hard. Services include Steam, EA Electronic Arts, World of Warcraft, RealArcade, and Gametap.
 - Recharge:** \$5. Your full-speed quota wasn't enough? A massive 2000 MB for access to your company's VPN at full speed. For accessing your friends' non-peering websites at full speed. For getting your emails faster and the included limit didn't cut it. Or if you're a web designer and need some extra buffer. Whether it be the world wide web, VPN or email, we have you covered.

Indeed, 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 from 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 such as zero-rating plans, where mobile broadband 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.

Figure 5: 1892 Omaha Populist Party poster calling for nationalization of the railroads and telegraph⁶³



Claim 5: Broadband Internet is a fundamental human right.

The final argument broadband populists use to advance their utility and public ownership agendas is to assert that broadband is a fundamental human right. The New America Foundation asserts, “The international consensus that communications is a fundamental human right is emerging as we begin to understand the key role that the Internet plays in numerous spheres of social life.”⁶⁴ By this they mean that every person should have the right to use the Internet, regardless of their ability to pay. If broadband is a fundamental human right, the argument then is that government needs to provide it, not the private sector.

To be sure, the broadband Internet is an incredibly empowering technology that makes people’s lives better. Whether it rises to a fundamental human right remains an unsettled question. And just because something is a human right does not mean that government has to be the provider of it. In most nations, education up to some level is a fundamental human right, but in some nations, like Sweden, the government not only provides education services, it also provides educational vouchers, in part because it wants to provide Swedish citizens with choice while at the same time enabling private-sector innovation. In the United States, food is generally considered a human right, but the government does not run grocery stores. Rather, we provide low-income people with vouchers (food stamps)

Whether broadband is a fundamental right has implications for government broadband subsidies; it does not have implications for government policy about broadband-industry structure.

with which they can buy food at for-profit grocery stores. So, whether broadband is a fundamental right has implications for government broadband subsidies; it does not have implications for government policy about broadband-industry structure.

Some countries have indeed declared broadband to be a human right. For example, in 2009 Finland was the first country to, by law, assert a right for every citizen, business, and public administration access to a minimum of 1 Mbps download speed at a reasonable price by the end of 2010, and 100 Mbps by 2015.⁶⁵ Now, in 2016, while Finland is certainly no slouch in the broadband department—Akamai ranks them eighth, with an average download speed of 17.6 Mbps, they are short of their 100 Mbps goal, due to unexpectedly high costs, a public-funding crunch, and little consumer demand for higher speeds.⁶⁶

BROADBAND POPULIST TACTICS TO ESTABLISH A REGULATED UTILITY OR PUBLIC OWNERSHIP MODEL

As noted above, rather than seek to attain their endgame of public ownership in one fell swoop, broadband populists focus on winning tactical battles, that in and of themselves, may not be all that significant, but collectively amount to a strategy that will get them their end goal. For they know that their only chance is to constrain the private-sector business model so much that not only does it underperform, leading to calls for a public-sector model, but that it makes it look like the next step is relatively innocuous. At the same time, they do everything they can to advance public-ownership models, most of which cherry-pick only the best customers and communities, with the goal of weakening private-sector ISPs, who must and do serve a broader array of customers.

Tactic 1: Constrain private-sector capabilities.

Just as antitax crusader Grover Norquist famously said, “I don’t want to abolish government; I simply want to reduce it to the size where I can drag it into the bathroom and drown it in the bathtub,” broadband populists want to starve and constrain the private-sector broadband beast so it too can be “drowned,” or least starved so much that the masses demand public-sector alternatives.

Constraining revenue

Limiting the revenue that flows to private-sector broadband providers is a key tactic. Broadband populists do that in a number of ways.

First, they have long opposed the industry increasing revenues through progressive pricing of data use. Usage-based pricing has long been seen as effective tool for pricing the Internet, all the way back to when it was first privatized.⁶⁷ Originally conceived as a way to help allocate scarce bandwidth during network congestion, usage-based pricing also helps to rein in the long tail of very heavy users, and offer more efficient pricing by enabling price discrimination with lower prices to lighter users. Data caps are an especially important tool, where network resources are shared at a local level, such as in mobile networks and hybrid-coax fiber plants. Broadband populists call for such pricing models to be banned, claiming that these pricing models introduce “artificial” scarcity and to

discourage the growth of online video distribution in an anticompetitive fashion.⁶⁸ Instead of experimentation within the bounds of ex post antitrust enforcement, populists would rather see these pricing models banned outright based on hypothetical concerns.

Second, they have fought vociferously against any mechanisms by which carriers can get extra revenue for differential treatment of Internet traffic, either improving performance for particular functions or not charging it against bandwidth caps (e.g., zero rating). This a core motivation for populists in their campaign against paid prioritization and zero rating.

Third, the populists saw a successful campaign to subject carriers to heightened privacy regulations, designed to effectively prevent ISPs from experimenting with advertising-supplemented business models similar to what Internet firms use. While couched as efforts to protect privacy, for broadband populists, this campaign is just one component of a coordinated strategy to starve the broadband beast, so that muni-broadband replaces it. For they know that if broadband providers cannot make a profit, investment will dry up, leaving the public sector as the investor of last resort.

Fourth, populists seek a host of limitations on video revenues. The recent set-top box fracas is a prime example, where the policies pushed would affect revenue, not just fees from the box themselves (which were overstated, and largely ancillary to the debate), but also higher-margin video services, such as pay-per-view and home-shopping channels.⁶⁹ Broadband populists also work to reduce scale-purchasing benefits large multichannel video programming distributors (MVPDs) get in negotiations with content providers, so that they will have to pay more, ultimately benefitting smaller providers, including municipal providers.⁷⁰

Increasing costs

Increasing costs is the flip side to decreasing revenues. Case in point was in 2009 when the U.S. Congress crafted the American Recovery and Reinvestment Act (a.k.a., the Stimulus bill). When several Senators proposed that in addition to providing \$7.2 billion in grants for broadband deployment, government should also give tax credits for high-speed broadband investments made that year, Free Press came out with guns blazing.⁷¹ There is no doubt that the incentives would have reduced the after-tax cost of network investment, spurring billions of dollars of new capital investment, including in underserved areas, all the while employing tens of thousands of workers in 2009, when the economy most needed a shot in the arm. To be clear, these tax incentives would have come not at the expense of the direct grants operated by the Rural Utilities Service; they would have been in addition. But Free Press, despite its purported support of higher broadband speeds and more deployment, would have no truck with any policy that helped Big Broadband, and played a key role in killing the provision, including attacking the incentives as a “corporate welfare boondoggle.”⁷² As such, they were in part responsible for limiting broadband deployment in America.

This also explains why the broadband populists have spent so much of their political capital working to constrain the private-sector model and so little on supporting public funding for responding to the digital divide and ensuring that high-cost areas (mostly rural) are able to obtain broadband. If the United States does what virtually every other leading nation does (support the private-sector broadband model with targeted subsidies to increase adoption and deployment in high-cost areas), then any success would undermine their narrative of private-sector failure, dashing their hopes for government-provided broadband.

A second strategy is to impose regulation that would raise prices, as the populists did when they succeeded in convincing the FCC to impose Title II regulation on broadband. Uncertainty surrounding Title II raises costs and limits investment, making government-owned networks more appealing. The basic provisions of Title II leave troubling room for FCC expansion into rate regulation, leading Craig Moffett, a leading investment analyst, to downgrade his rating on cable stocks: “It would be naïve to suggest that the implication of Title II, particularly when viewed in the context of the FCC’s repeated findings that the broadband market is non-competitive, doesn’t introduce a real risk of price regulation.”⁷³

Advocates know that if the United States does what other leading nations do (support the private-sector broadband model with targeted subsidies to increase adoption and deployment in high-cost areas), any success would undermine their narrative of private-sector failure and dash their hopes for government-owned networks.

Just as the push on net neutrality serves to reinforce the view that broadband is simply about a wire in the ground that anyone can provide, so too does the push for unbundling and Title II. If anyone can build and maintain a network, even a small town or local neighborhood, then there is no need for constant innovation that larger firms provide best. This is why Susan Crawford ends one presentation to broadband populists with a slide that the path forward on net neutrality is to end with supporting “the best possible muni overseen networks.”⁷⁴ If the system is a commodity, then it is okay if the industry becomes a boring stagnant one with little pressure to innovate, like the electric utility industry, where companies must go before politicized public-utility commissions to convince them to let them raise rates to pay for needed upgrades. We just have to look at the extremely limited deployment of the smart electric grid in the United States (or even worse at the pitiful conditions and performance of the U.S. highway system) to get a picture of the future of broadband should be it be turned into a utility or a government service.

Likewise, their longstanding push for network unbundling or “open access” policies is designed to limit revenues, recognizing that, if implemented, the pressures on regulators to price access at very low rates (as was done in the aftermath of the 1996 Telecom Act) would mean reduced incumbent investment in better networks. Yet around the world, functional or structural separation policies are generally viewed as a last resort in the face of a true monopoly. Here in the United States, Blair Levin, former FCC chief of staff under Chairman Reed Hundt, examined the open-access question while acting as lead author of the *National Broadband Plan* in the Obama administration. He ultimately “rejected this option, believing it would not lead to investments to deploy the next generation networks necessary to deliver the affordable, abundant bandwidth America needed.”⁷⁵ He points to the rise of Google Fiber and other new ultrafast networks, saying, “If the government had required open access that required Google to share its infrastructure with competitors,

Google Fiber would have been stillborn.”⁷⁶ There is plenty of economic literature to support this view and that common-carrier utility regulations have negative consequences for broadband investment.⁷⁷

Tactic 2: Support public alternatives.

Constraining the competitive, private-sector broadband model is only half the battle for broadband populists; the other half is to ease the way for its replacement by a public alternative. Besides trying to win the ideas war (praising the performance of public networks while denigrating the performance of private), broadband populists also want to win the tactical war. This is done in a number of different ways.

Constraining the competitive, private-sector broadband model is only half the battle for broadband populists; the other half is to ease the way for its replacement by a public alternative.

The first is to have the federal government fund government-owned networks or small private competitors to the major ISPs. For example, while the populists opposed using the stimulus bill to allow private-sector investment to be funded by tax incentives, they lobbied hard for the stimulus package to fund providers, but pushed for restrictive rules in the federal government broadband program (including in the NTIA) that made it unlikely that private-sector ISPs would apply for the program. In addition, many grants went to municipal networks. For example, rather than spend money to build networks where there were none, Chattanooga’s public electric utility received \$111.5 million in federal stimulus and raised another \$220 million in municipal bonds to upgrade its network from an already super-fast 100 Mbps to a network capable of gigabit speeds.⁷⁸ But if we really want to know the end result of a government-owned network model, we have to only look to the state of roads and bridges in America, the vast majority of which are owned by governments and are in states of serious disrepair and underinvestment, precisely because they cannot rely on market forces to drive further investment.

In a profile of Susan Crawford, who supports open access to government-owned fiber networks, journalist and populism expert John B. Judis explains that her “ultimate solution is to overhaul the telecoms the same way New Dealers reined in the electricity industry ... [when they] broke up national holding companies, instituted tougher regulations, and funded public power in regions the private companies had ignored.”⁷⁹ But Crawford does not want to do this through regulation directly, explaining that it would be too fiercely opposed by industry and slowed by litigation. “Instead, she believes the answer is for local communities to build their own fiber networks,” which she thinks will “help the public see the benefits of real regulations.”⁸⁰ And she knows full well that many of these projects will receive direct or indirect government subsidies, giving them a leg up on companies that must earn all their revenues from customers. And as noted above, she knows that these models weaken private-sector ISPs, not only because most involve wasteful “overbuilding,” but also because most of that is in areas with relatively low costs of deployment, meaning that the private ISPs will increasingly be left to serve only the highest-cost, lowest-revenue areas (e.g., exurbs and rural areas outside the footprint of the muni network).

The broadband populists will surely accelerate this style of bottom-up organizing under a Trump administration, and continue fighting against laws limiting local governments

building their own networks. This is a real risk, as many municipal broadband networks, including in Provo, Utah, and Burlington, Vt., went bankrupt, leaving the city taxpayers on the hook.

LOST IN THE DEBATE: THE BENEFITS OF PRIVATE-SECTOR INNOVATION

Even the above discussion about why the U.S. model of intermodal competition is doing well considering all the circumstances obscures longer-term benefits of private-sector broadband. Numerous scholars have examined the benefits of competitive ownership of broadband access infrastructure from a variety of perspectives, from public-choice theory to Schumpeterian creative destruction.⁸¹ Most notably, from a pro-innovation perspective, a transition to municipal fiber gives up on incentives to develop new access technologies and new business models to displace current technology.

A slow tumble into unbundled, open-access municipal networks would be the wrong direction for policy. This sort of structural separation explicitly gives up on the type of competition that drives innovation—when all providers use the same infrastructure, providers compete on back-office cost-cutting, with prices ultimately constrained by wholesale access prices.⁸² This makes for a sclerotic system, even more difficult for new technology to enter. Broadband populists do not see this as a problem—Crawford, for example, asserts, without argument, that fiber is “future-proof.”⁸³ Simply because fiber offers the most capacity today does not mean it is cost effective to abandon existing infrastructure, nor that the open-access format can enable business models that meet shifting consumer demand. No technology is future-proof—expect broadband access technology to change more in the next 20 years than the last 20.⁸⁴ We should not give up on high-functioning policies that continue to drive investment and innovation.

CONCLUSION

Broadband networks are a critical part of America’s digital technology system and, as such, the issue of how to continue to drive investment and innovation in these networks is worthy of robust and sustained debate. But the broadband policy debate should be open and transparent about what it really involves: Is America better off with an ISP industry that is structured the way the vast majority of the U.S. economy is structured (private-sector firms competing to provide the best product or service at a competitive price, with the role of government to limit abuse and support gaps where private-sector competition does not respond), or do we want to transform this largely successful industry model into either a regulated utility monopoly model or government-owned networks? As we ponder this question, policymakers need to understand what the debate is really about. Clearly, we believe the former model is the superior one for the overall American economy and most American residents.

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 52. FCC, “2016 Measuring Broadband America,” 79.
 53. Tom Wheeler, “The Facts and Future of Broadband Competition” (prepared remarks of FCC Chairman Tom Wheeler, 1776 Headquarters, Washington, DC, September 4, 2014),
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 55. Federal Communications Commission (FCC), *2015 Broadband Progress Report* (Washington, DC: FCC, February 4, 2015), <https://www.fcc.gov/reports-research/reports/broadband-progress-reports/2015-broadband-progress-report>; FCC, *2016 Broadband Progress Report* (Washington, DC: FCC, January 29, 2016), <https://www.fcc.gov/reports-research/reports/broadband-progress-reports/2016-broadband-progress-report>.
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<http://www.wwnorton.com/college/history/eamerica/media/ch22/resources/documents/populist.htm>.
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 75. Blair Levin, “What Have We Learned from Google Fiber,” *CNET*, July 31, 2015, <http://www.cnet.com/news/what-have-we-learned-from-google-fiber/>.
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