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## **Improving America's Broadband through Competition, Not Regulation** Removing Existing Barriers to Broadband Deployment Will Help Consumers More than Federal Mandates

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Should the government regulate the Internet like a public utility? This policy question has vexed U.S. lawmakers and agency officials in recent years, as the Federal Communications Commission (FCC) has worked to cement itself as the nation's Internet regulator.<sup>1</sup> The FCC's "multiyear voyage of discovery"<sup>2</sup> may soon come to an end, however, as new leadership at the agency has started the process of undoing its 2015 decision to regulate Internet service providers as common carriers.<sup>3</sup> But the debate over the proper role of government when it comes to the Internet remains as contentious as ever. Efforts in Congress to explicitly grant or deny the FCC the power to regulate broadband providers have failed to gain traction, leaving the matter in the hands of the agency and the federal courts, which review the legality of its decisions.<sup>4</sup>

Millions of Americans appear to believe the FCC should craft and enforce strict rules governing Internet service providers.<sup>5</sup> For those consumers, the perceived absence of meaningful choices among these providers may be the most compelling justification for treating Internet communications differently than other sectors of the economy. For instance, the Electronic Frontier Foundation, a prominent activist organization that supports common carriage regulation of ISPs, contends that "most customers aren't able to switch to another [Internet service] provider," and are thus "stuck with government-backed monopolistic ISPs that can get away with anti-consumer business practices."<sup>6</sup> This claim overstates the paucity of choices that the typical U.S. household enjoys among Internet providers; still, for many Americans, changing broadband providers entails choosing from a decidedly narrow set of options.

Contrary to pro-net neutrality regulation activists' premises, the state of broadband competition is not an unchangeable given. Public policy decisions are responsible for the current state of the U.S. broadband market. Changing such policies would change the level of competition. A laundry list of acts and omissions by government officials at the federal, state, and local levels have discouraged companies from entering the broadband market. If lawmakers embraced a less restrictive, more open approach to private-sector deployment of wireline and wireless broadband infrastructure, many Americans might enjoy a more compelling array of choices among Internet service providers. In turn, greater competition among ISPs would obviate the perceived need for federal regulation of the Internet,

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reducing pressure on Congress and the FCC to dictate how broadband companies run their networks.

**Internet Regulation from 2005 to the Present.** As the Internet has grown ubiquitous in American society over the past quarter-century, the Federal Communications Commission has issued a series of policies, orders, and regulations that prescribe how broadband providers should handle the traffic that traverses their networks. For over a decade, the FCC has been issuing ever-stricter regulations on broadband companies. In 2005, it issued a policy statement that set forth four principles aimed at guiding the agency’s “ongoing policymaking activities.”<sup>7</sup>

In 2008, relying on this policy statement, the agency ordered Comcast, a major cable broadband provider, to stop interfering with certain peer-to-peer file sharing traffic.<sup>8</sup> In 2010, after a federal appeals court invalidated this order,<sup>9</sup> the FCC issued a regulation that sought to codify a set of rules governing ISPs’ network management practices.<sup>10</sup> Yet again, a federal appeals court invalidated the FCC’s rules, so the agency went back to drawing board for a third time.<sup>11</sup>

In 2015, the agency issued new regulations that reinterpreted the Communications Act to treat Internet service providers as common carrier telecommunications services subject to public utility-style regulation.<sup>12</sup> The 2015 rule was affirmed by the D.C. Circuit in 2016,<sup>13</sup> and the matter is pending before the Supreme Court at the time of this publication.<sup>14</sup>

The election of a Republican president in 2016 brought new leadership to the FCC. Ajit Pai, who served as one of the agency’s two Republican commissioners during the second term of the Obama administration, was named FCC Chairman in January 2017.<sup>15</sup> In May 2017, Pai announced that the FCC would propose undoing its 2015 order. It would restore its pre-2015 interpretation of the Communications Act, freeing broadband providers from common carriage regulation.<sup>16</sup> The decision will undoubtedly spur new litigation, with federal courts asked yet again to determine whether the agency has adopted a permissible construction of the Communications Act.<sup>17</sup>

Meanwhile, it appears unlikely that Congress will pass any legislation that addresses the scope of the FCC’s authority over the Internet, as neither the proponents nor opponents of the agency’s 2015 rules have enough votes to send a bill to the president’s desk.<sup>18</sup>

**The State of Broadband in America.** Most Americans who use the Internet subscribe to wireline broadband service. About two in three U.S. adults have a home broadband subscription, according to a December 2015 survey by the Pew Research Center.<sup>19</sup> This figure peaked in 2013, at 70 percent of U.S. adults, and has since declined slightly as more consumers have begun to rely solely on mobile connectivity for Internet access.<sup>20</sup> Between 2013 and 2015, the share of U.S. adults relying on a smartphone as their only source of home broadband connectivity grew from 8 percent to 13 percent.<sup>21</sup> Among households earning less than \$25,000 per year, nearly one in three now rely solely on a mobile broadband subscription for Internet access.<sup>22</sup>

Still, for most Americans, accessing the Internet at home—whether through a traditional computer, smart television, video game console, or tablet—entails using a wireline connection, often augmented with a Wi-Fi access point. The “last mile” that links a broadband provider’s network to the residential wireline connection typically relies on one of three technologies: cable, digital subscriber line (DSL), and fiber optics. According to the FCC’s most recent Broadband Progress Report, released in January 2016, 38 percent of U.S. households had access to two or more providers of “fixed advanced telecommunications capability.”<sup>23</sup>

This term, which Congress included in Section 706 of the Telecommunications Act of 1996,<sup>24</sup> was interpreted by the FCC in 2015 as encompassing any broadband connection that offers throughput of at least 25 megabits per second (Mbps) downstream and 3 Mbps upstream.<sup>25</sup> However, the agency’s definition is not especially useful if one wishes to meaningfully evaluate the state of U.S. broadband competition. For a typical household, a 10 Mbps/1 Mbps broadband connection—which the FCC considered “advanced” until 2015—is not materially different from a 25 Mbps/3 Mbps connection. According to data from the FCC’s 2016 report, although 90 percent of American households have access to at least one fixed provider offering 25 Mbps/3 Mbps, a mere 37 percent of Americans actually subscribe to such a service.<sup>26</sup> In other words, less than half of all U.S. households *capable* of subscribing to broadband service that meets the FCC’s current definition of “advanced telecommunications capability” actually *choose* to pay for such speeds. Definitional questions aside, a sizable share of Americans have just one fixed broadband choice, whether the threshold for broadband is 25/3 or 10/1.

To focus solely on fixed—wireline—broadband access is to miss the forest for the trees. Wireless connectivity is an increasingly viable substitute for fixed broadband. A growing share of U.S. consumers are choosing to forego wireline broadband and instead rely on a mobile device with a wireless broadband subscription for Internet access. This convergence between wireline and wireless broadband has been fueled not only by the increasing speed of wireless broadband, but also by improvements in mobile devices. Contemporary smartphones and tablets offer ever-larger screens, greater computational power, and a diverse array of applications (“apps”) and smart devices that, for an increasing number of consumers, render the traditional home computer no longer necessary.<sup>27</sup> Indeed, sales of personal computers—including laptops—have declined in recent years, with the number shipped worldwide recently reaching its lowest figure in a decade.<sup>28</sup>

Wireless connectivity is now available where the vast majority of U.S. consumers live and work, at speeds that are more than sufficient to stream high-definition video.<sup>29</sup> For most mobile broadband subscribers, speed is no longer a meaningful differentiating characteristic between wireless and wireline access. Instead, for many users, the only material constraint comes from usage limits. For some wireless subscribers, transmitting data above a certain amount in a single month may incur hefty overage charges. For others, usage in excess of a specified amount may result in “throttling” whereby the subscriber’s throughput is selectively degraded to 3G speeds for the remainder of the monthly billing cycle.<sup>30</sup> However, a recent trend toward so-called unlimited data plans, has meant that even heavy users of

wireless broadband will experience degradation only when their cell tower is experiencing congestion.

In coming years, 4G mobile broadband networks will be augmented and eventually superseded by 5G networks that promise far greater speeds and coverage density, further shrinking the gap between wireless and wireline broadband. 5G networks will meet or exceed the spectral density—the amount of data transmitted within a given bandwidth—of LTE-Advanced, a recent iteration of 4G technology.<sup>31</sup> They will also require a far denser network of cell towers, which will likely enable users to transmit far more data within a given spectral and geographic space than 4G networks.<sup>32</sup> So in addition to offering faster speeds, 5G networks will likely allow more liberal usage policies compared to those of 4G networks. Yet, 5G deployment will also suffer from inefficient spectrum allocation, especially because 5G technology functions best at spectrum bands above 24 GHz, which government policy keeps largely out of reach of mobile service providers.<sup>33</sup>

There are numerous government policies that impede the fullest development of broadband networks and broadband competition. Eliminating those impediments to market competition would foster an environment that naturally directs firms to provide the services consumers demand at the lowest prices they can.

**Eliminating Governmental Barriers to Broadband.** Although broadband competition is not as lackluster as it is often portrayed, various existing public policies depress market entry by artificially pushing up the cost of deploying broadband. Such policies suppress both new build-outs in unserved areas or upgrades to existing infrastructure. Chronicling each and every policy that affects broadband competition is not feasible, but two areas of public policy are most responsible for distorting America's broadband market:

1. The federal government has made it needlessly costly for market participants to deliver broadband access using the electromagnetic spectrum.
2. State and local governments have made it needlessly costly to lay wire underground or build towers for wireless connectivity.

**Increasing Spectrum Availability.** Spectrum is the medium by which our laptop computers, tablets, smartphones, and other wireless devices send and receive information wirelessly over the Internet. In a finite space, spectrum has the capacity to carry only so much information. Although advances in technology have enabled more efficient uses of spectrum, fitting more information into a smaller spectral footprint, demand for spectrum often outstrips the available supply of it.

The U.S. government has regulated the airwaves for as long as they have been a useful medium of communication.<sup>34</sup> Fortunately, the FCC conducted the nation's first spectrum auction in 1994, and has since conducted about 100 such auctions.<sup>35</sup> However, a large portion of valuable spectrum remains government-licensed, not allocated by markets. The FCC routinely imposes burdensome restrictions on spectrum auctions, wielding its nebulous "public interest" standard to impose the communications policy preferences of the majority

of the agency's five commissioners.<sup>36</sup> In addition, the FCC has a tendency to meddle whenever spectrum is moved from the political realm to the marketplace. This makes acquiring spectrum far more expensive than it should be. High costs of entry discourage new wireless broadband providers, as the prospect of earning a competitive return is diminished. Consumers ultimately suffer from limited broadband choice.

Despite governmental limits on the availability of spectrum to market participants, however, recent spectrum auctions have enabled U.S. mobile broadband providers to dramatically improve their offerings. For instance, in 2008, after Verizon and AT&T, America's two largest wireless providers, each won valuable bundles of spectrum licenses worth \$9.4 billion and \$6.6 billion,<sup>37</sup> respectively, both firms went on to build nationwide fourth-generation (4G) wireless networks that rely on that spectrum.<sup>38</sup> Verizon, which holds the largest chunk of spectrum in the coveted 700 MHz band, has been consistently ranked by independent outlets as offering the nation's fastest and most widely available 4G network.<sup>39</sup> In March 2017, the FCC concluded another major auction involving spectrum in the 600 MHz band, with total auction proceeds of nearly \$19.8 billion.<sup>40</sup> The winners included T-Mobile, which will use the spectrum to improve its 4G network.<sup>41</sup>

However, of the economically viable portion of spectrum, a massive share is dedicated to use—or, in many cases, misuse—by federal government entities. These federal agencies do not “pay” for their spectrum via auction or in any other manner. Hence, they have little incentive to conserve spectrum that might be more fruitfully used by companies serving consumers—or by other agencies. Worse, agencies often have an incentive *not* to efficiently use the spectrum allocated to them, because budgets are tight, and squeezing the most out of a finite pool of spectrum often entails purchasing costly devices and facilities.<sup>42</sup>

To remedy this problem, government agencies should no longer be allowed to use spectrum without facing its market price. In general, when an agency wishes to procure a resource, it must budget for such an expenditure and obtain the appropriations to spend government funds. The right to transmit over spectrum is a scarce resource that should be allocated in the same way. Oversight of spectrum should be vested in an agency or, ideally, a marketplace that encompasses all spectrum. Government agencies should be equals in a spectrum market, buying or renting spectrum using appropriated funds.<sup>43</sup>

The federal government could do much to improve the condition of broadband networks, competition, and Internet service by permitting greater use of spectrum. State and local governments also have a large share of actions they could take toward this end.

**State and Local Government Impediments to Broadband Deployment.** When a firm wishes to deploy wireline broadband to residents of an existing community, it typically must navigate a complex web of municipal and state regulations that govern the use of public rights of way. Although some governmental oversight over projects that entail digging up public roads or other public lands is appropriate, the processes by which companies must obtain permits and pay fees to obtain permission for such projects is often extremely complex and costly.<sup>44</sup> The result is that only firms with deep pockets and

extensive experience dealing with local and state officials are typically willing to pursue large-scale broadband deployment initiatives.

On a few recent occasions when a company has sought to deploy wireline broadband on a limited scale, the towns in which such networks have been built are those that have committed to offering a simple permitting process, reasonable fees, and streamlined access to public rights of way.<sup>45</sup> For instance, when Google announced plans to deploy a fiber-optic residential broadband service known as “Google Fiber” in 2010, the company solicited applications from U.S. communities and ultimately selected Kansas City as its first deployment site.<sup>46</sup>

Google’s passive approach to broadband buildout stands in contrast to the traditional method employed by telecom providers, who typically go from town to town soliciting permission to deploy new broadband infrastructure. If a city insists on onerous terms as a prerequisite for allowing a company to deploy broadband there, the provider might simply skip over that city—as happened in Alexandria, Virginia, in 2010 when Verizon announced it could not reach an agreement with the city regarding the proposed deployment of Verizon’s FiOS broadband network.<sup>47</sup>

The FCC is currently examining state and local impediments to private-sector broadband deployment, both with respect to wireline and wireless services.<sup>48</sup> This proceeding is examining rules relating to the retirement of legacy copper infrastructure, which telecom carriers are replacing with fiber networks.<sup>49</sup> The proceeding also solicited comment on how the FCC can use its existing, albeit limited, authority under Section 253 of the Communications Act to preempt certain state and local regulations that “have the effect of prohibiting” the provisioning of interstate telecommunications services.<sup>50</sup>

In addition, in January 2017, the agency announced the establishment of a Broadband Deployment Advisory Committee (BDAC) to “make recommendations to the [FCC] on how to accelerate the deployment of high-speed Internet access, or ‘broadband,’ by reducing and/or removing regulatory barriers to infrastructure investment.”<sup>51</sup> The BDAC working group focused on removing state and local regulatory barriers to broadband deployment. It recently developed a draft set of recommendations, calling for, among other measures:

- The creation of a “broadband readiness checklist” for state and local agencies;
- Greater transparency regarding right-of-way fees, and
- A streamlined mediation and arbitration process, administered by a neutral third party, for disputes between a broadband company and a governmental entity.<sup>52</sup>

In comments filed with the FCC in these two proceedings, broadband companies and industry associations have identified many state and local rules that impede private-sector deployment. Such barriers include:

- Administrative fees of up to \$10,000 charged by localities before they will even consider a broadband provider’s application to access any public rights of way,<sup>53</sup>

- Conditions unrelated to the deployment of broadband facilities imposed on companies seeking permits from localities;<sup>54</sup> and
- State and local regulations that prevent telecom providers from retiring obsolete copper-based infrastructure and replacing it with fiber-optics.<sup>55</sup>

**Reviving the Commerce Clause to Preempt State and Local Barriers to Broadband Deployment.** Public pressure on state and local governments—which are, after all, theoretically more sensitive to constituents’ demands—may help encourage the removal of barriers to broadband deployment. However, the federal government’s involvement may be necessary to meaningfully erode such barriers throughout the nation. Broadband Internet access is a quintessential example of an interstate market; overseeing the process by which participants in this market offer their services falls squarely within Congress’s authority to “regulate Commerce . . . among the several States” under Article I of the Constitution.<sup>56</sup> Unlike other federal laws and regulations that courts have upheld despite their dubious nexus to interstate commerce,<sup>57</sup> preempting state and local governments with respect to broadband deployment is consistent with the Constitution.<sup>58</sup>

Congress has already used this power with respect to telecommunications services. Section 253 of the Communications Act empowers the FCC to preempt any “State or local statute or regulation” that “may prohibit or have the effect of prohibiting the ability of any entity to provide any interstate or intrastate telecommunications service.”<sup>59</sup> However, this authority does not encompass services that the agency does not classify as “telecommunications services”—a category that, until 2015, did not include broadband service. If the FCC finalizes its 2017 Restoring Internet Freedom proposed rule, broadband would once again fall outside the agency’s definition of telecommunications services.

Congress should revisit Section 253 to more clearly and forcefully preempt laws and regulations imposed by state and local governments that impede broadband deployment. Instead of forcing companies to rely on the FCC’s determinations about when and how to preempt states and localities, lawmakers should enable broadband providers affected by unreasonable state and local barriers to seek redress from federal courts.<sup>60</sup> State and local governments should be permitted to recoup only those costs they reasonably incur as a result of a firm deploying broadband infrastructure that traverse public property.

Congress should also set restrictions on how much state and local governments may charge broadband companies to access government-owned poles, ducts, and conduits. The FCC is now empowered to regulate the prices that utilities may charge telecommunications providers and cable television companies for pole attachments—a practice supposedly justified by utilities’ monopoly status—but this authority does not encompass government-owned poles.<sup>61</sup> To the extent that federal oversight of pole attachment rates is justified, the case for such regulation is much stronger with respect to government-owned infrastructure—which, unlike poles owned by privately owned utilities, is not subject to market discipline.

**Competition Disciplines Broadband Firms Better than Government Regulation.** Even if policy makers were to embrace liberalization of the airwaves and

preempt state and local barriers to broadband deployment, it is unlikely that Americans would have as many choices among broadband carriers as they do among restaurants, television shows, or banks. Addressing governmental impediments to broadband competition should not be viewed as a panacea capable of transforming the broadband market into a textbook example of “perfect competition” as taught in microeconomics.<sup>62</sup> Yet, reducing barriers to entry can discourage incumbent providers from engaging in undesirable conduct by strengthening competitive discipline.<sup>63</sup> Open markets produce both potential and actual competitors.

The U.S. Department of Justice discussed how broadband competition works in a 2010 filing with the FCC. Signed by senior antitrust officials appointed by President Obama, the filing said: “[S]triving for broadband markets that look like textbook markets of perfect competition, with many price-taking firms ... is unsuitable for the provision of broadband services, which involve very substantial fixed and sunk costs.”<sup>64</sup> The filing urged the FCC to embrace “public policies that affirmatively lower entry barriers facing new entrants and new technologies.”<sup>65</sup> By reducing artificial entry barriers—those stemming not from practical economic realities, but from laws and regulations—policy makers can promote competition among broadband providers.

Open markets can induce new firms to enter. Moreover, the mere *threat* of entry by newcomers into a market is often an effective means of deterring incumbents from engaging in monopolistic conduct.<sup>66</sup> A firm that lowers quality or excessively raises prices leaves the field open to potential competitors that will serve consumers better.

To be sure, the absence of meaningful competition among broadband providers in a particular geographic area is not the only justification for regulating providers’ network management practices. In its 2015 order, the FCC attempted to justify its rules based on the notion that each broadband provider is a “gatekeeper” regardless of how much competition it faces.<sup>67</sup> The agency contended that “regardless of the competition in the local market for broadband Internet access, once a consumer chooses a broadband provider, that provider has a monopoly on access to the subscriber.”<sup>68</sup> By that reasoning, a movie theater or restaurant is a “gatekeeper” with respect to the brands of soft drinks or alcoholic beverages it serves, while Netflix is a “gatekeeper” with respect to the video programming it offers. If a consumer is dissatisfied with a movie theater’s soda selection, or Netflix’s lineup of shows, she can seek out superior alternatives. Similarly, if a broadband provider interferes with traffic from popular websites, affected subscribers can seek out other providers—if alternatives are available.

What if an ISP engages in conduct that is not directly visible to its subscribers, such as demanding payment from edge providers—such as Google, Amazon, Netflix, and Facebook. In that case, an affected edge provider can signal its discontent to users who subscribe to that ISP. For example, in 2014, when Netflix subscribers who accessed the service through Verizon were experiencing stuttering video, Netflix began displaying error messages blaming Verizon for the congestion.<sup>69</sup> Similarly, in 2013, when CBS and Time Warner Cable could not reach an agreement as to how much Time Warner Cable would

pay CBS per television subscriber, CBS retaliated aggressively by blocking Time Warner Cable subscribers from accessing certain shows on the CBS website.<sup>70</sup>

**Conclusion.** Assessments of competition based on the number of competitors are simplistic and incomplete, especially in the telecommunications marketplace. The ability of competitors to enter the market is an important competitive pressure that can discipline Internet service providers and guide them toward the best interests of consumers. States, localities, and the federal government all have several avenues by which they can improve the competitive environment for broadband. In doing so, they can eclipse any perceived need for direct regulation of Internet service providers' practices.

Were states and localities to ease burdens on Internet service providers, and were the federal government to make more spectrum available, they would dramatically improve the competitive environment. That would have a disciplining effect on firms even in the absence of numerous competitors in the broadband marketplace.

By reforming spectrum allocation and preempting excessive state and local barriers to broadband deployment, policy makers can encourage competition in America's broadband market. Such competition will strengthen the market discipline that discourages Internet service providers from engaging in harmful conduct—obviating the need for heavy-handed FCC regulation of such providers.

This approach, instead of direct regulation, is the better way to foster the healthy broadband marketplace sought by advocates on all sides of the Internet regulation debate. Rather than fettering existing broadband providers with federal regulations, governments in the United States, at every level, should unleash potential and real broadband competition.

## Notes

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<sup>1</sup> Appropriate Framework for Broadband Access to the Internet over Wireline Facilities, Policy Statement, 20 FCC Rcd 14986 (2005), [https://apps.fcc.gov/edocs\\_public/attachmatch/FCC-05-151A1.pdf](https://apps.fcc.gov/edocs_public/attachmatch/FCC-05-151A1.pdf). Formal Complaint of Free Press and Public Knowledge Against Comcast Corporation for Secretly Degrading Peer-to-Peer Applications; Broadband Industry Practices; Petition of Free Press et al. for Declaratory Ruling that Degrading an Internet Application Violates the FCC's Internet Policy Statement and Does Not Meet an Exception for "Reasonable Network Management," Memorandum Opinion and Order, 23 FCC Rcd 13028 (2008), [http://hraunfoss.fcc.gov/edocs\\_public/attachmatch/FCC-08-183A1.pdf](http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-08-183A1.pdf). Preserving the Open Internet; Broadband Industry Practices, Report and Order, 25 FCC Rcd 17905 (2010), [https://apps.fcc.gov/edocs\\_public/attachmatch/FCC-10-201A1\\_Rcd.pdf](https://apps.fcc.gov/edocs_public/attachmatch/FCC-10-201A1_Rcd.pdf). Protecting and Promoting the Open Internet, Report and Order on Remand, Declaratory Ruling, and Order, 30 FCC Rcd 5601 (2015), [https://apps.fcc.gov/edocs\\_public/attachmatch/FCC-15-24A1\\_Rcd.pdf](https://apps.fcc.gov/edocs_public/attachmatch/FCC-15-24A1_Rcd.pdf).

<sup>2</sup> The Supreme Court used this phrase in a 2014 opinion to describe its approach toward the Environmental Protection Agency's Tailoring Rule. *Util. Air Regulatory Grp. v. EPA*, 134 S. Ct. 2427, 2446 (2014).

<sup>3</sup> Protecting and Promoting the Open Internet, Report and Order on Remand, Declaratory Ruling, and Order, 30 FCC Rcd 5601 (2015), [https://apps.fcc.gov/edocs\\_public/attachmatch/FCC-15-24A1\\_Rcd.pdf](https://apps.fcc.gov/edocs_public/attachmatch/FCC-15-24A1_Rcd.pdf).

<sup>4</sup> John Eggerton, "Sen. Nelson: Bipartisan Net Neutrality Bill Appears 'Impossible'," *Broadcasting & Cable*, May 3, 2017, <http://www.broadcastingcable.com/news/washington/sen-nelson-bipartisan-net-neutrality-bill-appears-impossible/165497>.

<sup>5</sup> Reliably quantifying how many public comments were filed in support of, and in opposition to, the FCC's 2015 Open Internet Order and its 2017 Restoring Internet Freedom NPRM, is difficult due to duplicate comments, potentially fake e-mail addresses, and other factors. According to a 2017 study by Emprata LLC,

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the FCC received 1.77 million unique comments in opposition to its proposal to undo its 2015 Open Internet Order. Tony Romm and Rani Molla, “Many of the FCC’s record-breaking 21 million net neutrality comments are duplicates—or come from suspicious sources,” Recode, August 30, 2017, <https://www.recode.net/2017/8/30/16223210/net-neutrality-fcc-21-million-record-comments-duplicates-suspicious-data>.

<sup>6</sup> Kate Tummarello, “A Bad Broadband Market Begg for Net Neutrality Protections,” *EFF Deep Links*, May 26, 2017, <https://www.eff.org/deeplinks/2017/05/bad-broadband-market-begs-net-neutrality-protections>.

<sup>7</sup> Appropriate Framework for Broadband Access to the Internet over Wireline Facilities, Policy Statement, 20 FCC Rcd 14986 (2005), [https://apps.fcc.gov/edocs\\_public/attachmatch/FCC-05-151A1.pdf](https://apps.fcc.gov/edocs_public/attachmatch/FCC-05-151A1.pdf).

<sup>8</sup> Formal Complaint of Free Press and Public Knowledge Against Comcast Corporation for Secretly Degrading Peer-to-Peer Applications; Broadband Industry Practices; Petition of Free Press et al. for Declaratory Ruling that Degrading an Internet Application Violates the FCC’s Internet Policy Statement and Does Not Meet an Exception for “Reasonable Network Management,” Memorandum Opinion and Order, 23 FCC Rcd 13028 (2008), [http://hraunfoss.fcc.gov/edocs\\_public/attachmatch/FCC-08-183A1.pdf](http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-08-183A1.pdf).

<sup>9</sup> *Comcast Corp. v. FCC*, 600 F.3d 642, 647 (D.C. Cir. 2010).

<sup>10</sup> Preserving the Open Internet; Broadband Industry Practices, Report and Order, 25 FCC Rcd 17905 (2010), [https://apps.fcc.gov/edocs\\_public/attachmatch/FCC-10-201A1\\_Rcd.pdf](https://apps.fcc.gov/edocs_public/attachmatch/FCC-10-201A1_Rcd.pdf).

<sup>11</sup> *Verizon v. FCC*, 740 F.3d 623 (D.C. Cir. 2014).

<sup>12</sup> Protecting and Promoting the Open Internet, Report and Order on Remand, Declaratory Ruling, and Order, 30 FCC Rcd 5601 (2015), [https://apps.fcc.gov/edocs\\_public/attachmatch/FCC-15-24A1\\_Rcd.pdf](https://apps.fcc.gov/edocs_public/attachmatch/FCC-15-24A1_Rcd.pdf).

<sup>13</sup> *U.S. Telecom Association v. FCC*, 825 F.3d 674 (D.C. Cir. 2016).

<sup>14</sup> Petition for Writ of Certiorari, *Berninger v. FCC*, no. 17-498, September 27, 2017, <http://www.scotusblog.com/wp-content/uploads/2017/10/17-498-petition.pdf>.

<sup>15</sup> Ali Breland, “Republican Ajit Pai named new FCC chairman,” *The Hill*, January 23, 2017, <http://thehill.com/policy/technology/315746-trump-taps-pai-as-new-fcc-chairman>.

<sup>16</sup> Restoring Internet Freedom, Notice of Proposed Rulemaking, 32 FCC Rcd 4434 (2017), [https://apps.fcc.gov/edocs\\_public/attachmatch/FCC-17-60A1\\_Rcd.pdf](https://apps.fcc.gov/edocs_public/attachmatch/FCC-17-60A1_Rcd.pdf).

<sup>17</sup> *Cf. Nat’l Cable & Telecomms. Ass’n v. Brand X Internet Servs.*, 545 U.S. 967 (2005).

<sup>18</sup> Kate Tummarello, “A Bad Broadband Market Begg for Net Neutrality Protections,” *EFF Deep Links*, May 26 2017, <https://www.eff.org/deeplinks/2017/05/bad-broadband-market-begs-net-neutrality-protections>.

<sup>19</sup> Pew Research Center, “Home Broadband 2015” (2015), p. 2, <http://assets.pewresearch.org/wp-content/uploads/sites/14/2015/12/Broadband-adoption-full.pdf>.

<sup>20</sup> *Ibid.* p. 2.

<sup>21</sup> *Ibid.*

<sup>22</sup> Brian Fung, “New data: Americans are abandoning wired home Internet,” *Washington Post*, April 18, 2016, [https://www.washingtonpost.com/news/the-switch/wp/2016/04/18/new-data-americans-are-abandoning-wired-home-internet/?utm\\_term=.78250f6e17b1](https://www.washingtonpost.com/news/the-switch/wp/2016/04/18/new-data-americans-are-abandoning-wired-home-internet/?utm_term=.78250f6e17b1).

<sup>23</sup> Federal Communications Commission, Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996, as Amended by the Broadband Data Improvement Act, 2016 Broadband Progress Report, 31 FCC Rcd 699, 736, para. 86 (2016), [https://apps.fcc.gov/edocs\\_public/attachmatch/FCC-16-6A1\\_Rcd.pdf](https://apps.fcc.gov/edocs_public/attachmatch/FCC-16-6A1_Rcd.pdf).

<sup>24</sup> 47 U.S.C. § 1302.

<sup>25</sup> The FCC adopted this definition of “advanced telecommunications capability” in its 2015 Broadband Progress Report. Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996, as Amended by the Broadband Data Improvement Act, 2015 Broadband Progress Report and Notice of Inquiry on Immediate Action to Accelerate Deployment, 30 FCC Rcd 1375, 1377, para. 3 & n.4 (2015), [https://apps.fcc.gov/edocs\\_public/attachmatch/FCC-15-10A1\\_Rcd.pdf](https://apps.fcc.gov/edocs_public/attachmatch/FCC-15-10A1_Rcd.pdf).

<sup>26</sup> 31 FCC Rcd at 772, Appendix H.

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- <sup>34</sup> Ronald Coase, “The Federal Communications Commission,” *The Journal of Law and Economics*, Vol. 2 (1959). Radio Act of 1927, Ch. 169, 44. Stat. 1162; Communications Act, title III, 47 U.S.C. §§ 301 et seq.
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<sup>51</sup> FCC Announces the Establishment of the Broadband Deployment Advisory Committee and Solicits Nominations for Membership, DA 17-110, Public Notice (rel. Jan. 31, 2017),

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<sup>53</sup> Comments of U.S. Chamber of Commerce, pp. 3–4, Accelerating Wireline Broadband Deployment by Removing Barriers to Infrastructure Investment (2017), <https://ecfsapi.fcc.gov/file/1071767285449/7.17.17-%20Comments%20to%20FCC%20on%20Accelerating%20Wireline%20Broadband%20Deployment%20by%20Removing%20Barriers%20to%20Infrastructure%20Development%20Proposal.pdf>.

<sup>54</sup> Comments of Comcast, Accelerating Wireline Broadband Deployment by Removing Barriers to Infrastructure Investment (2017), p. 9,

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<sup>55</sup> Comments of U.S. Telecom Association, p. 40, Accelerating Wireline Broadband Deployment by Removing Barriers to Infrastructure Investment (2017), <https://ecfsapi.fcc.gov/file/10615740512530/USTelecom-Wireline-Infrastructure-Comments-2017-06-15-FINAL.pdf>.

<sup>56</sup> U.S. Constitution, art. I, Section 8.

<sup>57</sup> *Wickard v. Filburn*, 317 U.S. 111 (1942) (upholding federal restriction on wheat production by private farmers as constitutional under the Commerce Clause).

<sup>58</sup> For a detailed discussion of federal preemption and the U.S. Constitution, see Richard A. Epstein and Michael Greve, “Preemption in Context” in *Introduction to Federal Preemption: States’ Powers, National Interests*, Richard A. Epstein and Michael Greve eds. (Washington, D.C.: AEI Press, 2007).

<sup>59</sup> 47 U.S.C. § 253.

<sup>60</sup> For instance, Section 332 of the Communications Act allows firms affected by an unreasonable state or local impediment on the deployment of “personal wireless service facilities” to seek recourse in any “court of competent jurisdiction.” 47 U.S.C. § 332(c)(7)(B)(v). Section 253, by contrast, empowers the FCC to act after notice and comment if the agency determines that any “State or local government has permitted or imposed any statute, regulation, or legal requirement that violates” the statute. 47 U.S.C. § 253.

<sup>61</sup> 47 U.S.C. § 224(a).

<sup>62</sup> P. J. McNulty, “A note on the history of perfect competition,” *Journal of Political Economy*, Vol. 75, No. 4 pt. 1 (1967), pp. 395–399.

<sup>63</sup> Wayne Crews, “Antitrust: Sherman’s March across the Globe,” *EU Reporter*, September 13, 2004, <https://cei.org/content/antitrust-shermans-march-across-globe>.

<sup>64</sup> Ex Parte Submission of the United States Department of Justice, “Economic Issues in Broadband Competition—A National Broadband Plan for Our Future,” January 4, 2010, <https://www.justice.gov/atr/ex-parte-submission-united-states-department-justice-matter-economic-issues-broadband>.

<sup>65</sup> *Ibid.*

<sup>66</sup> William J. Baumol, “Contestable Markets: An Uprising in the Theory of Industry Structure,” *American Economic Review*, Vol. 72, No. 1 (1982),

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<sup>67</sup> 2015 Open Internet Order, 30 FCC Rcd at 5629, para. 80.

<sup>68</sup> *Ibid.*

<sup>69</sup> Brian Fung, “Verizon responds to Netflix’s passive-aggressive error message with straight-up aggression,” *Washington Post*, June 4, 2014, [https://www.washingtonpost.com/news/the-switch/wp/2014/06/04/verizon-responds-to-netflixs-passive-aggressive-error-message-with-straight-up-aggression/?utm\\_term=.ad4ebcaedc55](https://www.washingtonpost.com/news/the-switch/wp/2014/06/04/verizon-responds-to-netflixs-passive-aggressive-error-message-with-straight-up-aggression/?utm_term=.ad4ebcaedc55).

<sup>70</sup> Lisa Richwine, “CBS retaliates, blocks online shows for Time Warner cable customers,” Reuters, August 2, 2013, <http://www.reuters.com/article/us-timewarnercable-cbs-internet/cbs-retaliates-blocks-online-shows-for-time-warner-cable-customers-idUSBRE97201F20130803>.