Welcome to the third issue of Volume 68 of the *Federal Communications Law Journal*, the nation's premier communications law journal and the official journal of the Federal Communications Bar Association.

This Issue includes a collection of pieces on important topics in today's communications field, such as process reform at the Federal Communications Commission, competition in broadband, spectrum use, and Wi-Fi security. This Issue also includes the Journal's Annual Review, a compilation of discussions about the year's most important communications cases.

In this Issue's Essay, Representative Greg Walden, Chairman of the Subcommittee on Communications and Technology of the U.S. House Committee on Energy and Commerce, discusses structural process reform at the FCC, particularly the FCC's public interest standard and the FCC Chairman's authority. Rep. Walden proposes a cost-benefit analysis of a proposed regulation, restructuring the FCC's merger review process, policies that result in stricter deadlines and greater transparency, and installing an independent Inspector General.

This Issue's Article was penned by Blair Levin, an industry expert and former chief of staff to FCC Chairman Reed Hundt. Levin's piece addresses competition in the broadband industry and recommends framing the discussion around the fundamental questions of what incentivizes competition and what "levers" the government has in its arsenal to intensify competition.

In addition to these pieces, the Journal is proud to present its Annual Review, which summarizes major communications law cases of the past year. This piece would not be possible without the help of the Federal Communications Bar Association's Judicial Practice Committee and the Journal's student community. The Annual Review covers: *U.S. Telecom Ass'n v. FCC*, 825 F.3d 674 (D.C. Cir. 2016), *Tennessee v. FCC*, 832 F.3d 597 (6th Cir. 2016), *National Ass'n of Broadcasters v. FCC*, 789 F.3d 165 (D.C. Cir. 2015), *Tennis Channel, Inc. v. FCC*, 827 F.3d 137 (D.C. Cir. 2016), *Prometheus Radio Project v. FCC*, 784 F.3d 33 (3d Cir. 2016), *ADX Communications of Pensacola v. FCC*, 794 F.3d 74 (D.C. Cir. 2015), *Great Lakes Comnet, Inc. v. FCC*, 823 F.3d 998 (D.C. Cir. 2016), *Montgomery County v. FCC*, 811 F.3d 121 (4th Cir. 2015), and *Mako Communications, LLC v. FCC*, No. 15-1264 (D.C. Cir. Aug. 30, 2016), among others.

In addition to these pieces, the Issue contains three student Notes. In the first Note, Nellie Foosaner discusses the possible effects of the reclassification of broadband internet. The Note analyzes the uses and allocation of spectrum and makes a case for spectrum sharing. In the second Note, Andrew Morris continues this conversation on spectrum policy and offers solutions to avoid near-term spectrum scarcity. Morris argues that the FCC has embraced innovation through its management of the Incentive Auction and other recent proposals. Finally, the third Note features Amy Roller addressing the FCC's approach to "Wi-Fi Sniffing," which involves intercepting content from unencrypted Wi-Fi networks. Roller reevaluates Section 705(a) of the Communications Act and concludes that a proper interpretation of this decades-old provision solves the problems of today. The Journal is committed to providing its readership with substantive coverage of relevant topics in communications law. We appreciate the continued support of our readers and contributors. We welcome your feedback and submissions – any questions or comments about this issue or future issues may be directed to fclj@law.gwu.edu, and any submissions for publication consideration may be directed to fcljarticles@law.gwu.edu. This issue and our archive are available at http://www.fclj.org.

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Federal Communications Law Journal

The *Federal Communications Law Journal* is published jointly by the Federal Communications Bar Association and the George Washington University Law School. The *Journal* publishes three issues per year and features articles, student notes, essays, and book reviews on issues in telecommunications, the First Amendment, broadcasting, telephony, computers, Internet, intellectual property, mass media, privacy, communications and information policymaking, and other related fields.

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The Federal Communications Bar Association (FCBA) is a volunteer organization of attorneys, engineers, consultants, economists, government officials and law students involved in the study, development, interpretation and practice of communications and information technology law and policy. From broadband deployment to broadcast content, from emerging wireless technologies to emergency communications, from spectrum allocations to satellite broadcasting, the FCBA has something to offer nearly everyone involved in the communications industry. That is why the FCBA, more than two thousand members strong, has been the leading organization for communications lawyers and other professionals since 1936.

Through its many professional, social, and educational activities, the FCBA offers its members unique opportunities to interact with their peers and decision-makers in the communications and information technology field, and to keep abreast of significant developments relating to legal, engineering, and policy issues. Through its work with other specialized associations, the FCBA also affords its members opportunities to associate with a broad and diverse cross-section of other professionals in related fields. Although the majority of FCBA members practice in the metropolitan Washington, D.C., area, the FCBA has ten active regional chapters: Atlanta, Carolina, Florida, Midwest, New England, New York, Northern California, Pacific Northwest, Rocky Mountain, and Texas. The FCBA has members from across the United States, its territories, and several other countries.

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ESSAY

A Better Agency: Reforming the Federal Communications Commission

This Essay offers the thoughts of Representative Greg Walden of Oregon on reforming processes at the Federal Communications Commission. As Chairman of the Subcommittee on Communications and Technology of the U.S. House Committee on Energy and Commerce, Walden has conducted oversight of the FCC and sponsored three versions of the Federal Communications Commission Reform Act over the past six years (H.R. 3309, H.R. 3675, and H.R. 2583). In his proposals, Walden has sought to increase transparency in the FCC's rulemaking processes, require rigorous economic analysis for major policy decisions, and impose accountability on FCC operations by requiring performance metrics and dashboards. Walden lays out his consideration of the flaws in FCC process as well as his proposals for rehabilitating the organization.

ARTICLE

Achieving Bandwidth Abundance: The Three Policy Levers for Intensifying Broadband Competition

Over the past several years, there has been an ongoing debate about the government's policy toward broadband policy. In this Article, Levin argues the goal of policy ought to be bandwidth abundance, such that bandwidth does not constrain economic growth or social progress. In that light, based on the history of both successful and unsuccessful government market interventions, the highest priority for government broadband competition policy ought to be to lower input costs for adjacent market competition and network upgrades. In today's broadband market, the greatest opportunity to achieve this goal is to create a virtuous cycle of upgraded mobile stimulating low-end broadband to upgrade, which in turn stimulates an upgrade of high-end broadband, which then uses its assets to enter mobile and accelerates the need for mobile to further upgrade.

COMMUNICATIONS LAW: ANNUAL REVIEW

NOTES

The Move to Spectrum Sharing: How Reclassification Under Title II Will Cause Spectrum Sharing to Dominate Telecommunications Policy

By	Nellie Foosaner	6	9)
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Technological uses of radio frequency bands of the electromagnetic spectrum are vital to innovation, economic growth, national security and public safety. Properly allocating spectrum among competing interests has meant balancing important governmental priorities with increasing consumer demands for wireless services. Congressional economic motivations previously drove the Federal Communications Commission's use of auctions to allocate spectrum. As a market-based means of spectrum allocation, the FCC conducted auctions with economic incentives in mind, and auctions have dominated spectrum policy thus far. As the need for innovation and demand for more commercial spectrum continue to increase, spectrum policy must develop to accommodate the commercial sector's need for spectrum with federal agencies' need to maintain large spectrum holdings.

As a result of the FCC's decision to reclassify broadband Internet access as a Title II telecommunications service, some believe the economic value of spectrum will decrease. Such a theory, whether or not it comes to fruition, will trigger a decrease in economic incentives to push federal agencies to relinquish some of their large amounts of spectrum. The decrease in economic incentives for the federal government's allocation of spectrum means a new method for spectrum policy that maximizes welfare in both public and private sector uses of spectrum must arise. As a result, spectrum sharing will emerge as a dominate means to foster innovation in the commercial sector while allowing federal incumbent users to maintain access to spectrum to perform their vital public functions.

Great Expectations: Using the Language of Innovation to Command Efficiency and Shift the Burden of Spectrum Scarcity

The availability of spectrum for wireless communications continues to shrink as demand grows for more wireless services. The Federal Communications Commission has addressed this problem of spectrum scarcity in the past by mandating technological change to encourage greater spectrum efficiency. Recently, the FCC adopted the position that unlicensed wireless devices should be able to operate in the guard bands of what will soon be repackaged spectrum. The FCC proposed this change without knowing whether existing technology could adequately facilitate such a technological transition. Yet the FCC has expressed confidence that both incumbents and new entrants will keep pace with an evolving state of the art. The FCC's proposal suggests a greater willingness to push for innovation in the absence of technological certainty and represents a bold development in the way it handles the problem of spectrum scarcity. Although the FCC has attempted to alter the pace of technological development in past rulemakings, it has not relied so heavily on the assumption that technology will evolve to fit the needs of particular proposal and alleviate interference concerns. This Note argues that the FCC should feel empowered to push this framework further by requiring compromise from both incumbents and new entrants, even when a consensus on technical feasibility fails to materialize.

From Ship-to-Shore Telegraphs to Wi-Fi Packets: Using Section 705(a) to Protect Wireless Communications

Section 705(a) of the Communications Act of 1934 prohibits unauthorized individuals from intercepting and divulging the contents of "radio communications." Despite this seemingly straightforward prohibition, confusion over the provision's construction and application has mounted in recent year as litigants and courts wrestle with the scope of Section 705(a). In 2010, the FCC grappled with Section 705(a)'s applicability to one of today's most common forms of radio communication—Wi-Fi—and was ultimately unable to determine whether intercepting the contents Wi-Fi network traffic— a practice known as Wi-Fi sniffing— from unencrypted networks falls within its prohibitions.

This Note examines the interpretive issues that have plagued Section 705(a) since its 1968 amendment. Taking a fresh look at the statute's language, history, and construction, the Note concludes that, properly interpreted, Section 705(a) prohibits unauthorized interception of unencrypted Wi-Fi payload data.

A Better Agency: Reforming the Federal Communications Commission

Representative Greg P. Walden *

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^{*} Greg Walden represents the people of Oregon's Second Congressional District, encompassing twenty counties in central, southern, and eastern Oregon, in the United States House of Representatives. Chairman, Subcommittee on Communications and Technology of the House Committee on Energy and Commerce.

I. INTRODUCTION

When I was a broadcaster in 2003, I filed a petition with the Federal Communications Commission (FCC) to license a couple of translators for our stations in Oregon.¹ While the licensing of a translator is not a trivial matter, it is one that the FCC's Media Bureau should be very familiar with and be able to address in short order. After all, licensing of radio stations is one of the core functions for which the FCC's predecessor agency, the Federal Radio Commission, was created in 1927.² The FCC granted my petition in December 2013,³ approximately ten years after I filed the petition and six years after I sold the stations in 2007.⁴

This story depicts an agency utterly unconcerned with the quotidian yet necessary tasks that serve its constituents. Indeed, the FCC has been criticized on a variety of fronts for its process failures.⁵ As former University of Colorado Law School professor Philip Weiser wrote in 2009: "[T]he great weight of opinion is that the FCC *has always* operated in a suboptimal fashion and is in dire need of institutional reform."⁶ Professor Weiser went on to quote former FCC Chairman Reed Hundt, saying "that the agency suffers from a perennial 'reputation for agency capture by special interests, mind-boggling delay, internal strife, lack of competence, and a dreadful record on judicial review."⁷⁷ Congress, led by both Democrats and Republicans, has produced numerous reports detailing the FCC's miscarriages and disappointments over

^{1.} See Application for Authority to Construct or Make Changes in an FM Transaltor or FM Booster Station: File No. BNPFT-20030317EDY, FCC: CDBS, https://licensing.fcc.gov/cgi-

bin/ws.exe/prod/cdbs/forms/prod/cdbsmenu.hts?context=25&appn=100649088&formid=349 &fac_num=155834 (last visited Oct. 16, 2016); *see also Application Search Details: File No. BNPFT-20030317EDY*, FCC: CDBS, http://licensing.fcc.gov/cgi-

bin/ws.exe/prod/cdbs/pubacc/prod/app_det.pl?Application_id=649088 (last visited Oct. 16, 2016).

^{2.} See Radio Act of 1927, 47 U.S.C. § 81 (2012).

^{3.} See Application Search Details, supra note 1.

^{4.} See BIA Fin. Networks, Deals, BROAD. & CABLE (Feb. 23, 2007, 7:00 PM ET),

http://www.broadcastingcable.com/news/news-articles/deals/81977. See also Broadcast Actions, Public Notice, Report No. 46573, at 6, 9-10, 12 (2007),

https://apps.fcc.gov/edocs_public/attachmatch/DOC-276654A1.pdf.

^{5.} See, e.g., Philip J. Weiser, Institutional Design, FCC Reform, and the Hidden Side of the Administrative State, 61 ADMIN. L. REV. 675 (2009).

^{6.} *Id.* at 677 (emphasis added).

^{7.} Id. (citing Reed E. Hundt & Gregory L. Rosston, Communications Policy for 2006 and Beyond, 58 FED. COMM. L.J. 1, 31 (2006)).

the past ten years.⁸ The FCC itself has called for its own reform over and over again.⁹

Different critics ascribe different reasons for the agency's failures, but I consistently return to two structural factors that leave the FCC prone to such defects as Chairman Hundt described.¹⁰ The first factor is the public interest standard under which the FCC is required to review mergers and regulate spectrum licenses,¹¹ and the second is the plenary authority of the Chairman, who, as a member of an independent agency, may not be removed except for cause.¹²

First, allow me to qualify this statement by noting that this is by no means an indictment of the public interest standard. The entire purpose of the government should be to serve the interest of the public. "By the people, for the people"¹³ are words that every American child learns and every citizen recognizes as a basic tenet of the American ethos. My concern, however, is that the noble aims of the public interest standard are too easily hijacked and converted to convenient pretexts for political, personal, or other agendas.

As other critics have pointed out, the public interest standard has little definition.¹⁴ Nobel Prize-winning economist Ronald Coase flatly stated that "[t]he phrase ['public interest, convenience, or necessity'] . . . lacks any

https://apps.fcc.gov/edocs_public/attachmatch/DOC-331140A1.pdf.

^{8.} See generally, e.g., Staff of H. Comm. on Energy & Commerce, 110th Cong., Deception and Distrust: The Federal Communications Commission Under Chairman Kevin J. Martin (2008) (majority staff report); Staff of S. Comm. on Homeland Sec. & Gov't Affairs, 114th Cong., Regulating the Internet: How the White House Bowled Over FCC Independence (2016). See also, e.g., U.S Gov't Accountability Off., GAO-10-249, Information Collection and Management at the Federal Communications Commission (2010), http://www.gao.gov/assets/310/300545.pdf; U.S Gov't Accountability Off., GAO-10-79, Improvements Needed in Communication, Decision-Making Processes, and Workforce Planning (2010),

http://www.gao.gov/assets/300/299578.pdf; U.S Gov't Accountability Off., GAO-08-125, FCC Has Made Some Progress in the Management of Its Enforcement Program but Faces Limitations, and Additional Actions Are Needed (2008),

http://www.gao.gov/assets/280/272397.pdf; U.S GOV'T ACCOUNTABILITY OFF., GAO-07-1046, FCC SHOULD TAKE STEPS TO ENSURE EQUAL ACCESS TO RULEMAKING INFORMATION (2007), http://www.gao.gov/assets/270/266205.pdf.

^{9.} See Letter from Robert M. McDowell, Comm'r, FCC to Julius Genachowski, Chairman, FCC (Jul. 20, 2009), https://apps.fcc.gov/edocs_public/attachmatch/DOC-292122A1.pdf; Letter from Robert M. McDowell, Comm'r, FCC to Michael J. Copps, Acting Chairman, FCC (Jan. 27, 2009), https://apps.fcc.gov/edocs_public/attachmatch/DOC-288104A1.pdf; News Release, Ajit Pai & Michael O'Rielly, Comm'rs, FCC, Joint Statement of Commissioners Ajit Pai and Michael O'Rielly on the Abandonment of Consensus-Based Decision-Making at the FCC (Dec. 18, 2014),

^{10.} See Weiser, supra note 5, at 677 (citing Hundt & Rosston, supra note 7, at 31).

^{11.} See 47 U.S.C. §§ 309(a), 310(d) (2012) (invoking the public interest standard for the granting of licenses and the FCC's review of their subsequent transfer).

^{12.} See 47 U.S.C. § 154(c) (2012) (which provides for five-year Commissioner terms after appointment and confirmation).

^{13.} See 7 ABRAHAM LINCOLN, THE WRITINGS OF ABRAHAM LINCOLN 20 (Constitutional ed., G.P. Putnam's Sons 1905).

^{14.} See, e.g., Ronald H. Coase, The Federal Communications Commission, 2 J.L. & ECON. 1, 8 (1959).

definite meaning.¹⁵ Furthermore, the many inconsistencies in FCC decisions have made it impossible for the phrase to acquire a definite meaning in the process of regulation.^{"16} Even the FCC's own leadership has pointed out that the public interest standard "is vague to the point of vacuousness, providing neither guidance nor constraint on the agency's action."¹⁷ Simply put, those charged with upholding the public interest standard are too easily convinced that their own values are those that are in the public interest.¹⁸

Such an unfettered mandate requires that the FCC be commanded by disciplined, dispassionate masters, dedicated to serving the public within the bounds of their congressional authorization. Realistically, such people are few and far between. In the hands of an ends-oriented Chairman, the public interest standard is all too malleable and often serves to excuse shortcuts in due process and public participation. Accordingly, I have argued consistently that strong process is the only method by which the FCC can regain its legitimacy and integrity.¹⁹

Under my term as Chairman of the House Subcommittee on Communications and Technology (the Subcommittee), we have dedicated significant time and effort to reforming the FCC, including moving three different bills through the House of Representatives during the 112th, 113th, and 114th Congresses.²⁰ Our efforts have been aimed at preventing potential

^{15.} Id.

^{16.} *Id.* at 8-9.

^{17.} Glen O. Robinson, *The Federal Communications Act: An Essay on Origins and Regulatory Purpose, in A LEGISLATIVE HISTORY OF THE COMMUNICATIONS ACT OF 1934, at 3, 14 (Max D. Paglin ed., 1989).*

^{18.} *See* Adam Thierer, President, Progress & Freedom Found., Testimony before the FCC: Hearing on "Serving the Public Interest in the Digital Era" (Mar. 4, 2010), http://reboot.fcc.gov/c/document_library/get_file?uuid=eb0c02c5-b5e3-4cc2-a15e-3843b738acb0&groupId=101236.

^{19.} See, e.g., Markup of H.R. 452, H.R. 3309, and H.R. 3310: Hearing Before the Comm. on Energy & Commerce, 112th Cong. (2012),

http://archives.republicans.energycommerce.house.gov/Media/file/Markups/FullCmte/20120 305/HMKP-112-IF00-MState-W000791-20120305.pdf (statement of Rep. Greg Walden, Chairman, Subcomm. on Commun. & Tech. of the H. Comm. on Energy & Commerce); *Improving FCC Process: Hearing Before the Subcomm. on Commun. & Tech. of the H. Comm. on Energy & Commerce*, 113th Cong. 3 (2013) (statement of Rep. Greg Walden, Chairman, H. Subcomm. on Commun. & Tech. of the H. Comm. on Energy & Commerce) ("The last thing that we want to do is stifle an industry that is continually growing and innovating. Yet that is exactly what could happen if the FCC is not held to certain standards of decision-making."); *Markup of Discussion Drafts on FCC Process and Transparency: Hearing Before the Subcomm. on Commun. & Tech. of the H. Comm. on Energy & Commerce*, 114th Cong. (2015),

https://energycommerce.house.gov/sites/republicans.energycommerce.house.gov/files/114/M arkups/CT/20150520/HMKP-114-IF16-MState-W000791-20150520.pdf (statement of Rep. Greg Walden, Chairman, Subcomm. on Commun. & Tech. of the H. Comm. on Energy & Commerce).

^{20.} *See* Federal Communications Commission Process Reform Act of 2012, H.R. 3309, 112th Cong. (2012); Federal Communications Commission Process Reform Act of 2014, H.R. 3675, 113th Cong. (2014); Federal Communications Commission Process Reform Act of 2015, H.R. 2583, 114th Cong. (2015).

abuses of the public interest standard under the variety of powers available to the FCC Chairman.²¹

The following sections will briefly consider our specific targets and proposals for FCC process reform, including: (1) requiring a formalized costbenefit analysis before the adoption of regulations, (2) limiting the FCC's excessive latitude in merger review, (3) providing for greater public access to the text of proposed rules and other documents in advance of voting, (4) imposing concrete deadlines for FCC action on complaints, petitions, and other public filings, (5) establishing greater transparency through the adoption of performance metrics and the provision of operating manuals for various FCC programs and decision-making functions, and (6) installing a truly independent Inspector General at the FCC. Collectively, these proposals represent a significant step in ensuring that the public interest standard is not stretched beyond recognition.

II. COST-BENEFIT ANALYSIS

One process ripe for reform is the FCC's lack of a formalized costbenefit analysis before the adoption of regulations.²² Conducting real economic, cost-benefit analyses would require the FCC to understand how costs are allocated across the communications sectors and where consumers ultimately pay those costs in the marketplace.²³ This type of research would, in turn, allow the FCC to better address the needs of the consumers it protects and reflect the reality of the industries it regulates, particularly small businesses that may be disproportionately affected.

This is not a novel idea. Presidents Ronald Reagan,²⁴ Bill Clinton,²⁵ George W. Bush,²⁶ and Barack Obama,²⁷ required all of their executive

^{21.} See, e.g., H.R. REP. No. 112-414, at 7 (2012) (noting that the purpose of the act is to require the FCC to be more "transparent and methodical" in its processes); H.R. REP. No. 113-338, at 6 (noting that the purpose of this act is to increase transparency and efficiency into decision-making processes); H.R. REP. No. 114-305, at 7 (2015) (same).

^{22.} See Review of the Emergency Alert System, Order, 31 FCC Rcd 2414 (2016) (statement of Comm'r. O'Rielly).

^{23.} Id.

^{24.} *See* Exec. Order No. 12,291, 46 Fed. Reg. 13,193 (Feb. 17, 1981) (in which President Reagan first required agencies to use cost-benefit analyses).

^{25.} See Exec. Order No. 12,866, 58 Fed. Reg. 51,735 (Sept. 30, 1993) (in which President Clinton ordered executive agencies to "identify the problem that it intends to address (including, where applicable, the failures of private markets or public institutions that warrant new agency action)" and "assess both the costs and the benefits of the intended regulation and recognizing that some costs and benefits are difficult to quantify, propose or adopt a regulation only upon a reasoned determination that the benefits of the intended regulation justify its costs.").

^{26.} See Exec. Order No. 13,422, 72 Fed. Reg. 2,763 (Jan. 18, 2007) (in which President Bush required each executive agency to "identify in writing the specific market failure (such as externalities, market power, lack of information) or other specific problem that it intends to address (including, where applicable, the failures of public institutions) that warrant new agency action.").

^{27.} Exec. Order No. 13,563, 76 Fed. Reg. 3,821 (Jan. 18, 2011).

agencies to inquire into the real harms and benefits of their proposed rules. President Obama's executive order required, among other things, that every executive agency "propose or adopt a regulation only upon a reasoned determination that its benefits justify its costs (recognizing that some benefits and costs are difficult to quantify)" and "tailor its regulations to impose the least burden on society, consistent with obtaining regulatory objectives, taking into account, among other things, and to the extent practicable, the costs of cumulative regulations."²⁸ President Obama has further suggested that the regulatory principles applied to executive agencies should apply to independent agencies as well.²⁹

While it is true that certain services regulated by the FCC do not lend themselves easily to a purely economic analysis—for example, the value of broadcast news as a public good—it is by no means impossible.³⁰ The FCC should not shield itself behind its public interest mandate to avoid the hard work of understanding the true impact of its policies. Moreover, while naiveté should not cloud the reality that expert studies are not completely bias-free, expert studies do require discipline and integrity to produce a rigorous examination of the market. The exercise of conducting such an analysis would force the FCC to "show its work" by documenting and sufficiently justifying to its constituents how it arrived at a given policy conclusion.³¹ Such a requirement would help to prevent the FCC from arriving at facile, purely anecdotal conclusions as to how its proposed rules would serve the public interest.

III. MERGER REVIEW

Merger authority is another instance in which the FCC's claim of serving the public interest is particularly pronounced. Under the Communications Act of 1934, the FCC is charged with reviewing transactions involving communications licenses and authorizations to ensure that the transactions are in the public interest.³² The current general counsel of the FCC has argued that "the 'public interest' standard is not limited to purely economic outcomes,"³³ justifying what appears to be horse-trading and

^{28.} Id.

^{29.} See Exec. Order No. 13,579, 76 Fed. Reg. 41,587 (July 11, 2011). Similarly, President Obama's Jobs Council has recommended that "Congress should require [independent regulatory commissions] to conduct cost-benefit analysis for economically significant regulations," including "regulatory impact analyses, coupled with some form of third-party regulatory review." 2011 PRESIDENT'S COUNCIL ON JOBS & COMPETITIVENESS YEAR-END REP. 1, 45, http://files.jobs-

council.com/files/2012/01/JobsCouncil_2011YearEndReport1.pdf.

^{30.} See Exec. Order No. 12,866, supra note 25.

^{31.} *See generally* Review of the Emergency Alert System, *supra* note 22 (statement of Comm'r O'Rielly).

^{32.} See 47 U.S.C. §§ 214(a), 310(d) (2012).

^{33.} See Jon Sallet, FCC Transaction Review: Competition and the Public Interest, FCC BLOG (Aug. 12, 2014, 12:39 PM), https://www.fcc.gov/news-events/blog/2014/08/12/fcc-transaction-review-competition-and-public-interest.

haggling with merger applicants for nongermane merger conditions and "voluntary commitments."³⁴

This practice is highly problematic.³⁵ For one thing, this type of process allows the FCC to extract policy outcomes without having to vet any proposed rules with the public. Open and transparent rulemakings—not reviews of license and authorization transfers—should be the primary venue for the FCC to effect federal policy. Imposing policy through transaction review shields the actions of the FCC from both judicial review and public scrutiny, as proposed conditions often are unknown to any party other than applicants until shortly before the FCC's approval order is announced.³⁶ This practice allows the FCC to "use[] such proceedings to decide issues that are otherwise pending in industry rulemakings—leading to one set of rules for those who have merged and another set of rules for similarly situated parties who have not."³⁷

IV. DUE PROCESS AND THE TIMELY PUBLICATION OF PROPOSED RULES

The Subcommittee's other efforts have focused on the availability of data to the public from the FCC. Because notice and comment are requirements borne of due process principles,³⁸ the fundamental notion that stakeholders must have a fair opportunity to comment before becoming subject to regulations, the Subcommittee has proposed that the FCC begin each rulemaking by developing a record with a Notice of Inquiry, which would lay out the path of the FCC's thinking.³⁹ A Notice of Proposed Rulemaking (NPRM) would follow only after the FCC has a sufficient record to support its conclusion and, presumably, its draft rules.

The Subcommittee has also proposed that the text of such tentative rules be made available in the NPRM itself.⁴⁰ During the past decade, the FCC has fallen into the deplorable habit of delineating only a general summary of potential action in NPRMs, without including the specific language of

39. See H.R. 3309, 112th Cong. § 2(a) (2012) (new proposed § 13(a)(1)(A)).

^{34.} See Christopher S. Yoo, Merger Review by the Federal Communications Commission: Comcast-NBC Universal, 45 Rev. IND. ORG. 295, 311 (2014).

^{35.} Id. at 311-32.

^{36.} *Id* at 310. Because merger conditions are "voluntarily" agreed upon by the parties seeking the merger, they are not likely to be contested by any of the participants. *Id.* at 313. Other stakeholders that may be impacted by the practices imposed in these merger conditions are unable to contest the conditions because they lack standing. Further, the public at large cannot comment on merger conditions because there is no required notice-and-comment period on the proposed merger conditions. *Id.* As a result, merger conditions are a back-door method of imposing certain policy outcomes arguably without due process, leveraging the merging parties' need to close a transaction in order to obtain a specific outcome.

^{37.} Weiser, supra note 5, at 709.

^{38.} See Lisa Schultz Bressman, *Procedures as Politics in Administrative Law*, 107 COLUM. L. REV. 1749, 1786 (2007) (noting the D.C. Circuit's concern for due process interests in notice-and-comment rulemaking).

^{40.} See id. (new proposed § 13(a)(1)(B)).

proposed rules.⁴¹ The inclusion of the specific text of proposed rules is "a critical step in facilitating meaningful discussion."⁴² Without the text of the proposed rules, the public is left "with the challenge of guessing what issues are really important," which "undermines the opportunity for meaningful participation and effective deliberation."⁴³ The public deserves an FCC that can commit to "publish[ing] the text of proposed rules sufficiently in advance of Commission meetings for both (i) the public to have a meaningful opportunity to comment and (ii) the Commissioners to have a meaningful opportunity to review such comments."⁴⁴ These measures may slow the ability of the Chairman to move swiftly under the powers granted to him or her in the Communications Act, but the benefit of improving process is a restored confidence in the judgment of the FCC.

V. DEADLINES FOR ACTION ON PUBLIC FILINGS

The Subcommittee has also sought to impose deadlines for FCC action on the complaints, petitions, and other actions filed at the FCC by the public, which the FCC ostensibly serves.⁴⁵ Too often, however, these petitions are left to languish without any indication as to when the FCC intends to take them up.⁴⁶ The American public deserves more transparency, and consumers and other stakeholders deserve to know that the FCC will resolve their complaints and petitions in a timely manner no matter the administration. Former FCC Chairman Julius Genachowski noted that "shot clocks may be

^{41.} See, e.g., Letter from Frederick Butler, President, Nat'l Ass'n of Regulatory Util. Comm'rs, to Susan Crawford, Visiting Professor, Yale Law Sch., Obama-Biden Transition Team on the FCC (Dec. 12, 2008), http://pubs.naruc.org/pub/536C7D1C-2354-D714-51E7-152898B0C987 ("The FCC frequently releases vague Notices of Proposed Rulemaking that fail to articulate proposed rules and read more like Notices of Inquiry by posing countless open-ended questions.").

^{42.} MICHAEL WEINBERG & GIGI B. SOHN, AN FCC FOR THE INTERNET AGE: RECOMMENDATIONS FOR REFORMING THE FEDERAL COMMUNICATIONS COMMISSION 4 (2010), https://www.publicknowledge.org/assets/uploads/blog/fcc-reform-report-card-details-03052010 0.pdf.

^{43.} PHILIP J. WEISER, FCC REFORM AND THE FUTURE OF TELECOMMUNICATIONS POLICY 16-17 (2009), https://web.archive.org/web/20130129162418/http://fcc-reform.org/f/fccref/weiser-20090105.pdf.

^{44.} Letter from John D. Dingell, Chairman, H. Comm. on Energy & Commerce, to Kevin J. Martin, Chairman, FCC (Dec. 3, 2007) (on file with author).

^{45.} *See* Federal Communications Commission Process Reform Act of 2015, H.R. 2583, 114th Cong. § 13(a)(2)(E) (2015).

^{46.} See, e.g., Fifty-Five Unopposed Petitions for Determination of Effective Competition, *Memorandum Opinion and Order*, 29 FCC Rcd 3140 (2014) (closing out *unopposed* petitions for determination of effective competition, some of which had been filed in early December of 2011); see also 2014 Quadrennial Regulatory Review –Review of the Commission's Broadcast Ownership Rules and Other Rules Adopted Pursuant to Section 202 of the Telecommunications Act of 1996, *Further Notice of Proposed Rulemaking and Report and Order*, 29 FCC Rcd 4371 (2014). The Commission did not complete the 2010 Quadrennial Review, as statutorily required. Instead, it decided that it would incorporate the 2010 Review into the 2014 Quadrennial Review without producing a separate report. Similarly, the Commission failed to complete Video Competition Reports.

an effective tool" for giving parties and the public a sense of when resolution would come on an issue.⁴⁷ Former FCC Commissioners Michael Copps and Robert McDowell also supported the adoption of additional shot clocks.⁴⁸ Moreover, shot clocks have been demonstrably effective at the FCC. During Chairman Genachowski's tenure, the FCC resolved 78% of petitions for reconsideration it received,⁴⁹ which are subject to a ninety-day deadline under Section 405 of the Communications Act.⁵⁰

VI. TRANSPARENCY: PERFORMANCE METRICS AND OPERATING MANUALS

Transparency in government shores up the public's faith in the fundamental fairness of the government's allocation of resources.⁵¹ Here, too, the FCC has fallen short, and our process reform bills have sought to remedy those failures.⁵² In particular, the Subcommittee has proposed program metrics for some of the FCC's largest programs.⁵³ The Government Performance Results Act of 1993 already requires the FCC and other agencies to identify yearly performance goals for all items on the federal budget.⁵⁴ Despite this requirement, the Government Accountability Office (GAO) has repeatedly cited the FCC for failing to establish objective, quantifiable performance measures for the various programs within the Universal Service Fund.⁵⁵ The Subcommittee have also sought to require the FCC to measure its own effectiveness in promulgating rules, enforcing regulations, and

48. *Id*.

^{47.} FCC Process Reform: Hearing Before the Subcomm. on Commun. & Tech. of the H. Comm. on Energy & Commerce, 112th Cong. 88 (May 13, 2011).

^{49.} See Staff of H. Comm. on Energy & Commerce, 112th Cong., Staff Report on the Workload of the Federal Communications Commission 1-2 (2011),

https://energycommerce.house.gov/sites/republicans.energycommerce.house.gov/files/analysis/20111115FCC.pdf.

^{50.} See 47 U.S.C. § 405(a) (2012).

^{51.} See generally Christopher Hood, Transparency: The Key to Better Governance? 3-20 (2006).

^{52.} See, e.g., H.R. REP. NO. 114-305, at 7-8 (2015).

^{53.} See id. at 22.

^{54.} See Government Performance Results Act of 1993 § 4, 31 U.S.C. § 1115 (2012).

^{55.} See, e.g., U.S. GOV'T ACCOUNTABILITY OFF., GAO-11-11, IMPROVED MANAGEMENT CAN ENHANCE FCC DECISION MAKING FOR THE UNIVERSAL SERVICE FUND LOW-INCOME PROGRAM (2010), http://www.gao.gov/assets/320/312708.pdf (finding that the FCC took limited steps to develop performance goals and measures for its Low-Income Program); U.S. GOV'T ACCOUNTABILITY OFF., GAO-09-253, LONG-TERM STRATEGIC VISION WOULD HELP Ensure TARGETING OF E-RATE FUNDS TO HIGHEST-PRIORITY USES (2009).http://www.gao.gov/assets/290/287867.pdf (finding no performance goals and inadequate performance measures for the FCC's E-Rate program); U.S. GOV'T ACCOUNTABILITY OFF., GAO-08-633, FCC NEEDS TO IMPROVE PERFORMANCE MANAGEMENT AND STRENGTHEN OVERSIGHT OF THE HIGH-COST PROGRAM (2008), http://www.gao.gov/assets/280/276640.pdf (finding that the FCC had not established performance goals and measures for the high-cost program); U.S. GOV'T ACCOUNTABILITY OFF., GAO-05-151, GREATER INVOLVEMENT NEEDED BY FCC IN THE MANAGEMENT AND OVERSIGHT OF THE E-RATE PROGRAM (2005), (finding that the FCC had not developed useful performance goals and measures for the E-rate program).

promoting the public interest.⁵⁶ The process reform bills proposed in our Subcommittee would seek to impose some measure of rigor on the FCC's management of these critical programs.⁵⁷

The FCC's most critical transparency failures have occurred with respect to its internal operations. As "CEO" of the FCC, the Chairman dictates procedures for carrying out FCC business.⁵⁸ The Chairman also manages the staff of the entire agency (other than personnel in the offices of fellow Commissioners), including the General Counsel and the Inspector General.⁵⁹ Additionally, he or she determines which policy matters will be considered and when they will be considered, and controls the availability of information to the public and to other Commissioners.⁶⁰ Despite this plenary power, one would imagine that a functioning agency would set out procedures for managing its internal operations (e.g., when votes are expected, when items are placed on delegated authority, how to provide input to staff, etc.). As any adult might imagine, working in a place without rules and expected procedures would reduce morale and efficiency.

Nonetheless, the FCC has been unable or unwilling to produce standard operating manuals for its basic decision-making functions.⁶¹ As a result, there is little evidence to believe that the Chairman adheres to procedures for providing information to the offices of other Commissioners for agenda items, as has been recommended by the GAO.⁶² Limited information on an agency's procedures impedes the public's ability to determine whether the agency is functioning effectively.⁶³ Other independent agencies have posted these materials on their websites and make them available to the public.⁶⁴ It is unclear why the FCC has failed to do so.

The Subcommittee has also proposed publication of the documents to be voted either on circulation or at an Open Meeting.⁶⁵ Without publication, the FCC Chairman—and only the Chairman, absent express written

61. This occurs despite a personal request for such information in writing. *See, e.g.*, Letter from Fred Upton, Chairman, H. Comm. on Energy & Commerce, et al. to Tom Wheeler, Chairman, FCC (Feb. 18, 2015),

https://energycommerce.house.gov/sites/republicans.energycommerce.house.gov/files/114/Letters/20150218FCC.pdf.

^{56.} See H.R. REP. NO. 114-305, at 3 (2015).

^{57.} See id. at 22.

^{58.} See 47 U.S.C. § 155(a) (2012) ("The member of the [FCC] designed by the President as chairman shall be the chief executive officer of the [FCC].").

^{59.} See id.

^{60.} See 47 C.F.R. § 19.735-203(a) (2015) ("Except as authorized in writing by the Chairman pursuant to paragraph (b) of this section, or otherwise as authorized by the [FCC] or its rules, nonpublic information shall not be disclosed, directly or indirectly, to any person outside the [FCC].").

^{62.} See GAO-10-79, supra note 8, at 2.

^{63.} See generally HOOD, supra note 51, at 3-23.

^{64.} See, e.g., U.S. NAT'L REG. COMM'N, INTERNAL COMMISSION PROCEDURES (2016), http://www.nrc.gov/docs/ML1611/ML16111B158.pdf; Administrative Staff Manuals, FED. TRADE COMM'N, https://www.ftc.gov/about-ftc/foia/foia-resources/ftc-administrative-staffmanuals (last accessed Sept. 25, 2016).

^{65.} See H.R. 2592, 114th Cong. (2015).

authorization—may release information regarding the draft to the public.⁶⁶ Commissioners other than the Chairman are prevented from fully discussing the issues in the document with potentially impacted parties before a vote, because such parties are prohibited from discovering the specifics of a proposal.⁶⁷ Among other resultant issues, stakeholders are uncertain as to whether their concerns are addressed, how the changed or new rules will modify their obligations, and whether the FCC's actions will produce the results desired. More problematically, those with special access to FCC insiders have greater knowledge of the agency's actions, which, as the GAO has found, gives those stakeholders an advantage in lobbying the FCC.⁶⁸ This does not promote informed and open policymaking.

Moreover, publication of documents before a vote is a practice endorsed by experts in administrative law.⁶⁹ Other federal agencies already practice this type of transparency, either by providing the proposed text of rules from the outset of the comment period or by releasing the final text of the rules before a final decision.⁷⁰ While there is a need to protect the deliberative process and the FCC would not be expected to make its discussions or other considerations public, publication of documents before a vote is desirable to ensure due process for all stakeholders. If a commissioner is unwilling to defend a policy position that he or she has championed in a particular proceeding, that person arguably lacks the qualifications for the position.

VII. INDEPENDENT INSPECTOR GENERAL

In addition to other requirements for transparency, there should be a truly independent Inspector General at the FCC.⁷¹ The FCC's Inspector General is somewhat unique in the fact that, unlike comparable public servants, he or she is not confirmed by the Senate and serves at the pleasure

^{66.} *See* 47 C.F.R. § 19.735-203 (2015) ("Except as authorized in writing by the Chairman pursuant to paragraph (b) of this section, or otherwise as authorized by the Commission or its rules, nonpublic information shall not be disclosed, directly or indirectly, to any person outside the Commission.").

^{67.} See id.

^{68.} See GAO-07-1046, supra note 8.

^{69.} See Admin. Conference of the United States, Administrative Conference Recommendation 2014-2: Government in the Sunshine Act,

https://www.acus.gov/sites/default/files/documents/Recommendation%202014-2%20%28Sunshine%20Act%29.pdf.

^{70.} The Federal Energy Regulatory Commission (FERC), which operates at an almost identical size, composition, budget, and statutory basis as the FCC, releases orders on the day of the vote. *See Rulemaking Process, Petition for Rulemaking*, FED. ENERGY REG. COMM'N, http://www.ferc.gov/resources/processes/flow/rule-petition.asp (last visited Sept. 25, 2016). The Federal Trade Commission (FTC) releases the actual text of rules before proceeding to a final decision pursuant to the Federal Trade Commission Act. 15 U.S.C § 57a(b)(1) (2012).

^{71.} See H. Comm. on Energy & Commerce, 114th Cong., FCC Reauthorization Act of 2015 Discussion Draft, tit. II (2015),

 $https://energycommerce.house.gov/sites/republicans.energycommerce.house.gov/files/114/BI\ LLS-114hr-PIH-FCCReauthorization.pdf.$

of the Chairman.⁷² It is hard to imagine that this fact does not influence the Inspector General's decision-making process. Anything that calls into question the integrity and independence of an Inspector General is harmful to the agency and to good government, regardless of whether the underlying fear of misconduct comes to fruition. There should be no question as to whether an outside auditor is able to independently evaluate an agency action or initiate an investigation when needed, without fear of retribution or intimidation from that agency's Chairman. Having an independent watchdog improves the agency's credibility, increases public confidence, and reduces opportunity for mischief at all levels.⁷³

VIII. CONCLUSION

Finally, Congress itself has a job to do as well. As much as the Subcommittee has taken the FCC to task for jurisdictional overreach and failure to complete statutorily required tasks, it is ultimately the job of Congress to reauthorize the FCC every year and ensure its compliance with its enabling statute. The FCC has not been formally reauthorized by Congress since the FCC authorization Act of 1990,⁷⁴ although Congress continues to appropriate funds for its activities. While reauthorization is a helpful tool for keeping any agency on track, it lends itself particularly well to the FCC, an agency tasked with regulating an ever-evolving industry. By periodically reviewing the utility of regulations, the agency is forced to take a hard look at its operations and management, and to determine whether it is doing the best possible job for both the industry it regulates and the consumers it protects.

Moreover, the FCC is laboring under a statute that may no longer fit the market.⁷⁵ The principles of competition and consumer protection that inform and structure the Communications Act are sound and time-proof. However, the regulatory silos, often created decades ago around various industries, are no longer valid. There is a real need to update the Communications Act for a market of converged services and overlapping competitors, before the FCC stretches the Communications Act and the public interest standard beyond recognition.

%20Rewriting%20the%20U.S.%20Communications%20Act.pdf.

^{72.} See Inspector General Act of 1978 § 8G(c), 5 U.S.C. App. § 8G(c) (2012).

^{73.} See U.S. GOV'T ACCOUNTABILITY OFF., GAO-04-117T, INSPECTORS GENERAL: ENHANCING FEDERAL ACCOUNTABILITY (2003), http://www.gao.gov/assets/120/110419.pdf (discussing how independent inspectors general have already improved government operations and stating inspectors general can be more effective in the future).

^{74.} Federal Communications Commission Authorization Act of 1990, Pub. L. No. 101-396, 104 Stat. 848.

^{75.} See Trey Hanbury & Deborah Broderson, USA: Rewriting the U.S. Communications Act for the 21st Century, HOGAN LOVELLS GLOBAL MEDIA & COMM. Q., Autumn 2014, at 9, http://www.hoganlovells.com/files/Uploads/Documents/2%20USA%20-

Achieving Bandwidth Abundance: The Three Policy Levers for Intensifying Broadband Competition

Blair Levin *

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I. INTRODUCTION

Broadband competition generates many discussions and speeches. In the last couple years, the three most important speeches were by current Federal Communications Commission (FCC) Chairman Tom Wheeler,¹ then-FCC General Counsel Jon Sallet,² and then-Assistant Attorney General Bill Baer for the Department of Justice's Antitrust Division.³ All three made policy pronouncements on regulatory approaches and merger analysis consistent with their official positions and actions.⁴

This Article represents a progress report from the field, deriving its data from game theory and lessons learned while working in the government on both the Telecommunications Act of 1996 and the National Broadband Plan,⁵ as well as broadband competition initiatives such as Gig.U and Republic Wireless.⁶ While my thoughts are consistent with those speeches,⁷ they are in conflict with a great deal of what others have said about competition and broadband.

Two illustrations of that conflict:

1. Techdirt blogger Karl Bode's article argued that Google Fiber proved the worthlessness of the National Broadband Plan,⁸

^{1.} Tom Wheeler, Chairman, FCC, Prepared Remarks at 1776 Headquarters: The Facts and Future of Broadband Competition (Sep. 4, 2014),

https://apps.fcc.gov/edocs_public/attachmatch/DOC-329161A1.pdf.

^{2.} Jon Sallet, General Counsel, FCC, Remarks at the Telecommunications Policy Research Conference: The Federal Communications Commission and Lessons of Recent Mergers & Acquisitions Reviews (Sept. 25, 2015),

https://apps.fcc.gov/edocs_public/attachmatch/DOC-335494A1.pdf.

^{3.} Bill Baer, Assistant Attorney General, Keynote Address at the Future of Video Competition and Regulation Conference Hosted by Duke Law School: Video Competition: Opportunities and Challenges (Oct. 9, 2015), http://www.justice.gov/opa/speech/assistant-attorney-general-bill-baer-delivers-keynote-address-future-video-competition.

^{4.} See generally Wheeler, supra note 1; Sallet, supra note 2; Baer, supra note 3.

^{5.} Telecommunications Act of 1996, Pub L. No. 104-110, 110 Stat. 56 (codified in scattered sections of 47 U.S.C.); FCC, CONNECTING AMERICA: THE NATIONAL BROADBAND PLAN (2010), http://download.broadband.gov/plan/national-broadband-plan.pdf [hereinafter NATIONAL BROADBAND PLAN].

^{6.} Gig.U refers to the University Community Next Generation Innovation Project, which is intended to allow research universities, in partnership with their local communities, to "create a critical mass of next generation test beds by accelerating the offering of ultra high speed network services and applications." *About*, GIG.U, http://www.gig-u.org/about/ (last visited July 12, 2016). Republic Wireless is a "hybrid phone service [that] mostly uses Wi-Fi as its primary network with cellular service as a backup." David Ranii, *Raleigh-Based Republic Adds Cellular Network, New Phones*, NEWS & OBSERVER (May 11, 2016, 3:47 PM),

http://www.newsobserver.com/news/business/article77009072.html. Its goal is to "make enjoying the features of a smartphone more affordable and accessible for everyone." *How to Use the Online Store*, REPUBLIC WIRELESS, https://republicwireless.com/faqs/ (last visited July 12, 2016).

^{7.} Wheeler, *supra* note 1; Sallet, *supra* note 2; Baer, *supra* note 3.

^{8.} See Karl Bode, Google Fiber Has Accomplished More for Broadband Than Our National Broadband Plan Ever Did, TECHDIRT (July 9, 2015, 6:23 AM),

https://www.techdirt.com/articles/20150628/13060131486/google-fiber-has-accomplished-more-broadband-than-our-national-broadband-plan-ever-did.shtml.

ignoring how the Plan stimulated the Google's Fiber effort, how both Google and the Plan made similar recommendations for policy changes, and most of all, how his own proposal—unbundling would have killed Google Fiber;⁹ and

2. Former FCC chairman Julius Genachowski's speech articulated the need for Gigabit networks,¹⁰ but did not offer any analysis as to why these networks nor any strategy for getting them deployed are in place, other than to "challenge" cities and states to build them,¹¹ as if the only thing preventing such development was his personal failure to challenge cities or the only power the FCC had was to request such action.

There are critiques on the substance of these pieces elsewhere,¹² but in short, what Mr. Bode and Chairman Genachowski have in common is a belief in the magic of words, as if the incantation of the word "competition" or "gigabit," if said enough, or loudly enough, is a substitute for a realistic plan followed by concrete steps to achieve it.¹³

Sadly, much of the commentary on the topic suffers from a similar flaw.¹⁴ This fundamental aspiration error¹⁵—the mere statement of aspiration correlates to the desired change—affects much of the debate about broadband. Those who commit this error only wish to own a narrative, instead of owning the problem.

^{9.} *Id*.

^{10.} See News Release, FCC, FCC Chairman Julius Genachowski Issues Gigabit City Challenge to Providers, Local, and State Governments to Bring at Least One Ultra-Fast Gigabit Internet Community to Every State in U.S. by 2015: FCC's Broadband Acceleration Initiative to Foster Gigabit Goal (Jan. 18, 2013), https://apps.fcc.gov/edocs_public/attachmatch/DOC-318489A1.pdf [hereinafter FCC's Broadband Acceleration Initiative].

^{11.} *Id*.

^{12.} See Blair Levin, What Have We Learned from Google Fiber?, CNET (July 31, 2015, 9:55 AM PDT), http://www.cnet.com/news/what-have-we-learned-from-google-fiber/; see also Blair Levin, Why It's Time for the U.S. to Get Serious About Its Broadband Problem, GIGAOM (Jan. 17, 2014, 3:50 PM PDT), https://gigaom.com/2014/01/17/why-its-time-for-the-u-s-to-get-serious-about-its-broadband-problem/.

^{13.} See Bode, supra note 8; FCC's Broadband Acceleration Initiative, supra note 10.

^{14.} See James Surowiecki, *The Wait-for-Google-to-Do-It Strategy*, MIT TECH. REV. (June 23, 2015), https://www.technologyreview.com/s/538411/the-wait-for-google-to-do-it-strategy/; John Cassidy, *We Need Real Competition, Not a Cable-Internet Monopoly*, NEW YORKER (Feb. 13, 2014), http://www.newyorker.com/news/daily-comment/we-need-real-competition-not-a-cable-internet-monopoly; Kevin Drum, *What the Broadband Industry Really Needs Isn't Net Neutrality. It Needs Competition*, MOTHER JONES (Feb. 24, 2015, 12:20 PM), http://www.motherjones.com/kevin-drum/2015/02/what-broadband-industry-really-needs-isnt-net-neutrality-it-needs-competition; Kate Cox, *Here's What the Lack of Broadband Competition Looks Like on a Map*, CONSUMERIST (Mar. 7, 2014),

https://consumerist.com/2014/03/07/heres-what-lack-of-broadband-competition-looks-like-in-map-form/.

^{15.} This is different than a fundamental attribution error, where "social perceivers attribute other people's behavior primarily to dispositional causes, rather than to situational causes." Glenn D. Reeder, *Fundamental Attribution Error / Correspondence Bias*, OXFORD BIBLIOGRAPHIES (Mar. 19, 2013), http://www.oxfordbibliographies.com/view/document/obo-9780199828340/obo-9780199828340-0114.xml.

Actual change starts with owning a problem, which requires starting with a framework, engaging in action, allowing for experimentation and course correcting in light of evidence.

The trial and many errors of my own work have led me to believe in the following bottom line: the *highest* priority for government broadband competition policy ought to be to lower input costs for adjacent market competition and network upgrades.¹⁶ The greatest opportunity to do so is to create a virtuous cycle of upgraded mobile stimulating low-end broadband to upgrade, which in turn stimulates an upgrade of high-end broadband, which uses its assets to enter mobile and accelerates the need for mobile to further upgrade.

II. THREE QUESTIONS TO UNDERSTAND THE POLICY LEVERS FOR INTENSIFYING BROADBAND COMPETITION

My purpose in this Article is to move the broadband competition discussion away from aspirational statements to focus on the reality of how to create incentives for enterprises to invest in the faster, cheaper, better delivery of bits. In order to address this reality, this Article will focus on the following three questions:

- 1. What do we want broadband competition to accomplish?
- 2. Where does broadband competition come from?
- 3. Given the current market, what are the appropriate government levers to intensify competition at this part of the cycle?

A. What Do We Want Broadband Competition to Accomplish?

Competition is generally thought of as the means, not the ends, of improving consumer welfare.¹⁷ That is, competition is the most likely means to deliver the optimal goods and services.¹⁸

In the debate leading up to and in the implementation of the Telecommunications Act of 1996, the vision was of increased competition in

^{16.} Some could argue that closing the adoption gap, sometimes referred to as the digital divide, should be a higher priority for broadband policy. *See* Press Release, General Assembly, 2d Comm., Closing Digital Divide Critical to Social, Economic Development, Delegates Say At Second Committee Debate on Information and Communications Technologies, U.N. Press Release GA/EF/3432 (Oct. 28, 2015); Letter from Calvin Smyre, President, Nat'l Black Caucus of State Legislators, to David Honig, Gen. Counsel, Broadband Opportunity Council (Nov. 8, 2009), https://www.scribd.com/document/22825832/Black-Elected-Officials-Urge-FCC-to-Keep-the-Digital-Divide-in-Mind. Although I agree that it ought to be a high priority for the policy, I am focused here on competition. While bringing more customers to the market will help with the competition issues, it will not, in and of itself, drive the network upgrades that I believe are necessary.

^{17.} See Council of Econ. Advisers, Benefits of Competition and Indicators of Market Power 2 (2016),

https://www.whitehouse.gov/sites/default/files/page/files/20160414_cea_competition_issue_brief.pdf.

all communications markets, but most of the debate focused on the voice market.¹⁹ The outcome sought was clear: lower prices.²⁰

Broadband is different. There are a number of variables competition should deliver.²¹ The two most prominent are lower prices and improved performance.²² However, ubiquity, security, privacy protection, and providing a platform for free and diverse speech, among others, are also desired outcomes.²³

Optimizing broadband for multiple factors complicates its policy decision making than when aiming for a single goal.²⁴ Different policies can deliver better outcomes on some metrics and worse outcomes on others, requiring decisions about priorities and trade-offs for which there may be no "right" answer.²⁵ This makes competition more important as competition can optimize for multiple factors according to what customers want more adroitly than a policy process.

21. See Strategic Plan of the FCC, FCC, https://www.fcc.gov/general/strategic-plan-fcc (last visited Aug. 8, 2016) [hereinafter Strategic Plan of the FCC].

^{19.} See Nicholas Economides, *Telecommunications Regulation: An Introduction, in* The LIMITS AND COMPLEXITY OF ORGANIZATIONS 48, 50-51 (Richard R. Nelson ed., 2005); see also 47 U.S.C. §§ 251-261 (2012).

^{20.} In both vision and specifics it succeeded, but not necessarily in a way that reflected the most heavily-debated provisions: the 14-point checklist for local exchange entry into long distance. Telecommunications Act of 1996 § 151, 47 U.S.C. § 271(c)(2)(B). Wireless and Voice over Internet Protocol (VoIP) entry, as discussed below, turned out to be bigger factors. *See* Kevin Werbach, *Using VoIP to Compete*, HARV. BUS. REV., Sept. 2015, at 140 https://hbr.org/2005/09/using-voip-to-compete.

^{22.} This is generally expressed in terms of greater bandwidth. See Speedtest Market Report – United States, SPEEDTEST (Aug. 3, 2016), http://www.speedtest.net/reports/united-states/; Measuring Broadband America – February 2013, FCC, https://www.fcc.gov/reports-research/reports/measuring-broadband-america/measuring-broadband-america-february-2013 (last updated Apr. 16, 2013). History will probably regard this as the least important use of next-generation networks, recalling Henry Ford's alleged comment that before he produced his cars, his customers, if asked, would have said they wanted "faster horses." Henry Ford: Quotable Quote, GOODREADS, http://www.goodreads.com/quotes/15297-if-i-had-asked-people-what-they-would (last visited July 12, 2016).

^{23.} See Strategic Plan of the FCC, supra note 21; NATIONAL BROADBAND PLAN, supra note 5, at xii.

^{24.} I personally encountered this when I was involved in cable rate regulation, as called for in the 1992 Cable Act. *See* Cable Television Consumer Protection and Competition Act of 1992 § 19, 47 U.S.C. § 548. To the extent the law sought to lower prices, that was relatively easy, and the February 1994 decision did so initially. *See generally* Implementation of Sections of the Cable TV Consumer Prot. & Competition Act of 1992, *Third Order on Reconsideration*, 9 FCC Rcd 4316 (1994). But the law also, correctly in my view, wanted the cable industry to be able to continue to invest in more and better programming. The initial price cuts were then reversed by the "going forward" rules, which allowed such investments. Optimizing for both proved difficult, if not impossible, for rate regulation of a dynamic product. *See generally* REED HUNDT, YOU SAY YOU WANT A REVOLUTION: A STORY OF INFORMATION AGE POLITICS (2011).

^{25.} See Tradeoff, BUSINESSDICTIONARY.COM,

http://www.businessdictionary.com/definition/tradeoff.html (last visited Aug. 8, 2016); Conflicts of Objectives, ECON. ONLINE,

http://www.economicsonline.co.uk/Global_economics/Conflicts_of_objectives.html (last visited Aug. 8, 2016).

At this point, competition should deliver the elimination of bandwidth as a constraint to innovation, economic growth, and social progress.²⁶ As the global economy moves from being primarily about the manipulation and transportation of atoms to knowledge exchange, bandwidth becomes our commons of collaboration and bandwidth constraints would present a major obstacle to economic and social progress.²⁷

That goal is likely to be achieved when there are at least two nextgeneration networks with viable upgrade paths capable of answering all foreseeable needs for the next decade. With only one network, economic forces would price the marginal use of bandwidth at a level that constrains growth and progress. Thus, multiple networks are needed to upgrade to next generation networks.

In short, competition can help move us from today's world, where the dominant business model focuses on how to allocate bandwidth scarcity, to the world we need, where there is competition over who can best deploy bandwidth abundance.²⁸

B. Where Does Broadband Competition Come from?

There are two potential and related origins of broadband competition.²⁹ The first goes to the nature of the competitive enterprise, and the second involves an economic equation.

29. I am consciously relying on my own experience rather than the Michael Porter's "How Competitive Forces Shape Strategy," which lays out five forces that determine competition in a market. *See generally* Michael Porter, *How Competitive Forces Shape*

^{26.} Expressed this way, the vision captures a number of different variables, including affordability, ubiquity, performance and others.

^{27.} There are a number of important government initiatives, including the reform of the E-Rate and Lifeline programs and ConnectHome, which are part of the effort to remove bandwidth constraints. *See* Tom Wheeler, *If You Reform It, They Will Come*, FCC BLOG (May 11, 2015, 3:10 PM), https://www.fcc.gov/news-events/blog/2015/05/11/if-you-reform-it-they-will-come; Lifeline and Link Up Reform and Modernization, *Second Further Notice of Proposed Rulemaking, Order on Reconsideration*, 30 FCC Rcd 7818, para. 1 (2015); Don Reisinger, *Obama Unveils ConnectHome to Get Low-Income Households Online*, CNET (July 15, 2015, 8:01 AM PDT), http://www.cnet.com/news/obama-unveils-connecthome-to-get-low-income-households-online/. As they are not directed toward changing the current mass-market competitive market structure, they are beyond the scope of this paper. Nonetheless, issues of adoption and anchor institution connectivity are critical to the vision that animates the framework I present here.

^{28.} A more complete discussion of the transition from moving from bandwidth scarcity to bandwidth abundance can be found elsewhere. *See* Blair Levin, Exec. Dir., Gig.U, Remarks at the SHLB Conference: The North Star of Bandwidth Abundance 2 (May 2, 2013), http://www.gig-u.org/the-north-star-of-bandwidth-abundance/. I should note that the goal of bandwidth abundance might strike an economist as encouraging an overproduction of bandwidth, not justified by actual consumer demand, and that that goal could lead to stranded investment. In my view, this is unlikely for a variety of reasons. The principal point is that given the transition to the information economy, abundance is a good in and of itself because it drives new use and consumer surplus. Unlike cyclical industries where demand goes up and down, the use of bandwidth only seems to continue to go up. Although the timing of such investments can lead to financial losses, as occurred in the early years of this century, assets produced were not abandoned but were rather picked up by a number of enterprises like Google to accelerate their own network operations.

Both existing competitors and new entrants are capable of intensifying competition in an industry. New entrants typically come in three varieties:

- 1. Greenfield entrants, constituting new ventures;
- 2. Adjacent market entrants, constituting existing ventures who bring asymmetric assets and interests into the market;³⁰ and
- 3. Resale entrants who depend on inputs sold on a wholesale basis, which may include regulated access to unbundled elements.³¹

The competition that emerges from all of these enterprises follow similar economic patterns.

First, intensified competition always requires a new capital allocation decision by one of those four kinds of enterprises. Every time a company shifts its capital allocation from one purpose to the purpose of providing or upgrading a communications service, the result is intensified competition.³²

Second, the new capital allocation decision follows a change in the same formula. The reason that greater competition has not occurred yet in the broadband industry is because the new or incremental capital (C) and operating expenses (O) of a network capable of intensifying competition are greater than the total of risk adjusted (1-r) new or incremental revenues (R),

Strategy, HARV. BUS. REV., Mar. 1979, at 137, https://hbr.org/1979/03/how-competitiveforces-shape-strategy (1979). Porter's work was updated for the digital era in *Unleashing the Killer App*, which lays out how digitalization, globalization, and regulation/deregulation are overshadowing Porter's five forces. *See generally* LARRY DOWNES & CHUNKA MUI, UNLEASHING THE KILLER APP: DIGITAL STRATEGIES FOR MARKET DOMINANCE (2000). My purpose here is not to fit what I have seen into either framework but to try to describe how policy has—and could in the future—intensified competition.

^{30.} Adjacent markets are "markets that are close in proximity to what [a business] already do[es]." *Growth Through Adjacent Markets*, INSIDE BOX (May 9, 2016), http://www.innovationinpractice.com/innovation_in_practice/2016/05/growth-through-adjacent-markets.html.

^{31.} Resale is "the ability of a firm to purchase a service on a wholesale basis, for the purpose of reselling that same service, either alone or in combination with other services or features, to end users in direct competition with the original service provider." Alexander C. Larson, *Resale Issues in Telecommunications Regulation: An Economic Perspective*, 2 MICH. TELECOMM. & TECH. L. REV. 57, 57 (1996).

^{32.} See Bain & Co., Next Generation Competition: Driving Innovation in Telecommunications 1 (2009),

http://www.bain.com/Images/2009_10_02_LGI_REPORT.pdf.

the benefits to the system (SB), 33 and the risk of lost revenues due to competition (CL). 34 These variables represented in an equation are:

C + O > (1-r)R + SB + (-CL)

Thus, to intensify competition, the math needs to change to cause, where possible, capital expenditures (cap ex), operating expenses (op ex), and risk to go down while revenues, system benefits, and competition go up. This change is represented in the equation below.



Third, historically, the biggest changes in the competitive landscape in communications result from changes in the formula, which themselves result directly from changes in government policy.³⁵ There are a few examples of

35. This is not always true. One counterexample would be Netflix, which transformed from a service that utilized postal delivery to a streaming and original programming service, thereby creating competition to MVPDs. Emily Steel, *Netflix Refines Its DVD Business, Even As Streaming Unit Booms*, N.Y. TIMES (July 26, 2015), http://www.nytimes.com/2015/07/27/business/while-its-streaming-service-booms-netflix-streamlines-old-

business.html. The critical change was the increase in broadband capacity and customers, making a streaming service viable. However, Netflix would not have made that transition if it were not for earlier government policies requiring interconnection, banning terminating access charges for data, and looking unfavorably upon blocking or throttling traffic. *See* Telecommunications Act of 1996 § 101, 47 U.S.C. §§ 251-252 (2012). Government policy played a critical role but the timing was different from the examples cited. Going back even further, Netflix would probably not exist but for 17 U.S.C § 109, which codified the first sale doctrine. If Netflix had had to ask Hollywood's permission first before buying and then lending

^{33.} Benefits to the system refers to the benefits a service provider may obtain in markets outside of the area of the investment. For example, AT&T, by building out fiber in Raleigh, North Carolina, may derive some benefit in another market such as Wilmington, North Carolina. *Where is AT&T U-Verse Available in North Carolina?*, AT&T, http://www.att-services.net/att-u-verse/availability/uverse-north-carolina.html (last visited Sept. 3, 2016). In the experience of Gig.U, this is significant for Google but not significant for incumbent ISPs. It is not clear where government policy could affect this factor. Nonetheless, it is a factor that is relevant to the formula for upgrades.

^{34.} There are certainly other factors that affect the equation. For example, as the investments in question are long-term, there is significant sensitivity to interest rates. Two factors that are not reflected in the equation but were significant in the Gig.U experience are entrepreneurial talent in network services and local leadership that can organize local resources to improve the economic opportunity. As to the first, it appears that the generation of entrepreneurial network talent that grew up at MCI and went on to start a number of CLECs and DLECs in the late 1990s has largely left the sector, though a new generation is starting to emerge. As to the second, there has been a significant increase in local government interest and talent related to broadband networks, owing to a number of factors, such as the sharing of lessons learned from the dozens of cities that have now successfully accelerated the deployment of next-generation networks.

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companies reallocating capital to intensify competition that demonstrate how policy affects capital allocation and competition. They also suggest not all elements of the equation are equal in producing long-term competitive effects.

- 1. Cable intensified competition with broadcast television when government rules lowered its cap ex and op ex through pole attachment rules and copyright rules. These rules increased its access to programming,³⁶
- 2. Direct broadcast satellite (DBS) intensified multichannel video programming distributor (MVPD) competition when the government lowered its op ex by granting non-discriminatory access to programming. Telecommunications companies (telcos) did so as well when the government prohibited local franchising monopolies and adopted state franchising, lowering costs for the telcos;³⁷
- 3. Wireless began competing with wireline voice when the government both enabled more wireless competition with the PCS spectrum auctions and lowered its op ex by reducing the terminating access charges wireless had been paying wired providers;³⁸
- 4. Cable began competing with the telcos' dial-up Internet service when faced with the loss of revenue due to intensified video competition from DBS;³⁹ and
- 5. Google devoted more capital to its fiber project when cities expressed a willingness to reform construction-related and other regulations in ways that reduced cap ex, op ex, and risk, thus increasing potential revenues.⁴⁰ In turn, the telcos facing Google Fiber competition were able to take advantage of these same streamlined regulations and devoted more capital to fiber

out DVDs (or, at least, if first sale were not there as a backstop should negotiations fall through), the original business plan would have been unlikely to get off the ground.

^{36. 47} U.S.C. § 224 (2012).

^{37.} *See* Cable Television Consumer Protection and Competition Act of 1992 § 19, 47 U.S.C. § 548 (2012).

^{38.} See Broadband Personal Communications Service (PCS), FCC,

https://www.fcc.gov/general/broadband-personal-communications-service-pcs (last visited Aug. 9, 2016) [hereinafter *Broadband PCS*].

^{39.} The program access rules made it possible for DBS to compete with cable in the multi-channel video market, but with a lower cost structure, more channels, a better picture quality and an easier (national, rather than local) regulatory structure. *See* Cable Television Consumer Protection and Competition Act of 1992, Pub. L. No. 102-385, 106 Stat. 1460. This caused cable to upgrade its networks and gave it the incentive to enter a market, internet access services, that DBS could not enter.

^{40.} See Berin Szoka et al., Don't Blame Big Cable. It's Local Governments That Choke Broadband Competition, WIRED (July 16, 2013, 9:30 AM),

http://www.wired.com/2013/07/we-need-to-stop-focusing-on-just-cable-companies-and-blame-local-government-for-dismal-broadband-competition/.

deployment, causing cable to accelerate deployment of its next-generation product. $^{\rm 41}$

Scholars also disagree on the categorization of the type of entrant in the market. Baer cites online video distribution as "disruptive innovation."⁴² He explains, "some innovation comes from incumbents smart and nimble enough to take advantage of these new opportunities. But new entrants deserve a lot of credit, too. Companies like Netflix and Amazon offer consumers flexibility and control; established players like CBS and HBO have been forced to respond."⁴³

There is truth behind the value of disruptive, instead of traditional, competition. After some period of time markets tend to stabilize, and it is difficult to affect the incentives of existing players without introducing a new competitor or better and/or cheaper technology substitute.⁴⁴

To bring improvements in price and quality to such mature markets, disruptive competition has proven key.⁴⁵ Indeed, the decisions on wireless to wired terminating access and on enabling inexpensive VOIP is the reason that long-distance charges of pennies per minute is now an anachronism.⁴⁶

However, Wireless, VoIP, Netflix, Amazon, or other disruptors are different from what many call new entrants and are greenfield new entrants.⁴⁷

47. See id.

^{41.} GIG.U, FROM GIGABIT TESTBEDS TO THE "GAME OF GIGS": THE THIRD ANNUAL REPORT OF GIG.U 4 (2014), http://www.gig-u.org/cms/assets/uploads/2012/12/81714-Gig.U-Final-Report-Draft-1.pdf (discussing the early rounds of the game of gigs).

^{42.} Baer, *supra* note 3, at 1.

^{43.} Id.

^{44.} For example, government policy did successfully enable wireless new entrants into wireless through the 1994-95 PCS auction. *See* Peter Cramton et al., *Using Spectrum Auctions to Enhance Competition in Wireless Services*, 54 J.L. & ECON. 167, 167 (2011). In that case, the existing market penetration was low enough and the potential high enough to induce new entrants. *See* MOTOROLA, 1995 SUMMARY ANNUAL REPORT 3,

https://www.motorolasolutions.com/content/dam/msi/docs/en-xw/static_files/history-

motorola-annual-report-archive-1995-9p55mb-28.pdf (last visited Aug. 9, 2016). Despite many efforts, subsequent auctions have not done so, as it is too difficult to dislodge existing efforts. T-Mobile has recently intensified competition, but only after it got a boost from a spectrum and financial payment from AT&T for the rejected merger. *See* Alice Truong, *Blocking AT&T's Merger with T-Mobile Has Been Great for U.S. Consumers, But Bad News for Operators*, QUARTZ (Dec. 15, 2014), http://qz.com/312907/blocking-atts-merger-with-t-mobile-has-been-great-for-us-consumers-but-bad-news-for-operators/; Timothy B. Lee, *AT&T Admits Defeat on T-Mobile Takeover, Will Pay \$4 Billion Breakup Fee*, ARS TECHNICA (Dec. 19, 2011, 4:57 PM), http://arstechnica.com/tech-policy/2011/12/att-admits-defeat-on-t-mobile-takeover-will-pay-4-billion-breakup-fee/. Adjacent market entry, through Wi-Fi, discussed *infra*, is most likely to be the next disruptive competition.

^{45.} The wireline voice market was disrupted by the introduction of wireless competition through PCS spectrum auctions. *See Broadband PCS, supra* note 38.

^{46.} The one exception is prisons, where the FCC recently acted to lower rates. *See* News Release, FCC, FCC Takes Next Big Steps in Reducing Inmate Calling Rates (Oct. 22, 2015), https://www.fcc.gov/document/fcc-takes-next-big-steps-reducing-inmate-calling-rates.

Without commenting on that decision or the unique market structure for prison phone services, it is worth noting that bandwidth abundance in prisons could also do a lot to increase communications, security, education, and job training, while reducing the cost of prison operations and bringing the cost of voice services to where it is in the nonprison market. But that is a subject for another time.

Rather, the entities Baer cites are adjacent market entrants.⁴⁸ They had different assets and motives than existing players. The experience of the last twenty years suggests that the asymmetry of those assets and motives, if unleashed to enter an adjacent market, leads to far greater disruptions in a mature market than those caused by existing competitors or greenfield new entrants.

Similarly, while Google Fiber could be seen as a new entrant, it had both existing network assets to lower its cost structure and motive to improve its search business revenues through better broadband performance.⁴⁹

Gig.U worked with some greenfield new entrants, but those efforts failed as efforts involving greenfield new entrants have a higher likelihood of failure.⁵⁰ Regulators should be cautious about betting on a greenfield new entrant, but they should also prioritize strategies that enable asymmetric, adjacent market entry.

Unbundling can work to reduce prices, but it discourages broad network upgrades. Unbundling can be appropriate when the government finances the facility, as it did in the BTOP program,⁵¹ or when there are economic reasons such that there is no appropriate way to make the economics work for providing an essential facility.⁵² Some argued that this point has been reached in 2009 and bitterly criticized the National Broadband Plan for not recommending unbundling.⁵³ As of today, it is likely that Google

^{48.} See id.; Growth Through Adjacent Markets, supra note 30.

^{49.} In Porter's model, this would be described as competition from both a buyer and supplier as Google is both a supplier to ISPs and a buyer from ISPs. *See* Stacey Higginbotham, *The Economics of Google Fiber and What It Means for U.S. Broadband*, GIGAOM (July 26, 2012, 3:52 PM CDT), https://gigaom.com/2012/07/26/the-economics-of-google-fiber-and-what-it-means-for-u-s-broadband/; Eric Rosenberg, *The Business of Google (GOOG)*, INVESTOPEDIA (Aug. 5, 2016, 4:51 PM EDT),

http://www.investopedia.com/articles/investing/020515/business-google.asp.

^{50.} See BLAIR LEVIN & DENISE LINN, THE NEXT GENERATION NETWORK CONNECTIVITY HANDBOOK 25 (2015) [hereinafter THE NEXT GENERATION NETWORK CONNECTIVITY HANDBOOK], http://www.gig-u.org/cms/assets/uploads/2015/07/Val-NexGen_design_7.9_v2.pdf.

^{51.} Program Information, NAT. TELECOMM. & INFO. ADMIN.,

http://www2.ntia.doc.gov/information (last visited Aug. 9, 2016).

^{52.} This is the heart of the economic inquiry in the FCC's current review of the special access market. *See Special Access Data Collection Overview*, FCC,

https://www.fcc.gov/general/special-access-data-collection-overview-0 (last viewed July 12, 2016). In that inquiry, the FCC has to make an assessment of, among other issues, under what circumstances is it economically feasible for a CLEC to be able to build its own last-mile fiber loops to a location, to what extent do lower wholesale rates provide negative incentives for a CLEC to construct its own fiber loops, and given that the ILEC, as the historical monopolist, likely has a first-mover advantage and thus a larger market share than the CLEC, how that larger market share affects comparative costs between the ILEC and the later entrant . Those issues are the subject of extensive economic analysis in the FCC docket. It is also at the heart of what I think will be an emerging issue for fiber upgrades as to access to poles and multiple dwelling units. Blair Levin, *Cities, Technology, the Next Generation of Urban Development, and the Next Administration, Part 3*, BROOKINGS (July 20, 2016),

https://www.brookings.edu/2016/07/20/cities-technology-the-next-generation-of-urbandevelopment-and-the-next-administration-part-3/.

^{53.} *See* Yochai Benkler, *Ending the Internet's Trench Warfare*, N.Y. TIMES (Mar. 20, 2010), http://www.nytimes.com/2010/03/21/opinion/21Benkler.html.

Fiber and other fiber efforts will prove them wrong, but it is still early on in the process. Recently, there have been press reports that Google has been rethinking its strategy, considering a wireless approach for the last link instead of fiber all the way to the home.⁵⁴ If those efforts end before bandwidth abundance can be reached in a critical mass of the country, then perhaps, the critics were right.⁵⁵

In short, if intensified competition is going to deliver abundant bandwidth, we should look at how government affects that equation today, with particular attention to how it can incent adjacent market entry.⁵⁶

C. Given the Current Market, What Are the Appropriate Government Levers to Intensify Competition at This Part of the Cycle?

It is clear some government actions are not appropriate, even if they would improve bandwidth abundance in the short term. To understand the proposed government levers, one must first understand the environment. In 2009, there appeared to be three broadband markets:

1. A high-speed wired market, generally characterized by a single cable provider. The first government acknowledgement of that was in a slide we presented to the Commission in September 2009,⁵⁷

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^{54.} Jack Nicas, *Google's High-Speed Web Plans Hits Snags*, WALL ST. J. (Aug. 15, 2016, 12:00 AM ET), http://www.wsj.com/articles/googles-high-speed-web-plans-hit-snags-1471193165.

^{55.} A Google Fiber study from Bernstein, an equity research firm, suggested a possible scenario in which Google Fiber would reach 15-20 million homes in six to eight years. *See* Jeff Baumgartner, *Study: Market "Too Dismissive" of Google Fiber*, MULTICHANNEL NEWS (Oct. 07, 2015, 10:45 AM ET), http://www.multichannel.com/news/distribution/study-market-too-dismissive-google-fiber-s-potential/394356. If that were to occur, it would drive a number of developments, including competitive responses and new products that would improve the economics of deployment throughout most of the rest of the country.

^{56.} This is not the occasion for a full discussion of the FCC's decision to pre-empt state laws restricting local broadband efforts except to note that the threat of competitive losses is, as demonstrated by the competitive response to Google and by our experiences with Gig.U, the single biggest driver of incumbents accelerating their deployment of next generation networks. *See* Levin, *supra* note 12; Brian Fung, *Comcast's New Internet Service Is Twice As Fast As Google Fiber*, WASH. POST (Apr. 2, 2015),

https://www.washingtonpost.com/news/the-switch/wp/2015/04/02/comcasts-new-internet-

service-is-twice-as-fast-as-google-fiber/. Whether it is wise for cities to build their own networks is subject to a reasonable debate. *See* Sorawit, *Transcript: Community Broadband Bits Episode 132*, COMMUNITY BROADBAND NETWORKS (Jan. 09, 2015),

http://muninetworks.org/content/transcript-community-broadband-bits-episode-132. On the other hand, there shouldn't really be a debate about whether a city having the ability to build its own fiber network increases the probability that the incumbent will act to make it unnecessary for a city to build its own. That is a factual question for which all the evidence is on the side arguing that just like any negotiation, more leverage increases the odds of a successful outcome. This is why the National Broadband Plan favored preemption of such laws. *See* NATIONAL BROADBAND PLAN, *supra* note 5, at 153 (Recommendation 8.19).

^{57.} It was also Exhibit 4.G of the Plan, where the text noted "in areas that include 75% of the population, consumers will have only one service provider (cable companies with DOCSIS 3.0 enabled infrastructure) that can offer very high peak download speeds." *Id.* at 42.

and was subsequently resurrected several years later by government officials.⁵⁸

- 2. A low-speed wired market, generally characterized by a single telephone company; and
- 3. The mobile market, generally characterized by at least four providers.



Some would argue that these three markets are actually a single market.⁵⁹ After all, AT&T's DSL service provides some competition to Comcast's DOCSIS 3.0 service.⁶⁰ However, government officials have concluded in their speeches that the competition provided is not much, particularly as we move to streaming video, and will be even less with the move to 4K and virtual reality.⁶¹

Others might argue that wireless competes with both high end and low end wired.⁶² Baer directly addressed that in noting, "today[,] wireless is too capacity-constrained and costly to provide a meaningful alternative for consumers."⁶³

http://www.ntia.doc.gov/files/ntia/publications/broadband_opportunity_council_report_final.pdf.

63. *Id.*

^{58.} Chairman Wheeler presented a similar slide in his competition speech, and as Mr. Baer noted, "One characteristic stands out most of all – today most consumers do not enjoy competition for high-speed Internet access. As Chairman Wheeler put it, "as bandwidth increases, competitive choices decrease." Wheeler, *supra* note 1, at 2; Baer, *supra* note 3, at 1. The Broadband Opportunities Council similarly wrote that "[t]hree out of four Americans do not have a choice of providers for broadband at 25 Mbps, the speed increasingly recognized as a baseline for broadband access." BROADBAND OPPORTUNITY COUNCIL, BROADBAND OPPORTUNITY COUNCIL REPORT AND RECOMMENDATIONS 6 (Aug. 20, 2015),

^{59.} See Cassidy, supra note 14.

^{60.} See Check DSL Availability, AT&T, https://www.att.com/shop/internet/internetservice.html (last visited Aug. 10, 2016); Upgrade Your XFINITY Internet Speed with DOCSIS 3.0, Comcast, https://customer.xfinity.com/help-and-support/internet/docsis3/ (last visited Aug. 10, 2016).

^{61.} See Wheeler, supra note 1, at 3; See Baer, supra note 3, at 1.

^{62.} See generally Baer, supra note 3, at 1.

In the summer of 2009, the National Broadband Plan team looked at the data and realized that for the first time since the beginning of the commercial Internet, there was no national carrier with plans to deploy a better network than the current best available network.⁶⁴ The data suggested, and subsequent experience confirmed, that current market forces would not drive deployment of world-leading wireline networks in the United States.⁶⁵



As noted above, for 75% of the country, cable had the faster network and the cheapest upgrade path.⁶⁶ The future looked like a cable versus copper competition that would be premised on allocating scarce bandwidth instead of building on technological advances to deploy abundant bandwidth.⁶⁷

In thinking about moving from scarcity to abundance, the prisoners' dilemma provides a framework to understand the challenge. In that classic bit of game theory, the prisoners are both better off if they both do not talk but that requires that they trust each other not to talk.⁶⁸ The officer wants one or both to talk, and to do so, he must cause a defection.

If we substitute the idea of talking with investing, economic logic would suggest that if cable and telco trusted each other not to invest in next generation networks, they would both be better off simply harvesting from past investments. But if society wants to remove bandwidth constraints on innovation, economic growth, and social progress, society would have to cause a defection.

^{64.} See NATIONAL BROADBAND PLAN, supra note 5, at 21.

^{65.} See id.; Jon Brodkin, Why Comcast and Other Cable ISPs Aren't Selling You Gigabit Internet, ARS TECHNICA (Dec. 1, 2013, 8:00 PM), http://arstechnica.com/information-technology/2013/12/why-comcast-and-other-cable-isps-arent-selling-you-gigabit-internet/.

^{66.} See NATIONAL BROADBAND PLAN, supra note 5, at 42.

^{67.} See Ed Lieber, Fiber, Copper, or Wireless: Which Connection Is Best for Your Company?, SMALL BUS. TRENDS (Aug. 4, 2015), http://smallbiztrends.com/2015/08/fiber-optic-copper-wireless-internet-transmission-methods.html

^{68.} See Avinash Dixit & Barry Nalebuff, The Concise Encyclopedia of Economics: Prisoners' Dilemma, LIBR. ECON. & LIBERTY,

http://www.econlib.org/library/Enc/PrisonersDilemma.html (last visited July 12, 2016).
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Thus, we saw the competition question as how to incent players in the three adjacent markets to defect, by investing in ways that threaten the other adjacent markets.

1. Lever One: Spectrum

Our first thought was consistent with Baer's observation: remove capacity constraints by providing the wireless sector more spectrum.⁶⁹ Not only is that a benefit in and of itself, but also it would negate the telcos' harvest strategy. It would change the capital allocation decisions for both the wireless and telco sectors, improving the economics of the upgrade for wireless, and by increasing competition, it would increase the motive for telcos to upgrade.



The Plan had numerous recommendations for improving the spectrum position of mobile providers. While there have been some problems, the government made significant progress replenishing the empty spectrum cupboard of 2009 and creating new supplies.⁷⁰

But there are three problems with increasing available spectrum as the sole strategy. First, it takes a very long time to identify spectrum bands and make them available for use.⁷¹ Second, the two largest wireless providers also

^{69.} See Baer, supra note 3, at 1.

^{70.} See Blair Levin, Net Neutrality at 10+; National Broadband Plan at 5; Civic Internet of Things at Birth: Lessons in Government Action in a Changing Landscape, 23 COMMLAW CONSPECTUS 289, 294-96 (2015).

^{71.} The generation of wireless capable of competing with high-end wireline speeds is not expected to be available to consumers until sometime early in the next decade at best. Stephen Shankland, *Think 5G Wireless Is Speeding to Your Phone? Hold Your Horses*, CNET

have significant wireline business, changing the incentives for what it would be if they were separate companies.⁷² Third, the next generation of mobility, sometimes referred to as 5G, will rely on small cells, an architecture that will require greater fiber connectivity.⁷³

These problems do not mean that increasing spectrum is a bad solution. Rather, only that realistically, the timing and impact of such an action may not be enough.

2. Lever Two: Lower Deployment Costs

The second lever would be to improve the economics of a telco upgrade. Although national policy proposals were made,⁷⁴ cities have greater leverage to improve the equation than the federal government.⁷⁵ This has become clear through the Google Fiber effort wherein Google turned out to be the officer that caused the greatest level of defection.⁷⁶

The Google project, which came out of discussions with the Plan,⁷⁷ has been the principal driver of the "game of gigs."⁷⁸ Everywhere Google Fiber announces, the impacted telco has announced a matching upgrade.⁷⁹ Further, everywhere Google Fiber announces, the prices of other providers go down.⁸⁰

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⁽Feb. 27, 2016, 9:25 AM PST), http://www.cnet.com/news/5g-wireless-wifi-mobile-network-fast-internet-high-speed-broadband/.

^{72.} See Sean Buckley, AT&T, Verizon, Other Top Telcos Lose 185K Broadband Subs in 2015 as Cable Surges Ahead, FIERCETELECOM (Mar. 13, 2016, 9:46 AM), http://www.fiercetelecom.com/telecom/at-t-verizon-other-top-telcos-lose-185k-broadband-

subs-2015-as-cable-surges-ahead.

^{73.} See Small Cells: The Only Way to 5G, TELECOMS.COM (Nov. 10, 2014, 3:55 PM), http://telecoms.com/opinion/small-cells-the-only-way-to-5g/. Most of the distance a "mobile communication" travels is over a wired network. This will be even more true in the future.

^{74.} See NATIONAL BROADBAND PLAN, supra note 5, at 110-13.

^{75.} See id. at 113.

^{76.} From GIG.U, *supra* note 41, at 4 (discussing the early rounds of the game of gigs).

^{77.} See Marguerite Reardon, *Google Exec Sees Google Fiber as a "Moneymaker,"* CNET (May 30, 2013, 11:39 AM PDT), http://www.cnet.com/news/google-exec-sees-google-fiber-as-a-moneymaker/.

^{78.} See GIG.U, supra note 41, at 4 (discussing the early rounds of the game of gigs).

^{79.} See Brian Fung, Google's Playing a Multi-Billion Dollar Game of Chicken with Traditional ISPs, WASH. POST (Oct. 28, 2014), https://www.washingtonpost.com/news/the-switch/wp/2014/10/28/google-fibers-playing-a-multibillion-dollar-game-of-chicken-with-traditional-isps/ (comparing this competition to a game of chicken between Google and incumbent ISPs).

^{80.} See, e.g., Jamie McGee, AT&T Drops Fiber Prices to Google Fiber Levels, TENNESSEAN (Sept. 29, 2015, 12:43 PM CDT),

http://www.tennessean.com/story/money/2015/09/29/t-drops-fiber-prices-google-fiberlevels/73023434/. But see Chris Morran, AT&T Touts "Lower Prices" for Gigabit Internet; Still Charges \$40 More if Google Fiber Isn't Around, CONSUMERIST (Sept. 30, 2015), http://consumerist.com/2015/09/30/att-touts-lower-prices-for-gigabit-internet-still-charges-40-more-if-google-fiber-isnt-around/ (prices stay higher in non-Google areas).



Google Fiber is highly unlikely to cover the entire country,⁸¹ but the project has inspired other activities such as the Gig.U project.⁸² Over twenty five of the Gig.U communities have accelerated the deployment of next-generation networks.⁸³ Further, even some rural communities, which have more difficult economics, have found ways to use smart dig-once and dark fiber policies to stimulate public private partnerships that bring new choices for their residents.⁸⁴

Some are now Google Fiber Gig.U communities, but most have brought about their upgrade through other means.⁸⁵ The lessons are the same as in Google communities in terms of generating a positive competitive response. Indeed, there are a variety of adjacent market entrants beyond Google, including electric utilities, municipalities, small ISPs, and nonprofits, all of which have had the same positive affect.⁸⁶

^{81.} See Baumgartner, supra note 55 (estimating a maximum coverage of 20 million homes in six to eight years).

^{82.} GIG.U, supra note 41, at 16.

^{83.} THE NEXT GENERATION NETWORK CONNECTIVITY HANDBOOK, supra note 50, at 21.

^{84.} See, e.g., Heather Coburn, Westminster Demonstrates Speed of Fiber Network, CARROLL COUNTY TIMES (June 26, 2015, 10:52 PM),

http://www.carrollcountytimes.com/news/local/ph-cc-fiber-lighting-ceremony-20150626story.html; Kathryn Trogdon, *Holly Springs to Get Ultra High-Speed Internet Through Ting Internet*, NEWS & OBSERVER (Oct. 22, 2015, 4:00 AM),

http://www.newsobserver.com/news/local/community/southwest-wake-news/article40803345.html.

^{85.} THE NEXT GENERATION NETWORK CONNECTIVITY HANDBOOK, *supra* note 50, at 8. 86. *Id.* at 13.

The lessons are also the same as to how cities have changed the capital allocation equation through three key strategies: asset utilization and improvement; ⁸⁷ regulatory flexibility to accommodate new business models;⁸⁸ and demand aggregation.⁸⁹

However, this does not mean the federal government has no role. Many of Google and AT&T's proposals to the Broadband Opportunity Council mirrored Plan proposals that have yet to be implemented.⁹⁰ Further, certain legislative efforts, such as the Dig Once bill introduced by Representatives Greg Walden and Anna Eshoo,⁹¹ are consistent with, and improve on, the recommendations in the Plan.⁹² A 2015 congressional hearing on broadband deployment, widely praised on all sides, included many ideas from the Plan.⁹³

90. See Comments of Google Inc., NTIA (June 10, 2015, 10:35 AM),

- 91. See H.R. 3805, 114th Cong. (2015).
- 92. See NATIONAL BROADBAND PLAN, supra note 5, at 114-15.

93. The success of the hearing raises the question of why these bipartisan ideas did not get aired in Congress immediately after the release of the Plan. Indeed, Congresswoman Anna Eshoo correctly commented, "It is so common sense that I wonder why we didn't come up with this a decade ago." *See* Green, *supra* note 88. There were a variety of factors but one of them was that the broadband political capital at that time focused on how the FCC should respond to its loss in the Comcast net neutrality case. *See generally* Comcast Corp. v. FCC, 600 F.3d 642 (D.C. Cir. 2010). Another was a focus on specific issues of the moment, such as a West Virginia mine disaster. *See* Cecilia Kang, *Rockefeller Vows Congressional Support for FCC on Broadband*, WASH. POST: POST TECH (Apr. 14, 2010, 3:00 PM ET),

http://voices.washingtonpost.com/posttech/2010/04/for_senator_jay_rockefeller_d-.html.

^{87.} The key inquiry is what assets does the city have that can be provided at no or little incremental cost that improve the economics of deployment and operations. *Id.* at 36. This can include: *physical assets*, like rights-of-ways (ROWs), utility poles, conduit, buildings, etc.; *information assets*, like information regarding conduit, ducts, and other ROWs; *and processes* to improve current assets, such as ensuring that make-ready work is done expeditiously, coordinating with new providers to save costs or allowing them to perform work themselves through approved contractors. *Id.*

^{88.} The key inquiry here is what rules does the city have that may have made sense in a different time and with a different market structure that in today's market creates a barrier to an upgrade or new deployment. *Id*. For example, all the projects with national ISPs, including Google Fiber, have allowed neighborhood-by-neighborhood builds, which significantly reduces capital expenditures and risk through a pre-commitment strategy. *See* Alisha Green, *Lawmakers Push "Dig-Once" and Other Bipartisan Policies to Expand High-Speed Internet*, ROLL CALL, (Oct. 30, 2015, 2:01 PM),

http://www.rollcall.com/news/lawmakers_push_dig_once_and_other_bipartisan_policies_to_expand_high_speed-244530-1.html.

^{89.} The key inquiry here is how to aggregate demand to demonstrate to existing players the value of an upgrade and to potential new entrants the opportunity in the community. Levin, *supra* note 52, at 36. This can be done on both the institutional and residential level. *Id.*

https://www.ntia.doc.gov/files/ntia/google_inc_boc.pdf (Google's comments regarding the Broadband Opportunity Council). For example, among other proposals, Google proposed changes to pole attachment rules similar to those proposed in Recommendations 6.2 and 6.3 of the Plan, changes to enable a more competitive marketplace for navigational devices similar to recommendation 4.12 of the Plan, and accountability measures similar to those proposed in Chapter 17 of the Plan. *Id.* Similarly, AT&T proposed moving forward with the IP Transition, as recommended in Section 4.5 of the Plan, improve federal coordination to facilitate more efficient spectrum use, similar to recommendation 5.15 of the Plan, and utilizing master contracts to expedite the placement of wireless towers on federal property and buildings, similar to Recommendation 6.10 of the Plan. *See Comments of AT&T Services, Inc.*, NTIA (June 10, 2015, 3:11 PM), https://www.ntia.doc.gov/files/ntia/att_services_inc_boc.pdf.

There were also new proposals at the hearing on topics such as pole attachments. The Plan made several proposals on pole attachments,⁹⁴ but the issue of pole attachments is even bigger than at first glance. Indeed, if there were one thing that would accelerate competition more than anything else, it would be cities updating their as-builts.⁹⁵

From a federal perspective, the most helpful change would be a rule that amends the pole attachment rules to reduce delays associated with pole attachments and conduit occupancy.⁹⁶ In the category of "good problems to have but must still be solved," cities have experienced delays due to multiple parties upgrading at the same time.⁹⁷ The more successful federal, state, and local governments are in creating the conditions for investment in new networks, the more there will be multiple competitive network builds.⁹⁸ Given that this is already occurring in some markets, attention should be focused on the reform of make-ready policies.

Another area of interest is access to video programming. Google Fiber wanted to offer a pure broadband service but found the economics did not make sense without a video offering.⁹⁹ At the same time, the company has found the difficulties in obtaining programming have limited the pace and expanse of its Fiber effort.¹⁰⁰ Google has proposed a number of adjustments to the current rules to enable smaller broadband players to obtain the

^{94.} See NATIONAL BROADBAND PLAN, supra note 5, at 110-13.

^{95.} See Karl Bode, Google Quietly Argues Broadband Competition, Google Fiber Build Out Could Be Aided by Title II, TECHDIRT: NETNEUTRALITY (Jan. 5, 2015, 11:21 AM), https://www.techdirt.com/blog/netneutrality/articles/20150102/06201029579/google-quietlyargues-broadband-competition-google-fiber-build-out-could-be-aided-title-ii.shtml. Not only would this make those cities more attractive for new fiber investment, it would minimize the risk to their infrastructure from fiber construction, and it would also improve their own plant maintenance capabilities.

^{96.} Among other things, such a rule should introduce shorter timeframes and establish higher pole-count thresholds before additional time allowances are triggered, accelerating deployments. Infrastructure owners should be required to negotiate access agreements in good faith with a broadband provider as soon as the provider has begun the process of obtaining necessary regulatory approvals. The rule should allow use of utility-approved contractors to perform all pole attachment and conduit make-ready work. Further, broadband providers should be permitted to use independent contractors if, in their estimation, utility-approved contractors alone cannot meet the deployment timetables.

^{97.} See Gary Dinges & Claudia Grisales, Google Fiber's Austin Rollout Trudges Onward, AUSTIN AM.-STATESMAN (Feb. 6, 2016, 1:52 PM),

http://www.mystatesman.com/news/business/google-fibers-austin-rollout-trudges-onward/nqK9L/.

^{98.} Under the current regime, these projects are handled by a queuing system that blocks simultaneous construction. See Jay F. Ireland et al., FCC Amends Pole Attachment Rules to Promote Broadband Deployment, DAVIS WRIGHT TREMAINE LLP (Apr. 08, 2011),

http://www.dwt.com/advisories/FCC_Amends_Pole_Attachment_Rules_to_Promote_Broadb and_Deployment_04_08_2011/.

^{99.} See Reardon, supra note 77.

^{100.} Id.

programming they need to invest and compete.¹⁰¹ Another cost to deployment is related to access to multiple dwelling units and inside wiring rules.¹⁰²

These policy adjustments to our current pole attachment, programming and other regimes are, to most people, dull. They are not nearly as much entertaining as blaming incumbent providers for limited bandwidth.¹⁰³ But based on the experience of Google Fiber and Gig.U, in order to seriously intensify competition, action must be taken to lower cap ex by, for example, improving the economics of make ready work for poles.

These first two levers address the issue noted by the Broadband Plan's Slide $4-G^{104}$ and provide telcos two incentives to upgrade: better economics for deployment of upgraded networks and the threat of new competition. Both of these levers help put greater competitive pressure on cable to upgrade.

3. Lever Three: Wi-Fi Based Mobile Entry

My understanding of a third lever to intensify competition stems from discussions with my friend David Morken, the CEO of Bandwidth.¹⁰⁵ In the summer of 2011, he suggested that his company could use its existing assets to launch a Wi-Fi-based mobile service.¹⁰⁶ At first, I thought his suggestion was outrageous, but I soon became a convert. A few months later, the company launched Republic Wireless,¹⁰⁷ "one of the first hybrid Wi-Fi and cellular mobile services" in the United States and which is already profitable.¹⁰⁸

One reason why I thought David was wrong was because everything Bandwidth could do, cable could also do with superior economics for all of the inputs. David argued that while cable would eventually enter the market, they would take a long time to do so, and if they did, they would price their

^{101.} See Comments of Google Inc., supra note 90, at 8. In the long run, I am certain such measures will not be necessary, but as economist John Maynard Keynes said, "In the long run we are all dead." JOHN MAYNARD KEYNES, A TRACT ON MONETARY REFORM 80 (1923) (emphasis omitted).

^{102.} See Comments of Google Inc., supra note 90, at 9-10; see also NATIONAL BROADBAND PLAN, supra note 5, at 47.

^{103.} As I hope is clear, I do not regard our need for more abundant bandwidth as representing any kind of a moral failure by incumbent providers. Rather, I see it as reflecting economic incentives. I am somewhat perplexed by arguments that go after the character of companies as if they should read David Brooks's book "The Road to Character" and reform themselves. Then again, I could be wrong, as the Supreme Court appears to think companies are people.

^{104.} See NATIONAL BROADBAND PLAN, supra note 5, at 44.

^{105.} See David Morken, BANDWIDTH, http://www.bandwidth.com/people/team-members/david-morken (last visited July 19, 2016).

^{106.} Id.

^{107.} Id.

^{108.} See Scott Moritz, Republic Wireless Adds "Magenta" Network Partner, Samsung Phones, BLOOMBERG (May 11, 2016, 9:00 AM EDT),

http://www.bloomberg.com/news/articles/2016-05-11/republic-wireless-adds-magenta-network-partner-samsung-phones.

product differently.¹⁰⁹ There would always be a niche that would be profitable for Bandwidth.

As to his first assertion, time will tell but so far, so good for Bandwidth.¹¹⁰ As to his second, cable companies like Comcast and other companies like Google are in the midst of testing entry into the wireless market.¹¹¹ However, David was right for another reason, which goes back to the prisoners' dilemma, with a bit of the classic innovator's dilemma thrown in.¹¹²

It is not plausible that a company with a couple hundred employees in North Carolina can develop and deliver a product that a company with tens of thousands has not yet done until one considers motive. Why would Comcast attack a market that might cause a counterattack and potentially reduce prices throughout all broadband markets?¹¹³ In this light, the logical path is not to attack but to focus on harvesting until one is forced to attack.

That brings us to the third lever. If there are sufficient forces threatening cable's existing revenue streams of multichannel video and broadband, it will attack new markets, as it did when DBS threatened its revenue.¹¹⁴ Alternatively, if enough players like Republic Wireless enter the space and the wireless providers seek new revenue streams by aggressively pursuing cord cutting in the broadband market, such moves would increase cable's motive and ability to enter the mobile market. With Verizon and AT&T ramping up the competition in the video market and over-the-top (OTT)¹¹⁵ threatening as well, Comcast and Charter are now both more aggressively

113. See Brodkin, supra note 65.

114. Austan Goolsbee & Amil Petrin, *The Consumer Gains from Direct Broadcast Satellites and the Competition with Cable TV*, 72 ECONOMETRICA 351, 351 (2004).

^{109.} See Republic Wireless Tops National Carriers in Overall Customer Satisfaction, REPUBLIC WIRELESS (Mar. 19, 2014), https://republicwireless.com/press/republic-wirelesstops-national-carriers-in-overall-customer-satisfaction/.

^{110.} See Walt Mossberg, Wi-Fi Calling from Republic Wireless Takes a Big Leap, VERGE (July 13, 2016, 9:00 AM), http://www.theverge.com/2016/7/13/12166560/walt-mossberg-republic-wireless-review-wifi-calling.

^{111.} *Id*.

^{112.} The innovator's dilemma is from the eponymous book by Clayton M. Christensen. *See* CLAYTON M. CHRISTENSEN, THE INNOVATOR'S DILEMMA (2011). The theory suggests that "incumbents often are the ones to spot and develop new technologies while easily reorganizing themselves to do so," but "they fail to value new innovations properly because incumbents attempt to apply them to their existing customers and product architectures – or value networks." Xenios Thrasyvoulou, *Understanding the Innovator's Dilemma*, WIRED,

http://www.wired.com/insights/2014/12/understanding-the-innovators-dilemma/ (last visited July 29, 2016). This makes ROI seem low on new technologies, and it is new entrants, who have little to lose, that enter the market. *Id*. As the new entrants discover the "right application use and market," they rapidly grow and start to disrupt and compete with the established market players. *Id*.

^{115.} Over the top (OTT) refers to "film and television content provided via a high-speed Internet connection rather than a cable or satellite provider." *Over The Top*, INVESTOPEDIA, http://www.investopedia.com/terms/o/over-top.asp (last visited July 23, 2016). Examples include Netflix and Amazon. *Id.*

pursuing their mobile strategy..¹¹⁶ That will intensify competition in all three broadband markets in turn.



Guaranteeing that this lever can continually drive competition requires two elements. First, the government should ensure that unlicensed spectrum bands will continue to have sufficient spectrum for the public to use and will not suffer degradation.¹¹⁷ Second, the cellular market structure should be

^{116.} See Gerry Smith, Charter Follows Comcast with Plan to Offer Mobile Phone Service, BLOOMBERG TECH. (Sept. 21, 2016, 6:45 PM EDT),

http://www.bloomberg.com/news/articles/2016-09-21/charter-follows-comcast-with-plan-tooffer-mobile-phone-service. Consistent with theory that adjacent market entry accelerates the competitive reaction at the same time that cable is accelerating its entry into mobile, wireline companies such as AT&T and Century Link are accelerating their entry into over-the-top video distribution. *See* Roger Cheng, *AT&T to Launch DirecTV Now Streaming Video Service Before 2017*, CNET (Sep. 21, 2016, 5:54 AM PDT), https://www.cnet.com/news/atts-directv-now-streaming-video-service-will-launch-in-fourth-quarter/; Sean Buckley, *Century Link to Launch 17-Channel OTT Video Service Early Next Year*, FIERCE TELECOM (Sep. 22, 2016, 1:39 PM), http://www.fiercetelecom.com/telecom/centurylink-to-launch-17channel-ott-video-service-early-next-year.

^{117.} Unlicensed spectrum refers to "frequency bands that anyone is free to use to operate wireless devices." Chris Szymanski, *Why Unlicensed Spectrum Allocation Is Critical to the Next Wave of Innovation*, BROADCOM (July 15, 2014),

http://www.broadcom.com/blog/wireless-technology/why-unlicensed-spectrum-allocation-iscritical-to-the-next-wave-of-innovation/. It generates \$62 billion a year for the U.S. economy, has been referred to as "the oxygen of innovation," and is critical to making Internet access more available to consumers. *Id.* The FCC is in agreement with this goal, and its decisions have made more unlicensed spectrum available. *Id.* This raises the issue of whether LTE-U threatens Wi-Fi. *See* Harold Feld, *My Insanely Long Field Guide to the LTE-U Dust Up, Part I: Spectrum Game of Thrones*, WETMACHINE (Oct. 7, 2015),

http://www.wetmachine.com/tales-of-the-sausage-factory/my-insanely-long-field-guide-tothe-lte-u-dust-up-part-i-spectrum-game-of-thrones/; Harold Feld, *My Insanely Long Field Guide to the LTEU Dust Up, Part II: A Storm of Spectrum Swords*, WETMACHINE (Oct. 20, 2015), http://www.wetmachine.com/tales-of-the-sausage-factory/my-insanely-long-fieldguide-to-the-lteu-dust-up-part-ii-a-storm-of-spectrum-swords/.

sufficiently robust to have market forces produce a robust wholes ale market. $^{118}\,$

In short, government policy ought to ensure that all three submarkets have the means, motive, and opportunity to enter the adjacent market. This will create a competitive virtuous cycle that drives toward bandwidth abundance.





If we agree that is the goal is to remove bandwidth constraints on innovation, growth, and social progress, then policy should create incentives for competitive upgrades. For policy to play that role, it must drive changes in capital allocations and the economics of deployment. To do that, policy should look at where it can lower the input costs for all potential competitors, particularly for adjacent market entrants. In such a market, all the major enterprises will have incentives to upgrade their networks for defensive reasons and the opportunity to play offensive in attacking the offerings and market share of others in currently well entrenched positions. While policy should not—and cannot—pick the winner in the market, it can—and

^{118.} In this regard, the speeches by Wheeler, Sallet, and Baer were all correct in taking a victory lap for several government efforts to ensure that the mobile market structure continued to have four national players. Wheeler, *supra* note 1; Sallet, *supra* note 2; Baer, *supra* note 3. This was a mixed blessing for Republic Wireless, as the rejection of the AT&T/T-Mobile deal led to T-Mobile becoming more aggressive on pricing and thereby reducing the attractiveness of Republic's pricing plan. Nonetheless, without a wholesale option, Republic Wireless and its Mobile Virtual Network Operator (MVNO) competitors would not exist.

should—ensure that all the existing networks have some incentives, mostly from competitive threats, to accelerate their upgrade to networks offering abundant bandwidth.



Last year, the writer Jeff Greenfield sought to explain the explosion of great television this way: "When technology replaced scarcity with abundance, every core assumption about TV began to crumble. Everything about the medium—how we receive it, how we consume it, how we pay for it, how we interact with it— has been altered, and TV is infinitely better for it."¹¹⁹

The purpose of broadband competition is to cause that same explosion of bandwidth. We are much better off than we were five years ago, thanks in no small part to the actions described in the speeches of the three government officials and their willingness to act in accordance with their analysis. If we continue to have such leadership, if we can avoid empty words and stay focused on the key leverage points, we can create bandwidth abundance. Five years from now, our broadband offerings, our country, and the world will be better for it.

^{119.} Jeff Greenfield, *From Wasteland to Wonderland: TV's Altered Landscape*, N.Y. TIMES (Oct. 3, 2015), http://www.nytimes.com/2015/10/05/business/media/from-wasteland-to-wonderland-tvs-altered-landscape.html. Graphic originally from GIG.U, *supra* note 41, at 2.

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U.S. TELECOM ASSOCIATION V. FCC

825 F.3d 674 (D.C. Cir. 2016)

by Austin Mooney*

In the FCC's ongoing attempt to establish open internet rules, an old adage rings true: "the third time's the charm." In *U.S. Telecom Ass'n v. FCC*,¹ the United States Court of Appeals for the District of Columbia Circuit upheld the FCC's most recent effort at enforcing net neutrality.² The D.C. Circuit ruled on the FCC's authority to impose net neutral rules twice before;³ this case marks the first time the Court upheld the FCC's plans.⁴

I. BACKGROUND

Net neutrality, a term coined in 2002,⁵ has been on the FCC's radar since at least 2005, when it announced its intent to "preserve and promote the open and interconnected nature of the public Internet."⁶ Since the passage of the Telecommunications Act of 1996,⁷ the FCC had struggled to place broadband internet access services within the Communications Act's statutory framework. If a service is categorized as a "telecommunications service,"⁸ the provisions of Title II of the Telecommunications Act apply, allowing the FCC to, for example, enforce the nondiscrimination provisions of Section 202 that it sees as the heart of a net neutrality policy.⁹ Until the implementation of the 2015 Open Internet Order¹⁰ at issue in this case, the

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^{1.} U.S. Telecom Ass'n v. FCC, 825 F.3d 674 (D.C. Cir. 2016).

^{2.} *Id.* at 689 ("[N]et neutrality [is] the principle that broadband providers must treat all [I]nternet traffic the same regardless of source.").

^{3.} See Comcast Corp. v. FCC, 600 F.3d 642 (D.C. Cir. 2010); Verizon v. FCC, 740 F.3d 623 (D.C. Cir. 2014).

^{4.} Compare U.S. Telecom, 825 F.3d 674 with Comcast Corp., 600 F.3d 642 and Verizon, 740 F.3d 623.

^{5.} See TIM WU, A PROPOSAL FOR NETWORK NEUTRALITY (2002),

http://www.timwu.org/OriginalNNProposal.pdf.

^{6.} Appropriate Framework for Broadband Access to the Internet Over Wireline Facils., *Policy Statement*, 20 FCC Rcd 14986, para. 4 (2005).

^{7.} Telecommunications Act of 1996, Pub. L. 104-104, 110 Stat. 56.

^{8.} See 47 U.S.C. § 153(53) (2012).

^{9. 47} U.S.C. § 202 (2012) ("It shall be unlawful for any common carrier to make any unjust or unreasonable discrimination in charges, practices, classifications, regulations, facilities, or services for or in connection with like communication service, directly or indirectly, by any means or device, or to make or give any undue or unreasonable preference or advantage to any particular person, class of persons, or locality, or to subject any particular person, class of persons, or locality to any undue or unreasonable prejudice or disadvantage.").

^{10.} Protecting & Promoting the Open Internet, *Report and Order on Remand*, *Declaratory Ruling, and Order*, 30 FCC Rcd 5601 (2015) [hereinafter 2015 Open Internet Order].

FCC had largely classified these services instead as "information services,"¹¹ to which the provisions of Title II do not apply.¹²

The FCC made good on its goal of creating an open Internet framework when it took action in 2008 against Comcast for allegedly throttling broadband access speeds to certain Internet-enabled applications.¹³ Invoking its "ancillary jurisdiction"¹⁴ under 47 U.S.C § 154(i), ¹⁵ the FCC ordered Comcast to, among other things, "submit a compliance plan . . . that describes how it intends to transition from discriminatory to nondiscriminatory network management practices"¹⁶ The D.C. Circuit vacated this decision, finding that the FCC's ancillary jurisdiction justification was insufficient authority for such an order.¹⁷ Crucially, that court found that the FCC "failed to tie its assertion of ancillary authority over Comcast's Internet service to any 'statutorily mandated responsibility."¹⁸

In 2010, the FCC renewed its efforts to preserve net neutrality, imposing a regulatory framework that, in part, prohibited blocking and discriminatory pricing by Internet service providers. ¹⁹ Maintaining its previous classification of broadband as an "information service," the FCC "relied primarily on [S]ection 706 of the Telecommunications Act," ²⁰ a provision that requires the FCC to "encourage the deployment" of telecommunications capability "on a reasonable and timely basis."²¹ This Order was largely vacated by the D.C. Circuit, which held that both the anti-blocking and anti-discriminatory requirements of the FCC's framework provisions strayed too close to the common carrier provisions in the Communications Act to be permissible under the FCC's classification of ISPs as "information services."²²

Subsequent to these repeated failed attempts to enforce net neutrality principles against ISPs, in March 2015, the FCC promulgated its 2015 Open Internet Order,²³ which enforces these principles by reclassifying broadband as a "telecommunications service," which would trigger the common carrier

- 17. See Comcast Corp. v. FCC, 600 F.3d 642, 658 (D.C. Cir. 2010).
- 18. Id. at 661 (quoting Am. Library Ass'n v. FCC, 406 F.3d 689 (D.C. Cir. 2005)).

^{11.} See 47 U.S.C. § 153(24).

^{12.} See U.S. Telecom Ass'n v. FCC, 825 F.3d 674, 691-92 (D.C. Cir. 2016).

^{13.} *See* Formal Complaint of Free Press and Pub. Knowledge Against Comcast Corp. for Secretly Degrading Peer-to-Peer Applications, *Memorandum Opinion and Order*, 23 FCC Rcd 13028 (2008) [hereinafter Comcast Order].

^{14.} See id. (statement of Comm'r Adelstein); see also Verizon v. FCC, 740 F.3d 623, 632 (2014).

^{15.} Such authority would grant the FCC authority to "issue such orders, not inconsistent with this chapter, as may be necessary in the execution of its functions." 47 U.S.C. 154(i) (2012).

^{16.} Comcast Order, *supra* note 13, at para. 54.

^{19.} See Preserving the Open Internet Broadband Indus. Practices, *Report and Order*, 25 FCC Rcd 17905 (2010); see also Verizon, 740 F.3d at 633.

^{20.} U.S. Telecom Ass'n v. FCC, 825 F.3d 674, 694 (D.C. Cir. 2016); Preserving the Open Internet Broadband Indus. Practices, *supra* note 19, at para 117.

^{21.} See U.S. Telecom, 825 F.3d at 694 (citing 47 U.S.C. § 1302(a) (2012)).

^{22.} See Verizon v. FCC, 740 F.3d 623, 650 (D.C. Cir. 2014).

^{23. 2015} Open Internet Order, *supra* note 10.

provisions of Title II of the Communications Act.²⁴ First, the Order imposes three "bright line" rules that prohibit blocking, throttling, and paid prioritization.²⁵ The Order also established a "General Conduct Rule," which prohibits certain "unreasonable interference" with Internet service, and an enhanced transparency rule.²⁶

II. ANALYSIS

The petitioners in this case consisted mainly of broadband providers and their related trade associations. The petitioners' main substantive arguments challenged the FCC's statutory authority to classify broadband as a telecommunications service and to reclassify mobile broadband in order to regulate it as a common carrier.²⁷ Petitioners also argued that the FCC did not adequately explain its reclassification decision.²⁸ Finally, some of the petitioners challenged the Order on First Amendment grounds.²⁹ In the end, the Court denied the petitions and upheld the Order.³⁰

First and foremost, petitioners objected to the FCC's authority to reclassify broadband as a "telecommunications service." The Court cited the Supreme Court's 2005 decision in *National Cable & Telecommunications Ass'n v. Brand X Internet Services*, ³¹ which held that the term "telecommunications service," the language at issue in this case, was ambiguous with respect to broadband services and thus triggered judicial deference to the FCC.³² Here, the Court found that the FCC's acted within the limits of its delegated authority,³³ that the FCC had "good reason[s]" to change its previous broadband classification, and, based on deferential review, found the FCC's reclassification reasonable.³⁴

After finding in the FCC's favor in its reclassification of mobile broadband service,³⁵ the Court majority then addressed objections to the specific rules in the 2015 Open Internet Order.³⁶ Specifically, petitioners challenged the FCC's authority to issue the paid prioritization rule under

35. See generally id. at 711-25.

^{24. 2015} Open Internet Order, supra note 10, at para. 5.

^{25.} Id. at para. 111.

^{26.} See id. at para. 138; U.S. Telecom, 825 F.3d at 696.

^{27.} See U.S. Telecom, 825 F.3d at 689, 695. One of the petitioners also challenged the Commission's decision to forbear from applying parts of the Communications Act. The Court denied both the substance and procedural challenges to the Commission's forbearances. See *id.* at 727.

^{28.} See id. at 735.

^{29.} See id. at 739.

^{30.} See id. at 744.

^{31.} See id. at 702-04 (citing Nat'l Cable & Telecomms. Ass'n v. Brand X Internet Servs., 545 U.S. 967 (2005)).

^{32.} *See id.* at 702-05. In his partial dissent, Judge Stephen F. Williams focuses primarily on this part of the opinion, arguing that the FCC failed to properly weigh the facts in its justification for the reclassification. *See id.* at 744-55.

^{33.} See id. at 733.

^{34.} Id. at 707.

^{36.} See id. at 733.

Section 706 of the Telecommunications Act.³⁷ Another challenge dealt with the language of the General Conduct Rule, which some petitioners claimed violated constitutional Due Process by being impermissibly vague.³⁸ Regarding the bright-line rule against paid prioritization, the majority found that *Verizon* had made clear the FCC's authority to promulgate rules under Section 706.³⁹ With respect to due process concerns, the Court found that the FCC's rules provide sufficient warning of what it perceives as prohibited conduct.⁴⁰

Finally, the Court rejected the argument that the rules impinged on the petitioners' First Amendment rights "by forcing broadband providers to transmit speech with which they might disagree."⁴¹ A common carrier, the majority found, is restrained only with respect to their "neutral transmission of *others*' speech, not . . . communication of its own message."⁴²

III. CONCLUSION

The FCC may have achieved its longstanding goal of creating enforceable net neutrality rules. Petitioners, for their part, have promised to appeal the decision to the Supreme Court.⁴³ In the meantime, the FCC's most recent net neutrality rules have survived their first major court decision.

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^{37.} See *id.* at 733. According to the 2015 Open Internet Order, "[p]aid prioritization occurs when a broadband provider accepts payment (monetary or otherwise) to manage its network in a way that benefits particular content, applications, services, or devices." 2015 Open Internet Order, *supra* note 10, at para. 18.

^{38.} See id. at 734.

^{39.} See id. at 733 (citing Verizon v. FCC, 740 F.3d 623, 633 (D.C. Cir. 2014)).

^{40.} See id. at 736.

^{41.} *Id.* at 740.

^{42.} Id.

^{43.} See Alina Selyukh, U.S. Appeals Court Upholds Net Neutrality Rules in Full, NPR (June 14, 2016, 10:42 AM ET), http://www.npr.org/sections/thetwo-

way/2016/06/14/471286113/u-s-appeals-court-holds-up-net-neutrality-rules-in-full ("We have always expected this issue to be decided by the Supreme Court, and we look forward to participating in that appeal," AT&T General Counsel David McAtee said in a statement.").

TENNESSEE V. FCC

832 F.3d 597 (6th Cir. 2016)

by Laura K. Hamilton *

In *Tennessee v. FCC*,¹ the United States Circuit Court of Appeals for the Sixth Circuit dealt a major setback to the FCC's attempt to preempt state laws that restricted expansion of municipal broadband service networks. The Court reversed the FCC's preemption order, holding that Section 706 of the Telecommunications Act of 1996 ("the Act") did not contain the requisite clear statement of congressional intent to delegate preemption authority to the agency.

I. BACKGROUND

Section 706(a) of the Act grants the FCC authority to encourage the deployment of advanced telecommunications capability by removing barriers to infrastructure investment. ² Section 706(b), similarly directs the Commission to "take immediate action" to accelerate deployment of such capability by removing barriers and promoting competition if the Commission finds that the capability is not being deployed to in a reasonable and timely fashion.³

In Tennessee, a Chattanooga-operated municipal broadband provider (the Electric Power Board, or EPB) petitioned the FCC to preempt a state law that barred Chattanooga from offering Internet service to any areas not served by the municipality's electric plant.⁴ In North Carolina, the City of Wilson asked the FCC to preempt the entirety of Session Law 2011-84,⁵ which contained a number of restrictions on municipal broadband providers.⁶ In relevant part, the law (1) confined service offerings to the municipality's corporate limits;⁷ (2) required municipalities to impute the costs of private providers when pricing municipal services;⁸ and (3) amended the state's definition of "public utility" to include municipal broadband providers, thereby exposing them to additional regulation by the state utilities commission.⁹

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^{1.} Tennessee v. FCC, 832 F.3d 597 (6th Cir. Aug. 10, 2016).

^{2.} See id. at 605-06 (citing 47 U.S.C. § 1302 (2012)).

^{3.} See id.

^{4.} *See id.* at 599-600.

^{5.} See id. at 601 (citing N.C. GEN. STAT. §§ 160A-340 to -340.6 (2011)).

^{6.} See id. at 601-02.

^{7.} See id. at 601 (citing to N.C. GEN. STAT. § 160A-340.1(a)(3)).

^{8.} See id. (citing to N.C. GEN. STAT. § 160A-340.1(a)(8)).

^{9.} See id.

The FCC granted both petitions and preempted most of the laws at issue.¹⁰ In the resulting Order,¹¹ the FCC argued that Sections 706(a) and (b) of the Act granted it implicit authority to preempt state telecommunications laws that conflict with federal communications policy.¹² Further, it concluded that Section 706 also allowed it to preempt "state laws regulating municipal subdivisions" when the laws stand as a barrier to broadband infrastructure investment or an impediment to competition.¹³ The FCC, therefore, could preempt Tennessee's territorial restriction by categorizing it as a "state law communications policy regulation, as opposed to a core state function in controlling its political subdivisions"¹⁴ As to North Carolina's Session Law, the Commission preempted only those sections deemed to constitute such "barriers."¹⁵

This case dealt with the consolidated petitions for review of the Order by the states of Tennessee and North Carolina.¹⁶ Tennessee argued that the Order unconstitutionally interfered with a state's right to determine the boundaries of its political subdivisions.¹⁷ Tennessee, North Carolina, and the National Association of Regulatory Utility Commissioners (NARUC) argued that even if Congress could pass such a law, Section 706 did not provide the required "clear statement" of legislative intent to delegate preemption authority over state laws regarding municipal subdivisions.¹⁸ Although preemption authority need not be explicit,¹⁹ the authority to preempt a state's allocation of powers between itself and its subdivisions "must be delegated by way of a clear statement."²⁰

II. ANALYSIS

The Sixth Circuit ruled against the FCC, reversing the preemption order.²¹ First, the Court held that the clear statement rule did apply.²² Finding binding precedent in *Nixon v. Missouri Municipal League*, the court held that the clear statement rule should apply here, where federal preemption results

^{10.} See id. at 602-03.

^{11.} City of Wilson, N.C. Petition for Preemption of N.C. Gen. Statute Sections 160A-340 *et seq.*, *Memorandum Opinion and Order*, 30 FCC Rcd 2408 (2015) [hereinafter *Preemption Order*].

^{12.} See Tennessee, 832 F.3d at 606-07 (citing Preemption Order, supra note 11, at paras. 142, 144-45).

^{13.} Id. at 607-08 (citing Preemption Order, supra note 11, at paras. 146-47).

^{14.} Id. at 609.

^{15.} See id.; see also id. at n.2.

^{16.} See *id.* at 609. Also noteworthy is the fact that the court granted motions to intervene by the National Association of Regulatory Utility Commissioners (NARUC), the Electric Power Board (EPB) of Chattanooga, Tennessee, and the City of Wilson, North Carolina. The United States was also a named party, but the Antitrust Division of the Department of Justice filed a letter disclaiming any particular position in either case. *See id.*

^{17.} See id. at 609-10.

^{18.} See id. at 610.

^{19.} See id. at 613; see also Gregory v. Ashcroft, 501 U.S. 452, 467 (1991).

^{20.} See Tennessee, 832 F.3d at 613.

^{21.} See id. at 600.

^{22.} See id. at 611.

in "interposing federal authority between a State and its municipal subdivisions "²³ As in *Nixon*, where the Supreme Court upheld the FCC's determination that it needed a clear statement to preempt a Missouri state statute barring its municipalities from entering the telecommunications market, here federal preemption threatened "to trench on the States" arrangements for conducting their own governments." ²⁴ Because both Tennessee and North Carolina made "discretionary determinations for their political subdivisions," the *Nixon* case was therefore analogous, and the clear statement rule applied. ²⁵ Importantly, the Sixth Circuit clarified that the Tennessee and North Carolina statutes at issue in this case implicated both interests in state sovereignty and regulation of interstate communications services. ²⁶ But because *Nixon* also interpreted a section of the Telecommunications Act that dealt with the same competing interests,²⁷ the Court essentially implied that state sovereignty interests will trump federal regulatory telecommunications interests (absent explicit statutory directives).

Therefore, Section 706 could only grant the FCC authority to preempt state laws regarding municipal subdivisions if it contained a clear statement of congressional delegation of that power. Because the statutory language was unclear as to whether "remov[ing] barriers to infrastructure investment" encompassed both public *and* private investment, or only private, and because "promot[ing] competition in the telecommunications market" did not specifically direct the agency to preempt a state's allocation of powers between it and municipalities, the court held that Section 706 could not be read to authorize federal preemption.²⁸ The Order was reversed.²⁹

III. CONCLUSION

It is difficult not to sympathize with the FCC here if one believes that the state laws at issue clearly presented "barriers" of some sort to infrastructure and competition. North Carolina's statute is especially illustrative: requiring municipal broadband providers to impute costs of private providers when pricing municipal services, as in Section 340.1(a)(8), does not appear to serve a sovereign state interest. Instead, as the dissent highlights, "it is an expression of [North Carolina's] telecommunications policy that private providers must be protected from a municipal provider's unfair advantage."³⁰ If the clear statement rule only applies where federal preemption threatens to interfere with a state's authority to govern its subdivisions, perhaps Section 706 arguably implied delegation of preemptory

^{23.} Id. at 610 (citing Nixon v. Mo. Mun. League, 541 U.S. 125, 140 (2004)).

^{24.} Id. (citing Nixon, 541 U.S. at 140-41).

^{25.} Id. at 610-11.

^{26.} See id. at 612 ("These effects are not mutually exclusive.").

^{27.} See id. at 610-11.

^{28.} *Id.* at 613.

^{29.} *Id.* at 614.

^{30.} See id. at 615 (White, J., concurring in part and dissenting in part).

authority should have been enough to save at least one victory for the FCC and consumers in the City of Wilson.

NATIONAL ASSOCIATION OF BROADCASTERS V. FCC

789 F.3d 165 (D.C. Cir. 2015)

by Warren Kessler*

In *National Ass'n of Broadcasters v. FCC*,¹ the United States Court of Appeals for the District of Columbia Circuit denied petitions for review of the FCC's orders instituting its incentive auction and corresponding channel repackaging of radiofrequency spectrum.²

I. BACKGROUND

Title VI of the Middle Class Tax Relief and Job Creation Act of 2012³ authorizes the FCC to reallocate portions of radiofrequency spectrum from television broadcasters to mobile broadband providers.⁴ The incentive auction is, in part, Congress's response to the American public's voracious demand for mobile broadband service.⁵ Ultra-high frequency spectrum is valuable to broadband providers because its characteristics make it particularly "well-suited for mobile broadband use."⁶

Title VI, also known as the Spectrum Act, establishes a three-part reallocation process.⁷ First, the FCC will initiate a reverse auction to incentivize broadcasters to hand over spectrum in return for payment.⁸ The Spectrum Act's second step authorizes the FCC to repackage spectrum belonging to broadcasters that did not participate in the incentive auction and to then reassign smaller spectrum bands to those broadcasters.⁹ Finally, the FCC will facilitate a forward auction for broadband providers to purchase newly-released spectrum.¹⁰

In the instant case, National Association of Broadcasters and Sinclair Broadcast Group, Inc. filed petitions for review of an order from the FCC¹¹ that laid out the FCC's implementation of the Spectrum Act. In particular, the petitioners challenged the FCC's proposed use of certain tools and data in the repackaging process.¹² The FCC was required to use "all reasonable efforts" to preserve the "coverage area" and "population served" of broadcasters as

5. See id. at 169.

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^{1.} Nat'l Ass'n of Broads. v. FCC, 789 F.3d 165 (D.C. Cir. 2015).

^{2.} See id.

^{3.} *See* Middle Class Tax Relief and Job Creation Act of 2012, Pub.L. No. 112–96, tit. VI, 126 Stat. 156, 201-55.

^{4.} See 789 F.3d at 168-69.

^{6.} *Id.* at 170

^{7.} *Id.* at 168.

^{8.} See id. at 169-70.

^{9.} See id. at 169

^{10.} See id.

^{11.} Expanding the Econ. & Innovation Opportunities of Spectrum Through Incentive Auctions, *Report and Order*, 29 FCC Rcd 6567 (2014).

^{12.} See id. at 170.

they were being assigned new spectrum.¹³ These metrics are important because the new repackaged stations are supposed to generally serve the same viewers as they did before the incentive auction.¹⁴ To accomplish these goals, the Spectrum Act requires the FCC to "make all reasonable efforts to preserve, as of February 22, 2012, the coverage area and population served of each broadcast television licensee, as determined using the methodology described in OET Bulletin 69 of the Office of Engineering and Technology" (OET) of the FCC.¹⁵

The petitioners argued that in applying this methodology, known as the "Longley-Rice Methodology," the FCC should have been limited to using the computer software and population data available as of the 2012 date referenced in the Spectrum Act.¹⁶ Instead, the FCC was using more recent TVStudy software and recent census results, rather than the older software and decade-old census data to which they were limited in 2012.¹⁷

The petitioners also raised a procedural challenge by arguing that the FCC's corresponding Notice of Proposed Rulemaking did not mention the use of the new software or new data sets.¹⁸ Additionally, the petitioners pressed claims that the FCC did not sufficiently protect reassigned stations against loss of coverage in its attempts to replicate each station's previous coverage area.¹⁹ Petitioners further argued that the FCC's approach would leave some unpopulated areas within a station's territory susceptible to unacceptable radio interference.²⁰

II. ANALYSIS

With regard to the methodology claim, after a *Chevron* analysis the Court found that the Spectrum Act did not unambiguously foreclose the use of these new practices because the methodology it referenced did not also refer to the actual data or tools to be used by the FCC.²¹ The Court found it "counterintuitive" to require the FCC to use outdated tools or census information.²² Further, the use of modern and faster software and data satisfied the "all reasonable efforts" directive.²³

For the procedural challenge, the Court found that this was harmless error and non-prejudicial because the petitioners were aware of the changes by way of a Public Notice submitted by the FCC's Office of Engineering Technology and because use of the modern software and data were not a

- 15. 47 U.S.C. § 1452(b)(2).
- 16. 789 F.3d at 173.
- 17. See id. at 174.
- 18. See id. at 176
- 19. See id. at 177-78
- 20. See id. at 178-79.
- 21. See id. at 175.
- 22. *Id.* at 174.
- 23. See id. at 176.

^{13.} Id. at 170 (citing 47 U.S.C. § 1452(b)(2) (2012)).

^{14.} Id. at 170.

significant enough departure from the NPRM to run afoul of the Administrate Procedure Act.²⁴

In response to the petitioner's claim that the FCC did not sufficiently protect reassigned stations against loss of coverage, the Court found that though there were methods by which the FCC could have reduced loss in coverage area or radio interference, the FCC's chosen methods were reasonable because they provided the FCC with "flexibility in connection with the reverse auction and repacking process," per its mandate.²⁵ The Court also denied a claim that dealt with which types of broadcast stations were within the Spectrum Act's repackaging mandate.²⁶

The Court finished its opinion by denying Sinclair Broadcast Group's challenges relating to (i) the FCC's creation of a 39-month post-repackaging deadline (after which broadcasters are prohibited from using their pre-auction stations), and (ii) the FCC's requirement that participation in the reverse auction requires at least two competing licensees (not of common ownership).²⁷ The Court found that the FCC acted with appropriate discretion with the purpose of advancing its goal of operating an effective forward auction.²⁸

III. CONCLUSION

In sum, the Court denied both the substantive and procedural aspect of the petitions.²⁹ The FCC began implementing the auction procedures; stage two began in mid-September 2016.³⁰

29. See id. at 184.

^{24.} See id. at 177; 5 U.S.C. § 553(b) (2012).

^{25.} *Id.* at 178.

^{26.} See id. at 179.

^{27.} See id. at 180.

^{28.} See id. at 183

^{30.} Gary Epstein et al., *Incentive Auction Second Stage: Same as the First? Not Exactly*, FCC BLOG (Sept. 12, 2016, 1:45 PM), https://www.fcc.gov/news-

events/blog/2016/09/12/incentive-auction-second-stage-same-first-not-exactly.

TENNIS CHANNEL, INC. V. FCC

827 F.3d 137 (D.C. Cir. 2016)

by Chasel Lee *

In *Tennis Channel v. FCC*,¹ the United States Court of Appeals for the District of Columbia Circuit rejected a petition by Tennis Channel, Inc. to review the FCC's dismissal of their complaint against Comcast Corporation regarding alleged violations of Section 616 of the Communications Act, relating to multichannel video programming distributors (MVPD).² This was the second time the D.C. Circuit considered this case; the first round was in 2013.³

I. BACKGROUND

Section 616 of the Communications Act of 1934⁴ prohibits MVPDs such as Comcast from discriminating against unaffiliated content providers and networks such as Tennis Channel.⁵ Among other provisions, MVPDs may not "engag[e] in conduct the effect of which is to unreasonably restrain the ability of an unaffiliated video programming vendor to compete fairly."⁶

In 2010, Tennis Channel filed a complaint to the FCC against Comcast for the latter's discrimination against them based on affiliation,⁷ which is prohibited by the Communications Act.⁸ It was alleged that Comcast offered the Tennis Channel only at select premium tiers of service, while sports networks affiliated with Comcast such as the Golf Channel were offered on a broader scale.⁹ Tennis Channel wanted to require Comcast to carry its content "on each of its systems on a programming tier that is no less distributed than the most highly-penetrated tier on which it carries one or more of its affiliated sports networks."¹⁰

The administrative law judge (ALJ) ruled in favor of Tennis Channel,¹¹ finding that while the unaffiliated Tennis Channel was similarly situated to the affiliated Golf Channel and Versus (a multisport cable channel),¹² the

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^{1.} Tennis Channel, Inc. v. FCC, 827 F.3d 137 (D.C. Cir. 2016).

^{2.} See id. at 139.

^{3.} Comcast Cable Comm., LLC v. FCC, 717 F.3d 982 (D.C. Cir. 2013).

^{4. 47} U.S.C. § 536 (2012).

^{5.} See id.; see also Tennis Channel, 827 F.3d at 139.

^{6.} Id. § 536(a)(3); see also 47 C.F.R. § 76.1301(c) (2015).

^{7.} Tennis Channel, Inc. v. Comcast Cable Comm., LLC, *Initial Decision*, 26 FCC Rcd 17160, para. 1 (2011) (ruling by A.L.J. Richard L. Sippel) [hereinafter Tennis Channel ALJ Decision].

^{8. 47} U.S.C. § 536(a)(3); see also 47 C.F.R. § 76.1301(c).

^{9.} Tennis Channel ALJ Decision, *supra* note 7, at para. 1; *cf. id.* at para. 7 (noting that Comcast has an equity interest in the Golf Channel).

^{10.} *Id.* at para. 1.

^{11.} Id. at para. 55.

^{12.} Id. at para. 24.

Golf Channel and Versus were given preferential treatment as "siblings" rather than "strangers" like the Tennis Channel,¹³ a dynamic acknowledged by top Comcast executives and implemented in practice.¹⁴ As a result, the ALJ found Comcast in violation of the Communications Act and ordered it to pay a \$375,000 monetary forfeiture and to prohibit further discrimination against Tennis Channel.¹⁵ A split Commission substantially upheld the ALJ's decision in 2012.¹⁶

Comcast subsequently appealed the FCC's decision to the D.C. Circuit. In 2013, the Court granted Comcast's petition for review and, after reviewing the record, reversed the FCC's decision.¹⁷ The Court found that the FCC failed to take into account "valid business considerations" as a potential reason why Comcast declined to include the Tennis Channel on more tiers of service.¹⁸ In short, there was insufficient evidence substantiating the FCC's conclusions.¹⁹ The Court vacated the entire ruling and remanded it back to the FCC for reconsideration.²⁰ Tennis Channel petitioned for an en banc hearing before the D.C. Circuit and for certiorari before the Supreme Court, but was turned down in both.²¹

On remand before the FCC, Tennis Channel sought to have the ALJ's decision reaffirmed under the supposedly "new" standard set out by the D.C. Circuit, or alternatively to reopen the record to allow submission of further evidence to bolster Tennis Channel's case.²² The FCC declined to do either and reversed the ALJ's verdict,²³ finding that the D.C. Circuit had merely reaffirmed a longstanding standard of evaluating evidence and that the Court did not require the FCC to reevaluate the record for evidence substantiating its and Tennis Channel's assertions.²⁴ The FCC also declined to reopen the record for further briefing,²⁵ noting that Tennis Channel already had an opportunity for a full and fair hearing and that "the interest in bringing the proceeding to a close outweighs any interest in allowing Tennis Channel a

19. *Id.* at 987 ("On this issue the Commission has pointed to no evidence, and therefore obviously not to substantial evidence.").

20. Id.; see Tennis Channel, Inc. v. FCC, 827 F.3d 137, 140 (D.C. Cir. 2016).

21. Comcast Cable Comm., LLC v. FCC, No. 12-1337 (D.C. Cir. Sept. 4, 2013) (per curiam); Tennis Channel, Inc. v. Comcast Cable Comm., LLC, 134 S. Ct. 1287 (2014).

^{13.} Id. at para. 55.

^{14.} See id. at paras. 55-61.

^{15.} Id. at paras. 125-26.

^{16.} See generally Tennis Channel, Inc. v. Comcast Cable Comm., LLC, Memorandum Opinion and Order, 27 FCC Rcd 8508 (2012).

^{17.} Comcast Cable Comm., LLC v. FCC, 717 F.3d 982 (D.C. Cir. 2013).

^{18.} See id. at 985, 987 ("[I]f the MVPD treats vendors differently based on a reasonable business purpose . . . , there is no violation." "Neither Tennis nor the Commission has invoked the concept that an otherwise valid business consideration is here merely pretextual cover for some deeper discriminatory purpose.").

^{22.} Tennis Channel, Inc. v. Comcast Cable Comm., LLC, *Order*, 30 FCC Rcd 849, para. 6 (2015).

^{23.} Id. at paras. 9-11.

^{24.} *Id.* at para. 7.

^{25.} Id. at para. 8.

second opportunity" to pursue its case.²⁶ The entire case was therefore dismissed.²⁷

Faced with a reversal of fortunes, Tennis Channel turned back to the D.C. Circuit to reopen the proceeding.²⁸ Tennis Channel alleges that the FCC was required by the D.C. Circuit in 2013 to review the record following the remand, that it would have found evidence in favor of Tennis Channel, and that its decision against doing so was arbitrary and capricious.²⁹ Tennis Channel also petitioned to require a reopening of the record for further briefing.³⁰

II. ANALYSIS

The Court found Tennis Channel's allegations to be lacking. Regarding the FCC's decline to review the record again, the Court noted that Tennis Channel had misconstrued its ruling, stating that it merely decided that the evidence in the record could not substantiate the FCC's claims and decision rather than requiring the FCC to do further fact finding.³¹ In fact, the Court had already done the re-review Tennis Channel was seeking and found nothing. ³² Therefore, there was "no room for [the FCC] to find discrimination" on the record; the FCC would have to directly contradict the Court in order to do so.³³

The Court also found that the FCC had wide discretion on reopening the record absent new evidence or changed circumstances.³⁴ A court may overturn such a decision only after a "showing of the clearest abuse of discretion."³⁵ Tennis Channel offered no new evidence and showed no such abuse of discretion.³⁶ The Court also upheld the FCC's weighing of interests in determining whether to reopen the record, finding its reasoning sufficiently persuasive.³⁷

III. CONCLUSION

The Court reviewed the FCC's actions in the wake of the Court's prior ruling and found that they were well within the discretion of the agency.

^{26.} Id.

^{27.} *Id.* at para. 13.

^{28.} Tennis Channel, Inc. v. FCC, 827 F.3d 137, 140-41 (D.C. Cir. 2016).

^{29.} See id. at 141.

^{30.} See id.

^{31.} See id. at 141-42.

^{32.} See id. at 143.

^{33.} *Id.* at 142-43.

^{34.} See id. at 143.

^{35.} Id. at 144 (citing ICC v. Bhd. Of Locomotive Eng'rs, 482 U.S. 270, 278 (1987)).

^{36.} See id. at 143-44.

^{37.} See id. at 144.

Finding no "arbitrary, capricious, [and] an abuse of discretion," the Court upheld the dismissal and termination of Tennis Channel's complaint.³⁸

PROMETHEUS RADIO PROJECT V. FCC (PROMETHEUS III)

824 F.3d 33 (3d Cir. 2016)

by Bryan Schatz *

In *Prometheus Radio Project v. FCC*,¹ petitioners challenged the FCC's definition of the "eligible entity," a status bestowed upon certain applicants for broadcast ownership to promote female and minority ownership. Petitioners also challenged the entirety of the FCC's quadrennial review of ownership broadcast rules, as well as the FCC's rule regarding television joint sales agreements.

I. BACKGROUND

The FCC is directed to promote minority and female broadcast ownership² and attempts to promote this goal by providing preferences for "eligible entities."³ This is the third in a line of cases⁴ in which the Third Circuit has analyzed FCC ownership rules and the Telecommunications Act's mandate for the Commission to perform quadrennial reviews of these rules.⁵

In this case, several broadcasters and a non-profit organization individually filed petitions for review of a 2014 FCC Further Notice of Proposed Rulemaking,⁶ challenging the agency's delay in defining an eligible entity and a related attribution rule for television joint sales agreements.⁷ Petitioners argued that the current eligible entity definition has failed to provide any benefit to ownership groups of women or minorities.⁸ The FCC had employed revenue-based criteria to help classify eligible entities.⁹

II. ANALYSIS

The Court first discussed how the previous *Prometheus* decisions had affected the eligible entity definition.¹⁰ For example, in *Prometheus II*, the Court had found that the FCC's revenue-based criteria for categorizing

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^{1.} Prometheus Radio Project v. FCC (Prometheus III), 824 F.3d 33 (3d Cir. 2016).

^{2.} See 47 U.S.C. § 309 (2012).

^{3.} See Prometheus III, 824 F.3d at 40.

^{4.} *See* Prometheus Radio Project v. FCC (*Prometheus I*), 373 F.3d 372 (3d Cir. 2004); Prometheus Radio Project v. FCC (*Prometheus II*), 652 F.3d 431 (3d Cir. 2011).

^{5.} See Telecommunications Act of 1996, Pub. L. No. 104-104, § 202(h), 110 Stat. 56, 111-12.

^{6.} See 2014 Quadrennial Reg. Rev., Further Notice of Proposed Rulemaking and Report and Order, 29 FCC Rcd 4371 (2014).

^{7.} See Prometheus III, 824 F.3d at 39.

^{8.} See id.

^{9.} *Id.* at 49.

^{10.} See id. at 42.

"eligible entities" was insufficient.¹¹ The Court then applied the its test for determining whether an agency's action has been "unreasonably delay[ed]"¹² and found that because (1) it has taken the FCC over a decade to settle on new criteria to define eligible entity;¹³ (2) the statutory importance of minority and female broadcast ownership is very high;¹⁴ (3) without a set eligible entity definition, several other FCC initiatives cannot occur;¹⁵ and (4) because the FCC does not have a strong reason for its continued delay,¹⁶ there has been an unreasonable delay in the FCC's finalization of its eligible entity definition.¹⁷ After agreement from both parties, the court determined that a mediation will occur, which will set a schedule for when the FCC must finalize its eligible entity definition with no further delays.¹⁸

Next, the court analyzed the FCC's (in)actions under its statutorily required quadrennial review of broadcast ownership rules.¹⁹ A quadrennial review has not been completed since 2006, and the 2010 quadrennial review was incorporated into the subsequent 2014 review, which also has yet to see a finalized decision.²⁰

While some of the petitioners sought to have the Court eliminate all the standing broadcast ownership rules as a result of the delay, the Court refused to do so, as this "would lead to a degree of deregulation that is unprecedented in the modern broadcast industry[],"²¹ and there is no other "instance when a court has ordered mass vacatur in similar circumstances."²² Further, because the petitioners sought only this relief, they had no other form of relief for the Court to grant.²³ Therefore, while the court admonished the FCC for its continued delays and failures to hold an effective quadrennial review, there was no sanction or order against the FCC.²⁴

Finally, the Court addressed the petitioners' challenge of an FCC rule on television joint-sales agreements.²⁵ The FCC promulgates attribution restrictions related to its local TV broadcast ownership rules in order to prevent circumvention of common ownership rules.²⁶ In 2014, the FCC applied a new attribution rule to television joint sales agreements.²⁷ A previous attribution rule that applied to radio joint sales agreements had been

17. See id. at 48.

- 23. *See id* at 53-54.
- 24. See id.
- 25. See id. at 54.
- 26. See id. at 54 (citing 2014 Quadrennial Reg. Rev., supra note 6).
- 27. See id.

^{11.} Id. at 43 (citing Prometheus Radio Project v. FCC (*Prometheus II*), 652 F.3d 431, 469-71 (3d Cir. 2011)).

^{12.} See id. at 39.

^{13.} See id. at 49.

^{14.} See id. at 48.

^{15.} See id.

^{16.} See id. at 48-49.

^{18.} See id. at 52.

^{19.} See id. at 50; Telecommunications Act of 1996, Pub. L. No. 104-104, § 202(h), 110 Stat. 56, 111-12.

^{20.} See Prometheus III, 824 F.3d at 50.

^{21.} Id. at 52.

^{22.} Id.

upheld in Court.²⁸ However, the FCC applied its new attribution rule to TV broadcast ownership without incorporating this determination into the quadrennial review and without addressing whether the local television ownership caps are in the public interest, as is required under the quadrennial review.²⁹ FCC Commissioner Ajit Pai lamented this in a dissent to the 2014 rulemaking procedure.³⁰ Because Commissioner Pai brought up this issue in his dissent, the Court determined that the issue had been sufficiently raised before the FCC and the petitioners were not required to have brought the issue up before the FCC themselves due to the language of the exhaustion statute at issue.³¹ Further, the FCC had addressed this issue in part in its Order, again providing evidence that the issue had been sufficiently raised before the FCC. ³² The Court held that "[a]ttribution of television [joint sales agreements] modifies the Commission's ownership rules by making them more stringent. Unless the Commission determines that the preexisting ownership rules are sound, it cannot logically demonstrate that an expansion is in the public interest," as is the required standard under the quadrennial review.33

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III. CONCLUSION

The Court ordered joint mediation to address the question of eligible entities. Additionally, the joint sales agreement ownership rule was accordingly vacated and remanded to the FCC to sufficiently justify "in the public interest."³⁴ Judge Anthony Scirica dissented and argued that he would order the FCC to complete its 2010/2014 quadrennial review and hold the FCC to a strict timeline until the completion.³⁵

^{28.} See id. at 55.

^{29.} See id. at 56.

^{30.} See id. at 56 (citing 2014 Quadrennial Reg. Rev., supra note 6 (Comm'r Pai, dissenting).

^{31.} See id. at 57-58.

^{32.} See id.

^{33.} See id. at 58.

^{34.} *Id.* at 60.35. *See id.* at 60-62.

ADX COMMUNICATIONS OF PENSACOLA V. FCC

794 F.3d 74 (D.C. Cir. 2015)

by Seo ho Lee *

In *ADX Communications of Pensacola v. FCC*,¹ the United States Court of Appeals for the District of Columbia Circuit upheld the FCC's decision not to deviate from its current market definition methodology for radio station markets when it assigned radio licenses to one of ADX's local competitors in the Mobile, Alabama and Pensacola, Florida markets. The D.C. Circuit also found that the FCC did not act arbitrarily when it did not submit the competitor to a two-year waiting period.²

I. BACKGROUND

Pursuant to Section 307 of the Communications Act, ³ the FCC regulates radio stations by awarding licensing or approving license transfers.⁴ The FCC awards licenses or approves license transfers based on public interest, convenience, and necessity.⁵ To these ends, the FCC caps the number of stations a licensee may own in a given market.⁶

The FCC's method for determining the size of a local market has changed since 2003.⁷ Previously, the FCC used the "contour overlap method," which based the boundaries of a radio station's market on certain geographic considerations and the station's signal strength.⁸ Due to the flaws of the contour overlap method,⁹ the FCC changed to a method developed by Arbitron, a private data collection company. ¹⁰ Under Arbitron's methodology, major metropolitan areas are assigned markets labeled as "Arbitron Metro Survey Areas," or "Arbitron Metros."¹¹ Each radio station is also assigned a "home" Metro, which is based on either the community that the station is licensed to serve or if a station licensed elsewhere competes with stations in that same Metro.¹² The Arbitron method still applies the previous contour overlap method under certain circumstances.¹³

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^{1.} ADX Comm. of Pensacola v. FCC, 794 F.3d 74 (D.C. Cir. 2015).

^{2.} See id. at 74.

^{3.} Communications Act of 1934, 47 U.S.C. § 307 (2012).

^{4.} See id. § 307(a).

^{5.} See id.

^{6.} See id. § 307(b).

^{7.} See ADX Comm., 794 F.3d at 77.

^{8.} See id. at 76 (citing 2002 Biennial Regulatory Review, *Report and Order and Notice of Proposed Rulemaking*, 18 FCC Rcd 13620, para. 256 (2003) [hereinafter *Ownership Order*]); 794 F.3d at 77 (citing *Ownership Order*, *supra*, at paras. 250-52, 256).

^{9.} See id. at 77 (citing Ownership Order, supra note 8, at para. 257).

^{10.} See id.

^{11.} *Id*.

^{12.} *Id*.

^{13.} See id.

Interested parties may petition to bar another license applicant from acquiring a license if the interested party can present a prima facie showing that the license acquisition would be against public interest.¹⁴ Additionally, when Arbitron changes a market definition, the FCC applies a two-year waiting period before a radio station owner can take advantage of the new market definition.¹⁵

In 2012, Cumulus Licensing LLC (Cumulus) applied for radio station licenses in the Pensacola and Mobile Metros.¹⁶ To ensure that it would only need to satisfy the newer Arbitron-based methodology, Cumulus proposed transferring some of its licenses to new owners and shifted the "community of license" for another local station.¹⁷ Cumulus's competitor, ADX, filed petitions to deny the license transfers, claiming that the transfers would violate Cumulus's ownership limits under the contour-overlap methodology.¹⁸ ADX also argued that the two-year waiting period should apply to Cumulus's attempt to transfer licenses.¹⁹ The Media Bureau denied ADX's petition²⁰ and the FCC affirmed the Media Bureau's decision.²¹

II. ANALYSIS

The FCC and the Media Bureau reasoned that Cumulus's application did not involve acquiring another radio station in one market, but was instead an acquisition in another market and thus did not breach Cumulus's cap on radio stations, even if the markets were adjacent to each other.²² Additionally, the FCC decided that Cumulus's actions did not trigger the two-year waiting period because its license transfers did not change affect Arbitron's market definitions.²³ Finally, the FCC argued that ADX lacked standing to challenge its decision because ADX could not demonstrate that its injury was likely to be redressed by a favorable decision by the court.²⁴

ADX appealed, arguing that the FCC's actions were arbitrary and contrary to the public's interest.²⁵ It argued that the FCC and the Media Bureau's "robotic"²⁶ application failed to take into account the situation's nuances, like the fact that some stations were "transmitted from the same tower even though they are classified as being located in different markets."²⁷

22. See id.

27. Id.

^{14.} See id.

^{15.} See id.

^{16.} See id. at 78.

^{17.} See id.

^{18.} See id.

^{19.} See id.

^{20.} See id.

^{21.} See id. (citing 7 Johnson Road Licenses, Inc., Memorandum Opinion and Order, 29 FCC Rcd 6386 (2014) [hereinafter 2014 Denial Order]).

^{23.} *See id.* (citing and quoting Dan J. Alpert, Esq. et al., *Letter*, 28 FCC Rcd. 20 (2013) [hereinafter 2013 Bureau Denial Letter]).

^{24.} See id. at 82.

^{25.} See id. at 79.

^{26.} *Id.*

The Court was tasked with deciding whether the FCC's actions were arbitrary, ²⁸ and it reminded the parties that it must defer to the FCC's interpretation of its own rule unless the interpretation is plainly erroneous or inconsistent with the regulation.²⁹

After finding that ADX had standing,³⁰ the Court concluded that the FCC's interpretation of the *Ownership Order* was not plainly erroneous or otherwise arbitrary or capricious.³¹ The FCC had identified problems with the contour overlap methodology, and it had presented rational reasons to abandon it and to refuse to apply it in this case.³² Based on this decision, the Court found it reasonable for the FCC to conclude that there was no issue with the adjacent Metros; ADX only showed that the situation would have violated the old contour overlap method.³³ Additionally, ADX's proposal to apply the contour overlap method.³⁴ Further, the FCC to apply it in too many other circumstances, which would defeat the purpose of adopting the newer Arbitron method.³⁴ Further, the FCC's use of the Media Bureau's full public interest analysis demonstrated that it had made a rational connection between the facts found and choices made.³⁵

Additionally, the Court found that the FCC was reasonable in determining that Cumulus changing its community of license was not a change in the boundaries of a market by Arbitron and thus did not necessitate a two-year waiting period. ³⁶ The FCC also successfully argued that its decision not to apply the waiting period was not plainly erroneous by distinguishing this case from the limited circumstances to which the waiting period may apply. The FCC also showed that it had taken into account, but ultimately discarded, the possibility of manipulation of market definitions in this case.³⁷

III. CONCLUSION

The FCC justified its granting of new licenses relying on its Arbitronbased methodology. *ADX* illustrates the FCC's approach to the granting of licenses when considering market definitions, ownership limits in adjacent markets, and some of the geographic and ownership variables that may affect its decision making.

32. See id. at 80.

^{28.} See id. (citing 5 U.S.C. § 706(2)(A) (2012)).

^{29.} See id. (quoting Star Wireless, LLC v. FCC, 522 F.3d 469, 473 (D.C. Cir. 2008)).

^{30.} See id. at 82.

^{31.} See id.

^{33.} See id.

^{34.} See id.

^{35.} See id. at 81.

^{36.} See id. at 83.

^{37.} See id.

GREAT LAKES COMNET, INC. V. FCC

823 F.3d 998 (D.C. Cir. 2016)

by Stephen Klein^{*}

In May 2016, the United States Court of Appeals for the District of Columbia Circuit decided *Great Lakes Comnet v. FCC.*¹ The D.C. Circuit found: (1) that Great Lakes Comnet, Inc. (Great Lakes) qualified as a competitive local exchange carrier (CLEC); (2) that the carrier's use of transport facilities in urban areas did not exclude it from the rural exemption; and (3) that remand was appropriate because the FCC failed to demonstrate that an alternative finding was sufficient to sustain its conclusion that Great Lakes was excluded from the exemption.²

I. BACKGROUND

Great Lakes operates as an intermediate carrier in Michigan between local carriers and AT&T's long-distance service.³ In 2014, AT&T filed a formal complaint with the FCC alleging that Great Lakes was charging access fees that are greater than the benchmark rates imposed on CLECs.⁴ The FCC determined that Great Lakes qualified as a CLEC for rate benchmarks and that it did not qualify under the rural exemption to those benchmarks.⁵ This case is a petition for review of that order.⁶

II. ANALYSIS

The Court first determined that Great Lakes qualified as a CLEC for the purpose of benchmark rates under 47 C.F.R. § 61.26.⁷ Great Lakes argued that intermediate carriers should fall outside the CLEC definition because they do not directly provide any service to end users and therefore the FCC's conclusion to the contrary was "clearly erroneous" under the standard of review developed in *Auer v. Robbins.*⁸ The FCC countered that the regulation only require a CLEC to provide "some of the interstate exchange access services used to send traffic to or from an end user."⁹ Additionally, the FCC's

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^{1.} Great Lakes Comnet, Inc. v. FCC, 823 F.3d 998 (D.C. Cir. 2016).

^{2.} See id. at 998.

^{3.} See id. at 1001. An intermediate carrier connects local exchange carriers and longdistance carriers. See id.

^{4.} See id.

^{5.} See id. at 1001-02.

^{6.} See id. at 1002.

^{7.} See id.

^{8.} See id. at 1003. See Auer v. Robins, 519 U.S. 452 (1997) (setting out plainly erroneous standard of review).

^{9.} *Id.* at 1002 (quoting AT&T Services Inc. v. Great Lakes Comnet, Inc., *Memorandum Opinion and Order*, 30 FCC Rcd 2586, 2590 (2015)).

2004 Eighth Report and Order had specifically amended the relevant regulations for the precise purpose of subjecting intermediate carriers to the benchmark rate regulation.¹⁰

Great Lakes argued that the canon of surplusage dictated that CLEC definition should be confined to carriers who serve end users directly, and that the FCC's interpretation conflicted with its 2011 Transformation Order.¹¹ However, the Court determined that the canon did not apply in this case because the regulatory history and text was clear that the CLEC definition did extend to intermediary carriers.¹²

Additionally, Great Lakes argued that the rate in question conflicts with the 2011 FCC Order, which will transition carriers into a new rate framework by 2018.¹³ The Court quickly dismissed the second argument, only finding relevant the carrier rate of the year before AT&T's complaint.¹⁴ Therefore, the Court agreed with the FCC and determined that, because of the clarity of the regulatory text and history, the FCC's classification of Great Lakes as a CLEC was not plainly erroneous under *Auer*, and Great Lakes' arguments were without merit.¹⁵

Another point of dispute was Great Lakes's contention that it should qualify as a rural CLEC, and as such, is exempt from the FCC's benchmark rules.¹⁶ The FCC based its decision regarding Great Lakes on two grounds: first, that a carrier is not exempt if it had transport facilities in an urban area; and second, whether 8YY long-distance calls originate in an urban area.¹⁷

The Court found the FCC's first contention plainly erroneous because the exemption did not apply to carriers serving customers in an urban area, and did not relate to the existence of transport facilities in an urban area.¹⁸ The Court did not reach the merits of the FCC's second contention because the FCC had not demonstrated that it believed that the rationale was independently sufficient to preclude the rural classification.¹⁹ Additionally, in oral argument, the FCC advanced an argument that intermediate carriers could not be classified as rural CLECs under any circumstances.²⁰ However, the Court was unable to rely on this argument because the FCC had not placed it in the original order.²¹

19. See id.

21. See id.

^{10.} See id. (citing Access Charge Reform, *Eighth Report and Order and Fifth Order on Reconsideration*, 19 FCC Rcd. 9108 (2004)).

^{11.} See id. at 1003; see also generally Connect America Fund, Report and Order and Further Notice of Proposed Rulemaking, 26 FCC Rcd 17663 (2011) [hereinafter Transformation Order].

^{12.} See Great Lakes Comnet, 823 F.3d at 1003.

^{13.} See id. (citing Transformation Order, supra note 11, at para. 801).

^{14.} See id. at 1003.

^{15.} See id.

^{16.} See id. at 1004.

^{17.} See id.

^{18.} See id.; 47 C.F.R. § 61.26 (2015).

^{20.} See id.

The Court quickly disposed of Great Lakes arguments that the FCC chose the wrong ILEC for setting its benchmark rates, the 2011 Order constituted an unlawful taking, and the FCC Order was applied retroactively against a reasonable expectation they would not apply.²²

III. CONCLUSION

The Court denied all parts of the petition except the issue of Great Lakes' classification as a rural CLEC, which it remanded to the FCC for further proceedings.²³

^{22.} See id. at 1004-05

^{23.} See id. at 1005.

MONTGOMERY COUNTY V. FCC

811 F.3d 121 (4th Cir. 2015)

by Kenyon Redfoot*

In *Montgomery County v. FCC*,¹ the United States Court of Appeals for the Fourth Circuit denied a petition for review of an FCC Order implementing "the [congressional] mandate that localities 'shall approve' facility-modification requests covered by Section 6409(a)" of the Spectrum Act.²

I. BACKGROUND

Passed in 2012 as part of the Middle Class Tax Relief and Job Creation Act, the Spectrum Act seeks, in applicable part, to facilitate the timely deployment of wireless infrastructure by providing that "local governments may not deny, and *shall approve*, any eligible facilities request for a modification of an existing wireless tower or base station that does not substantially change the physical dimensions of such tower or base station."³ Pursuant to its delegated authority under the statute,⁴ the FCC issued an Order on October 17, 2014, to resolve several matters left unaddressed by the foregoing language from Section 6409(a) of the Spectrum Act. ⁵ The petitioners behind the administrative appeal in *Montgomery County*—a coalition of local governments, including Montgomery County, Maryland—were attempting to overturn two specific aspects of this Order.

II. ANALYSIS

First, the Order established a "deemed granted remedy" to implement Section 6409(a)'s "shall approve" mandate.⁶ In essence, the "deemed granted remedy" represents a sixty-day shot clock for local authorities to grant a covered facility-modification request before it is "deemed granted" by operation of federal law.⁷ Citing landmark Supreme Court cases including *Printz v. United States* and *New York v. United States*,⁸ the petitioners in

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^{1.} Montgomery Cty. v. FCC, 811 F.3d 121 (4th Cir. 2015).

^{2.} Id. at 124, 126.

^{3.} Spectrum Act, 47 U.S.C. § 1455(a)(1) (2012) (emphasis added).

^{4.} Id. § 1403(a).

^{5.} Acceleration of Broadband Deployment by Improving Wireless Facilities Siting Policies, *Report and Order*, 29 FCC Rcd 12865 (2014).

^{6.} Id. at para. 226.

^{7.} See *id*. To effectuate this operation of law, a permit applicant is only required to provide written notice to the relevant local authority that the application has been deemed granted. *Id*.

^{8.} See generally Printz v. United States, 521 U.S. 898 (1997) (striking down a federal statute requiring states to run background checks on handgun purchases); New York v. United States, 505 U.S. 144 (1992) (striking down a federal statute requiring states to enact laws
Montgomery County argued that the FCC's "deemed granted remedy" violated the Tenth Amendment by conscripting local governments into the administration of a federal regulatory scheme.⁹ The Fourth Circuit rejected this challenge, distinguishing the "deemed granted remedy" from federal overreaches in *Printz* and *New York* on the basis that the FCC's procedure does not require local governments to enforce the Spectrum Act.¹⁰ To the contrary, the Fourth Circuit observed that "the 'deemed granted remedy' obviates the need for the states to affirmatively approve applications."¹¹

The second component of the Order at issue in *Montgomery County* involved the FCC's interpretation of two undefined terms in Section 6409(a), setting the parameters for what requests trigger the Spectrum Act's "shall approve" mandate – and, in turn, the default protection of the Order's "deemed granted remedy."¹² The first challenged definition from the Order was that given to the term "base station," which the FCC construed broadly "to include 'structures other than towers that support or house an antenna, transceiver, or other associated equipment,' even if the structure was not built primarily for that purpose."¹³ The second challenged definition from the Order involved the FCC's objective, multi-part criteria for evaluating when an equipment modification "substantially changes the physical dimensions" of a wireless facility, and thus falls within a locality's limited discretion for denying an application.¹⁴

While the petitioners raised a series of related challenges to the Order's definitions for these Spectrum Act terms, such challenges were fundamentally grounded in the argument that the FCC's statutory interpretations were "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with the law" under the Administrative Procedure Act.¹⁵ Given the nature of this challenge—and the fact that the FCC was the agency charged with administering the Spectrum Act—the Fourth Circuit determined that the Order was entitled to a deferential *Chevron* analysis.¹⁶ Quickly finding that the language of Section 6409(a) was sufficiently ambiguous,¹⁷ the Fourth Circuit concluded that the FCC's Order

providing for the disposal of radioactive waste within their borders or else take title and possession of the waste themselves).

^{9.} See Montgomery Cty. v. FCC, 811 F.3d 121, 127-29 (4th Cir. 2015).

^{10.} See id. at 128.

^{11.} *Id*.

^{12.} See id. at 127, 129-30.

^{13.} *Id.* at 127.

^{14.} *Id.*

^{15.} Id. at 129-30 (quoting 5 U.S.C. § 706(2)(A)).

^{16.} *See id.*; *see generally* Chevron, U.S.A., Inc. v. Nat'l Res. Def. Council, 467 U.S. 837, 844 (1984) (articulating the principle of judicial deference to administrative interpretations of statutory schemes).

^{17.} *Montgomery Cty.*, 811 F.3d at 129 ("There is no question that the terms of the Spectrum Act at issue here are ambiguous.").

represented a reasonable policy position in light of the Spectrum Act's underlying goal of removing barriers to wireless deployment.¹⁸

III. CONCLUSION

Although the Order's efficacy in achieving this goal will remain the subject of ongoing scrutiny, the Fourth Circuit's decision in *Montgomery County* continues a trend of growing judicial solicitude for the adverse consequences of case-by-case litigation and local inefficiency in regulating wireless infrastructure buildout. In 2012, the United States Court of Appeals for the Fifth Circuit upheld an FCC Declaratory Order imposing 90- and 150day shot clock *presumptions* for local governments to address collocation and other wireless facilities requests, respectively.¹⁹ However, while these "deadlines" still afforded localities opportunities to rebut the presumption of unreasonable delay based on contextual factors,²⁰ both the "deemed granted remedy" at sixty days and the objective criteria for a "substantial" facilities modification at issue in *Montgomery County* were absolute.²¹ In this sense, the decision in *Montgomery County* not only contributes to the ongoing refinement of an important branch of Tenth Amendment jurisprudence, it further paves the path for FCC regulations-shot clocks or otherwise-that may be used to strike an acceptable balance between interests of federalism and the avoidance of municipal delay in a rapidly evolving wireless industry.

^{18.} *See id.* at 133 ("Petitioners have the burden of showing that the FCC's definition is an unreasonable interpretation of the Spectrum Act. We conclude that Petitioners have failed to carry their burden.").

^{19.} See City of Arlington v. FCC, 668 F.3d 229, 255-56 (5th Cir. 2012).

^{20.} See id. at 259.

^{21.} See Montgomery Cty., 811 F.3d at 131 ("[T]he FCC has set forth objective standards that divest municipalities of their reviewing discretion.").

MAKO COMMUNICATIONS, LLC V. FCC

No. 15-1264 (D.C. Cir. 2016)

by Kenyon Redfoot*

In *Mako Communications v. FCC*,¹ the United States Court of Appeals for the District of Columbia Circuit denied two petitions for review of an FCC Order excluding low-power television (LPTV) stations from protection in the "repacking" phase of the ongoing broadcast incentive auction.²

I. BACKGROUND

Enacted as Title VI of the Middle Class Tax Relief and Job Creation Act of 2012, the Spectrum Act sets forth—and authorizes the FCC to conduct—a multi-step auction process designed to combat "spectrum crunch" by reallocating television broadcast licenses to satisfy the growing demands of mobile broadband.³ The auction's first phase, which commenced in March 2016, ⁴ involved the repurchase of licensed spectrum from television broadcasters through "reverse" bidding.⁵ Ultimately, this spectrum will be sold to wireless service providers in a "forward" auction.⁶ To connect these matters of supply and demand, however, the Spectrum Act framework will require the FCC to "repack" space for television broadcasters planning to stay on the air.⁷ The natural result of the auction—indeed, its fundamental purpose—will necessitate that these remaining broadcasters share a narrower range of spectrum than had been previously allocated for television service.⁸

While this plan is likely to present myriad technical and economic challenges for broadcasters generally,⁹ LPTV stations are in a position of unique vulnerability arising from their secondary status to full-power counterparts. Since 1982, LPTV stations have been required to either avoid interference with primary broadcasters or cease operation.¹⁰ However, as the

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^{1.} Mako Comm., LLC v. FCC, No. 15-1264 (D.C. Cir. Aug. 30, 2016).

^{2.} *Mako*, slip op. at 12.

^{3.} *See Mako*, slip op. at 3-4.

^{4.} See Dan Meyer, FCC 600 MHz Incentive Auction Begins; Verizon, AT&T, and T-Mobile Wait, RCR WIRELESS NEWS (Mar. 29, 2016),

http://www.rcrwireless.com/20160329/policy/fcc-600-mhz-incentive-auction-begins-verizon-att-t-mobile-wait-2-tag2.

^{5.} See generally Dru Sefton, A Guide to the FCC Spectrum Auction, CURRENT (Dec. 17, 2015), http://current.org/2015/12/a-guide-to-the-fcc-spectrum-auction/.

^{6.} *See id.*

^{7.} See id.

^{8.} See id.

^{9.} *See Spectrum*, CORP. FOR PUB. BROAD., http://www.cpb.org/spectrum (last visited Sep. 2, 2016) (providing an embedded *PBS* video explaining the likely costs of repacking for broadcasters).

^{10.} See Mako Comm., LLC v. FCC, No. 15-1264, slip op. at 8 (D.C. Cir. Aug. 30, 2016) (citing An Inquiry into the Future Role of Low Power TV Broad. & TV Translators in the Nat'l

band of spectrum available to a large pool of broadcasters shrinks, avoiding interference becomes increasingly difficult.¹¹ In light of this concern, the Spectrum Act contains two subsections, codified under 47 U.S.C. § 1452(b), purporting to limit the FCC's repacking power.¹² While the first general limitation requires the FCC to "make all reasonable efforts to preserve ... the coverage area and population served of each broadcast television licensee,"¹³ the statutory definition of "broadcast television licensee" does not extend to the majority of LPTV stations (i.e., those operating without a Class A license).¹⁴ Nonetheless, § 1452(b)(5) provides further that "[n]othing in [§ 1452(b)] shall be construed to alter the spectrum usage rights of [LPTV] stations."¹⁵ To interpret and reconcile these (and other) Spectrum Act provisions, the FCC issued an Order in May 2014 concluding that "[p]rotection of LPTV . . . stations in the repacking process is not mandated by" § 1452(b).¹⁶ Following unsuccessful Petitions for Reconsideration of the FCC's Order,¹⁷ two LPTV station operators, Mako Communications and Beach TV, appealed to the D.C. Circuit for review.

II. ANALYSIS

The principal argument raised by the petitioners in *Mako* was that the FCC's denial of protection to LPTV stations violated § 1452(b)(5) by "alter[ing] [their] spectrum usage rights." ¹⁸ Applying the conventional *Chevron* analysis, the Court sustained the FCC's interpretation of the statute.¹⁹ Because "LPTV stations have always been subject to displacement by primary services such as full-power stations" and, more recently, by wireless service providers, the Court determined that the practical risk of LPTV displacement attendant to the repacking process did not alter their already secondary status.²⁰

- 12. See 47 U.S.C. § 1452(b)(2), (5) (2012).
- 13. 47 U.S.C. § 1452(b)(2).
- 14. 47 U.S.C. § 1401(6) (2012).
- 15. 47 U.S.C. § 1452(b)(5).

16. See Expanding the Econ. & Innovation Opportunities of Spectrum Through Incentive Auctions, *Report and Order*, 29 FCC Rcd 6567, para. 238 (2014) [hereinafter *Order*].

17. *See* Expanding the Econ. & Innovation Opportunities of Spectrum Through Incentive Auctions, *Second Order on Reconsideration*, 30 FCC Rcd 6746, paras. 64, 67, 68 (2015).

18. See Mako Comm., LLC v. FCC, No. 15-1264, slip op. at 7 (D.C. Cir. Aug. 30, 2016).

20. *See Mako*, slip op. at 8-10 ("[T]he challenged orders subordinate LPTV stations to wireless licensees in the same way the [FCC] had done before the Spectrum Act.").

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Telecomms. Sys., 47 Fed. Reg. 21,468, 21,489 (1982) (to be codified in 47 C.F.R. pts. 73, 74, 76, 78)).

^{11.} *Cf.* Sefton, *supra* note 5 (referencing a National Association of Broadcasters prediction that 80% of full-power broadcasters would remain in operation if the FCC reclaimed 41% of current television spectrum in the "reverse" auction).

^{19.} *Id.*; *see generally* Chevron, U.S.A., Inc. v. Nat'l Res. Def. Council, 467 U.S. 837, 844 (1984) (articulating the principle of judicial deference to administrative interpretations of statutory schemes).

A distinct procedural challenge to the Order was also raised by the petitioners and summarily dismissed by the Court.²¹ Under Section 312 of the Communications Act, revocation of a spectrum license entitles the affected licensee to certain procedural protections set forth in Section 9(b) of the Administrative Procedure Act. ²² Presumably, if LPTV displacement constituted a license revocation as was argued by the petitioners,²³ that would also fall within the scope of a prohibited alteration under 47 U.S.C. § 1452(b)(5). However, accepting the FCC's explanation that "displacement requires only that LPTV . . . stations vacate the channel on which they are operating," but "does not require termination of operations or relinquishment of spectrum usage rights," the Court concluded that the potential for displacement was not the sort of "intentional sanction" contemplated by the Communications Act definition of license revocation.²⁴

III. CONCLUSION

While *Mako* seemingly resolves a legal uncertainty in the Spectrum Act, the decision's practical effect is unlikely to be fully appreciated until the incentive auction unfolds. At this point, LPTV displacement is merely a fear, if a well-founded one. However, industry stakeholders can only speculate about the extent to which it will be realized and the service areas it will affect. Particularly in rural and remote communities, LPTV stations have been praised for offering free content of local interest.²⁵ Mindful of this important role, the FCC has indicated that greater clarity may be forthcoming and has already provided (in a separate rulemaking) for the use of repacking and optimization software to help LPTV stations transition to the postauction media landscape.²⁶

^{21.} See Mako, slip op. at 11-12.

^{22.} Communications Act of 1934, 47 U.S.C. § 312 (2012); *see also* 5 U.S.C. § 558(c) (2012).

^{23.} See Mako, slip op. at 11-12.

^{24.} See id.

^{25.} *See, e.g., Order, supra* note 15 (statement of Comm'r Clyburn) ("LPTVs provide diverse and local television programming and . . . are an important free over-the-air television resource in the most remote of locations.).

^{26.} See Low Power TV Digital Rules, 81 Fed. Reg. 5,041, 5,044-45 (2016).

SATURN TELECOMMUNICATION SERVICES V. FCC

632 F. App'x 591 (11th Cir. 2016)

by Chasel Lee *

In Saturn Telecommunication Services v. FCC,¹ the United States Court of Appeals for the Eleventh Circuit rejected a petition by Saturn Telecommunication Services, Inc. to review the FCC's dismissal of Saturn's complaint against AT&T for violating their statutory obligations regarding unbundled access to network elements.² The Court found that Saturn's claims had already been settled between Saturn and AT&T in 2006, that their agreement bars raising these claims again, and that the FCC's dismissal was thereby proper.³

I. BACKGROUND

In 2006, Saturn, a competitive local exchange carrier (CLEC) providing services in Florida, raised allegations of misconduct against BellSouth, Inc., the incumbent local exchange carrier (ILEC), regarding the construction of a new network for Saturn's customers and their subsequent migration to the new network in the wake of the FCC's elimination of UNE-P provision requirements in 2005.⁴ After filing complaints before the FCC and Florida Public Service Commission (FPSC),⁵ and after trying to block BellSouth's then-pending merger with AT&T,⁶ the two sides eventually agreed to a Settlement Agreement on November 2006.7

In addition to resolving the immediate problem of network construction and migration, Saturn agreed to withdraw their complaints and comments before the FCC and the FPSC and to refrain from refiling these claims.⁸ Saturn also agreed to "release[], acquit[], and discharge[] [AT&T] from all Demands, Actions and Claims, whether known or unknown, asserted or which could have been asserted, against [AT&T] related to' the FPSC Complaint or the FCC Comments."9 "Demands, Actions and Claims" were defined as:

[A]ll obligations, promises, covenants, agreements, contracts, endorsements, controversies, suits, actions, causes of actions,

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^{1.} Saturn Telecomm. Servs., Inc. v. FCC, 632 F. App'x 591 (11th Cir. 2016) (per curiam).

^{2.} Id. at 593.

^{3.} See id.

^{4.} See Saturn Telecomm. Servs. Inc. v. BellSouth Telecomms., Inc., Memorandum Opinion and Order, 28 FCC Rcd 4335, paras. 5-10 (2013) [hereinafter Saturn EB Order].

See id. at para. 10. 5.

^{6.} See id.

^{7.} See id. at para. 11. 8.

See id. at paras. 12-13.

^{9.} Id. (citing the Settlement Agreement).

rights of action . . . claims, demands, rights, charges . . . of any kind or sort whatsoever or howsoever or whenever arising . . . that *relate to* the claims set forth by [Saturn] in the FCC [Comments] and the FPSC Complaint.¹⁰

However, implementation of the Settlement Agreement ran into numerous difficulties, and Saturn filed an informal complaint with the FCC and a three-claim lawsuit in federal district court against AT&T in connection with the ongoing conflict.¹¹ After the district court dismissed two of the claims,¹² Saturn had the case dismissed and filed a formal complaint in 2009 with the FCC seeking damages.¹³

After reviewing Saturn's petition, the Enforcement Bureau dismissed the entire complaint in 2013.¹⁴ Citing the "related to" language in the "Demands, Actions and Claims" definition, the Enforcement Bureau found that the claims at issue "related to" those already disputed in 2006,¹⁵ and Saturn was therefore disallowed from raising those issues again.¹⁶ Saturn's argument that the Settlement Agreement did not reach post-Agreement conduct was dismissed ¹⁷ as the allegations stemmed from either pre-Agreement conduct or conduct discussed explicitly in the Agreement.¹⁸ Also, the "howsoever and whenever arising" and "relate to" language of the "Demands, Actions and Claims" definition included the claims at issue.¹⁹

Saturn subsequently moved for reconsideration by the full Commission.²⁰ The FCC issued an Order in October 2014 upholding the Enforcement Bureau's decision in full and dismissing the complaint with prejudice, agreeing with the Enforcement Bureau's findings and conclusions.²¹ Saturn then petitioned the Eleventh Circuit, whose jurisdiction includes Florida, for review of the FCC's decision.²²

II. ANALYSIS

The Court agreed with the Enforcement Bureau and the full FCC, finding the language of the Settlement Agreement to be determinative.²³ It

20. See Saturn Telecomm. Servs., Inc. v. BellSouth Telecomms., Inc., Order on Reconsideration, 29 FCC Rcd 12520, para. 13 (2014).

21. See generally id. at paras. 14-24.

^{10.} *Id.* at para. 25; Saturn Telecomm. Servs., Inc. v. FCC, 632 F. App'x 591, 592 (11th Cir. 2016) (per curiam) (emphasis added).

^{11.} Saturn EB Order, *supra* note 4, at paras. 16-17.

^{12.} See id. at para. 18.

^{13.} See id. at paras. 20-24.

^{14.} See id. at para. 23.

^{15.} See id. at paras. 26, 28.

^{16.} See id.

^{17.} *See id.* at para. 30.

^{18.} *See id.* at paras. 32-33.

^{19.} Id. at para. 34.

^{22.} Saturn Telecomm. Servs., Inc. v. FCC, 632 F. App'x 591, 592 (11th Cir. 2016) (per curiam).

^{23.} See id. at 593.

stated that the Settlement Agreement's language was "broad[] and unambiguous[],"²⁴ with little room for escape. Saturn had "fail[ed] to allege a new independent violation,"²⁵ instead raising "a continuation of the same, released misconduct."²⁶ Saturn had merely restated its old complaint, which it had agreed to settle.

III. CONCLUSION

The Court reviewed the language in the Settlement Agreement and found that Saturn's claims were barred by the Agreement it signed ten years ago. Accordingly, the Court agreed with the FCC's decision on the case and dismissed the petition to reconsider.

^{24.} See id. at 592.

^{25.} See id. at 593.

^{26.} *Id.*

LAW V. FCC

627 F. App'x 1 (D.C. Cir. 2015), cert. denied, No. 16-311 (Oct. 17, 2016)

by Melissa Morgans *

In *Law v. FCC*,¹ the United States Court of Appeals for the District of Columbia Circuit dismissed appellants' appeal from the FCC's granting of radio license applications.² The D.C. Circuit held, citing *Rainbow/PUSH Coalition v. FCC*, that there is no "automatic audience standing" for individuals who may be a part of a broadcaster's local audience.³

I. BACKGROUND

In 2012, following a bankruptcy action, ⁴ the FCC granted an application to assign two radio licenses for New York City radio stations.⁵ After the grant, four New York City residents filed a petition under Section 309(d) of the Communications Act of 1934, ⁶ indicating the license application would negatively impact local black audiences⁷ and contribute to the media's consolidation into the hands of the "corporate elite."⁸ The FCC dismissed the petitioners' argument which asserted the license application would be contrary to the public interest under Section 309(d)⁹ and denied to hear them on their Fifth Amendment claim.¹⁰

II. ANALYSIS

The D.C. Circuit held petitioners lacked standing to bring suit as members of a radio station's listening audience, holding that there is no "automatic audience standing."¹¹ Aside from being members of the listening audience of the radio station, the appellants did not provide affidavits or other

10. See Urban Radio Order, supra note 7, at para. 3.

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^{1.} Law v. FCC, 627 F. App'x 1 (D.C. Cir. 2015).

^{2.} See id. at 1.

^{3.} *Id.* at 1 (quoting Rainbow/PUSH Coalition v. FCC, 330 F.3d 539, 542 (D.C. Cir. 2003)).

^{4.} *See In re* Inner City Media Corp., No. 11-13967 (Bankr. S.D.N.Y, Feb 23, 2012) (Westlaw, Bankruptcy Cases).

^{5.} *See* Brief for Appellee at 1, Law v. FCC, 627 F. App'x 1 (D.C. Cir. 2015) (No. 14-1130).

^{6.} See Communications Act of 1934 § 309(d), 47 U.S.C. § 309(d) (2012).

^{7.} *See* Urban Radio I, L.L.C., Debtor-in-Possession and YMF Media, New York Licensee LLC for Consent to Assign Licenses, Memorandum Opinion and Order, 29 FCC Rcd 6389, para. 4 (2014) [hereinafter Urban Radio Order].

^{8.} *Id*.

^{9.} *See* Brief for Appellee, supra note 5, at 1.

^{11.} Law v. FCC, 627 F. App'x 1, 1 (D.C. Cir. 2015) (quoting Rainbow/PUSH Coalition v. FCC, 330 F.3d 539, 542 (D.C. Cir. 2003)).

evidence on behalf of the group to assert standing under Article III.¹² Given the lack of standing, the D.C. Circuit dismissed the case.¹³

III. CONCLUSION

As the D.C. Circuit decided *Law* on an issue of standing,¹⁴ it did not address the pressing underlying issue involving the reduction of blackoriented broadcast programing in New York City.¹⁵ Rather, the Court furthered the policy articulated in *Rainbow/PUSH Coalition v. FCC* that being a part of a radio station's listening audience does not affirm legal standing.¹⁶ As a result, parties considering petitioning against FCC license applications should ensure they possess Article III standing, knowing the D.C. Circuit has reliably rejected the argument of audience standing.¹⁷

^{12.} See id. at 1.

^{13.} *Id.*

^{14.} *Id*.

^{15.} David Hinckley, *Radio Personality Bob Law Warns that Black Radio Is in danger of Disappearing from New York*, N.Y. DAILY NEWS (June 13, 2012), http://www.nydailynews.com/entertainment/tv-movies/radio-personality-bob-law-warns-black-radio-danger-disappearing-new-york-article-1.1094465.

^{16.} See Rainbow/PUSH Coalition, 330 F.3d at 542.

^{17.} Compare Law v. FCC, 627 F. App'x 1, 1 (D.C. Cir. 2015) with Rainbow/PUSH Coalition, 330 F.3d at 542.

<u>KAY V. FCC</u> 621 F. App'x 5 (D.C. Cir. 2016)

by Brittany Pont*

In *Kay v. FCC*,¹ the United States Court of Appeals for the District of Columbia Circuit denied a petition from James A. Kay, Jr. challenging an FCC order to reconfigure the 800 MHz spectrum band in order to reduce interference with public safety communication systems. This case explores whether a petitioner maintains standing to challenge an FCC Order reconfiguring the 800 MHz spectrum when he is the sole member of a limited liability company holding such licenses. The D.C. Circuit found that he cannot assert this challenge.

I. BACKGROUND

An 800 MHz radio system is a combination of conventional two-way radio and computer-controlled transmitters.² Police, firefighters, and other public safety officials use portions of the band for communications, which is comprised of spectrum at 806-824 MHz paired with spectrum at 851-869 MHz.³ In order to combat harmful interferences on these systems, in 2004 the FCC set forth a plan to reconfigure the band.⁴ The plan ordered certain licensees to move their operations to a different area of the spectrum.⁵

Kay first petitioned the D.C. Circuit in 2006, when he personally held licenses that were affected by the FCC order.⁶ In the present case, however, Kay acknowledges that he personally no longer holds any licenses.⁷ Instead, he maintains "control and ultimate beneficial ownership" of Third District Enterprises (Third District), a Nevada limited liability corporation and licensee of 800 MHz licenses.⁸ Kay asserts that his ownership of Third District provides him continued standing to bring this case in his personal capacity since he is the company's sole member.⁹

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^{1.} Kay v. FCC, 621 F. App'x 5 (D.C. Cir. 2015).

^{2.} See UC RIVERSIDE POLICE DEP'T, 800 MHZ FREQUENTLY ASKED QUESTIONS, http://police.ucr.edu/docs/mhz_faq.pdf (last visited Oct. 5, 2016).

^{3.} *See 800 MHz Spectrum*, FCC, https://www.fcc.gov/general/800-mhz-spectrum (last updated Aug. 12, 2016).

^{4.} See id.

^{5.} See Kay, 621 F. App'x 5.

^{6.} *See id.*

^{7.} See id.

^{8.} See id.

^{9.} See id.

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II. ANALYSIS

The D.C. Circuit began by reminding the petitioner that a corporation is a separate and distinct legal entity from its shareholders, even if the corporation is solely owned.¹⁰ Thus, a shareholder is generally unable to bring a personal lawsuit to "vindicate the rights of that separate legal entity."¹¹ Kay does not assert, nor does the court find, that he falls under any of the exceptions to this rule.¹² Thus, when Kay transferred his personal licenses to Third District, his claim became moot.¹³ Additionally, the fact that Third District is a limited liability corporation, as opposed to a traditional corporation, does not alter the analysis; just as a corporation is a legally distinct entity from the corporate shareholders, a limited liability company is also legally distinct from its owners.¹⁴

III. CONCLUSION

The D.C. Circuit found that because Kay cannot personally assert the legally distinct rights of Third District, his challenge of the FCC Order is denied.¹⁵ This decision may have an impact on other parties who transferred personally-held 800 MHz licenses to corporate ownership and may also affect those others who transfer licenses on other spectrum frequencies. The decision that personal standing is lost upon such a transfer to a corporate entity should serve as a warning that any challenges to a reconfiguration order must occur prior to such a transfer or sale of a license.

^{10.} See id. (citing Am. Airways Charters, Inc. v. Regan, 746 F.2d 865, 872-73 (D.C. Cir. 1984)).

^{11.} See id. (citing PHILLIP A. BLUMBERG ET AL., 5 BLUMBERG ON CORPORATE GROUPS § 167.03, at 21 (2d ed. 2015); WILLIAM MEAD FLETCHER, 12B FLETCHER CYCLOPEDIA OF THE LAW OF CORPORATIONS § 5910, at 502-04 (2009)); see also Am. Airways Charters, 746 F.2d at 873 n.14.

^{12.} See Kay, 621 F. App'x at 6.

^{13.} See id.

^{14.} Id. (citing Cedric Kushner Promotions, Ltd. v. King, 533 U.S. 158, 163 (2001)).

^{15.} See id. at 6.

BEHR V. FCC 638 F. App'x 1 (D.C. Cir. 2015)

by Melissa Morgans *

In *Behr v. FCC*,¹ the United States Court of Appeals for the District of Columbia Circuit affirmed the FCC's order denying petitioner's request for an evidentiary hearing after partial approval of a license modification application under 47 C.F.R. § 1.110.² The FCC denied the request, arguing that it did not grant any application *in part*, but granted one application³ and separately denied another.⁴ The D.C. Circuit deferred to the FCC's judgment and affirmed the order.

I. BACKGROUND

In 1993, Behr won an FCC lottery for a 220-222 MHz-Band broadcasting license⁵ which, due to an administrative error, Behr received in 1996.⁶ The license required Behr to construct a base station within twelve months.⁷ In June 2003, Behr filed an application to modify his license and attached a request for a waiver of a construction requirement asking for an extension from twelve months to five to ten years.⁸ In November 2003, the Wireless Telecommunications Bureau denied the waiver request and granted the license modification application.⁹

Under 47 C.F.R. § 1.110,¹⁰ if the FCC, without a hearing, grants any application *in part*, the application is considered granted unless the applicant sends the FCC a written rejection of the grant within thirty days.¹¹ If the applicant does send in a written rejection within thirty days, the FCC must vacate the original action and send the application for a hearing.¹² Behr contended that his application was granted *in part* and then should have been sent to a hearing before the FCC under Section 1.110.¹³ However, the FCC did not hold a hearing because it did not believe that it granted any application

- 1. See Behr v. FCC, 638 F. App'x 1 (D.C. Cir. 2015).
- 2. Id. at 1; see also 47 C.F.R. § 1.110 (2015).
- 3. See Behr, 638 F. App'x at 2.
- 4. *Id.* at 1.
- 5. *Id*.
- 6. *Id*.
- 7. *Id*.
- 8. *Id.* at 1-2.
- 9. *Id.* at 2.
- 10. See 47 C.F.R. § 1.110 (2015).
- 11. See Behr v. FCC, 638 F. App'x 1, 2 (D.C. Cir. 2015).
- 12. See 47 C.F.R. § 1.110; see also Behr, 638 F. App'x at 2.
- 13. See Behr, 638 F. App'x at 2.

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in part.¹⁴ Rather, the FCC contended Behr's matter involved one granted modification application and one separately denied waiver request.¹⁵

II. ANALYSIS

The D.C. Circuit affirmed the FCC's order under the applicable standard of review, "arbitrary, capricious, [or] an abuse of discretion," because the FCC's decision making was rational.¹⁶ The FCC reasonably thought the license modification would need to be updated regardless of the status of the waiver request, and thus treated them separately.¹⁷ The D.C. Circuit also found the FCC is entitled to great deference when it interprets its own regulations.¹⁸

Judicial precedent also supported the decision, specifically *Buckley-Jaeger v. FCC.*¹⁹ In *Buckley-Jaeger*, the D.C. Circuit held that Section 1.110 disputes are reserved for "situations where the applicant receives less than a full authorization."²⁰ Here, Behr did receive full authorization of his license modification request and therefore does not fall under this category.²¹ Finally, the D.C. Circuit asserted there were other remedies open to Behr in addition to this Section 1.110 lawsuit, namely "filing a petition for reconsideration or an application for review"—opportunities he did not pursue.²²

III. CONCLUSION

Behr is a lesson in uniformity and lost opportunity. First, *Behr* exemplifies the D.C. Circuit's choice to defer to the FCC, especially when the agency interprets its own regulations.²³ Second, *Behr* demonstrates how parties will be held accountable for any squandered opportunities for relief.²⁴ Going forward, parties should be aware of what judicial remedies are available to them, as the D.C. Circuit is willing to take that into account when determining the party's diligence.

15. Id.

- 17. Id.
- 18. Id.
- 19. Id. at 2-3; See also Buckley-Jaeger v. FCC, 397 F.2d 651 (D.C. Cir. 1968).
- 20. Behr, 638 F. App'x at 3 (quoting Buckley-Jaeger, 397 F.2d at 656).
- 21. Id. at 3.
- 22. See id.
- 23. Id. at 2.
- 24. Id. at 3.

^{14.} See id. at 2.

^{16.} Id.

BEACH TV PROPERTIES, INC. V. FCC

617 F. App'x 10 (D.C. Cir. 2015)

by Alexander Gorelik^{*}

In *Beach TV Properties, Inc. v. FCC*,¹ the United States Court of Appeals for the District of Columbia Circuit affirmed the FCC's rejection of the broadcaster's certification for eligibility. The D.C. Circuit affirmed the FCC's action based on the broadcaster's initial deficient certification and its untimely amended submission.²

I. BACKGROUND

The Community Broadcasters Protection Act of 1999 authorized the FCC to provide certain licenses to ensure that low-power television stations, which provide "programming tailored to the interests of viewers in small localized areas," could survive the transition to the digital television format.³ Class A licensees are protected from interference from newer broadcast facilities in the area so long as the licensee continues to meet certain requirements.⁴

To convert from a regular low power television license to a Class A license, the FCC required the submission of a completed certification of eligibility form prior to January, 28, 2000, ⁵ in accordance with the Community Broadcasters Protection Act of 1999.⁶ Beach TV Properties, Inc. is a broadcaster that provides television programming aimed at tourists in various American vacation cities.⁷ On December 29, 1999, following the FCC's release of regulations to establish a Class A television license, Beach TV Properties, Inc. submitted its certification of eligibility form for such a license.⁸

After a review of Beach TV's certification of eligibility submission, the FCC deemed the company's submission noncompliant because the applicant did not mark any of the blocks specifying its qualifications for a Class A

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^{1.} Beach TV Props., Inc. v. FCC, 617 F. App'x 10 (2015).

^{2.} See id. at 10.

^{3. 145} CONG. REC. 29,977 (1999).

^{4.} *See* Brief for Respondents, *supra* note 2, at 7 (citing Community Broadcasters Protection Act of 1999, Pub. L. No. 106-113, § 5008, 113 Stat. 1501, 1501A-594 to -598).

^{5.} *See* Brief for Respondents, *supra* note 2, at 6-7 (citing Mass Media Bureau Implements Community Broadcasters Protection Act of 1999, *Public Notice*, https://www.fcc.gov/document/mass-media-bureau-implements-community-broadcasters-protection-act-1999 (1999)).

^{6.} See Community Broadcasters Protection Act of 1999 § 5005.

^{7.} See TRIPSMARTER.COM, http://www.tripsmarter.com/ (last visited Oct. 4, 2016).

^{8.} *See* Brief for Respondents at 9, Beach TV Props., Inc. v. FCC, 617 F. App'x 10 (2015) (Nos. 14-1229, 14-1230).

license.⁹ Beach TV asked for a reevaluation of the dismissal and submitted an amended form, which was promptly denied because the FCC received the submission after the statutory deadline.¹⁰ In response, the broadcaster asked for review of the denial by the full Commission, which was denied in a 2012 Order.¹¹ Beach TV filed for a reconsideration of the FCC's decision, but the Media Bureau rejected the submitted challenges.¹² Beach TV filed suit to overturn the denial of a reconsideration.¹³

II. ANALYSIS

In its review, the D.C. Circuit Court of Appeals affirmed the FCC's decisions.¹⁴ The Court found that of the seven challenges brought by Beach TV, three were jurisdictionally barred, two were procedurally barred, and two were meritless.¹⁵

Beach TV first claimed that the FCC failed to properly publish and promulgate the relevant rules pursuant to the Administrative Procedure Act.¹⁶ The Court pointed out that Beach TV neglected to present those arguments in front of the FCC first and therefore any authority to assess them now was lacking.¹⁷ Beach TV also claimed that it lacked notice for the form's requirements and that it was the victim of disparate treatment.¹⁸ The Court rejected these arguments because they were not asserted prior to the request for reconsideration.¹⁹

Finally, the Court rejected the broadcaster's claim that the omissions in its original license submission were immaterial because the application failed to identify how the company met any of the requirements for eligibility.²⁰ The Court also rejected Beach TV's argument that the FCC should have extended its deadline for a timely submission of the form by noting that the FCC's deadline was supported by statute.²¹ The Court also reiterated its conclusion in *Virgin Islands Telephone Corp. v. FCC* that untimely submissions must only be accepted in "extremely unusual circumstances."²²

^{9.} *See* Brief for Respondents, *supra* note 2, at 11 (citing Dismissal of LPTV Licensee Certificates of Eligibility for Class A Television Status, *Public Notice*, 15 FCC Rcd 9761, 9762 (2000)).

^{10.} See Beach TV Props., Inc. v. FCC, 617 F. App'x 10, at 10 (2015).

^{11.} See Brief for Respondents, *supra* note 2, at 14 (citing Atlanta Channel, Inc., *Memorandum Opinion and Order*, 27 FCC Rcd 14541, para. 1 (2012)).

^{12.} See Brief for Respondents, supra note 2, at 16-19.

^{13.} See Beach TV Props., 617 F. App'x at 10.

^{14.} See id.

^{15.} See id.

^{16.} See id. (citing 5. U.S.C. §§ 552-553 (2012)).

^{17.} See id.

^{18.} See id.

^{19.} See id.

^{20.} See id. at 11.

^{21.} See 47 U.S.C. § 336(f)(1)(B) (2012).

^{22.} See Beach TV Props., 617 F. App'x at 11 (citing V.I. Tel. Corp. v. FCC, 989 F.2d 1231, 1237 (D.C. Cir. 1993)).

III. CONCLUSION

The decision underscores the importance of a timely assertion of a challenge and further decreases the likelihood of other successful appeals against denials of the Class A licenses for similar reasons.

JOHNSON V. FCC No. 14-1250 (D.C. Cir. 2015)

by Arian Attar * and Lynn Chang †

In *Johnson v. FCC*,¹ the United States Court of Appeals for the District of Columbia Circuit dismissed an appeal of the FCC's dismissal of an objection to a radio licensing assignment.² This case was originally handled by the FCC's Media Bureau, Audio Division.³

I. BACKGROUND

In December 2010, petitioner William Johnson sought a determination by the FCC that the FM Translator Station W227AV's license had expired according to Section 312(g) of the Communications Act.⁴ One motive for seeking an FCC determination on license expiration is to show the license is not being used, so the petitioner can then have the license assigned to them and take advantage of its benefits. In May 2013, the FCC granted an application to reassign W227AV from Reach Communications, Inc. to Suncoast Radio, Inc., and the application went unopposed.⁵

Despite previously having the opportunity to object to the assignment through public comment, Johnson filed an assignment petition, where he objected to the assignment of W227AV from Reach Communications, Inc. to Suncoast Radio, Inc.⁶ Johnson argued the assignment should be rescinded because the license had expired and therefore could not be assigned.⁷ In August 2013, the FCC denied Johnson's 2010 petition as lacking merit and dismissed the assignment petition because it was not timely filed.⁸ In September 2013, Johnson filed a petition for review of the FCC's August 2013 decision, but this petition was again dismissed as untimely in April 2014.⁹ Johnson then challenged the April 2014 dismissal by filing another petition for review, but the FCC dismissed the application for review in September 2014 because it was untimely.¹⁰ In November 2014, Johnson

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^{1.} Johnson v. FCC, No. 14-1250 (D.C. Cir. Oct. 6, 2015).

^{2.} See id.

^{3.} Brief for Respondent at 7-9, Johnson v. FCC, No. 14-1250 (D.C. Cir. Oct. 6, 2015).

^{4.} See *id.* 47 U.S.C. § 312(g) (2012) states that "[i]f a broadcasting station fails to transmit broadcast signals for any consecutive 12-month period, then the station license granted for the operation of the broadcast station expires at the end of that period."

^{5.} Brief for Respondent, *supra* note 3, at 2-3.

^{6.} *See id.*

^{7.} See id.

^{8.} See id.

^{9.} See id.

^{10.} See id.

petitioned the D.C. Circuit for review of the FCC's September 2014 decision.¹¹

II. ANALYSIS

The main issue in *Johnson* was whether the D.C. Circuit had jurisdiction to rule upon the merits of a petitioner's complaint in a situation where the petitioner did not timely file an appeal.¹² Pursuant to Section 402(c) of the Communications Act, the petitioner had 30 days to file his petition.¹³ In this case, the petitioner missed the deadline by nearly one month.¹⁴ The D.C. Circuit agreed with the FCC that the petitioner "failed to file his appeal within [the appropriate time], and it therefore must be dismissed."¹⁵

III. CONCLUSION

Johnson illustrates the importance of adhering to procedural requirements and exemplifies the risks of late filing. Courts impose a stringent reading of the requirements and are unlikely to allow tardy filings or petitions get to the merits. It is also important to note the number of procedural failures on the part of the petitioner in this case prior to the D.C. Circuit's decision, because it illustrates how noncompliance can strain FCC resources.

^{11.} See id. at 3.

^{12.} Id. at 1.

^{13.} Communications Act of 1934 § 402(c), 47 U.S.C. § 402(c) (2012).

^{14.} Brief for Respondent, *supra* note 3, at 1.

^{15. 47} U.S.C. § 402(c); Johnson v. FCC, No. 14-1250 (D.C. Cir. Oct. 6, 2015).

SCHUM V. FCC

617 F. App'x 5 (D.C. Cir. 2015), cert. denied, 136 S. Ct. 1672 (2016)

by Lynn Chang *

In *Schum v. FCC*,¹ the United States Court of Appeals for the District of Columbia Circuit dismissed the plaintiff's petition for review and appeal of an FCC action approving the transfer of a radio license from one of the plaintiff's companies to a separate entity.²

I. BACKGROUND

After a Texas state court found a judgment against the plaintiff personally, the plaintiff declared bankruptcy. The FCC approved a transfer of a radio license from The Watch, Ltd. (The Watch) to a different licensee after the bankruptcy court put up the license for auction.³ The plaintiff is the sole owner of DFW Radio, Inc., a general partner of The Watch.⁴ The plaintiff alleged that he was injured by the FCC's approval of the transfer.⁵

The issue in this case was whether the plaintiff could prove injury to establish standing.⁶ To proceed to a trial on the merits, the plaintiff must have shown a concrete injury that resulted from the FCC's actions.⁷ To this end, the plaintiff attempted to assert three distinct injuries: (1) the FCC's approval terminated fees that the new licensee allegedly owed to The Watch;⁸ (2) entry of a personal judgment against him resulted in lost job opportunities;⁹ and (3) The Watch's valuation had fallen dramatically as a result of the action.¹⁰

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Schum v. FCC, 617 F. App'x 5 (D.C. Cir. 2015), *cert. denied*, 136 S.Ct. 1672 (2016).
See id. at 6.

^{3.} See id. at 7. The Watch, Ltd. was founded in 1997 with Mr. Schum serving as President since inception. *Executive Profile: Dave Schum*, BLOOMBERG,

http://www.bloomberg.com/research/stocks/private/person.asp?personId=9406342&privcapI d=9394978&previousCapId=9394978&previousTitle=The%20Watch%20Ltd. (last visited Oct. 19, 2016). After filing for bankruptcy, The Watch is now known as Renaissance Radio, Inc. and continues to own an operate radio broadcasting stations in the Dallas area. Company *Overview of the Watch Ltd.*, BLOOMBERG, http://www.bloomberg.com/research/stocks/private/snapshot.asp?privcapId=9394978 (last visited Oct. 19, 2016).

^{4.} See id. at 6.

^{5.} See id.

^{6.} *See id.*

^{7.} *See, e.g.*, Summers v. Earth Island Inst., 555 U.S. 488, 493 (2009); Lujan v. Defs. of Wildlife, 504 U.S. 555, 556 (1992) ("[A] plaintiff claiming only a generally available grievance about government, unconnected with a threatened concrete interest of his own, does not state an Article III case or controversy.").

^{8.} *See Schum*, 617 F. App'x at 6. As the judgment mentions, "Schum is the sole owner of DFW Radio, Inc., which is the general partner of The Watch, Ltd." *Id.*

^{9.} See id.

^{10.} The plaintiff alleges that he personally "sustained over 50% of the loss." Id.

II. ANALYSIS

The D.C. Circuit rejected all three of the plaintiff's contentions.¹¹ The D.C. Circuit found that the plaintiff did not suffer any injury in fact from the lost fees or the decline in value of The Watch because these were "merely derivative of harms suffered by the company," and are not personal injuries on which the plaintiff could obtain any form of recovery.¹² Further while the plaintiff's lost job opportunities may "arguably represent an injury in fact," they too fail to meet the "standing requirements of traceability and redressability."¹³ The D.C. Circuit notes that the FCC's order is an ancillary action that "helped to effectuate" the Texas court case and the plaintiff's subsequent bankruptcy proceedings.¹⁴ As a result, the injury cannot be traced to the FCC order.¹⁵ In addition, the D.C. Circuit decided that all three complaints failed to satisfy the final standing requirement: that a favorable decision would offer redress for the injuries.¹⁶

III. CONCLUSION

Schum is not likely to have a large impact in future cases. It is a straightforward procedural case and has no precedential value as an unpublished opinion. While it is fairly interesting how the court discusses whether fees, business value, or job opportunities may count as injuries in fact, the question is dealt with rather perfunctorily due to the "well-established shareholder standing rule."¹⁷ Litigants must invoke "those narrow exceptions to the [shareholder standing] rule" should they wish to challenge a FCC action in their personal capacity or have the company in question as the party issuing a challenge.

- 12. Id.
- 13. Id.
- 14. *Id.* at 6.
- 15. See id.
- 16. See id.
- 17. *Id*.

^{11.} See id.

The Move to Spectrum Sharing: How Reclassification Under Title II Will Cause Spectrum Sharing to Dominate Telecommunications Policy

Nellie Foosaner *

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I. INTRODUCTION

Electromagnetic spectrum plays an instrumental role in the daily lives of United States citizens as the nation's airwaves power countless devices from cellular phones to marine radios, and demand for spectrum continues to grow exponentially.¹ The Federal Communications Commission (FCC) faces the challenges associated with skyrocketing demand for spectrum that outpaces the amount of the resource available.² Meanwhile, in the public sector, federal agencies utilize spectrum to perform vital functions, including maintaining public safety and national security.³ Although there have been different methods of spectrum allocation in the past, recent methods include spectrum auctions and spectrum sharing. This Note will discuss how methods of managing spectrum in the United States must evolve with the expanding marketplace and the needs of federal agencies. Central to this Note's analysis is the impact of reclassifying broadband Internet access under Title II of the Communications Act on spectrum allocation implications.

In deciding among methods of allocation, one must understand how the actors in the private and public sectors value spectrum for their own use. The private sector derives value from spectrum based on the amount of potential profit from wireless services utilizing bandwidth.⁴ Federal agencies value spectrum based on potential social welfare.⁵ The United States government has demonstrated that it has an economic incentive for repurposing the spectrum held by federal agencies for the commercial sector through spectrum auctions. ⁶ Spectrum valuation and incentives for repurposing federal agencies' spectrum, may be impacted by the reclassification of broadband Internet access as a common carrier under Title II of the Telecommunications Act. ⁷ One theory asserts that reclassification under Title II will decrease capital investment and competition, thereby causing a devaluation of spectrum that will impact

^{1.} *See* Ruth Milkman, *Spectrum: Supply and Demand*, FCC BLOG (Jan. 1, 2011, 12:15 PM), http://www.fcc.gov/blog/spectrum-supply-and-demand.

^{2.} Id.

^{3.} See Spectrum Management, NAT'L TELECOMM. & INFO. ADMIN.,

http://www.ntia.doc.gov/category/spectrum-management (last visited Apr. 5, 2015).

^{4.} See COLEMAN BAZELON & GIULIA MCHENRY, THE ECONOMICS OF SPECTRUM SHARING 1-2 (2013) http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2242008.

^{5.} *Id*.

^{6.} *See e.g.*, Letter from the H. Comm. on Energy & Commerce to Tom Wheeler, Chairman, FCC (May 2, 2014), https://ecfsapi.fcc.gov/file/7521372330.pdf (stating that a purpose of spectrum auctions was to raise money for the Treasury).

^{7.} See Casey Given, Title II Reclassification Harms Innovation and the Poor, HILL: CONG. BLOG (Feb. 6, 2015, 5:00 PM),

http://thehill.com/blogs/congress-blog/technology/231942-title-ii-reclassification-harms-innovation-and-the-poor.

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spectrum policy.⁸ If reclassification devalues spectrum, new methods of allocation of spectrum will dominate telecommunications policy. This Note argues that the theory of spectrum devaluation, as a result of reclassification of broadband Internet access, will cause a decrease in governmental economic incentives to use clearing and auctions for the dominant means of spectrum policy. However, there will still be a skyrocketing demand for spectrum and a need to protect the interests of incumbent federal users, which spectrum sharing addresses. Due to theories of spectrum devaluation combined with growing private and public sector needs, spectrum sharing will become the dominant means to address the challenges of spectrum allocation.

Section II of this Note begins by defining spectrum and describing the modern uses of spectrum. It highlights that federal agencies hold large amounts of spectrum that could be put to use in the private sector while still protecting agencies' ability to perform vital public functions. Next, Section III describes past and current methods of spectrum allocation while demonstrating the benefits of spectrum sharing. In addition to potential methods of spectrum allocation, Section III explains how the private and public sectors value spectrum, and the incentives the federal government has when shaping spectrum policy. Section IV highlights the open Internet debate regarding reclassifying broadband Internet access providers under Title II, which some believe will cause a devaluation of spectrum. Accepting the theory that reclassification devalues spectrum dilutes the economic incentives the federal government has for repurposing spectrum. Because such concerns within the private sector constantly affect the marketplaces, Section V argues that, as a result of economic uncertainties, spectrum sharing will become the dominant and logical choice in telecommunications policy moving forward.

II. SPECTRUM: ITS MODERN USES AND METHODS OF Allocation

Spectrum is "commonly referred to as radio frequency spectrum or wireless spectrum, [which] refer to the properties in air that transmit electric signals and, with applied technology, can deliver voice, text, and video communications."⁹ Electromagnetic spectrum is a finite resource, ¹⁰ and current technological restraints limit the amount of spectrum that is actually usable.¹¹ Among the technological uses that competing for spectrum are

^{8.} See generally Fred B. Campbell, Jr., Internet Innovation All., Impact of "Title II" Regulation on Communications Investment (2015),

http://internetinnovation.org/images/misc_content/Impact_of_Title_II.PDF.

^{9.} LINDA K. MOORE, CONG. RESEARCH SERV., SPECTRUM POLICY: PROVISIONS IN THE 2012 SPECTRUM ACT 1 (Mar. 12, 2014), https://www.fas.org/sgp/crs/misc/R43256.pdf.

^{10.} See FCC, FACT SHEET: FCC MOBILE SPECTRUM HOLDINGS 1 (2014), https://apps.fcc.gov/edocs_public/attachmatch/DOC-327110A1.pdf [hereinafter FCC MOBILE SPECTRUM HOLDINGS].

^{11.} See MOORE, supra note 9, at 1.

"public safety, commercial and non-commercial fixed and mobile wireless services, broadcast television and radio, satellite and other services."¹² Wireless providers utilize spectrum to transmit communications, and increases in technological innovation have led to growing public and private sector demands for licensed and unlicensed spectrum.¹³ The FCC currently manages all commercial uses of spectrum, and the National Telecommunications and Information Administration (NTIA), an agency within the Department of Commerce, regulates federal spectrum.¹⁴ Spectrum concerns are not a resource problem, but a management problem.¹⁵

The approximately five billion mobile devices connected to networks today¹⁶ coupled with government operations creates an increasing demand for spectrum. Spectrum value in the commercial setting is based on how profitable spectrum will be to the market's wireless carriers.¹⁷ Gains in social welfare determine the value of non-commercial spectrum.¹⁸ Spectrum has to be allocated among users, from commercial use to use by the federal government, and currently only frequency bands between 9 kHz and 275 GHz have been allocated.¹⁹ In order for wireless providers to continue to meet consumer demands, more spectrum needs to be made available and available spectrum needs to be used more efficiently.²⁰

A. Spectrum and United States Federal Governmental Agencies

Federal government agencies remain the largest holders of spectrum in the United States, with over sixty federal agencies possessing spectrum assets.²¹ The Department of Defense (DOD) is the largest user of federal spectrum, followed by the Federal Aviation Administration (FAA), the Department of Homeland Security (including the Coast Guard) and the

^{12.} Licensing, FCC, http://www.fcc.gov/topic/licensing (last visited July 8, 2016).

^{13.} See FCC, THE BROADCAST TELEVISION SPECTRUM INCENTIVE AUCTION: INNOVATION IN POLICY TO IGNITE INNOVATION FOR CONSUMER AND BUSINESS 1 (Jan. 16, 2013), https://apps.fcc.gov/edocs_public/attachmatch/DOC-318455A1.pdf.

^{14.} See Radio Spectrum Allocation, FCC, https://www.fcc.gov/engineering-technology/policy-and-rules-division/general/radio-spectrum-allocation (last visited Mar. 6, 2016) [hereinafter FCC Radio Spectrum Allocation].

^{15.} See President's Council of Advisors on Sci. & Tech., Report to the President: Realizing the Full Potential of Government-Held Spectrum to Spur Economic Growth, at vi (2012),

https://www.whitehouse.gov/sites/default/files/microsites/ostp/pcast_spectrum_report_final_j uly_20_2012.pdf [hereinafter PCAST REPORT].

^{16.} See PCAST REPORT, supra note 15, at 1.

^{17.} See BAZELON & MCHENRY, supra note 4, at 1-2.

^{18.} See id.

^{19.} See FCC Radio Spectrum Allocation, supra note 14.

^{20.} See FCC MOBILE SPECTRUM HOLDINGS, supra note 10, at 1.

^{21.} See Brent Skorup, Reclaiming Federal Spectrum: Proposals and Recommendations, 15 COLUM. SCI. & TECH. L.J. 90, 103 (2013).

Department of Justice. ²² The NTIA currently regulates the federal government's spectrum usage.²³ The delegation of a band as federal or non-federal is subject to an informal agreement between the FCC and the NTIA.²⁴

Redeploying spectrum from incumbent public-sector users helps the spectrum scarcity problem in the commercial sector.²⁵ Some argue that spectrum is better utilized by private commercial users who can "(a) internalize the benefits and costs of deploying the input, and (b) can later sell it to parties who value it more," than by the federal government.²⁶ As a counterargument, the government uses its spectrum for important purposes such as public safety, emergency communications, and national security.²⁷ Unlike the FCC rules, which have a market-based approach to allocating commercial spectrum for the private sector, the government still does not pay for its own use of the valuable resource.²⁸ The federal government holds a large amount of important radio frequencies, which it utilizes for next to no cost.²⁹ For example, the utilization of free spectrum eliminates the possibility for massive revenues as seen in previously spectrum auctions.³⁰ Economists have stated that the resulting misallocation from the government's inefficient use of spectrum costs hundreds of billions of dollars annually.³¹ The demands for commercial spectrum and the harms to the economy demonstrate a need to reallocate lightly-used federal spectrum. The design of spectrum allocation to the federal government also poses a problem as a report from the President's Council of Advisors on Science and Technology (PCAST) asserts:

In addition to limiting the amount of contiguous spectrum available for commercial or federal use, the current regime has created a multiplicity of spectrum borders where underutilized

^{22.} See U.S. Gov't Accountability Off., GAO-11-352, Spectrum Management: NTIA Planning and Processes Need Strengthening to Promote the Efficient Use of Spectrum by Federal Agencies 1, 20 (2011), http://www.gao.gov/new.items/d11352.pdf.

^{23.} See 47 U.S.C. § 305(a) (2012); see also A Short History of NTIA, NAT'L TELECOMM. & INFO. ADMIN., https://www.ntia.doc.gov/legacy/opadhome/history.html (last visited Mar. 6, 2016).

^{24.} See Nat'l Telecomm. & Info. Admin., Manual of Regulations and Procedures for Federal Radio Frequency Management § 4.1.2(2)(a) (2014).

^{25.} See Skorup, supra note 21, at 90.

^{26.} *Id.* at 96.

^{27.} See U.S. GOV'T ACCOUNTABILITY OFF., GAO-12-1018T, SPECTRUM MANAGEMENT, FEDERAL GOVERNMENT'S USE OF SPECTRUM AND PRELIMINARY INFORMATION ON SPECTRUM SHARING 1, 3 (2013), http://www.gao.gov/assets/650/648206.pdf [hereinafter GAO-12-1018T].

^{28.} See Skorup, supra note 21, at 92.

^{29.} Id.

^{30.} See Chloe Albanesius, FCC Spectrum Auction Pulls in Staggering \$44.9 Billion, PC MAG (Jan. 29, 2015, 3:20 PM EST),

http://www.pcmag.com/article2/0,2817,2476035,00.asp.

^{31.} See Thomas W. Hazlett & Roberto E. Munoz, A Welfare Analysis of Spectrum Allocation Policies, 40 RAND J. ECON. 424, 425 (2009), http://www.jstor.org/stable/25593718.

guard bands are imposed to prevent mutual disturbance of services in neighboring bands. In general, the fragmented partitioning of [f]ederal spectrum leads to inefficiency, artificial scarcity, and constraints on current and future [f]ederal and non-[f]ederal users.³²

The PCAST Report asserts that the federal government needs to share its spectrum holdings with non-federal users.³³ Because federal agencies use a large quantity of spectrum and only pay a small fee to the NTIA, the agencies have little economic incentive to utilize spectrum efficiently or share spectrum.³⁴ Federal users hold about eighteen percent of the most highly valued spectrum.³⁵ Although the federal government remains the largest holder of spectrum in the United States, many commentators state that federal spectrum holders do not use spectrum efficiently.³⁶ Depending on which estimate is used, the exact total amount of highly valued spectrum that the federal government uses exclusively or predominately ranges from thirty-nine to fifty-seven percent.³⁷ In approximately eighty percent of the shared spectrum, federal users have dominant use that prevents substantial commercial use in those bands.³⁸ Federal spectrum users effectively dominate sixty percent of coveted "beachfront"³⁹ spectrum.⁴⁰

In addition to holding large amounts of spectrum, the PCAST Report states that "[f]ederal users currently have no incentives to improve the

^{32.} PCAST REPORT, supra note 15, at 10.

^{33.} Id.

^{34.} See U.S. GOV'T ACCOUNTABILITY OFF., GAO-13-7, SPECTRUM MANAGEMENT: INCENTIVES, OPPORTUNITIES AND TESTING NEEDED TO ENHANCE SPECTRUM SHARING 11 (2012), http://www.gao.gov/assets/660/650019.pdf.

^{35.} See id. at 6.

^{36.} See Skorup, supra note 21, at 103 n.60 (quoting Harvey J. Levin, *The Radio Spectrum Resource*, 11 J.L. & ECON. 433, 434 (1968)) ("Most other users (like those in public safety and local or federal government radio) are not directly constrained in their use of spectrum by pressures in any 'markets' for their end products or services."); THOMAS M. LENARD ET AL., INCREASING SPECTRUM FOR BROADBAND: WHAT ARE THE OPTIONS? 23 (2010), http://web-

docs.stern.nyu.edu/old_web/economics/docs/workingpapers/2010/Lenard,%20White,%20Ris o_Increasing%20Spectrum%20for%20Broadband.pdf ("There appears to be a widespread consensus that spectrum in government hands is likely not being used efficiently"); James Losey & Sascha Meinrath, *Free the Radio Spectrum*, IEEE SPECTRUM (Jun. 28, 2010, 19:59 GMT), http://spectrum.ieee.org/telecom/wireless/free-the-radio-spectrum/0 (stating that "the 270,000 [allocations] held by government agencies . . . are woefully underutilized."); Martin Cave & Adrian Foster, Commentary, *Solving Spectrum Gridlock: Reforms to Liberalize Radio Spectrum Management in Canada in the Face of Growing Scarcity*, 303 C.D. HOWE INST. 1, 3 (2010) ("To a significant degree, these [efficiency] improvements have not worked their way into spectrum use by public sector users, including the military, emergency services, or aeronautical or maritime transport.").

^{37.} See GAO-13-7, supra note 34, at 7.

^{38.} See PCAST REPORT, supra note 15, at 8.

^{39.} *Id.* (due to their valuable transmission capabilities, frequencies between 225 and 3700 MHz are often referred to as "beachfront spectrum").

^{40.} PCAST REPORT, *supra* note 15, at 8.

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efficiency with which they use their own spectrum allocation "41 Efficiency is commonly defined as the output based on the amount of input.⁴² In the case of spectrum, the 2002 FCC Spectrum Task Force declared that efficiency "occurs when the maximum amount of information (i.e., output) is transmitted within a given amount of spectrum (i.e., input), or equivalently, when the least amount of spectrum is used to transmit a given amount of information." 43 The efficiency of federal spectrum management is based on findings reported in government audits.⁴⁴ Such reports demonstrated inefficient management of spectrum resources.⁴⁵ As a United States Government Accountability Office (GAO) Report stated, "Federal officials from one agency told us that approximately [thirty] percent of the time, program offices at the agency procure spectrumdependent equipment without first notifying the agency spectrum managers, and in some cases, before the assignment has been granted."⁴⁶ Many agencies do not closely monitor their spectrum usage because for federal agencies acquiring more bandwidth is currently a less costly approach than investing in new equipment or practices that would better maximize spectrum availability.⁴⁷

Additionally, agencies fail to properly report their spectrum use, further indicating large amounts of inefficient use.⁴⁸ The NTIA requires federal users to evaluate their frequency needs in five-year reviews based on the amounts used, but agency spectrum managers do not have to validate or verify any of the reported spectrum use information.⁴⁹ The GAO reported that "[s]even out of [ten] federal spectrum managers we contacted reported that they do not have mechanisms in place to verify the accuracy of the information collected during these processes."⁵⁰ In addition to those findings the GAO found that "[five] out of [ten] federal spectrum managers reported that their agency had not conducted site visits or sample surveys to verify information in their data systems."⁵¹

B. Methods of Spectrum Allocation: Clearing and Reallocating, and Other Implausible Solutions

Various methods have been offered as means of handling the spectrum scarcity issue. Clearing and reallocating has been the current

^{41.} PCAST REPORT, *supra* note 15, at ix.

^{42.} See FCC SPECTRUM POLICY TASK FORCE, REPORT OF THE SPECTRUM EFFICIENCY WORKING GROUP 5 (2002), http://transition.fcc.gov/sptf/files/SEWGFinalReport_1.pdf.

^{43.} *Id.* at 5. The Report also defines "technical efficiency," and "economic efficiency" in the various aspects of efficiency to be considered. *See id.*

^{44.} See Skorup, supra note 21, at 104.

^{45.} *Id*.

^{46.} GAO-11-352, *supra* note 22, at 27.

^{47.} See Skorup, supra note 21, at 104.

^{48.} *Id.* at 105.

^{49.} See GAO-11-352, supra note 22, at 27, 38.

^{50.} *Id* at 24.

^{51.} Id. at 24-25.

method, which involves clearing government-held spectrum and auctioning it off for commercial use, but it is not always possible to apply this method.⁵² The method of clearing and reallocating moves spectrum from one exclusive use to another exclusive use.⁵³ It runs into difficulties when government operations cannot be moved to another frequency because it is unavailable or moving the operation would be too expensive.⁵⁴ Under the current "command and control" approach the FCC and the NTIA set aside specific bands for specific services.⁵⁵ Sharing provides a new advantage over the command and control structure because sharing could accommodate "transient spectrum demand."⁵⁶

Some advocate for creating an agency like the General Services Administration (GSA) to lease spectrum to federal users.⁵⁷ Proponents believe leasing spectrum will incentivize more efficient use on behalf of federal spectrum holders.⁵⁸ Such an agency would operate in the same manner as the current GSA does in leasing out office space to federal agencies.⁵⁹ Some believe a Base Realignment and Closure (BRAC) process is also a possibility for removing spectrum from the hands of the federal government.⁶⁰ The process would take a method used to close military bases and attempt to apply the method to the vastly different field of spectrum management.⁶¹ Meanwhile, a market approach towards spectrum could not be set by the market, but instead would be determined by an agency.⁶²

http://www.brookings.edu/~/media/research/files/papers/2011/3/03-spectrum-rights-

matheson-morris/0303_spectrum_rights_matheson_morris.pdf.

58. Id.

61. *Id*.

^{52.} See PCAST REPORT, supra note 15, at iii.; see also Patrick Welsh, Spectrum Sharing in the 3.5 GHz Band, VERIZON POL. BLOG (Jul. 11, 2014),

http://publicpolicy.verizon.com/blog/entry/spectrum-sharing-in-the-3.5-ghz-band.

^{53.} See Skorup, surpa note 21, at 107 ("Rather than seeking permission from regulators and incumbent federal users—as they would in shared bands—wireless firms can win bandwidth at auction and intensively utilize spectrum for mobile broadband and other services.").

^{54.} Id. at 102; See also Welsh, supra note 52.

^{55.} ROBERT MATHESON & ADELE C. MORRIS, BROOKINGS INST., THE TECHNICAL BASIS FOR SPECTRUM RIGHTS: POLICIES TO ENHANCE MARKET EFFICIENCY 19 (2011),

^{56.} *Id.* at 25.

^{57.} See DOROTHY ROBYN, BROOKINGS, BUILDINGS AND BANDWIDTH: LESSONS FOR SPECTRUM POLICY FROM FEDERAL PROPERTY MANAGEMENT 1, 8 (2014),

http://www.brookings.edu/research/papers/2014/09/23-buildings-bandwidth-spectrum-property.

^{59.} See PCAST REPORT, supra note 15, at 55.

^{60.} See ROBYN, supra note 57, at 8.

^{62.} T. Randolph Beard et al., Market Mechanisms and the Efficient Use and Management of Scarce Spectrum Resources, 66 FED. COMM. L.J. 263, 285 (2014).

Market approaches include spectrum fees on licensed spectrum in the hopes that it will cause federal users to take the price of spectrum into account.⁶³

C. Methods of Spectrum Allocation: Auctions

In the 1993 Budget Act, Congress provided the FCC with the authority to conduct auctions for spectrum licensees.⁶⁴ The Act gave the FCC "authority to use competitive bidding to choose from among two or more mutually exclusive applications for an initial license."⁶⁵ Auctions are now obligatory for commercial spectrum services.⁶⁶ Auctions demonstrate the theory that the entities that value spectrum the most will put it to the best and highest usage.⁶⁷ Auctions are a market-driven approach to spectrum allocation,⁶⁸ and the spectrum auctions arose when there was a need to boost the United States economy.⁶⁹ To date, the FCC has raised tens of billions of dollars through spectrum auctions.⁷⁰ The "auctions are open to any eligible company or individual that submits an application and upfront payment, and is found to be a qualified bidder by the Commission."⁷¹ The FCC believes that spectrum auctions are far more effective means of distributing radio licenses than previously utilized methods, and the FCC attempts to use auctions to award licenses to those who will use it the most effectively.⁷²

67. See Ellen P. Goodman, Spectrum Auctions and the Public Interest, 7 J. TELECOMM. & HIGH TECH. L. 343, 352-53 (2009).

68. *See* Middle Class Tax Relief and Job Creation Act of 2012, Pub. L. No. 112-96, § 6412, 125 Stat. 156, 234-35 (2012).

69. *See* WHITE HOUSE, ECONOMIC REPORT OF THE PRESIDENT 23-25, 251-52 (2012), https://www.whitehouse.gov/sites/default/files/microsites/ERP_2012_Complete.pdf.

70. See Skorup, supra note 21, at 99.

71. About Auctions, FCC,

http://wireless.fcc.gov/auctions/default.htm?job=about_auctions (last visited May 17, 2016).

^{63.} See FCC, CONNECTING AMERICA: THE NATIONAL BROADBAND PLAN 82 (2010), http://download.broadband.gov/plan/national-broadband-plan.pdf [hereinafter 2010 NATIONAL BROADBAND PLAN].

^{64.} See Omnibus Budget Reconciliation Act of 1993, Pub. L. No. 103-66, § 6002, 107 Stat. 312, 387-392.

^{65.} Id.

^{66.} *See* Balanced Budget Act of 1997, Pub. L. No. 105-33, § 3002, 111 Stat. 251, 258 (1997) (codified at 47 U.S.C. § 309(j) (2012)).

^{72.} See William Kummel, Spectrum Bids, Bets, and Budgets: Seeking an Optimal Allocation and Assignment Process for Domestic Commercial Electromagnetic Spectrum Products, Services, and Technology, 48 FED. COMM. L.J. 511, 512-514 (1996). Previously, the government issued spectrum licenses through comparative hearings and later lotteries. See JENNIFER A. MANNER, SPECTRUM WARS: THE POLICY AND TECHNOLOGY DEBATE, 119-25 (2002). Comparative hearings looked for applicants that had the best capabilities and were the best for the public interest. However, the comparative hearing process was long and drawn out. *Id.* Additionally, there were often few differences between the applicants. *Id.* Lotteries for licenses followed comparative hearings as a method for issuing spectrum. *Id.* Lotteries were intended to get spectrum into the hands of individuals who would use it as quickly as possible by assigning licenses randomly to members of the applicant pool. *Id.* However, lottery winners would turn and sell it to everyone else. *Id.*

The Balanced Budget Act of 1997 both extended and expanded the FCC's auction authority.⁷³ The Budget Act amended Section 309(j) of the Communications Act to require the FCC to use competitive bidding to grant licenses "when mutually exclusive applications for initial licenses are filed, unless certain specific statutory exemptions apply."⁷⁴ The Budget Act provided exemptions from auctions only for wireless services applicable to "public safety radio services," which was defined as public and private services that protect "the safety of life, health, and property."⁷⁵ Section 309(j) also articulated which licenses should be subject to competitive bidding.⁷⁶ The FCC also concluded it should consider alternative procedures under Section 309(j), including the use of a band manager.⁷⁷

The 2010 National Broadband Plan posited that "Congress should consider expressly expanding the FCC's authority to enable it to conduct incentive auctions."78 Then Congress gave the FCC authority to conduct spectrum incentive auctions in the Middle Class Tax Relief and Job Creation Act of 2012.⁷⁹ Congress defines the term "incentive auction" as an auction where "the Commission may encourage a licensee to relinquish voluntarily some or all of its licensed spectrum usage rights in order to permit the assignment of new initial licenses subject to flexible-use service rules by sharing with such a licensee a portion, based on the value of the relinquished rights "80 In the winter of 2015, the FCC finished the AWS-3 auction, or Auction 97, that fulfilled economic incentives by raising billions of dollars in revenue for the government.⁸¹ Auction 97's revenueraising effect indicates the scarcity of spectrum, and the commercial sector's need for the resource in order to better serve consumers. Additionally, auction revenues demonstrate that the federal government has had an economic incentive to use spectrum auctions for allocating spectrum.⁸²

Auctions, such as incentive auctions where participants voluntarily relinquish spectrum, depend on the participation of large spectrum holders,

^{73.} *See* Balanced Budget Act of 1997, Pub. L. No. 105-33, § 3002, 111 Stat. 251, 258 (1997) (codified at 47 U.S.C. § 309(j) (2012)); *see also About Auctions, supra* note 71.

^{74.} FCC Implements Changes to Auction Authority Pursuant to the Balanced Budget Act of 1997, *News Release*, WT 99-87 (2000),

 $http://transition.fcc.gov/Bureaus/Wireless/News_Releases/2000/nrwl0041.html.$

^{75.} *Id*.

^{76.} *Id*.

^{77.} Id.

^{78. 2010} NATIONAL BROADBAND PLAN, *supra* note 63, at 75.

^{79.} See Middle Class Tax Relief and Job Creation Act of 2012, Pub. L. No. 112-96, § 6412, 125 Stat. 156, 234-35. (2012) (Spectrum Act). See also Expanding Economic and Innovation Opportunities of Spectrum Through Incentive Auctions, *Notice of Proposed Rulemaking*, 27 FCC Rcd 12357, para. 3 (2012).

^{80. 47} U.S.C § 309(j)(8)(G)(i) (2012).

^{81.} See Auction 97, Advanced Wireless Services (AWS-3), FCC: AUCTIONS,

http://wireless.fcc.gov/auctions/default.htm?job=auction_summary&id=97 (last visited May 16, 2016).

^{82.} See GEORGE S. FORD & LAWRENCE J. SPIWAK, PHOENIX CTR. FOR ADVANCED LEGAL & ECON. PUB. POLICY STUDIES, AUCTION 97 AND THE VALUE OF SPECTRUM (2015), http://www.phoenix-center.org/perspectives/Perspective15-02Final.pdf.

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and political complications often affect the auction revenues.⁸³ The value of spectrum to potential buyers and sellers affects the success of an auction, and incumbents receive a portion of the proceeds, creating economic incentives for incumbents to engage with the FCC in reallocating their spectrum by participating in auctions.⁸⁴ As FCC Chairman Tom Wheeler acknowledges, the approach involves marrying wireless providers' demand for spectrum with economics of current holders of spectrum.⁸⁵ "Robust participation" is fundamental to the successes of spectrum auctions⁸⁶ as revenues help to measure the success of auctions.

D. Methods of Spectrum Allocation: Sharing

The GAO defines spectrum sharing as the "cooperative use of common spectrum that allows disparate missions to be achieved."⁸⁷ Sharing allows an opportunity to open up to 1000 MHz for both federal and nonfederal purposes.⁸⁸ Sharing represents a shift from an exclusive method of allocation to a non-exclusive one as it allows multiple users to access the same frequencies while avoiding adverse interference.⁸⁹ Spectrum sharing allows government agencies to maintain control of their spectrum while allowing commercial use when or where the government does not need it.⁹⁰ Spectrum sharing is a particularly feasible option for lightly-used military spectrum that could be put to important commercial uses.⁹¹ Time Division Multiple Access (TDMA) enables spectrum sharing by transmitting frequencies in distinct time slots.⁹² Sharing military spectrum would preempt commercial users from using the spectrum when the federal holder demands it, which protects the needs of incumbent users.⁹³ Improved technology for spectrum sharing has recently developed.⁹⁴ Methods such as a centralized system for mobile devices that would to scan for available radio frequencies and choose the best one would help enable spectrum sharing.95

89. Id. at viii.

95. See Chen, supra note 93.

^{83.} See George S. Ford, Will Net Neutrality Politics Scuttle the FCC's Upcoming Incentive Auction?, HILL (Sept. 3, 2014, 6:30 AM), http://thehill.com/blogs/pundits-blog/technology/216462-will-net-neutrality-politics-scuttle-the-fccs-upcoming.

^{84.} See 2010 NATIONAL BROADBAND PLAN, supra note 63, at 81.

^{85.} See Tom Wheeler, *The Incentive Auction: Helping Broadcasters Make Informed Decisions*, FCC BLOG (June 25, 2014, 2:45 PM), https://www.fcc.gov/news-

events/blog/2014/06/25/incentive-auction-helping-broadcasters-make-informed-decisions-0. 86. *Id.*

^{87.} GAO-13-7, supra note 34, at 7.

^{88.} See PCAST REPORT, supra note 15, at 6.

^{90.} See Skorup, supra note 21, at 115.

^{91.} Id.

^{92.} See PCAST REPORT, supra note 15, at 30, n.62.

^{93.} See Brian X. Chen, How Spectrum Sharing Would Work, NY TIMES: BITS (May 29,

^{2012, 4:02} PM), http://bits.blogs.nytimes.com/2012/05/29/how-spectrum-sharing-would-work/.

^{94.} See PCAST REPORT, supra note 15, at 30.

There are different types of spectrum sharing, including dynamic sharing, geographic sharing, and temporal sharing. The PCAST Report recommends dynamic sharing as a remedy for the current frequency challenges in the United States.⁹⁶ Much of the spectrum held by licensees remains unused at various given locations and times.⁹⁷ "Dynamic Spectrum Access" or "opportunistic use" would find spectrum that is not being used and operate radio devices without causing interference. 98 Dynamic Spectrum Access (DSA) systems find spectrum that is unused and organizes the users to operate within it.⁹⁹ Geographic sharing means that "multiple users agree to access the same spectrum at different times or locations, as well as negotiate other technical parameters, to avoid adversely interfering with one another."¹⁰⁰ Temporal sharing can occur because federal users are not transmitting across frequencies at all times, so commercial users can access the frequencies during times when the federal users are not transmitting.¹⁰¹ When the government or other primary user is not using the spectrum, a commercial or secondary user could utilize the frequencies even if both users are in close proximity.¹⁰² The FCC and the NTIA both oversee the process leading to sharing radio frequencies between federal and nonfederal users.¹⁰³ Spectrum sharing occurs in unlicensed bands by FCCcertified Part 15 wireless equipment devices. 104 The FCC prohibits unlicensed devices from causing interference, and the operators of these devices must accept potential interference by other unlicensed and licensed devices.¹⁰⁵ Spectrum sharing provides a method of handling spectrum scarcity that is not tied to federal economic incentives.

III. SPECTRUM VALUATION AND INCENTIVES

Determining the value of a band of spectrum depends on the sum of the value of its use and differs in the public sector versus the private sector.¹⁰⁶ The private sector determines the value of spectrum as the derived

105. Id. § 15.5(b).

^{96.} PCAST REPORT, *supra* note 15, at 30.

^{97.} See Ann Gallagher, Int'l Bureau, FCC, Opening Keynote at the Dynamic Spectrum Alliance Global Summit: The State of TV White Space in the United States 2-4 (May 2014), http://dynamicspectrumalliance.org/assets/DSA_Presentations/DSASummit_May2014_Day2 OpeningKeynote_AnnGallagher.pdf.

^{98.} *Id* at 2-3, 7.

^{99.} See PCAST REPORT, supra note 15, at 30-31.

^{100.} GAO-13-7, supra note 34, at 7.

^{101.} See Skorup, supra note 21, at 115-16.

^{102.} See GAO-13-7, supra note 34, at 7.

^{103.} Id.

^{104.} Cf. 47 C.F.R. § 15.5(a) (2015) ("Persons operating intentional or unintentional radiators shall not be deemed to have any vested or recognizable right to continued use of any given frequency....").

^{106.} See Coleman Bazelon & Giulia McHenry, Brattle Group, Spectrum Sharing: Taxonomy and Economics 24 (2014),

http://www.brattle.com/system/publications/pdfs/000/004/983/original/Spectrum_Sharing_Taxonomy_and_Economics_Bazelon_McHenry_020614.pdf.

profitability of the wireless devices utilizing the bandwidth.¹⁰⁷ In contrast, the public sector values spectrum based on "the public welfare gained from its use."¹⁰⁸ Shared spectrum value comes from the shared value of each user.¹⁰⁹ In "The Economics of Spectrum Sharing," Coleman Bazelon and Giulia McHenry define a matrix showing how valuation affects the method of allocation chosen:

First, if value of the spectrum to a new user is greater than the cost of clearing the incumbent user, reallocating the spectrum increases welfare. Second, if the costs of moving an incumbent user from a band exceed the value created by a new user, there is no reason to reallocate. Third, when introducing new user(s) creates more value than what is lost to the incumbent user(s) sharing enhances welfare. Finally, when the loss to the incumbent user(s) exceeds the value created by the users, sharing is not welfare enhancing.¹¹⁰

It is hard to determine the exact value derived from the social welfare of public policies utilizing spectrum. ¹¹¹ Developments in telecommunications policy cause shifts along the Bazelon and McHenry matrix as policy changes affect how actors value spectrum.¹¹²

A. Federal Agencies' Incentives for Efficient Use

Policy makers believe creating new availabilities of spectrum to be key in promoting wireless innovation and economic growth,¹¹³ but in order to create new availabilities one must understand what incentivizes efficient spectrum usage by federal holders. A federal spectrum holder:

[D]ecides, in the light of policies, rules, regulations, frequency allocations, and availability of frequencies, whether, what, and how many mission requirements can be fulfilled by using telecommunications systems. Each agency makes the necessary technical studies, selects potential frequencies, coordinates with

^{107.} See BAZELON & MCHENRY, supra note 4, at 2.

^{108.} Id.

^{109.} See id. at 2.

^{110.} Id. at 3.

^{111.} See id. at 10.

^{112.} See id. at 2 n.4 (noting that the FCC has considered policies that would limit spectrum value, which would logically create shifts along Bazelon and McHenry's matrix).

^{113.} See Memorandum on Expanding America's Leadership in Wireless Innovation, 2013 DAILY COMP. PRES. DOC. 421 (June 14, 2013), https://www.gpo.gov/fdsys/pkg/DCPD-201300421/pdf/DCPD-201300421.pdf.
other agencies involved, and prepares and files an application with the NTIA $\ldots ^{114}$

Currently, federal users do not have a market incentive to indicate the value of the spectrum they hold.¹¹⁵ Price signals or market factors could encourage more efficient spectrum use by federal holders.¹¹⁶ As the GAO states, "Typically, paying the market price for a good or service helps to inform users of the value of the good and provides an incentive for efficient use."¹¹⁷ Even if federal users wanted to share spectrum with commercial users for monetary reasons, federal users would not profit from such an arrangement. ¹¹⁸ As most federal agencies with vast spectrum holdings belong to the executive branch of the federal government, Congress has budgetary control over them, so the agencies cannot create independent financial relationships such as a spectrum sharing arrangement.¹¹⁹ If federal users, the revenue received from such agreements would go back to the United States Treasury or be deducted from agency budgets.¹²⁰

B. Private Sector Valuation and Incentives

Wireless providers value spectrum based on how much profit they will make through deploying wireless services on the bandwidth.¹²¹ Efficient use of federal spectrum would make more available for the commercial sector to increase innovation and economic growth.¹²² Increased availability of spectrum for the commercial sector is linked to increases in innovation.¹²³ For wireless companies, increased spectrum holdings create more capability for data services and decreased congestion on the networks.¹²⁴ Companies need to be able to predict the amount of capacity

http://www.whitehouse.gov/blog/2014/04/01/promoting-collaboration-advance-wireless-spectrum-economic-growth.

^{114.} NAT'L TELECOMM. & INFO. ADMIN., MANUAL OF REGULATIONS AND PROCEDURES FOR FEDERAL RADIO FREQUENCY MANAGEMENT, at § 8.1.1 (2014),

 $http://www.ntia.doc.gov/files/ntia/publications/redbook/2014-05/8_14_5.pdf.$

^{115.} See Skorup, supra note 21, 104 (2013).

^{116.} See Brent Skorup, *Getting Away from Gosplan*, REGULATION, Winter 2013-2014, at 14, http://object.cato.org/sites/cato.org/files/serials/files/regulation/2014/1/regulation-v36n4-7.pdf.

^{117.} GAO-12-1018T, supra note 27, at i, 1.

^{118.} See BAZELON & MCHENRY, supra note 4, at 9.

^{119.} *Id*.

^{120.} Id.

^{121.} See BAZELON & MCHENRY, supra note 4, at 2.

^{122.} See Tom Power, Promoting Collaboration to Advance Wireless Spectrum for Economic Growth, WHITE HOUSE BLOG (Apr. 1, 2014, 2:59 PM ET),

^{123.} See Welsh, supra note 52.

^{124.} See Mobile Networks May Improve as AT&T, Verizon Spend Big at Airwaves Auction, Fox Bus. (Jan. 30, 2015),

http://www.foxbusiness.com/technology/2015/01/30/mobile-networks-may-improve-as-att-verizon-spend-big-at-airwaves-auction/.

necessary to meet demands of spectrum usage by consumers.¹²⁵ Wireless service providers also weigh the costs of buying spectrum against the costs of improving existing infrastructure and technology.¹²⁶ As John Stankey, chief strategy officer for AT&T, stated, "Our need for spectrum is no less but our economic willingness to pay has limits."¹²⁷ More airwaves in the hands of commercial sector actors equals less congested networks for consumers.¹²⁸ As a scarce resource, the economic value generated from the use of spectrum determines its value in the private sector.¹²⁹

C. Federal Government Valuation and Incentives for Repurposing Agency Spectrum

The federal government has financial incentives for repurposing federal spectrum, and it has a stated goal of finding a spectrum policy that maximizes economic value.¹³⁰ The 2012 Spectrum Act set a congressional goal of debt reductions through spectrum auctions.¹³¹ Specifically, the Spectrum Act demonstrates congressional economic motivations for spectrum auctions in the creation of a Public Safety Trust Fund with funds from an incentive auction of broadcast television spectrum.¹³² Congress already planned the allocation of auction proceeds, demonstrating an economic incentive for the auction.¹³³ Agencies do not want to relinquish their spectrum, but commercial users, Congress, and the FCC want an increased availability of spectrum.¹³⁴ Technological innovations such as wireless broadband bring increased innovation and new ways for the industry to deliver services to consumers.¹³⁵ The United States government views mobile broadband as a big economic opportunity, with domestic wireless carriers investing billions of dollars into networks and as major companies "export innovation globally." 136 Therefore, the federal

^{125.} See Thomas Gryta & Gautham Nagesh, FCC to Hold Major Auction of Wireless Airwaves, WALL ST. J. (Jan. 21, 2014, 7:39 PM ET),

http://www.wsj.com/articles/SB10001424052702304027204579335181451959904.

^{126.} See *id*.

^{127.} Id.

^{128.} See Associated Press, AT&T, Verizon Get More Airwaves: Except More Mobile Capacity, DAILY MAIL (Jan. 30, 2015, 17:28 EST),

http://www.dailymail.co.uk/wires/ap/article-2933717/AT-T-Verizon-airwaves-Expect-mobile-capacity.html.

^{129.} See BAZELON & MCHENRY, supra note 4, at 12.

^{130.} *See* Letter from the H. Comm. on Energy & Commerce to the FCC 1 (Apr. 19, 2013), https://ecfsapi.fcc.gov/file/7022289507.pdf [hereinafter 2013 Energy & Commerce Comm. Letter].

^{131.} See MOORE, supra note 9, at 3.

^{132.} See Middle Class Tax Relief and Job Creation Act of 2012, Pub. L. No. 112-96, § 6402, 125 Stat. 156, 224-25.

^{133.} See MOORE, supra note 9, at 1.

^{134.} See 2013 Energy & Commerce Comm. Letter, supra note 130, at 1.

^{135.} See 2010 NATIONAL BROADBAND PLAN, supra note 63, at 75.

^{136.} Id.

government has an incentive to drive agencies to relinquish spectrum to the commercial sector.

Deficit reduction drives the government to push for the repurposing of federal spectrum. Congressmen Fred Upton and Greg Walden declared that bipartisan "solutions to free this valuable spectrum without harming the Defense Department's . . . ability . . . to keep Americans safe" was a "remarkable success" because it raised \$20 billion to be put towards debt reduction. ¹³⁷ "President Obama's Plan to Win the Future through the Wireless Innovation and Infrastructure Initiative" emphasized that it would reduce the deficit by \$9.6 billion in part through "more efficient use of government spectrum." ¹³⁸ Further economic incentives for repurposing federal spectrum highlighted in the plan include \$3 billion to "go to research and development of emerging wireless technologies and applications."¹³⁹

IV. RECLASSIFICATION OF BROADBAND INTERNET ACCESS PROVIDERS UNDER TITLE II

In February 2015, the FCC voted to approve an Order for the adoption of open Internet rules that in part reclassify "broadband Internet access service" as a telecommunications service under Title II of the Communications Act.¹⁴⁰ Under such a classification, both service to the end user and to the edge provider are classified as telecommunications services.¹⁴¹ The rules also apply to mobile broadband.¹⁴² The Order outlined bright-line rules, including a "no blocking" rule prohibiting broadband providers from blocking access to legal content, applications, services, or non-harmful devices; a "no throttling" rule prohibiting broadband providers from impairing or degrading lawful Internet traffic on the basis of content, applications, services, or non-harmful devices; and a "no paid prioritization" rule stating that broadband providers are not allowed to favor particular lawful Internet traffic over other lawful traffic and prohibiting Internet service providers from prioritizing content and services of their affiliates.¹⁴³ The provisions allow less flexibility for companies in delivering services to

^{137.} Press Release, H. Comm. on Energy & Commerce, BOOM! Auction Raises \$35 Billion and Counting (Nov. 24, 2014), https://energycommerce.house.gov/press-release/boom-auction-raises-35-billion-and-counting.

^{138.} Press Release, White House Office of the Press Secretary, President Obama Details Plan to Win the Future Through Expanded Wireless Access (Feb. 10, 2011),

https://www.whitehouse.gov/the-press-office/2011/02/10/president-obama-details-plan-winfuture-through-expanded-wireless-access.

^{139.} *Id*.

^{140.} See FCC, FACT SHEET: CHAIRMAN WHEELER PROPOSES NEW RULES FOR PROTECTING THE OPEN INTERNET (2015),

https://apps.fcc.gov/edocs_public/attachmatch/DOC-331869A1.pdf. See generally Protecting and Promoting the Open Internet, *Report and Order on Remand, Declaratory Ruling, and Order*, 30 FCC Rcd 5601 (2015) [hereinafter Open Internet Order].

^{141.} *Id*.

^{142.} See id.

^{143.} Id.

consumers utilizing "reasonable network management."¹⁴⁴ Some refer to this *Open Internet Order* as preserving net neutrality.¹⁴⁵ This Note focuses specifically on the spectrum implications of reclassification under Title II.

A. Reclassification Under Title II: Creating Uncertainty

The FCC's effort to protect the open Internet through reclassification affects spectrum policy in key ways.¹⁴⁶ Uncertainty in the future of the regulatory framework represents the first challenge to spectrum policy, as the open Internet rules face legal attacks and interpretation issues.¹⁴⁷ Some believe the FCC should not have taken the approach of regulating broadband providers as utilities under Title II.¹⁴⁸ Entities arguing against the FCC's decision to reclassify under Title II have regarded the decision as "risky" and as potentially putting "innovation and development" in jeopardy.¹⁴⁹ Additionally, stakeholders have made arguments that the FCC lacked the authority to act as it did in the *Open Internet Order*, which led to litigation causing further uncertainty for providers.¹⁵⁰ Other questions arise from the potential for net neutrality legislation as Republicans in Congress disagree with the approach that applies Title II to wireless providers.¹⁵¹

B. Reclassification Under Title II: Spectrum Valuation Impacts

Because of the ever-increasing demand for spectrum, the successes of spectrum incentive auctions depend largely on the participation of spectrum

^{144.} Phil Goldstein, *Zero-Rating, Throttling and Other Wireless Practices Targeted by the FCC's Net Neutrality Rules*, FIERCE WIRELESS (Feb. 4, 2015), http://www.fiercewireless.com/story/zero-rating-throttling-and-other-wireless-practices-

targeted-fccs-net-neutr/2015-02-04.

^{145.} Open Internet Order, supra note 140, at paras. 1-6.

^{146.} See GEORGE S. FORD & LAWRENCE J. SPIWAK, PHOENIX CTR. FOR ADVANCED LEGAL & ECON. PUB. POLICY STUDIES, THE UNPREDICTABLE FCC: POLITICIZING COMMUNICATIONS POLICY AND ITS THREAT TO BROADBAND INVESTMENT 5 (2014), http://www.phoenix-center.org/perspectives/Perspective14-05Final.pdf.

^{147.} See e.g., Monica Alleven, Net Neutrality: Long-Term Implications Loom for Internet of Things, FIERCE WIRELESS, (Feb. 26, 2015),

http://www.fiercewireless.com/tech/story/net-neutrality-long-term-implications-loominternet-things/2015-02-26 ("[S]ome of the provisions of Title II will need to be applied and probably tested in the courts to determine what might be considered 'fair and reasonable'").

^{148.} See Open Internet Order, supra note 140, at paras. 1-6 (Comm'r Pai, dissenting).

^{149.} Libby Jacobson, Verizon CFO Fran Shammo reiterates the dangers of Title II for jobs and investment, VERIZON (Jan. 22, 2015), http://www.verizon.com/about/news/verizon-cfo-fran-shammo-reiterates-the-dangers-of-title-ii-for-jobs-and-inv.

^{150.} See Lawrence J. Spiwak, The FCC's Legal Gymnastics: Why Wheeler's Title II Approach to Network Neutrality Will Lead to Litigation, MULTICHANNEL NEWS (Feb. 22, 2015, 6:00 PM), http://www.multichannel.com/blog/mcn-guest-blog/fccs-legal-gymnastics/388213.

^{151.} See Ted Johnson, Democrats Skeptical that GOP Net Neutrality Bill Will Protect Open Internet, VARIETY (Jan. 21, 2015, 1:13 PM PT),

http://variety.com/2015/biz/news/democrats-skeptical-that-gop-net-neutrality-bill-will-protect-open-internet-1201411073/.

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holders including, for example, broadcasters.¹⁵² Title II reclassification debates and potential regulations previously played a role in spectrum auctions. In the 2007 Broadcast Television Auction for instance, companies such as Google and AT&T battled for and against net neutrality rules and additional regulations impacting the auction.¹⁵³ Some strongly believe that the 2015 increased regulation of net neutrality will decrease broadcast spectrum's value, resulting in decreased auction revenue.¹⁵⁴ George Ford of the Phoenix Center for Advanced Legal & Economic Public Policy Studies cites the 2007 auction as evidence that the net neutrality rules will devalue spectrum:

In [the 2007] auction, the agency imposed "network neutrality" encumbrances on the auction's 20 MHz C-Block (the largest block in the auction). As a result, despite its high intrinsic value, almost no one was interested in the block. In the end, Verizon scooped it up for only \$4.7 billion. Based on the other blocks sold in this auction and prior auction results, econometric models predicted that the C-Block would have sold for about \$9 billion without the encumbrances. That's a 40% loss in value attributable to network neutrality.¹⁵⁵

Some economists estimate decreases of billions of dollars in investment for data services in wireline and wireless networks.¹⁵⁶ If the reclassification under Title II impacts the spectrum holders in a similar manner and limits the flexibility of use, spectrum revenues and the supply of spectrum available to the commercial sector through auctions will decrease.¹⁵⁷

V. ANALYSIS: SPECTRUM SHARING WILL RESULT

The government holds a large amount of spectrum that could be repurposed for commercial use to increase innovation and economic

^{152.} See Ford, supra note 83.

^{153.} See Anne Broache, Google Lobbies for 'Open' Wireless Networks, CNET (June 14, 2007, 5:21 AM PDT), http://news.cnet.com/Google-lobbies-for-open-wireless-networks/2100-1039_3-6190863.html.

^{154.} See FORD & SPIWAK, supra note 146.

^{155.} Ford, supra note 83.

^{156.} See Kevin A. Hassett & Robert J. Shapiro, The Impact of Title II Regulation of Internet Providers on Their Capital Investments 16 (2014),

 $http://www.sonecon.com/docs/studies/Impact_of_Title_II_Reg_on_Investment-Hassett-Shapiro-Nov-14-2014.pdf.$

^{157.} *Id.*; Anna-Maria Kovacs, *At Painful Odds: Spectrum Auctions and Title II Reclassification*, BLOOMBERG BNA (Nov. 12, 2014), http://www.bna.com/painful-odds-spectrum-n17179911497/ ("[Auction] success depends on broadcasters' willingness to sell their spectrum. That, in turn, will depend on the price offered by mobile broadband providers for the spectrum.").

growth.¹⁵⁸ The exploding consumer demands for wireless technology make tackling the issue of federal spectrum use increasingly important. Federal spectrum that is not being efficiently used should be reallocated for commercial uses.

Some have argued that spectrum will be devalued as a result of reclassifying ISPs under Title II.¹⁵⁹ The uncertainties created by this theory and its proponents will decrease economic incentives for Congress and government agencies pushing federal users to relinquish spectrum.¹⁶⁰ As a result, spectrum sharing will become a more dominant approach. As FCC Commissioner Mignon Clyburn noted, traditional means for increasing the availability of spectrum, "such as removing unnecessary restrictions in our rules, allowing flexible use, encouraging efficient use of the existing spectrum holdings, and holding traditional spectrum auctions" will not be sufficient.¹⁶¹

The spectrum policy in the United States going forward will likely center around spectrum sharing because while the federal government will doubtlessly always need spectrum, it may not need the entire amount of spectrum it possesses all of the time. The FCC's reclassification of Internet access providers under Title II creates both regulatory uncertainty and beliefs that the value of spectrum had decreased.¹⁶² As a result, auctions are negatively affected and are a less reliable source for increasing the availability of spectrum.¹⁶³ Where the FCC cannot incentivize the holders of spectrum to sell in auctions, spectrum sharing should be utilized as a way of making more bandwidth available to facilitate innovation and economic growth. Whether or not the belief that the FCC's reclassification under Title II will devalue spectrum comes to fruition, the debate about its accuracy leads to uncertainty in the future of spectrum policy.

A. The Move to Sharing: Impact of Reclassification Under Title II

Spectrum allocation is about deciding among competing interests for a finite resource.¹⁶⁴ To date, auctions have been effective in putting spectrum to their highest value use.¹⁶⁵ The auction revenues derived from repurposing

^{158.} See Skorup, supra note 21, at 90.

^{159.} See, e.g., Kovacs, supra note 157.

^{160.} Id.

^{161.} Mignon L. Clyburn, Comm'r, FCC, Keynote Presentation at the 4th Annual Americas Spectrum Management Conference 2 (Nov. 13, 2014),

https://apps.fcc.gov/edocs_public/attachmatch/DOC-330471A1.pdf.

^{162.} See Alleven, supra note 147.

^{163.} See Ford, supra note 152.

^{164.} See 2010 NATIONAL BROADBAND PLAN, supra note 63, at 75.

^{165.} *See* Roger Sherman, *Putting Auction 97 in the History Books*, FCC BLOG (Jan. 29, 2015, 12:18 PM), http://www.fcc.gov/blog/putting-auction-97-history-books. Highlights from the single Auction 97 include: \$7 billion to fund the nation's first nationwide broadband public safety network, \$300 million for public safety communications research, \$115 million in grants for 911, E911, and NextGen 911 implementation, and more than \$20 billion for deficit reduction.

spectrum have incentivized the federal government to get spectrum into the hands of commercial users.¹⁶⁶ One argument asserts that the reclassification under Title II will create a reduction in spectrum value.¹⁶⁷ Skepticism in the stability of spectrum value will produce a decrease in economic incentives, driving agencies to relinquish spectrum.¹⁶⁸ Congress will lose its demonstrated economic incentive to push federal agencies to give up spectrum holdings.¹⁶⁹ Spectrum sharing will arise as the dominant approach to address the dichotomy because it allows incumbent federal users to hold on to the spectrum they need for important public purposes.

While spectrum cannot be created, innovative ways to use it more efficiently can be developed.¹⁷⁰ To date, the government's economic interest has been the most important aspect of the trend of repurposing spectrum for commercial use.¹⁷¹ If the devaluing of spectrum as a result of the reclassification of Internet service providers under Title II argument is true, the balance is shifting. The trend moves away from exclusive reallocation (due to a lack of economic incentives) to shared uses that preserve incumbent users' interests while fostering innovation. In addition to economic incentives for repurposing spectrum, the federal government views commercial wireless broadband services as a "key platform for innovation in the United States."172 Spectrum sharing enlarges the amount of bandwidth available. Federal users do not need their spectrum all the time, so the spectrum could be put towards innovative purposes in the private sector while ensuring that agencies have access to it when needed. Developments in spectrum sharing will increase with the reduction in economic incentive for reallocation. One consequence of the reduction in the value of spectrum is that it forces exploration of the mechanisms that will be more persuasive than the economic incentive was to federal users. The decrease in the economic value of spectrum will create a move across the Bazelon and McHenry matrix from clearing and reallocating increasing welfare to such methods of spectrum management decreasing overall welfare.173

^{166.} Id.

^{167.} See George S. Ford, Is the FCC's Regulatory Revival Deterring Infrastructure Investment?, BLOOMBERG BNA (Nov. 18, 2015), http://www.bna.com/fccs-regulatory-revival-n57982063711/.

^{168.} See FORD & SPIWAK, supra note 146.

^{169.} See Ford, supra note 167.

^{170.} See BAZELON & MCHENRY, supra note 4, at 1.

^{171.} See Sherman, supra note 165 (discussing the government's monetary gains from Auction 97).

^{172. 2010} NATIONAL BROADBAND PLAN, supra note 63, at 75.

^{173.} See BAZELON & MCHENRY, supra note 4, at 3 (2013).

B. Why Sharing Will Come to Dominate Modern Spectrum Management Policy

Spectrum sharing most effectively tackles the spectrum management problem, which has led to a scarcity that is outpacing supply because it broadens service categories by opening blocks of spectrum to increased types of users.¹⁷⁴ Traditional methods of auctions, incentivizing efficient use by existing users, removing restrictions, and allowing flexible use are not enough.¹⁷⁵ Even supporters of auctioning spectrum for flexible, exclusive use recognize that such methods are not always feasible as some operations cannot be moved due to a lack of available frequencies or cost restraints.¹⁷⁶ Spectrum sharing represents a "new approach to [f]ederal spectrum architecture and policy by establishing large shared spectrum blocks, new effectiveness metrics, and coordinated and prioritized [f]ederal and commercial use."¹⁷⁷

Rather than relying on a nonexistent spectrum marketplace, spectrum sharing relies on technology that has become feasible to allow multiple users, both federal and nonfederal, to share spectrum without interference.¹⁷⁸ Additionally, spectrum sharing circumvents the costs of completely clearing existing federal users.¹⁷⁹ Dynamic spectrum access comes from known technologies being put together.¹⁸⁰ Technological advances have made large steps in ensuring communications capabilities even in the face of considerable interference.¹⁸¹ White spaces are channels that are "unused" at any given location by licensed devices.¹⁸² Technological devices called white space radios use a database of spectrum usage to make unused spectrum available.¹⁸³ The FCC is already working to validate database services for sharing unused channels in white space.¹⁸⁴ Smart antennas that can increase spatial reuse have been rapidly increasing in the past few years.¹⁸⁵

Spectrum sharing will also protect incumbent government users who could still have priority for their important functions through a spectrum sharing hierarchy. The PCAST Report recommends giving federal systems

^{174.} See PCAST REPORT, supra note 15, at xi, 11; NAT'L TELECOMM. & INFO. ADMIN., U.S. SPECTRUM MANAGEMENT POLICY: AGENDA FOR THE FUTURE (1991),

https://www.ntia.doc.gov/report/1998/us-spectrum-management-policy-agenda-future.

^{175.} See Clyburn, supra note 161, at 2.

^{176.} See Welsh, supra note 52.

^{177.} PCAST REPORT, supra note 15, at 15.

^{178.} See id.

^{179.} See BAZELON & MCHENRY, supra note 4, at 1.

^{180.} See Brian X. Chen, *Q&A: Martin Cooper, Father of the Cellphone, on Spectrum Sharing*, N.Y. TIMES: BITS, (May 31, 2012 7:30 PM),

http://bits.blogs.nytimes.com/2012/05/31/qa-marty-cooper-spectrum-sharing/.

^{181.} See PCAST REPORT, supra note 15, at 30.

^{182.} See Gallagher, supra note 97, at 2.

^{183.} See PCAST REPORT, supra note 15, at 31.

^{184.} Id.

^{185.} Id. at 32.

the highest priority and protection from interference.¹⁸⁶ The Report also recommends procedures for safeguarding federal users, such as having the FCC require secondary users to achieve a certification to operate within state interference limits in order to share a bandwidth with federal users.¹⁸⁷ There is already a framework for exploring the expansion efforts in spectrum in certain bandwidths.¹⁸⁸ As devaluation of spectrum causes a shift along the Bazelon and McHenry matrix to the point where clearing and reallocating no longer increases overall welfare, spectrum sharing will result as a method for protecting the important functions of incumbent users.¹⁸⁹

C. Why Methods Other Than Spectrum Sharing Will Not Occur

As the economic incentive for spectrum auctions dissipates, the NTIA and FCC should continue exploring spectrum sharing methods as the primary means of handling the spectrum management problem because spectrum sharing has the most potential for maximizing the availability of spectrum, and the technology and regulatory framework are the most viable options. Clearing and reallocating spectrum is not always feasible, and a spectrum-sharing policy needs to be implemented to handle problems that clearing and reallocating spectrum cannot address.¹⁹⁰ Proponents of a market approach to spectrum allocation argue that prices demonstrate the cost of spectrum use, thereby incentivizing increased efficiency of use.¹⁹¹ On the other hand, there is the economic argument that the government should pay a price for its spectrum to reflect opportunity costs.¹⁹² Proponents put forth different potential market mechanisms, including spectrum fees in the form of a General Services Administration (GSA), a spectrum inventory approach limiting the amount of spectrum an agency buys, and a proposal to create artificial spectrum currencies to be traded among government users.¹⁹³ None of the market proposals provide a sustainable solution to the federal government's inefficient use of spectrum.

Clearing and reallocating spectrum is a less effective means of handling the spectrum scarcity issue than spectrum sharing. The President's

189. See BAZELON & MCHENRY, supra note 4, at 1, 9.

190. See Welsh, supra note 52.

^{186.} Id. at xi.

^{187.} Id. at xii.

^{188.} See generally Amendment of the Comm'n's Rules with Regard to Commercial Operations in the 3550- 3650 MHz Band, Further Notice of Proposed Rulemaking, 29 FCC Rcd 4273 (Apr. 23, 2014). For instance, in the April Further Notice of Proposed Rulemaking (Further Notice) the FCC proposes a Citizens Broadband Radio Service in the 3.5 GHz band. Additionally, the FCC sought public comment on the creation of a "Model City" with the purpose of exploring advanced spectrum sharing technologies.

^{191.} See Skorup, supra note 21, at 104, 111-12.

^{192.} See J. Scott Marcus et al., Final Report: Optimising The Public Sector's Use of the Radio Spectrum in The European Union 52 (2008),

http://www.plumconsulting.co.uk/pdfs/Plum_Optimising_public_sector_spectrum_use_April _2010.pdf.

^{193.} See T. Randolph Beard et al., supra note 62, at 277.

Council of Advisors on Science and Technology found in their "Report to the President: Realizing the Full Potential of Government-Held Spectrum to Spur Economic Growth" that clearing and reallocating federal spectrum was not an economically sound or efficient mechanism for spectrum policy.¹⁹⁴ For instance, the NTIA estimated it would cost \$18 billion to accommodate commercial wireless broadband in the 1755-1850 MHz band.¹⁹⁵ Sometimes clearing and reallocating spectrum is not an option as moving some government activities to a different bandwidth is not always possible if alternative spectrum is not available or it is too costly. ¹⁹⁶ For the aforementioned reasons, spectrum sharing will become the predominate policy.

VI. CONCLUSION

Despite the ever-increasing demand for spectrum, there is not enough of the resource to support the needs of both the public and the private sector. While federal government agencies hold large amounts of spectrum, the agencies often fail to utilize the spectrum in the most efficient manner. In order to spur innovation and economic growth, the United States government must find ways to increase the efficiency of federal spectrum. One option includes transferring spectrum from one exclusive use to another exclusive use through spectrum auctions or reallocation, but due to recent regulations and policy developments that method may no longer be sustainable. The federal government has economic incentives for encouraging the availability of federal spectrum for the private sector because reallocation and auction methods raise revenue for the government. However, such methods are not always feasible, and often "the costs of moving an incumbent user from a band [exceeds] the value created by a new user," making reallocation to another exclusive use an unattractive option.¹⁹⁷ Spectrum sharing is the most likely method to resolve the spectrum crunch. Spectrum sharing, moving from exclusive use of spectrum to nonexclusive use, would protect the interests of incumbent federal users while allowing wireless service providers access to spectrum.

Net neutrality, involving the application of Title II of the Communications Act to Internet service providers, leads to less flexibility for the wireless industry. An existing theory states that, as a result of the decrease in flexibility, spectrum value will decrease. Spectrum devaluation eliminates the economic incentives to reallocate federal spectrum and spectrum auctions. Demand for spectrum in the commercial sector will continue to increase without regard to spectrum devaluation. As a result, the

http://www.ntia.doc.gov/report/2012/assessment-viability-accommodating-wireless-broadband-1755-1850-mhz-band.

^{194.} See PCAST REPORT, supra note 15, at vi.

^{195.} U.S. DEP'T OF COMMERCE, AN ASSESSMENT OF THE VIABILITY OF ACCOMMODATING WIRELESS BROADBAND IN THE 1755 – 1850 MHz BAND, at iii (2012),

^{196.} See Welsh, supra note 52.

^{197.} See BAZELON & MCHENRY, supra note 4, at 3.

United States will likely explore spectrum sharing as the answer to increasing the availability of the resource for innovation and economic growth.

Great Expectations: Using the Language of Innovation to Command Efficiency and Shift the Burden of Spectrum Scarcity

Andrew Morris *

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^{*} J.D., The George Washington University Law School, May 2016. Notes Editor, Federal Communications Law Journal, 2015-16.

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I. INTRODUCTION

Wireless innovation depends on avoiding near-term spectrum scarcity, but a framework for accommodating new users in fields as diverse as driverless cars and wireless microphones must somehow reconcile the interference concerns of incumbent operators with an increasingly crowded spectrum environment. Because spectrum is scarce and highly valuable, the Federal Communications Commission (FCC) must strike the right balance between incentivizing the development of new technologies and protecting the rights of existing users.¹ Fortunately, the FCC has already adopted such a framework, albeit in piecemeal fashion. Recent actions taken by the FCC to migrate old technologies into repackaged broadcast spectrum indicate a willingness to push for spectral efficiency and innovation even as the problem of harmful signal interference grows larger.²

The FCC's Broadcast Incentive Auction (Incentive Auction), which involves repackaging digital television channels to free up new wireless broadband spectrum, illustrates this tradeoff.³ The FCC, acting on a congressional mandate in the Middle Class Tax Relief and Job Creation Act of 2012, has encouraged television broadcasters to relinquish spectrum they no longer need (given advances in technology and market development) in exchange for compensation.⁴ Whatever spectrum the FCC reaps will be repackaged and sold to wireless broadband operators on a licensed basis.⁵

Some of the repackaged spectrum includes Television White Spaces (TVWS), vacant frequencies that originally served to prevent interference between analog television stations,⁶ but now host various white space

^{1.} See Promoting Spectrum Access for Wireless Microphone Operations, Notice of Proposed Rulemaking, 29 FCC Rcd 12343, (2014) [hereinafter Promoting Spectrum Access NPRM] (statement of Chairman Wheeler) ("[W]e are exploring how best to address the needs of wireless microphone users over the long term, while encouraging development of technologies that will better facilitate sharing with other wireless uses in an increasingly crowded spectral environment.").

^{2.} See Tammy Parker, Industry Wrestles with the Growing Problem of Spectrum Pollution, FIERCE WIRELESS (Nov. 18, 2013, 3:04 AM),

http://www.fiercewireless.com/tech/story/industry-wrestles-growing-problem-spectrum-pollution/2013-11-18.

^{3.} See Promoting Spectrum Access NPRM, supra note 1, at para. 2; see also Comment Sought on Competitive Bidding Procedures for Broad. Incentive Auction 1000, Including Auctions 1001 & 1002, Public Notice, 29 FCC Rcd 15750 (2014) (statement of Comm'r Rosenworcel) ("One novel issue strikes me as deserving special attention—what to do when new wireless licenses are impaired by interference. This is important because with these new wireless licenses the potential for co-channel interference and adjacent channel interference is real.").

^{4.} See Mitchell Lazarus, Wireless Microphone Users Face Worsening Spectrum Shortage, COMMLAWBLOG (June 5, 2014),

http://www.commlawblog.com/2014/06/articles/unlicensed-operations-and-emer/wireless-microphone-users-face-worsening-spectrum-shortage/.

^{5.} See id.

^{6.} *See id.*

devices (WSD) such as wireless microphones.⁷ Because the FCC's Incentive Auction will dissolve the TVWS frequencies, WSD manufacturers are scrambling to find new spectrum for their products in an increasingly spectrum-scarce environment.⁸ However, the FCC has sought to make accommodations for incumbent users of WSDs, wireless microphone operators in particular. The FCC believes that developing technology will allow these displaced users to operate in the guard bands of the repackaged television spectrum and in the duplex gap of the post-auction 600 MHz band.⁹

The FCC's proposals to accommodate the needs of unlicensed TVWS users is emblematic of a bolder willingness to rely on the agency's innovation mandate¹⁰ to command greater efficiency and shift the burden of spectrum scarcity onto incumbent users.¹¹ By suggesting that both licensed and unlicensed wireless users can coexist in narrower bands of spectrum—guard bands and duplex gaps—while simultaneously requiring more stringent power requirements on the devices themselves,¹² the FCC has signaled an intention to promote innovation not only among displaced stakeholders, but also among licensees, such as TV broadcasters and wireless they can adapt, licensees and incumbent users of repackaged broadcast spectrum may be forced to operate with less protection from interference as guard bands shrink to accommodate both old and new uses.

Whereas the FCC's previous attempts to accelerate technological transitions relied to varying degrees on evidence that existing technology could mitigate interference concerns,¹³ the decision to open the guard bands

12. See Promoting Spectrum Access NPRM, supra note 1, at para. 30.

^{7.} Sascha D. Meinrath & Michael Calabrese, "White Space Devices" & the Myths of Harmful Interference, 11 N.Y.U. J. LEGIS. & PUB. POL'Y 495, 497 (2008).

^{8.} See id.

^{9.} See Promoting Spectrum Access NPRM, supra note 1, at paras. 2, 52.

^{10.} See, e.g., 47 U.S.C. §§ 157(a), 303(g), 309(j)(3)(A), 316(a)(1) (2012).

^{11.} See Michael O'Reilly & Jessica Rosenworcel, Driving Wi-Fi Ahead: The Upper 5 GHz Band, FCC BLOG (Feb. 23, 2015, 5:02 PM), http://www.fcc.gov/blog/driving-wi-fi-ahead-upper-5-ghz-band (proposing that more efficient utilization of the upper 5 GHz band should be studied to reach a compromise between preserving incumbent roadside safety systems and introducing new, unlicensed wireless systems, such as driverless car features).

^{13.} See Telocator Network of Am. v. FCC, 691 F.2d 525, 539 (D.C. Cir. 1982) ("The [FCC] also relied upon its conviction that there was currently available technology capable of sustaining shared usage without an unacceptable level of interference."); see also Teledesic LLC v. FCC, 275 F.3d 75, 85-88 (D.C. Cir. 2001) (acknowledging that subsidized relocation of incumbent terrestrial services in the 18 GHz band did not implicate questions of technological constraints but rather the cost of adopting then existing state-of-the-art technology); Implementation of Sections 309(j) & 337 of the Comm. Act of 1934 as Amended, Second Report and Order and Second Further Notice of Proposed Rulemaking, 18 FCC Rcd 3034, para. 7 (2003) [hereinafter Implementation of Sections 309(j) & 337 Second Order] (observing that narrowband technology was available but users did not adopt it); Amendment of the Comm'n's Rules to Modify Antenna Requirements for the 10.7-11.7 GHz Band, 72 Fed. Reg. 55,673, 55,674 (Oct. 1, 2007) (to be codified at 47 C.F.R. pt. 101) [hereinafter Amendment of Rule to Modify Antenna Requirements Final Rule] (noting that technology has evolved to permit deployment of new, more efficient antenna designs).

of repackaged broadcast spectrum for unlicensed operations relies on the FCC's explicit assumption that technology will evolve to mitigate the likelihood of harmful interference.¹⁴ The FCC's confidence in its own predictive judgment, particularly as contained in its final rule for wireless microphone operators (Final Rule), represents a novel approach to reconciling spectrum scarcity with the desire to accommodate new technologies¹⁵—an approach that might be summed up as "adapt or die."

This Note argues that the steps the FCC has taken to accommodate displaced TVWS users in its June 2, 2014, Incentive Auction Rule and Order (and subsequent proposed rulemakings) are representative of a policy shift that embraces the language of innovation and efficiency to justify hard choices about how to allocate the burden of spectrum scarcity.¹⁶ This shift is strategically well-considered given the judicial deference afforded to questions of a technical nature.¹⁷ Furthermore, this shift has the potential to become the prevailing basis for settling interference disputes in a crowded spectrum environment.

Section II of this Note begins with a description of the FCC's basis for regulating spectrum, its goal of promoting efficiency, and the approaches it has taken, particularly with respect to balancing the interference concerns of incumbents versus new entrants. Section II observes that the language of innovation and efficiency has guided the FCC's most recent proposal concerning microphone users by shifting some of the burden of technological transition onto incumbent licensees, which marks a change from the deference traditionally afforded to licensed users. Section II concludes with a discussion of the judicial deference traditionally afforded to the FCC whenever it offers predictions or judgments about the technical feasibility of spectrum-related proposals.

Section III argues that the FCC should it embrace its mandate to promote innovation and efficiency, even in the face of technological uncertainty. Section III concludes with the argument that the FCC should continue to employ the language of innovation when determining how best to manage the burden of spectrum scarcity, because underlying assumptions

^{14.} See Unlicensed Use of TV Band and 600 MHz Band Spectrum, 79 Fed. Reg. 69,710, 69,719-20 (proposed Nov. 21, 2014) (to be codified at 47 C.F.R. pts. 15, 74) [hereinafter Unlicensed Use of TV Band and 600 MHz Band Spectrum Proposed Rule] ("Given that there is some time prior to networks being deployed, we expect manufacturers to improve filter technology and designs to ensure a minimum potential for harmful interference.").

^{15.} Promoting Spectrum Access for Wireless Microphone Operations, 80 Fed. Reg. 71,702, 71,703 (Nov. 17, 2015) (to be codified at 47 C.F.R. pts. 2, 15, 73, 87, 90) (emphasis added) [hereinafter *Promoting Spectrum Access for Wireless Microphone Operations Final Rule*] ("The [FCC's] goal is to *enable the development* of a suite of devices that operate in different bands and can meet wireless microphone users' various needs while efficiently sharing the spectrum with other users.").

^{16.} See id. at para. 60.

^{17.} See generally Expanding the Econ. & Innovation Opportunities of Spectrum Through Incentive Auctions, *Report and Order*, 29 FCC Rcd 6567, para. 24 (2014).

about the future development of spectrally efficient technologies will tend to be reviewed by courts with heightened deference.

II. BACKGROUND

A. Purpose and Basis of Spectrum Regulation

The FCC's application of its statutory authority to referee interference disputes between incumbents and new entrants exposes the broader priorities underlying spectrum allocation. Foremost among these priorities is respecting the investment-backed expectations of incumbent licensees, one of the FCC's traditional goals.¹⁸ However, a new policy goal can be seen emerging—one that places a greater premium on the innovative potential of new technologies to alleviate spectrum scarcity.¹⁹ The FCC has acted on this policy goal in the past, although tentatively, and with varying degrees of deference to affected incumbents. The transition from analog to digital television, the creation of MedRadio and Medical Body Area Network (MBAN) wireless services, and the various narrowbanding initiatives of the previous decade have all tested the FCC's willingness to push for greater efficiency on the part of incumbents and entrants alike.

The regulatory framework that has emerged out of the Incentive Auction represents a significant development in the FCC's ongoing policy shift, one that downplays the need for technical certainty as a predicate for implementing tougher standards and mandating greater efficiency. Although this shift emerges out of proposals to permit unlicensed wireless microphone operations in the guard bands of postauction spectrum, the underlying goals of efficiency and innovation extend beyond licensing classifications.²⁰ By requesting input on newer, more efficient, access models for spectrum allocation,²¹ and by challenging all wireless users to adapt to an evolving technological landscape,²² the FCC appears to value innovation, particularly in the form of more spectrally efficient technology, as a guiding principle of spectrum policy. In turn, this principle may provide a convenient, public interest justification for commanding change to alleviate scarcity.

^{18.} See Ellen P. Goodman, Spectrum Rights in the Telecosm to Come, 41 SAN DIEGO L. REV. 269, 310 (2004).

^{19.} See Fostering Innovation & Inv. in the Wireless Comm. Mkt, *Notice of Inquiry*, 24 FCC Rcd 11322, paras. 26-27 (2009) [hereinafter *National Broadband Plan*] (noting that the FCC has on occasion "reallocated spectrum from one service to another and required incumbent licensees to relocate any continuing operations as necessary to a reduced or modified frequency band.").

^{20.} See Promoting Spectrum Access for Wireless Microphone Operations Final Rule, supra note 15, at 71,704.

^{21.} See National Broadband Plan, supra note 19, at para. 31 (2009).

^{22.} See Unlicensed Use of TV Band and 600 MHz Band Spectrum Proposed Rule, supra note 14, at para. 63 ("[T]he [FCC] notes that there is a lack of real world testing.").

1. Why the FCC Regulates Spectrum Use

The FCC generally adheres to a framework of increasing capacity, promoting competition, and advancing the public's interest whenever it regulates the use of spectrum.²³ However, such an expansive framework often yields to more specific considerations, such as the need to promote innovation or efficiency.²⁴ Arguably the most significant decision to be made when crafting an appropriate spectrum regulation involves deciding how to avoid interference between users while respecting existing rights and expectations of incumbent operators.

Radio spectrum encompasses the range of frequencies over which telecommunications may travel.²⁵ Frequencies are grouped into different bands which have different propagation characteristics.²⁶ One constant, however, is the existence of interference, which is what makes spectrum scarce.²⁷ FCC Rule 2.1(c) defines "interference" as "[t]he effect of unwanted energy due to one or a combination of emissions, radiations, or inductions upon reception in a radio communication system, manifested by any performance degradation, misinterpretation, or loss of information which could be extracted in the absence of such unwanted energy."28 Interference results when energy sources radiate on the frequencies used to carry transmissions, such that a receiving device cannot parse its intended signal from additional background radiation.²⁹ There are different methods for avoiding interference which could involve frequency separation, altering the power level of a device, or improving the ability of a device to mitigate interference through either contention-based protocols (e.g., "listen before talk") or frequency-agile technology, such as smart radios that can shift their operating frequency in response to external conditions.³⁰

These techniques are important insofar as interference prevents full exploitation of every available band of spectrum. Furthermore, interference mitigation is a constantly evolving field, and major stakeholders have acknowledged that current allocations of spectrum could be better utilized.³¹

^{23.} *See* Expanding the Econ. & Innovation Opportunities of Spectrum Through Incentive Auctions, *Notice of Proposed Rulemaking*, 27 FCC Rcd 12357, paras. 1, 4 (2012) [hereinafter *Innovation Opportunities*].

^{24.} See id. at paras. 2, 23, 232.

^{25.} See Kathryn A. Watson, White Open Spaces: Unlicensed Access to Unused Television Spectrum Will Provide an Unprecedented Level of Interconnectivity, 2010 U. ILL. J.L. TECH. & POL'Y 181, 181, 184.

^{26.} Id.

^{27.} See Arthur S. De Vany, et. al, A Property System for Market Allocation of the Electromagnetic Spectrum: A Legal-Economic-Engineering Study, 21 STAN. L. REV. 1499, 1504 (1969).

^{28. 47} C.F.R. § 2.1 (2015).

^{29.} See id.

^{30.} See Goodman, supra note 18, at 367, 373.

^{31.} See, e.g., Comments of Verizon and Verizon Wireless at 69-70, A National Broadband Plan for Our Future, WT 09-51 (June 8, 2009),

https://ecfsapi.fcc.gov/file/6520220110.pdf (supporting a spectrum inventory carried out by the FCC to discover inefficiently used spectrum bands).

To address this scarcity problem, the FCC has tried to maximize the amount of spectrum available by promoting economic and technological efficiency.³² The FCC's approach follows from its statutory authority to promote "efficient and intensive use of the electromagnetic spectrum,"³³ along with its duty to "study new uses for radio, provide for experimental uses of frequencies, and generally encourage the larger and more effective use of radio in the public interest."³⁴

The FCC's implementation of frequency separation through the use of guard bands and duplex gaps is just one example of how it might achieve spectrum efficiency.³⁵ Guard bands serve as a buffer to prevent interference between adjacent services and duplex gaps separate the uplink and downlink frequencies a device uses to send and receive data.³⁶ However, with the right technology, guard bands and duplex gaps can do more than just separate. In the FCC's view, WSDs such as wireless microphones can operate within these bands and coexist with adjacent wireless services.³⁷

2. Statutory Basis for Regulating Spectrum and Interference Standards

Section 157 of the Communications Act of 1934 as amended (the Act) grants the FCC power to "encourage the provision of new technologies and services to the public" in all areas of wire and radio communication.³⁸ Furthermore, anyone who opposes the proposed introduction of a new technology or service bears the burden of demonstrating that such a proposal would be inconsistent with the public interest.³⁹ The problem the FCC faces when administering Section 157 involves striking a balance between the public's interest in new wireless technologies (which requires that spectrum be available in the first place) and the rights of incumbents, particularly licensees.

The FCC enjoys some degree of flexibility whenever it must strike a compromise between innovators and incumbents who want to operate on shared bands of frequency. A spectrum license does not confer a traditional

36. See id. at paras. 9, 135.

^{32.} See Douglas W. Webbink, Frequency Spectrum Deregulation Alternatives 12 (FCC Office of Plans & Policy, Working Paper No. 2, 1980),

http://transition.fcc.gov/Bureaus/OPP/working_papers/oppwp2.pdf (reading Section I of the Communications Act of 1934 to mean that the FCC should promote "economic efficiency" in the use of frequency spectrum).

^{33. 47} U.S.C. 309(j)(3)(D) (2012).

^{34. 47} U.S.C. 303(g) (2012).

^{35.} See Innovation Opportunities, supra note 23, at para. 9.

^{37.} See Unlicensed Use of TV Band and 600 MHz Band Spectrum Proposed Rule, supra note 14, at para. 199.

^{38. 47} U.S.C. § 157(a) (2012).

^{39.} See *id.*; see *also* M2Z Networks, Inc. v. FCC, 558 F.3d 554, 562-63 (D.C. Cir. 2009) (finding that the FCC had no obligation to consider every technical piece of evidence challenging its denial of a spectrum license to a petitioner whose services were found to be slower than competitors' and, therefore, not new pursuant to §157(a)).

property right; the user must agree not to cause interference to other licensed users.⁴⁰ More importantly, the FCC's powers also permit it "to adjust [frequency] allocations and the terms and conditions governing individual licenses,"⁴¹ and to create regulations "necessary to prevent interference."⁴²

For example, adjustments to licenses may occur when the FCC perceives a need to reduce interference in order to promote the "public interest, convenience, and necessity."⁴³ Though subject to protest, these decisions can be based on the public's interest in new wireless technologies.⁴⁴ However, the FCC does not apply a mechanical framework when deciding these questions, partly because its key regulation defining "harmful interference" does not include bright line definitions.⁴⁵ The terms "degrades," "obstructs," and "repeatedly interferes" have yet to be clarified by either the FCC or the courts.⁴⁶

Nevertheless, preventing interference between and among devices that transmit across radio frequencies may involve determining how much area a license covers, transmitter power levels, and what degree of frequency separation is needed to avoid harmful interference, however that may be defined.⁴⁷ To carry out this mandate,⁴⁸ the FCC's powers and duties are once again framed in terms of "encourag[ing] the larger and more effective use of radio in the public interest."⁴⁹ The FCC's interpretations of this mandate are considered informal rulemakings, which are generally given considerable deference under the Administrative Procedure Act.⁵⁰

The FCC has previously relied on its authority under Section 157 in conjunction with its power to regulate the terms of licenses to promote "efficient and intensive use of the electromagnetic spectrum."⁵¹ Furthermore, the FCC has interpreted Section 157 to mandate not only the provision of new technologies, but also their "timely" deployment.⁵²

46. Watson, *supra* note 25, at 202-03.

47. See Stuart Minor Benjamin et al., Telecommunications Law and Policy 62-63 (2001).

48. See 47 U.S.C. § 302a (2012).

49. 47 U.S.C. § 303(g) (2012).

50. See Home Box Office, Inc. v. FCC, 567 F.2d 9, 35 (D.C. Cir. 1977); see also 5 U.S.C. § 706(a)(2) (2012) (articulating the standard of review for agency rulemaking).

51. See Service Rules Order, supra note 41, at para. 51; 47 U.S.C. § 309(j)(3)(D) (2012).

52. *See Service Rules Order, supra* note 41, at para. 51 n.96 (emphasis added) (finding that 47 U.S.C § 157 directs the FCC "to encourage the reasonable and *timely* deployment of advanced telecommunications capability to all Americans").

^{40.} See 47 U.S.C. § 301(d) (2012).

^{41.} Serv. Rules for 746-764 & 776-794 MHz Bands & Revisions to Part 27 of the Comm'n's Rules, *Memorandum Opinion and Order and Further Notice of Proposed Rulemaking*, 15 FCC Rcd 20845, para. 46 (2000) [hereinafter *Service Rules Order*]; *see also* 47 U.S.C. § 316(a)(1) (2012).

^{42. 47} U.S.C. § 303(f) (2012).

^{43. 47} U.S.C. § 316(a)(1) (2012).

^{44.} See id.

^{45. 47} C.F.R. § 2.1 (2015) (defining harmful interference with respect to licensed services as anything that "seriously degrades, obstructs, or repeatedly interrupts").

The Incentive Auction is one example of how spectrum management policy implicates the FCC's Section 157 mandate. Generally, the FCC's authority to promote innovation and efficiency gives it the ability to determine what is reasonable in terms of frequency separation.⁵³ In the context of the Incentive Auction, 47 U.S.C. § 1454 grants the FCC specific authority to determine the size of guard bands in repackaged broadcast spectrum, with the only limitation being that the FCC must create bands that are "no larger than is technically reasonable to prevent harmful interference."⁵⁴ The FCC also has the authority to permit unlicensed operations in the post-auction guard bands.⁵⁵ In its Final Rule for migrating wireless microphones to repackaged spectrum, the FCC explained that its regulations were calibrated to promote long-term technological advances and efficiency notwithstanding current technological difficulties.⁵⁶

Innovation in the field of interference mitigation could resolve many of the uncertainties surrounding the proposed repackaging, to the extent that Congress has specifically called for additional research improve spectrum utilization.⁵⁷ Section 6408 of the Middle Class Tax Relief and Job Creation Act requires the Comptroller General to study ways in which spectrum use can be made more efficient.⁵⁸ The same section requires that the Comptroller General consider narrowing guard bands between adjacent users of repackaged spectrum.⁵⁹

B. Approaches to Regulating Spectrum

The FCC's framework for addressing spectrum scarcity in the Incentive Auction and in its Final Rule embraces the notion that efficient technology can alleviate the uncertainties inherent in the auctioning and repackaging process.⁶⁰ Perhaps due to the novelty of the auction itself as the government's first attempt to purchase back unused spectrum, the FCC has approached the problem of interference differently than in the past. Instead of deferring generously to incumbent rights or insisting on the availability of workable technological solutions, the FCC has required both incumbents and entrants to keep pace with the evolving status quo.⁶¹ However, the

^{53.} See 47 U.S.C. § 303(f) (2012).

^{54. 47} U.S.C. § 1454(b) (2012).

^{55.} See 47 U.S.C. § 1454(c).

^{56.} See Promoting Spectrum Access for Wireless Microphone Operations Final Rule, supra note 15, 71,702, 71,711.

^{57.} See Middle Class Tax Relief and Job Creation Act of 2012, Pub. L. No. 112-96, § 6408(a)-(b), 126 Stat. 156, 232.

^{58.} Id.

^{59.} *Id*.

^{60.} See Promoting Spectrum Access for Wireless Microphone Operations Final Rule, supra note 15, at 71,703.

^{61.} *See id.* at 71,704 (proposing secondary, licensed wireless microphone operation in the 1435-1525 GHz band, which is shared by the federal government and industry for aeronautical mobile telemetry (AMT), so long as incumbent AMT operators could agree on a method to referee spectrum interference).

creation of new guard bands and duplex gaps in the repackaged spectrum will necessitate more stringent technical standards, and the burden will fall on all users to find ways to meet them. Accordingly, the FCC faces a dilemma that goes beyond licensed versus unlicensed spectrum allocation: how can the FCC promote innovative solutions to spectrum scarcity without creating so much uncertainty as to stifle investment?

1. The FCC Has Traditionally Favored Incumbents over New Entrants

Previous spectrum policies advanced by the FCC have typically aligned with incumbent concerns that new entrants should bear the burden of preventing harmful interference.⁶² One example of such deference was the FCC's sluggish development of final rules for new, ultra-wideband services.⁶³ In a sequence of prolonged, proposed rulemakings, incumbent business interests asked for study after study to explore essentially unanswerable questions about the interference risk posed by novel technologies – all while delaying the introduction of competitor services.⁶⁴

The negative effects of such deference have not gone unnoticed by the FCC.⁶⁵ Former Commissioner Michael Copps suggested in 2009 that when government sponsorship of research and development declines, and corporate consolidation takes priority over innovation, the FCC should intervene to ensure that technology is being developed to improve spectrum efficiency.⁶⁶ However, for much of the last decade, the FCC's approach to regulating interference between newcomers and incumbents has involved deference to the latter group by settling disputes according to a first-in-time principle.⁶⁷

While reconciling incumbent and entrant interests can be tricky enough, introducing unlicensed wireless usage presents its own set of problems. Although Congress dictates the scope and terms of spectrum auctions, the FCC often faces a choice when it repackages old spectrum left vacant: license all of it for exclusive use or reserve a portion for unlicensed operations.⁶⁸ When the FCC reserved spectrum for unlicensed use after the

^{62.} See Goodman, supra note 18, at 309 ("The FCC has demonstrated a solicitude to the ongoing operations and investment-backed expectations of incumbent licensees that exceeds the obligations of due process or the Administrative Procedures Act."); Stuart Minor Benjamin, Arti K. Rai, *Fixing Innovation Policy: A Structural Perspective*, 77 GEO. WASH. L. REV. 1, 51 (2008).

^{63.} See Thomas W. Hazlett, The Wireless Craze, the Unlimited Bandwidth Myth, the Spectrum Auction Faux Pas, and the Punchline to Ronald Coase's "Big Joke": An Essay on Airwave Allocation Policy, 14 HARV. J.L. & TECH. 335, 449-451 (2001).

^{64.} Id.

^{65.} See National Broadband Plan, supra note 19 (statement of Comm'r Copps). But see id. (statement of Comm'r McDowell) (arguing that free-market principles should govern future spectrum allocations).

^{66.} Id.

^{67.} See Goodman, supra note 18, at 310.

^{68.} *See infra* Section II.B.2.

digital television (DTV) transition in 2009,⁶⁹ part of its rationale was that unlicensed spectrum would promote wireless innovation.⁷⁰ However, in the spectrally crowded environment of TVWS bands, the FCC faced the difficult task of convincing incumbent TVWS users, like licensed wireless microphone operators, that innovation would not occur at their expense.⁷¹

After the DTV transition, incumbent microphone operators faced new competition in the form of unlicensed WSDs operating on the remaining vacant television channels.⁷² Yet the FCC's rules for WSDs were deferential toward incumbents insofar as they prohibited WSDs from causing harmful interference to licensed services, such as broadcast television stations, and required WSD operators to accept any interference received from these users.⁷³

Despite this stringent toll on unlicensed usage, TVWS licensees wanted even greater protection and claimed that spectrum was so limited that the FCC's proposed safeguards would be ineffectual.⁷⁴ By contrast, manufacturers and users of unlicensed devices believed that adequate safeguards could be developed to prevent harmful interference.⁷⁵ The debate between the two groups eventually crystallized around proposed detection thresholds for interference mitigation, with incumbents cherry-picking FCC lab data to argue that prototypes for unlicensed WSDs were not perfectly reliable.⁷⁶

Despite incumbent concerns, the FCC eventually considered the potential for harmful interference acceptably low based on the adaptability of currently available technology and the confidence of the Institute of Electrical and Electronics Engineers (IEEE) that a standard for WSDs could be developed to permit sharing of TVWS.⁷⁷ The FCC also believed that rules promoting unlicensed use could lead to the adoption of more efficient power transmitters and future spectrum gains.⁷⁸ The view that unlicensed

^{69.} See Lazarus, supra note 4.

^{70.} See Unlicensed Operation in the TV Broad. Bands, Notice of Proposed Rulemaking, 19 FCC Rcd 10018, para. 1 (2004). The [FCC], in order to account for potential interference issues during the DTV transition, proposed strict rules on WSDs. "We propose to define when a TV channel is 'unused' and to require these unlicensed devices comply with significant restrictions and technical protections." See also Unlicensed Operation in the TV Broad. Bands, First Report and Order and Further Notice of Proposed Rulemaking, 21 FCC Rcd 12266, para. 29 (2006) [hereinafter Spectrum for Unlicensed Devices Order].

^{71.} See Watson, supra note 25, at 181, 182.

^{72.} See Lazarus, supra note 4.

^{73.} See 47 C.F.R. 15.5(b) (2015).

^{74.} See Spectrum for Unlicensed Devices Order, supra note 68, at para. 9 (2006) ("The comments received in response to the *Notice* are divided between existing spectrum users of the TV bands, who are concerned about potential interference, and manufacturers and users of unlicensed devices who believe adequate safeguards can be put in place to prevent harmful interference to authorized services.").

^{75.} See id.

^{76.} See Meinrath & Calabrese, supra note 7, at 512-13.

^{77.} See Spectrum for Unlicensed Devices Order, supra note 70, at para. 17.

^{78.} Id. at app. C, para. A.2.

spectrum has an outsize effect on innovation has since gained traction with at least one FCC Commissioner.⁷⁹

The FCC's spectrum policy in the Incentive Auction places less of a premium on technological certainty. At the time the FCC proposed accommodations for unlicensed users in the guard bands of repackaged spectrum, the agency did not know how much spectrum it would recover through the Incentive Auction, nor how it would interpret congressional language limiting guard bands to a "technically reasonable" size.⁸⁰ The FCC invited proof of technological advances aimed at improving spectral efficiency and solicited comment on the feasibility of allowing unlicensed WSD operations before it could reliably answer questions about future interference.⁸¹ In this regard, the FCC appears to have embraced its role as a proponent of innovation rather than of the status quo, all while politely sidelining opponents who either insist that current technology cannot accommodate allocation of unlicensed spectrum in the guard bands or who believe that mandated progress would prove detrimental to cost and efficiency.⁸²

2. The FCC's Spectrum Policy Has Changed over Time to Reflect the Values of Innovation and Efficiency

To understand how the FCC's spectrum policy has evolved to place greater emphasis on innovation and efficiency (as opposed to incumbent rights), one can begin by looking to the approach taken by the FCC when deciding whether to allocate spectrum on a licensed or unlicensed basis, given that allocation of unlicensed spectrum can be a rough proxy for gauging the FCC's level of commitment to promoting innovation as a discrete goal.⁸³

^{79.} *See* Jessica Rosenworcel, Comm'r, FCC, Remarks at the National Press Club: Wi-Fi in the 5 GHz Fast Lane, (Mar. 7, 2014),

https://apps.fcc.gov/edocs_public/attachmatch/DOC-325938A1.pdf.

^{80.} *See* Middle Class Tax Relief and Job Creation Act of 2012, Pub. L. No. 112-96, § 6407(b), 126 Stat. 156, 231.

^{81.} See Promoting Spectrum Access for Wireless Microphone Operations, Notice of Proposed Rulemaking, 29 FCC Rcd 12343, paras. 61-67 (2014); Amendment of Part 15 of the Comm'n's Rules for Unlicensed Operations in the Television Bands, Repurposed 600 Mhz Band, 600 Mhz Guard Bands & Duplex Gap, & Channel 37, Notice of Proposed Rulemaking, 29 FCC Rcd 12248, para. 10 (2014) [hereinafter Amendment of Part 15 of the Comm'n's Rules NPRM].

^{82.} See Unlicensed Use of TV Band and 600 MHz Band Spectrum Proposed Rule, supra note 14, at para. 64 (noting Qualcomm's objection to unlicensed guard band use by WSDs on grounds that the current technology for frequency separation would probably result in interference); Promoting Spectrum Access for Wireless Microphone Operations Final Rule, supra note 15, at 71, 704.

^{83.} See generally Goodman, supra note 18, at 361-62.

Congress has empowered the FCC to make available and regulate spectrum for unlicensed use,⁸⁴ provided that users abide by special antiinterference provisions that generally favor the rights of licensed and incumbent users.⁸⁵ For example, the FCC might create a "spectrum commons" open for unlicensed use,⁸⁶ such as the 2.4 GHz band that Wi-Fi devices occupy. However, under the FCC's rules, these devices must accept interference from within the band and not interfere with licensed users operating outside the band. Alternatively, the FCC may, in certain circumstances, auction bands of spectrum to licensed users who are willing to pay a premium for exclusive usage rights.⁸⁷

Choosing between licensed and unlicensed use is often a source of contention within the FCC and among industry stakeholders, and the FCC has recently taken the stance of attempting to please both sides.⁸⁸ Principles of laissez-faire economics often clash with command-and-control theories of market regulation when proponents of exclusivity confront advocates of greater unlicensed spectrum allocations.⁸⁹ The FCC has previously acknowledged the possibility that a rigid command-and-control approach to spectrum allocation might deter innovation in some circumstances.⁹⁰

While some academics expound on the innovative potential of unlicensed spectrum,⁹¹ the FCC has, for the past decade, taken a marketbased stance that favors licensed use.⁹² One policy view that encapsulates the market-based vision for spectrum regulation articulates a four-factor test for determining the appropriateness of licensed versus unlicensed allocation:

The licensed model is more efficient in many cases, and tends to work best when spectrum rights are (1) clearly defined, (2) exclusive, (3) flexible, and (4) transferable. When spectrum rights lack these attributes, potential licensees face uncertainty and may lack incentive to invest in a license or offer service. In those circumstances, the unlicensed model may better optimize spectrum access and utilization.⁹³

^{84.} See 47 U.S.C. § 307(e) (2012).

^{85.} See 47 C.F.R. §§ 15.109, 15.5 (2015) (requiring lower power emission).

^{86.} See Goodman, supra note 18, at 362-63.

^{87.} See 47 U.S.C. § 309(j)(1) (2012).

^{88.} See FCC Spectrum Policy Task Force, Report of the Spectrum Rights and Responsibilities Working Group 7 (2002) [hereinafter FCC SRRWG Report],

https://transition.fcc.gov/sptf/files/SEWGFinalReport_1.pdf (recognizing that allegations of interference by incumbents may simply be a tactical effort to block the entry of competitors). 89. See id. at 8-9, 12.

^{90.} *See id.* at 11 ("From the [FCC's] experience with command-and-control regulation, it is apparent that overregulation can deter both efficiency and innovation.").

^{91.} See Watson, supra note 25 at 206; see also Yochai Benkler, Open Wireless vs. Licensed Spectrum: Evidence from Market Adoption, 26 HARV. J.L. & TECH. 69, 95-96 (2012).

^{92.} See Benkler, supra note 91, at 78.

^{93.} Spectrum for Unlicensed Devices Order, supra note 70, at para. 27.

Congress wants to maximize revenue from the sale of licensed spectrum in the Incentive Auction, but the guard bands in the repackaged 600 MHz band tend to lack the characteristics conducive to licensing enumerated above.⁹⁴ Although the FCC has sometimes equated efficient spectrum usage with gains in licensing opportunities,⁹⁵ the FCC's decision to promote spectrally efficient wireless microphone technology has not yet translated into proposals to reserve the guard bands for purely licensed use.⁹⁶

Arguably, the tension between protecting the rights of licensees and promoting innovative uses of unlicensed spectrum concerns the question of whether spectrum will always remain scarce, and whether technological efficiency can make spectrum so accessible as to obviate the need for a system of private rights.⁹⁷ Although compelling arguments exist on both sides, the FCC's approach toward displaced TVWS users suggests a third way forward based on the principle that efficiency can alleviate scarcity,⁹⁸ even if it means abandoning the old view that incumbent users deserve at least the certainty that a technological solution is at hand rather than evolving with the rulemaking.⁹⁹ Comments made by Commissioner Jessica Rosenworcel advocating for greater utilization of the guard bands in the repackaged 600 MHz spectrum would appear to support this concept.¹⁰⁰

While pressuring incumbent users to become more spectrally efficient may implicate issues of command-and-control allocation, the FCC has general statutory authority to modify the rights of licensees to reduce interference and improve efficiency in order to benefit the public interest.¹⁰¹ When the FCC allocated spectrum for MBANs, a form of wireless medical service, it took the approach of maximizing incumbent rights by placing several restrictions on MBAN licensees, such as low-power requirements

^{94.} See Unlicensed Use of TV Band and 600 MHz Band Spectrum Proposed Rule, supra note 14, at paras. 15-17 (noting that unlicensed wireless microphones in the guard bands of the 600 MHz spectrum may have to vary their power levels based on the probability of interference with adjacent television stations); see also Joe Ciaudelli, Issues That Will Impact Wireless Mic Operators, SENNHEISER (2016), http://en-us.sennheiser.com/spectrum (claiming that the probability of interference from out of band emissions will be high for devices in the proposed guard bands).

^{95.} See Implementation of Sections 309(j) & 337 Second Order, supra note 13, at para. 26 ("[W]e note that use of more efficient technology creates additional channels that become available for licensing.").

^{96.} See Expanding the Econ. & Innovation Opportunities of Spectrum Through Incentive Auctions, *supra* note 17, at para. 126.

^{97.} *See* Goodman, *supra* note 18, at 380 ("Thus, it is mainly a view of technology, not of economics or law, that divides private and commons property theorists.").

^{98.} See Spectrum for Unlicensed Devices Order, supra note 70, at para. 27.

^{99.} See Goodman, supra note 18, at 309.

^{100.} See Phil Goldstein, FCC's Rosenworcel looks to 5 GHz band, 600 MHz guard bands for unlicensed wireless, FIERCE WIRELESS (Mar. 7 2014),

http://www.fiercewireless.com/story/fccs-rosenworcel-looks-5-ghz-band-600-mhz-guard-

bands-unlicensed-wireless/2014-03-07; Rosenworcel, *supra* note 79 ("We should move beyond old dichotomies that pit licensed versus unlicensed spectrum. Because across the board we need to choose efficiency over inefficiency and speed over congestion.").

^{101.} See 47 U.S.C. § 303(f) (2012).

and indoor limits on certain types of MBAN operations.¹⁰² The FCC was willing to adopt a framework of spectrum sharing between MBAN licensees and incumbents in the same frequency range, but with the caveat that MBAN operate on a secondary basis.¹⁰³

The FCC took a similar approach of protecting incumbent rights when introducing MedRadio, which is used in wireless healthcare applications. The FCC urged MedRadio operators to assume the burden of developing and implementing technology to mitigate interference received from federal services in the same spectrum.¹⁰⁴ The FCC's spectrum policy framework for the Incentive Auction has yielded the most radical position to date: advocating that users develop technologies in anticipation of yet-to-be-determined rules and standards. However, requiring efficiency raises questions of whether efficiency is realistically attainable and whether the FCC can impose its own predictions about what is technically reasonable.

a. The FCC Considers Both Technological Capability and the Need for Innovation When Seeking Gains in Spectrum Efficiency

The FCC has encouraged efficiency through a variety of methods, such as flexible leasing arrangements of licensed spectrum,¹⁰⁵ spectrum sharing, or mandated improvements at a technological level.¹⁰⁶ The FCC's rationale for ordering improvements in spectrum efficiency relies on a public interest argument that efficiency conserves a valuable national resource, frees up spectrum for licensing, and benefits the ambitions of industry.¹⁰⁷ The statutory language that grants the FCC its broad powers to regulate the rights of licensees rests upon on the same rationale.¹⁰⁸ The FCC

^{102.} See Amendment of the Comm'n's Rules to Provide Spectrum for the Operation of Medical Body Area Networks, *First Report and Order and Further Notice of Proposed Rulemaking*, 27 FCC Rcd 6422, paras. 39, 47 (2012).

^{103.} Id. at 19.

^{104.} See Investigation of the Spectrum Requirements for Advanced Med. Techs., Report and Order, 24 FCC Rcd 3474, paras. 4, 6 (2009) [hereinafter Spectrum Requirements for Advanced Med. Techs. Amendment].

^{105.} See Promoting Efficient Use of Spectrum, Report and Order and Further Notice of Proposed Rulemaking, 18 FCC Rcd 20604, para. 59 (2003).

^{106.} *See* Service Rules for Advanced Wireless Services H Block—Implementing Section 6401 of the Middle Class Tax Relief and Job Creation Act of 2012 Related to the 1915-1920 MHz and 1995-2000 MHz Bands, *Final Rule*, 78 Fed. Reg. 50,214, 50,243, 50,252 (to be codified at 47 C.F.R. pts. 1, 27).

^{107.} See Implementation of Sections 309(j) & 337 Second Order, supra note 13, at para. 26 n.84.

^{108.} See 47 U.S.C. § 303(f) (2012) ("Changes in the frequencies, authorized power, or in the times of operation of any station, shall not be made without the consent of the station licensee unless the [FCC] shall determine that such changes will promote public convenience or interest or will serve public necessity.").

has even suggested recently that it is willing to orient its technical specifications around its own predictions about the future state of the art.¹⁰⁹

To pursue its goal of promoting technological efficiency, the FCC has solicited comments on "How should receiver standards be taken into account for purposes of repurposing spectrum, such as the case where protected incumbents are using legacy receivers that could be replaced with newer, state-of-the-art equipment offering superior performance that would facilitate the introduction of new services?"¹¹⁰ The FCC has also acknowledged that licensees may lack incentive to pursue efficiency on their own when operating on "shared" spectrum, because "[a] licensee operating in a shared use environment does not necessarily directly accrue the benefits of its own investment in narrowband technology."¹¹¹

b. *The FCC Has Ordered Technological Changes to Increase Spectrum Efficiency*

Section 332(a) of the Act charges the FCC with encouraging technologically efficient use of mobile spectrum.¹¹² Pursuant to this mandate, the FCC has required Part 90 Private Land Mobile Radio (PLMR) services, which include private licensed communications services of public safety and industrial users, to make their equipment more spectrally efficient.¹¹³ In 2013, the FCC implemented planned improvements in spectral efficiency by ordering a migration of PLMR services to narrower bands of spectrum.¹¹⁴

The result of the FCC's commitment to promote more efficient and innovative uses of spectrum has predictably resulted in pushback from incumbent stakeholders who feel that the burden of adaptation is too onerous. After the PLMR narrowbanding order in 2004, several petitioners

^{109.} See Unlicensed Use of TV Band and 600 MHz Band Spectrum Proposed Rule, supra note 14, at para. 66.

^{110.} *National Broadband Plan, supra* note 19, at para. 36; JULIUS KNAPP, FCC WORKSHOP: SPECTRUM EFFICIENCY AND RECEIVER PERFORMANCE 7 (2012),

http://transition.fcc.gov/bureaus/oet/receiver-workshop1/Session1/Receiver-Workshop-Knapp-Opening-Remarks-w-Notes.pdf.

^{111.} Implementation of Sections 309(j) & 337 Second Order, supra note 13, at para. 13 (noting that efficiency gains may benefit new or existing applicants who want to gain increased access to the shared spectrum instead of the licensee choosing to use more efficient technology).

^{112.} See 47 U.S.C. § 332(a)(2) (2012).

^{113.} See Implementation of Sections 309(j) & 337 of the Comm. Act of 1934 as Amended, *Third Memorandum Opinion and Order, Third Further Notice of Proposed Rulemaking and Order*, 19 FCC Rcd 25045, paras. 4-5 (2004) [hereinafter *Implementation of Sections 309(j) & 337 Third Order*].

^{114.} See FCC Pub. Safety & Homeland Sec. Bureau, VHF/UHF Narrowbanding Information, FCC, http://transition.fcc.gov/pshs/public-safety-spectrum/narrowbanding.html (last visited July 30, 2016); see also Implementation of Sections 309(j) & 337 Third Order, supra note 113, at para. 4 ("In an effort to promote the transition to a more efficient narrowband channel plan, the [FCC] adopted certain market-based incentives in the PLMR service. The [FCC] stated that 'only increasingly efficient equipment' would be type certified.").

complained that migration of services to a smaller band of spectrum would take longer than the FCC had predicted given the difficulty of adopting industry standards and bringing hardware to market.¹¹⁵ The FCC's response in that instance was to grant a stay on the deadline for the proposed narrowbanding.¹¹⁶ However, the FCC has not always been so deferential.

In 2009, the FCC's proposed rules for MedRadio, a service intended for low-power medical devices, required certain industry stakeholders to accept more technical constraints than they wanted.¹¹⁷ Simultaneously, the FCC required major stakeholders, namely Medtronic, to accommodate smaller industry petitioners who wanted to operate less sophisticated devices in bands adjacent to prime spectrum.¹¹⁸ In permitting this degree of interference, the FCC expressed optimism that the device manufacturers would work out any potential conflicts at the engineering level.¹¹⁹

However, the exact method of achieving spectrum efficiency has varied in terms of scope and regulatory pressure. The narrowbanding of PLMR services to free up spectrum involved a decade-long transition period "where equipment certification represent[ed] the limit of inducement to migrate to narrowband technology" before the statutory deadline of 2013.¹²⁰ In other words, the FCC had already identified available technology that would make the transition possible. Prior to its order setting final deadlines, the FCC noted that the "current pace of migration to more spectrally efficient technology has not been sufficiently rapid" and determined that the best way to accelerate the process involved prohibiting the manufacture or importation of equipment that failed to meet certain efficiency criteria.¹²¹

119. Id.

^{115.} See Implementation of Sections 309(j) & 337 Third Order, supra note 113, at para. 45.

^{116.} Id. at para. 47.

^{117.} The FCC determined that certain vendors would be permitted to operate their devices in the narrower "wing bands" of MedRadio's core spectrum subject to more restrictive power limits. *See Spectrum Requirements for Advanced Med. Technologies Amendment, supra* note 104, at paras. 1, 13-14 (2009).

^{118.} See Spectrum Requirements for Advanced Med. Techs. Amendment, supra note 104, at para. 64 ("We decline to impose more restrictive limits on emissions from MedRadio wing band devices into the existing core band in the manner indicated by Medtronic in its petition...We find no compelling reason to place wing band devices on such an unequal footing with core band devices...[w]e are confident that manufacturers of wing band devices are capable of designing their products to be compatible with and to protect core band devices.").

^{120.} Implementation of Sections 309(j) & 337 Second Order, supra note 13, at paras. 22, 27.

^{121.} Id. at para. 9.

c. The FCC Has Eased Back on Traditional Deference Granted to Incumbent Interests

Over the past decade, the FCC has entertained a gradual shift in policy that places more of the burden of spectrum scarcity onto incumbent users.¹²² This shift has reached its most significant point with the FCC's proposal to allow unlicensed operations in the guard bands of repackaged broadcast spectrum. However, the FCC had already demonstrated in proceedings for MedRadio and the DTV transition that it is willing to deny licensees and incumbents unfettered access to interference-free spectrum when innovation is at stake.

During the creation of the MedRadio rules, the FCC was willing to accommodate smaller stakeholders developing MedRadio products by permitting flexible use of spectrum instead of deferring to dominant licensees seeking to maximize the value of their core MedRadio licenses.¹²³ The FCC also demonstrated a willingness to set the pace of innovation by limiting how long one petitioner could delay implementation and design of spectrum-compliant devices.¹²⁴

During the DTV transition, the FCC gave proponents of WSDs a chance to demonstrate that their technological solutions could prevent harmful interference to incumbent users who claimed that harmful interference was inevitable.¹²⁵ Despite the spectrum's many constraints (low-power requirements, operation on a secondary basis, lack of nation-wide clear channels),¹²⁶ companies were willing to invest in technology that would allow them to squeeze their operations into TVWS.¹²⁷

The FCC has also dismissed attempts by incumbents to overstate technological uncertainty as a barrier to proposed spectrum-sharing arrangements. In a rulemaking to amend antenna requirements in the 10.7-11.7 GHz band, the FCC dismissed incumbent concerns about interference

^{122.} The FCC has entertained the idea of setting the pace for technological improvements in contexts outside of narrowbanding, most recently by proposing a system whereby the FCC would increase required broadband speeds automatically over time to account for evolving technology. *See* Development of Nationwide Broadband Data to Evaluate Reasonable & Timely Deployment of Advanced Servs. to All Americans, Improvement of Wireless Broadband Subscribership Data, & Dev. of Data on Interconnected Voice over Internet Protocol (VoIP) Subscribership, *Notice of Proposed Rulemaking*, 22 FCC Rcd 7760, para. 20 (2007) [hereinafter *Development of Nationwide Broadband Data NPRM*].

^{123.} See Spectrum Requirements for Advanced Med. Techs. Amendment, supra note 104, at para. 64 (denying Medtronic's request to impose restrictive non-interference requirements on "wing band" devices outside the core MedRadio spectrum).

^{124.} See id. at para. 73.

^{125.} See Meinrath & Calabrese, *supra* note 7, at 496, 500; *see also* Comments of Verizon Wireless at 21, Int'l Comparison & Consumer Survey Requirements in the Broadband Data Improvement Act, GN 09-47 (Oct. 23, 2009),

https://ecfsapi.fcc.gov/file/7020143218.pdf.

^{126.} See Meinrath & Calabrese, supra note 7, at 508.

^{127.} Id.

when they were unsubstantiated by "engineering analysis."¹²⁸ Yet, according to one incumbent protestor, the entrant who had successfully petitioned for new antenna standards had failed to provide any "hard engineering analysis" of its own.¹²⁹ In the absence of any concrete data as to whether aggregate interference would doom proposed antenna standards, the FCC decided that new rules did not require complete certainty; incumbents could protest whatever interference might result from adoption of the new rules, but until then, their premature concerns could not preempt the public's interest in promoting "efficient use of spectrum."¹³⁰

The FCC's response to claims of interference during the amendment of antenna requirements for the 10.7-11.7 GHz band also confronted a broader, informational issue that often faces the agency. Although the FCC can produce its own analysis of technical solutions, frequently it must rely on predictions by prospective licensees about the true cost to the public of adopting new standards or efficiency requirements.¹³¹ The FCC's present study of guard band usage in repackaged broadcast spectrum raises the same issue.¹³² Nonetheless, the FCC expects that evolving technology will permit both future users of the 600 MHz guard bands and licensees of the repackaged spectrum to coexist.¹³³

This shift toward rolling back incumbent protections has surfaced in statements issued by Commissioner Mignon Clyburn, who argues for distributing the burden of spectrum scarcity equally among licensees, incumbents (whether licensed or not), and unlicensed stakeholders.¹³⁴ Commissioner Clyburn has also expressed guarded optimism about the ability of engineers to create standards that allow for greater sharing of spectrum.¹³⁵

C. The FCC's Decisions to Promote Efficiency Are Entitled to Judicial Deference

Judicial review presents a major obstacle for the FCC when promoting spectrum policy that values adaption and efficiency over entrenched rights. For such a policy to survive legal challenges brought by

^{128.} See Amendment of Rule to Modify Antenna Requirements Final Rule, supra note 13, at para. 8.

^{129.} Comments of Intelsat, Ltd. at 5, Amendment of Part 101 of the Comm'n's Rules to Modify Antenna Requirements for the 10.7-11.7 GHz Band, WT 07-51 (May 25, 2007), https://ecfsapi.fcc.gov/file/6519417294.pdf.

^{130.} See Amendment of Rule to Modify Antenna Requirements Final Rule, supra note 13, at paras. 8, 12.

^{131.} See Ellen P. Goodman, Spectrum Auctions and the Public Interest, 7 J. TELECOMM. & HIGH TECH. L. 343, 344 (2009).

^{132.} See Unlicensed Use of TV Band and 600 MHz Band Spectrum Proposed Rule, supra note 14, at para. 63 ("[T]he [FCC] notes that there is a lack of real world testing.").

^{133.} See id. at para. 66.

^{134.} See Amendment of Part 15 of the Comm'n's Rules NPRM, supra note 81 (statement of Comm'r Clyburn).

^{135.} See id.

incumbents aghast that they must "share the burden" of potential interference with new entrants, the FCC must think carefully about how greatly it desires aspirational levels of efficiency. While tossing displaced and new users into a demanding regulatory environment might promote creative solutions that yield incredible results, like Wi-Fi in the 2.4 GHz band,¹³⁶ an alternative scenario might involve disinterest and underutilization of spectrum. However, the FCC has an advantage should it choose to advance an aspirational policy framework – courts treat the agency's expertise in making technological predictions with great deference.

When the FCC mandates spectrum efficiency by proposing new technical standards, it generally does so through notice-and-comment rulemaking as governed by the Administrative Procedure Act.¹³⁷ At the end of the rulemaking process, the resulting rule may be protested by an affected party, such as an incumbent user who claims, for example, that new technical standards are arbitrary and capricious.¹³⁸ When a court reviews the FCC's rulemaking to determine if the resulting rule was, in fact, arbitrary and capricious, it affords deference to an agency's interpretation of its rulemaking authority so long as the interpretation is reasonable and not preempted by Congress.¹³⁹ With respect to technical rules governing interference standards, the FCC has traditionally received considerable deference.

Courts have afforded deference to the FCC's interpretation of Section 301 of the Act, which governs licenses for wireless use. In *Capitol Broadcasting v. FCC*, the Court of Appeals for the District of Columbia Circuit (D.C. Circuit) held that matters of engineering that were factual predicates in the FCC's decision to allow construction of a broadcast transmitter, despite concerns over interference, should not be second-guessed by the court.¹⁴⁰ The court also asserted that if the FCC found that an objecting licensee faced no additional interference from the novel deployment of an advanced transmitter in close proximity to its base station, then the decision to waive mandatory spacing requirements for that transmitter did not amount to modification of the objector's license.¹⁴¹

The FCC has also enjoyed great latitude when adopting policies that reflect predictions about future technological improvements and the market's likelihood of adopting new technology.¹⁴² Moreover, the FCC has

141. See id. at 404-05.

^{136.} See Rosenworcel, supra note 79.

^{137.} See 47 U.S.C. § 154(i) (2012); see also 5 U.S.C. § 553 (2012).

^{138.} See 5 U.S.C. § 553(e).

^{139.} See Chevron, U.S.A., Inc. v. Nat'l Res. Def. Council, Inc., 467 U.S. 837, 845 (1984).

^{140.} *See* Capitol Broad. Co. v. FCC, 324 F.2d. 402, 404-05 (D.C. Cir. 1963) (finding that waiver of minimum spacing distance for a type of transmitter was in accordance with the public interest, provided additional coverage, and afforded "[e]quivalent protection from interference...thought to be adequate as of the present time").

^{142.} See AT&T Co. v. FCC, 832 F.2d 1285, 1291 (D.C. Cir. 1987) (citations omitted) ("When . . . 'an agency is obliged to make policy judgments where no factual certainties exist . . . ,' we require only that the agency 'so state and go on to identify the considerations it

wide discretion to make predictions about the future state of the art.¹⁴³ When the FCC proposed displacing fixed terrestrial services to make way for new satellite services, the D.C. Circuit held in *Teledesic LLC v. FCC* that:

The [FCC] correctly conceives of its role in prophetic and managerial terms: it must predict the effect and growth rate of technological newcomers on the spectrum, while striking a balance between protecting valuable existing uses and making room for these sweeping new technologies Its decisions about how best to strike this balance thus involve both technology and economics. The [FCC] is therefore entitled to the deference traditionally accorded decisions regarding spectrum management.¹⁴⁴

Nearly twenty years earlier, the D.C. Circuit had likened the FCC's role in predicting the development of new technologies to that of a "seer."¹⁴⁵ In *Telocator Network of America v. FCC*, the court defended the FCC's power to take risks when making technical predictions:

In view of the increasing congestion on the radio spectrum and the continued growth in demand for communication services, we cannot fault the [FCC's] policy determination that novel methods evincing the potential for greater efficiency ought be tried. Nor can we brand a clear error of judgment the [FCC's] conclusion that its frequency-sharing plan possessed that potential. To insist upon concrete proof that a proposed innovation will succeed without undesirable side effects would be effectively to relegate the [FCC] to preserving the status quo.¹⁴⁶

The FCC recognizes that it is entitled to deference when making determinations about the potential for interference.¹⁴⁷ The FCC's position is consistent with the view of the D.C. Circuit, which has held that "where a 'highly technical question' is involved, 'courts necessarily must show

145. See Telocator Network of Am. v. FCC, 691 F.2d 525, 538 (D.C. Cir. 1982).

found persuasive.""); *see also* Melcher v. FCC, 134 F.3d 1143, 1151-52 (D.C. Cir. 1998) ("[O]ur review of the FCC's exercise of its predictive judgment is particularly deferential" because where "the FCC must make judgments about future market behavior with respect to a brand-new technology, certainty is impossible").

^{143.} See Consumer Elecs. Ass'n v. FCC, 347 F.3d 291, 303 (D.C. Cir. 2003); see also EarthLink, Inc. v. FCC, 462 F.3d 1, 12 (D.C. Cir. 2006) ("[A]n agency's predictive judgments about areas that are within the agency's field of discretion and expertise are entitled to *particularly deferential* review as long as they are reasonable.").

^{144.} Teledesic LLC v. FCC, 275 F.3d 75, 84 (D.C. Cir. 2001).

^{146.} Id. at 542.

^{147.} *See* Service Rules for Advanced Wireless Serv. H Block—Implementing Section 6401 of the Middle Class Tax Relief and Job Creation Act of 2012 Related to the 1915-1920 MHz and 1995-2000 MHz Bands, *Report and Order*, 28 FCC Rcd 9483, para. 19 (2013).

considerable deference to an agency's expertise.¹¹⁴⁸ Accordingly, when the FCC makes predictions about the potential for interference, it need only articulate a "rational connection between the facts found and the choice made"¹⁴⁹ to survive a "modicum of reasoned analysis" upon judicial review.¹⁵⁰

The FCC must, however, disclose to interested parties the studies upon which it intends to rely in notice-and-comment rulemaking procedures.¹⁵¹ Consequently, the FCC may be free to make predicative judgments about the evolving state of technology and what degree of interference mitigation technology can be expected in the future, but it cannot furnish such predictions without disclosing the studies and data it uses to derive its conclusions.¹⁵²

Despite the latitude it receives when deciding questions of a technical nature, the FCC cannot easily backtrack once it has committed itself to a particular technological solution. When the FCC defended its position that currently available technology could accommodate guard band sharing in *Telocator*, the court chastised the FCC for characterizing the technical viability of its analysis as an "irrelevant issue."¹⁵³ Nevertheless, the court found that the FCC's last-minute reversal was superseded by an ample record that that could have reasonably led it to conclude that the band sharing was, in fact, technically feasible.¹⁵⁴ However, the court also suggested that the FCC's lack of courage in its technological predictions could potentially lend itself to accusations of capriciousness fatal to the rulemaking.¹⁵⁵

III. ANALYSIS

A. The FCC Has Indicated a Willingness to Shift More of the Burden of Spectrum Efficiency onto Licensed Incumbents by Placing Less of a Premium on Technological Certainty

The FCC's policy trajectory from the DTV transition to the Incentive Auction can be characterized as successive attempts to de-emphasize what has traditionally been a focal point in many incumbent complaints: the need for technological certainty.¹⁵⁶ By embracing the language of innovation to

^{148.} Am. Radio Relay League, Inc. v. FCC, 524 F.3d 227, 233 (D.C. Cir. 2008) (quoting MCI Cellular Tel. Co. v. FCC, 738 F.2d 1322, 1333 (D.C. Cir. 1984)).

^{149.} Motor Vehicle Mfrs. Ass'n of the U.S., Inc. v. State Farm Mut. Auto. Ins. Co., 463 U.S. 29, 43 (1983).

^{150.} Hispanic Info. & Telecomms. Network, Inc. v. FCC, 865 F.2d 1289, 1297-98 (D.C. Cir. 1989); see also Am. Radio Relay League, 524 F.3d at 233.

^{151.} See Am. Radio Relay League, 524 F.3d 227 at 237 (citing Portland Cement Ass'n v. Ruckelshaus, 486 F.2d 375, 392–93 (D.C.Cir. 1973)).

^{152.} See id.

^{153.} See Telocator Network of Am. v. FCC, 691 F.2d 525, 540-41 (D.C. Cir. 1982).

^{154.} See id. at 541.

^{155.} See id.

^{156.} See supra notes 128-29.

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urge adoption of newer, more efficient technologies, the FCC has effectively told incumbents that they must become adaptable and shoulder more of the burden of spectrum scarcity. This is for the best. The FCC cannot forever cater to established interests that would delay the introduction of new technologies merely because the technical feasibility of anti-interference standards remains foggy.¹⁵⁷

The FCC's decision to allow wireless microphones and other WSDs to operate in the 600 MHz guard bands on an unlicensed basis after the Incentive Auction does not go as far as erasing incumbent licensees' rights to be free from harmful interference, but nevertheless encourages them to be more spectrally efficient as the margins of interference protection shrink to accommodate new guard band usage.¹⁵⁸ Similarly, the FCC's optimism about permitting licensed microphone usage in the aeronautical mobile telemetry (AMT) band arises from its expectation that device manufactures representing both AMT users and microphone users will coordinate the adoption of new, interference-mitigating technologies.¹⁵⁹ In sum, the FCC has effectively signaled to both licensees and displaced wireless microphone users that they have an obligation to adapt to less spectrum by innovating and cannot simply demand greater protection because their technology is outdated.¹⁶⁰

Commissioner Clyburn's optimism about the potential for efficient spectrum sharing and Commissioner Rosenworcel's belief that adoption of efficient technologies by all wireless users is essential to progress represent new ways of thinking about the rights of licensees in a spectrum-scarce environment.¹⁶¹ In fact, the FCC has been tentatively pushing towards this policy framework with its previous decisions, especially those concerning PLMR services, MedRadio, and antenna rules for the 10.7-11.7 GHz band. The common thread in these previous rulemakings was the FCC's interest in setting the pace of innovation at a reasonable enough rate to promote the introduction of new technology despite the complaints of incumbent users who either harbored interference concerns or feared the costliness of adaptation.¹⁶² In these decisions, the FCC rationalized its decision to push

160. See id. at paras. 91, 94.

^{157.} See Hazlett, supra note 63, at 449-451 (2001).

^{158.} See Unlicensed Use of TV Band and 600 MHz Band Spectrum Proposed Rule, supra note 14, at paras. 61-66.

^{159.} See Promoting Spectrum Access for Wireless Microphone Operations Final Rule, supra note 15, at 71,716 (finding that the successful migration of microphone users into the AMT band will require "the cooperation of the AMT community in recognizing opportunities to share use of the band in those locations and times that will not interfere with the critical existing primary use, and the implementation of a coordination process to allow for such determinations in a timely and effective manner").

^{161.} See Amendment of Part 15 of the Comm'n's Rules NPRM, supra note 81 (statement of Comm'r Clyburn); Rosenworcel, *supra* note 79 ("We should move beyond old dichotomies that pit licensed versus unlicensed spectrum. Because across the board we need to choose efficiency over inefficiency and speed over congestion.").

^{162.} See Amendment of Part 101 of the Comm'n's Rules to Modify Antenna Requirements for the 10.7 – 11.7 GHz Band, Notice of Proposed Rulemaking, 22 FCC Rcd 6057, paras. 3, 16-17 (2007) [hereinafter Amendment of Part 101 NPRM]; Spectrum
for efficiency on grounds of public interest.¹⁶³ Although the FCC did not explicitly rely in these instances on its authority under Section 157 to encourage the provision of new technologies to the public, the way it framed its decision implies a conceptual link between promoting innovation and requiring efficiency.¹⁶⁴

The FCC has adopted a similar framework in its discussion of guard band operations in the repackaged TVWS spectrum, particularly through its insistence that an evolving technological landscape will eventually validate its technical rules for interference.¹⁶⁵ The FCC's request that opponents of guard band operations propose potential uses for those bands also suggests a willingness to force incumbents to come up with ideas for innovative uses of spectrum before deferring to their rights as license holders.¹⁶⁶

Although the FCC's goal of requiring greater efficiency may shift some of the burden onto incumbent users to improve their own interference mitigation technology, the greater share is fixed firmly on the shoulders of those operating in the narrow guard bands. A more restrictive spectrum environment may promote innovation to gain entry, but it does not guarantee sustained improvements in technology. As the FCC observed when ordering spectrum efficiency requirements for PLMR services in "shared" frequency bands, "[a] licensee operating in a shared use environment does not necessarily directly accrue the benefits of its own investment in narrowband technology."¹⁶⁷ Consequently, imposing a technological hurdle may incentivize a one-time investment to conform technology to guard band operating requirements, but will not spur future innovation thereafter.

Taking a pessimist's view, continued innovation in an environment where technological adaptability is a barrier to entry may in fact be unlikely. On the other hand, the examples of MBAN and MedRadio show that FCC rules to protect incumbent license holders from interference can still yield

Requirements for Advanced Med. Techs. Amendment, supra note 104, at para. 73; Implementation of Sections 309(j) & 337 Second Order, supra note 13, at para. 9; see also Development of Nationwide Broadband Data NPRM, supra note 122, at para. 20.

^{163.} See, e.g., Amendment of Rule to Modify Antenna Requirements Final Rule, supra note 13, at 55,676.

^{164.} See Spectrum for Unlicensed Devices Order, supra note 70, at paras. 1-2 (finding that proposed rules for WSDs would promote adoption of low power transmitters which would in turn lead to efficiency gains and more innovation uses of spectrum).

^{165.} See Unlicensed Use of TV Band and 600 MHz Band Spectrum Proposed Rule, supra note 14, at paras. 62, 66.

^{166.} See Amendment of Part 15 of the Comm'n's Rules NPRM, supra note 81, at para. 86; see also Promoting Spectrum Access for Wireless Microphone Operations Final Rule, supra note 15, at para. 71,716 - 17.

^{167.} *Implementation of Sections 309(j) & 337 Second Order, supra* note 13, at para. 13 (noting that efficiency gains may benefit new or existing applicants who want to gain increased access to the shared spectrum instead of the licensee choosing to use more efficient technology).

innovative technologies.¹⁶⁸ In fact, the FCC has specifically invoked the success of MBAN to promote its view that entrants and incumbents should embrace a cooperative form of technological evolution to maximize available spectrum.¹⁶⁹ The FCC may be hoping for a similar result in the Incentive Auction by placing the burden of adaptation more squarely on the shoulders of displaced wireless microphone users than future licensees of repacked TVWS spectrum.¹⁷⁰

B. The FCC Should Feel Empowered to Rely More Heavily on Its Mandate to Innovate and Promote Efficiency Given Judicial Deference to Technical Predictions

The FCC should leverage its ability to command efficiency by invoking its roles as a predictor of technological progress and herald of innovation.¹⁷¹ Because reviewing courts tend to avoid second-guessing the FCC's judgments about the pace of technological evolution, the FCC has an incentive to pressure licensees and incumbent users to find ways to become more efficient sooner rather than later. The FCC can do this by replicating the approach it took for guard bands in the Incentive Auction: advocate technical standards based on predictions about the future state of the art,¹⁷² then rely on the statutorily ambiguous definition of harmful interference to craft a standard just strict enough to spur technological change.¹⁷³

Although the FCC may occasionally need to rely on the studies or data from prospective licensees to justify its predictions about the limits of efficiency or interference potential, as it did when it amended antenna requirements for the 10.7-11.7 GHz band,¹⁷⁴ it should nonetheless feel confident that courts will review its interpretation of industry studies with considerable deference.¹⁷⁵ The FCC's only meaningful constraint when assuming the role of a technology "seer" is to maintain a consistent position about its expectations for particular technological developments.¹⁷⁶

^{168.} See Amendment of the Comm'n's Rules to Provide Spectrum for the Operation of Medical Body Area Networks, *supra* note 102, at paras. 16, 21-22; *Spectrum Requirements for Advanced Med. Techs. Amendment, supra* note 104, at para. 23.

^{169.} See Promoting Spectrum Access for Wireless Microphone Operations Final Rule, supra note 15, at 71,715-16 ("The [FCC] also expects wireless microphone manufactures to continue to innovate and find further operational efficiencies, and believe that they will be able to draw on the experiences of MBAN proponents as they develop equipment designed to operate in the AMT space.").

^{170.} See Unlicensed Use of TV Band and 600 MHz Band Spectrum Proposed Rule, supra note 14, at para. 62.

^{171.} See AT&T Co. v. FCC, 832 F.2d 1285, 1291 (D.C. Cir. 1987); Melcher v. FCC, 134 F.3d 1143, 1151-52 (D.C. Cir. 1998).

^{172.} See Unlicensed Use of TV Band and 600 MHz Band Spectrum Proposed Rule, supra note 14, at 69,719-20.

^{173.} See 47 C.F.R. § 2.1 (2015); see also Watson, supra note 25, at 181, 202-03.

^{174.} See Amendment of Part 101 NPRM, supra note 162, at paras. 22-23.

^{175.} *See* Am. Radio Relay League, Inc. v. FCC, 524 F.3d 227, 233 (D.C. Cir. 2008) (quoting MCI Cellular Tel. Co. v. FCC, 738 F.2d 1322, 1333 (D.C. Cir. 1984)).

^{176.} See Telocator Network of Am. v. FCC, 691 F.2d 525, 540-41 (D.C. Cir. 1982).

Furthermore, the decision of the D.C. Circuit in *Capitol Broadcasting* suggests that if FCC policies can yield genuinely efficient technologies to alleviate concerns of harmful interference, the FCC will have more flexibility to continue allocating unlicensed spectrum in duplex gaps and guard bands. The minimum separation distances for broadcast transmitters that were at issue in *Capitol Broadcasting* have, in principle, the same function as guard bands—both provide a minimum distance between signals to avoid interference.¹⁷⁷ Although *Capitol Broadcasting* involved questions of law particular to television stations, the court made a powerful point in holding that a license is not automatically modified by the FCC's waiver of certain anti-interference rules for users with spectrally efficient technology.¹⁷⁸

An extrapolation of this reasoning could not only guide the FCC's interpretation and creation of "technically reasonable" guard bands for repackaged spectrum,¹⁷⁹ but also establish a baseline principle that if a device does not exceed technically reasonable levels of interference, it may operate however close to the margins of another frequency as technology permits. Although this may seem intuitive, incumbent licensees would likely reject the idea of packing guard bands with novel technology since it would subject them to the predictive judgments of the FCC and, if challenged in court, the established judicial deference given to such aspirational standards.¹⁸⁰ Indeed, the downside of such a framework is that it tends to erode the core principle the FCC celebrates in the licensed model of spectrum allocation: certainty.¹⁸¹

However, when too much of a premium is placed on certainty it can become the enemy of innovation, a sentiment echoed by Commissioner Michael Copps in 2009 when he suggested that the FCC intervene when private sector research and development fails to yield the new technologies necessary to improve services to the public.¹⁸² Of course, Commissioner Copps was not without opposition in this view,¹⁸³ but his suggestion is one the FCC has heeded at times when concerned with a slow pace of innovation.¹⁸⁴

The FCC should not hesitate to demand that both incumbent and prospective users of spectrum pursue technological efficiency at a more

^{177.} See Capitol Broad. Co. v. FCC, 324 F.2d. 402, 403-05 (D.C. Cir. 1963).

^{178.} See id.

^{179.} See 47 U.S.C. § 1454 (2012).

^{180.} See Am. Radio Relay League, 524 F.3d at 233.

^{181.} See Spectrum for Unlicensed Devices Order, supra note 70, at para. 27.

^{182.} See National Broadband Plan, supra note 19 (statement of Comm'r Copps).

^{183.} See id. (statement of Comm'r McDowell) (arguing that free-market principles should govern future spectrum allocations).

^{184.} See Amendment of Part 101 NPRM, supra note 162, at para. 3; Spectrum Requirements for Advanced Med. Techs. Amendment, supra note 104, at paras. 72-73; Implementation of Sections 309(j) & 337 Second Order, supra note 13, at para. 9.

aggressive pace.¹⁸⁵ There is ample statutory authority to augment the FCC's duty under Section 157 to encourage the provision of new technologies to the public.¹⁸⁶ Moreover, the FCC's interpretations of its powers and duties under Section 303 are considered informal rulemakings, which are given considerable deference by courts applying the Administrative Procedure Act.¹⁸⁷ Making use of this deference, the FCC could potentially expand its authority under Section 303(g) by interpreting "more effective use of radio" to mean more *efficient* use of radio. The FCC could then employ Section 157, in conjunction with Section 303(f),¹⁸⁸ to set the boundaries of interference in a fashion that encourages the public interest in efficiency. While this may seem like a radical proposition, the FCC has slowly gravitated toward this reasoning by expressing its expectation that technological developments will eventually validate the FCC's technical predictions for guard band operations in repackaged 600 MHz spectrum.¹⁸⁹

The FCC may also employ the ambiguous statutory language of the Middle Class Tax Relief and Job Creation Act of 2012 to pressure incumbents to adopt more substantial interference mitigation technology. This legislation requires the FCC to establish guard bands of "technically reasonable" size in the repackaged TVWS spectrum but stops short of explaining how much unlicensed use can occur within the band or what "technically reasonable" means.¹⁹⁰

Given that a question of what is technically reasonable is probably subject to considerable judicial deference (because it is necessarily a technical question), the FCC could construe the term broadly to pressure incumbent license holders to adapt to reduced frequency separation without fear of excessive judicial scrutiny.

IV. CONCLUSION

The FCC's proposal to permit wireless operations in the guard bands of repackaged broadcast spectrum may represent a promising framework for addressing the issue of spectrum scarcity, but demanding efficiency may not work in every scenario. Technical limitations present real barriers that the FCC cannot simply ignore, and requiring technological change prematurely may frustrate the investment-backed expectations of both licensed and

^{185.} The FCC itself has interpreted its innovation mandate under 47 U.S.C. § 157 to include the "timely" deployment of advanced technologies to the public. *See Service Rules Order, supra* note 41, at para. 51.

^{186.} See, e.g. 47 U.S.C. §§ 157(a), 303(g), 309(j)(3)(B) (2012).

^{187.} See Home Box Office, Inc. v. FCC, 567 F.2d 9, 34-35 (D.C. Cir. 1977).

^{188.} *See* 47 U.S.C. § 303(f) (2012) (authorizing the FCC to make "such regulations not inconsistent with law as it may deem necessary to prevent interference between stations and to carry out the provisions of this chapter").

^{189.} See Unlicensed Use of TV Band and 600 MHz Band Spectrum Proposed Rule, supra note 14, at para. 66.

^{190. 47} U.S.C. § 1454(b) (2012).

unlicensed users. If the FCC wishes to fully assume its role as a technology "seer," its predictions must be reasonable and fair.

Beyond fairness lies the question of accountability. While this Note attempts to describe a strategic policy framework for promoting spectrally efficient technologies, it does not address who in the FCC will make the technological predictions necessary to advance the state of the art. A policy centered around aspirational requirements may invite technocratic overreach, since many key questions would be shrouded in the language of engineering analysis, something that courts have been reluctant to address.

Another question that remains to be answered is whether a liberally interpreted innovation mandate can guarantee technological neutrality—the principle that the FCC does not pick winners or losers in the marketplace. What happens when there is only one technology that can accommodate the sort of shared spectrum environment the FCC wants to promote? When there is no time to research alternatives, must the FCC necessarily endorse a certain type of interference mitigation technology or wireless operator? Before the FCC can fully enjoy the flexibility of the framework described in this Note, it must think carefully about the consequences of requiring change too soon.

From Ship-to-Shore Telegraphs to Wi-Fi Packets: Using Section 705(a) to Protect Wireless Communications

Amy McCann Roller *

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IV.

In early 2010, Google admitted that its Google Maps Street View cars had been capturing more than just street-level images of American communities.¹ For the past few years, the cars had also been collecting the contents of individuals' Internet activity from every Wi-Fi network they encountered.² The collected data included e-mails, text messages, Internet browsing history, and "other highly sensitive personal information."³ The program had come about when a reportedly rogue Google engineer saw commercial opportunity in intercepting this data as it travelled through the most vulnerable link in the Internet relay: consumer Wi-Fi networks.⁴

This may sound like a modern problem—unique to our interconnected world—but the idea is not a new one. A hundred years ago, tabloid journalists had a similar idea, intercepting private telegrams as they travelled ship to shore via radio wave.⁵ At the urging of the telegraph industry, Congress responded to these interceptions by enacting the first federal law to protect American wireless communications, prohibiting the unauthorized interception and disclosure of Americans' radio communications.⁶

The 1912 law remains on the books today as Section 705(a) of the Communications Act of 1934.⁷ Despite the striking similarities between early interceptions and those undertaken by Google, the Federal Communications Commission (FCC) struggled with Section 705(a)'s applicability to Wi-Fi sniffing.⁸ Over the years, federal courts have similarly struggled with Section 705(a)'s construction, repeatedly decrying its notorious opacity.⁹ Wi-Fi sniffing, however, is exactly the type of invasion of privacy that Section 705(a) and its predecessor statutes were designed to prohibit.

This Note argues that despite recent uncertainty among courts and regulators, Section 705(a) of the Communications Act does protect unencrypted Wi-Fi traffic from unauthorized interception and divulgence. Section II of this Note looks at the development of American radio communications and their federal statutory protection. Section III of this Note

^{1.} See Google, Inc., Notice of Apparent Liability for Forfeiture, DA 12-592, para. 1 (2012),

https://epic.org/privacy/google/FCC%20Google%20SV%20Enforcement%20UNREDACTE D.pdf [hereinafter Unredacted Google Notice]. This Note cites to an unredacted version of the Notice released by Google. See, e.g., Peter Ha, Google Releases Full Report on Street View Investigation, Finds that Staff Knew About Wi-Fi Sniffing, TECHCRUNCH (Apr. 28, 2012), https://techcrunch.com/2012/04/28/543181/. The official, heavily redacted version of the document can be found in the FCC Record. See Google, Inc, Notice of Apparent Liability for Forfeiture, 27 FCC Rcd 4012 (2012), https://apps.fcc.gov/edocs_public/attachmatch/DA-12-592A1_Rcd.pdf.

^{2.} See Unredacted Google Notice, supra note 1, at para. 1.

^{3.} *See id.*

^{4.} See id. at para 21-26, 30-31, 33-39.

^{5.} See Radio Communication: Hearing on S. 3620 and S. 5334 Before the S. Comm. on Commerce, 62d Cong. 80-82 (1912) [hereinafter 1912 Hearings].

^{6.} See Farina v. Nokia Inc., 625 F.3d 97, 105 (3d Cir. 2010); see also Radio Act of 1912, Pub. L. No. 62-264, Regulation 19, 37 Stat. 302, 307.

^{7.} Communications Act of 1934 § 705(a), 47 U.S.C. § 605(a) (2012).

^{8.} *See Unredacted Google Notice, supra* note 1, at para. 53.

^{9.} See, e.g., Reston v. FCC, 492 F. Supp. 697, 706 (D.D.C. 1980).

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looks at the conflicting interpretations of the scope of Section 705(a)'s prohibitions and how that inconsistency muddled the FCC's attempts to enforce the provision against Google when it investigated the company for Wi-Fi sniffing. Section IV lays out a novel proposal for interpreting Section 705(a) to protect unencrypted Wi-Fi and addresses some counterarguments to the proposal.

I. RADIO COMMUNICATIONS AND THEIR STATUTORY PROTECTIONS

Wireless communications, transmitted by radio wave, have been a part of American life for over a century and have been protected from unauthorized interception and disclosure for nearly as long.¹⁰ Wireless transmission eases geographic barriers to communication by eliminating the extensive infrastructure and maintenance outlays required to lay and maintain a wired network. Unfortunately, for all their convenience, radio communications are especially easy to intercept because, unlike communications travelling over a closed wire, they travel multi-directionally through the airwaves.¹¹ Users and commercial operators can compensate for this special vulnerability by encrypting either the transmission or its content—i.e., the signal or the underlying communication—thereby rendering a message difficult to read, even if successfully intercepted.¹² Although sophisticated signal encryption is common for commercially transmitted wireless communications such as cell phone calls, many other wireless communications, particularly consumer Wi-Fi networks, are not.¹³

A. Radio Communications from Telegraphs to Wi-Fi

Statutorily, the Communications Act defines radio communication as "the transmission by radio of writing, signs, signals, pictures, and sounds of all kinds, including all instrumentalities, facilities, apparatus, and services (among other things, the receipt, forwarding, and delivery of communications) incidental to such transmission."¹⁴ In 1912, common radio communications included voiceless radiotelegraph and transmissions by amateur HAM-style radio operators, who numbered around 200,000.¹⁵ By 1924, radio broadcasting was in full swing, with 16,590 amateur stations

^{10.} See infra Sections I.A-I.B.

^{11.} See Kent R. Middleton, Radio Privacy Under Section 705(a): An Unconstitutional Oxymoron, 9 ADMIN. L.J. AM. U. 583, 587 (1995).

^{12.} See Orin S. Kerr, Computer Crime Law 528 (3d ed. 2013).

^{13.} See Bruce Schneier, Why We Encrypt, SCHNEIER ON SECURITY (June 23, 2015, 6:02 AM), https://www.schneier.com/blog/archives/2015/06/why_we_encrypt.html; How to Avoid Public WiFi Security Risks, KASPERSKY LAB, http://usa.kaspersky.com/internet-security-center/internet-safety/public-wifi-risks (last visited Sept. 24, 2016).

^{14. 47} U.S.C. § 153(40) (2012).

^{15.} See Middleton, supra note 11, at 594.

transmitting programming to the general public.¹⁶ Later, toward the end of the twentieth century, America saw the rise of cordless phones.¹⁷ Today, radio communications' prevalence, and concomitantly their importance, has only increased as new forms of radio communication facilitate Americans' Internet access.¹⁸

Over the past fifteen years, consumer Wi-Fi has emerged as one of the most popular radio-based technologies in the Internet-access relay.¹⁹ "Wi-Fi" is a proprietary term, registered to the Wi-Fi Alliance, that has been incorporated into the popular lexicon to describe wireless networks connecting consumer electronic devices to the Internet.²⁰ These consumer Wi-Fi networks operate using a common set of standards, established by the Institute of Electrical and Electronics Engineers, called the 802.11 protocols, which allow for interoperability of wireless devices among disparate brands of consumer electronics.²¹ These end-user Wi-Fi networks connect devices such as laptops, tablets, cell phones, and game consoles²² to a router via radio waves.²³ The router, in turn, couples with a modem that connects to the Internet via a hardwired connection.²⁴ A network configured in this manner negates the need for users to remain tethered to a wall while accessing the Internet.²⁵

While in transmission, the Internet data that Wi-Fi ferries across the airwaves is broken down into packets.²⁶ Each packet contains both "header" and "payload" data.²⁷ The header contains addressing information, like those seen on the outside of a letter sent through the postal system, while the payload contains the substance of the communication, like the letter within

^{16.} See id. at 598.

^{17.} See Nat'l Acad. of Eng'g, *Telephone Timeline*, GREATEST ACHIEVEMENTS, http://www.greatachievements.org/?id=3625 (last visited Sept. 24, 2016).

^{18.} See FCC, Federal Communications Commission Frees Up Airwaves to Ease WI-FI Congestion Across the Country (2015),

https://apps.fcc.gov/edocs_public/attachmatch/DOC-326341A2.pdf [hereinafter *Part 15 Revision Fact Sheet*].

^{19.} See The Future of Wi-Fi, NCTA, https://www.ncta.com/positions/unlicensed-spectrum (last visited Sept. 24, 2016).

^{20.} See CLIFFORD S. FISHMAN & ANNE T. MCKENNA, WIRETAPPING AND EAVESDROPPING § 30:41 (2007); see also Our Brands, WI-FI ALLIANCE, http://www.wi-fi.org/who-we-are/our-brands (last visited Sept. 24, 2016).

^{21.} See Mani Potnuru, *Limits of the Federal Wiretap Act's Ability to Protect Against Wi-Fi Sniffing*, 111 MICH. L. REV. 89, 93 (2012). For more technical information on the 802.11 protocols, visit the Institute's website. *See* IEEE 802.11 Wireless Local Area Networks, INST. OF ELEC. & ELEC. ENG'RS, http://www.ieee802.org/11/ (last visited Sept. 24, 2016).

^{22.} For a look at the myriad household devices that are now connected to the Internet via Wi-Fi, see *The Future of Wi-Fi, supra* note 19.

^{23.} *See* Revision of Part 15 of the Comm'ns Rules to Permit Unlicensed Nat'l Info. Infrastructure Devices in the 5 GHz Band, *First Report and Order*, 29 FCC Rcd 11599, para. 9 n.10 (2015) [hereinafter *Part 15 Revision Report and Order*].

^{24.} See id.

^{25.} See Potnuru, supra note 21.

^{26.} See KERR, supra note 12, at 542.

^{27.} See id.

the envelope.²⁸ This Note deals only with the law relating to the interception of payload data.

Wi-Fi, like other forms of radio communication, is particularly susceptible to interception.²⁹ When setting up his router, a consumer can configure his Wi-Fi network to be either encrypted or unencrypted.³⁰ The former prevents an interceptor from accessing the packets' content, even after he has intercepted the packets.³¹ The latter, however, is the default set up for many consumer Wi-Fi routers.³²

In the United States, Wi-Fi devices are classified as Unlicensed National Information Infrastructure Devices and governed by Part 15 of the FCC's rules.³³ So-called "Part 15 devices," including Wi-Fi routers, operate in the unlicensed portions of the 2.4 GHz and 5 GHz bands.³⁴ FCC regulations make this spectrum available for public use, requiring no license to operate devices in these bands.³⁵ However, the spectrum's unlicensed status does not mean it is unregulated—unlicensed spectrum is still subject to the full panoply of Communications Act provisions and FCC rules.³⁶ Although the majority of spectrum is licensed,³⁷ this Note only concerns itself with the law as applied to interceptions on the unlicensed bands. Additionally, there are several other forms of contemporary radio communication, including baby monitors³⁸ and Bluetooth,³⁹ that operate on unlicensed bands and can be subject to similar interceptions. For manageability, however, this Note limits its analysis to Wi-Fi communications.

Today, consumer Wi-Fi serves several important purposes. First, it helps to offload congestion from licensed spectrum bands used by mobile

^{28.} See id.

^{29.} See Middleton, supra note 11, at 588.

^{30.} See id. at 604, 609 (indicating that originators can encrypt their messages, and that originators are capable of sending unencrypted messages).

^{31.} See id. at 604 n.95; see also KERR, supra note 12, at 528.

^{32.} See Eric Geier, Lock Down Your Wi-Fi Network: 8 Tips for Small Businesses, PCWORLD (Nov. 16, 2011, 6:03 PM),

http://www.pcworld.com/article/244012/lock_down_your_wi_fi_network_8_tips_for_small_businesses.html.

^{33.} See Kenneth R. Carter et al., Unlicensed and Unshackled: A Joint OSP-OET White Paper on Unlicensed Devices and Their Regulatory Issues 22 (FCC OSP Working Paper Series, Paper No. 39, 2003), https://apps.fcc.gov/edocs_public/attachmatch/DOC-234741A1.pdf.

^{34.} See Glenn Fleishman, Understanding Wi-Fi's Two Spectrum Bands, MACWORLD (May 20, 2009, 7:41 AM),

http://www.macworld.com/article/1140685/wifi_spectrumbands.html.

^{35.} See Potnuru, supra note 21, at 93.

^{36.} See Warning: Wi-Fi Blocking is Prohibited, *Enforcement Advisory*, 30 FCC Rcd 387, 388 n.3 (2015).

^{37.} See Spectrum Dashboard, FCC,

http://reboot.fcc.gov/spectrumdashboard/searchSpectrum.seam (last visited Sept. 24, 2016).

^{38.} *See* Letter from Rep. Joseph Crowley to Julius Genachowski, Chairman, FCC, et al. 1-2, (Nov. 23, 2010), https://ecfsapi.fcc.gov/file/7021448306.pdf.

^{39.} See Roman Unucheck, *How I Hacked My Smart Bracelet*, SECURELIST (Mar. 26, 2015, 11:00 AM), http://securelist.com/blog/research/69369/how-i-hacked-my-smart-bracelet/.

phone carriers.⁴⁰ In 2013, 57% of mobile data traveled over Wi-Fi rather than the mobile network.⁴¹ By 2018, this is expected to increase to 64%.⁴² Second, Wi-Fi serves as an important Internet onramp for consumers;⁴³ in fact, by 2017, 86% of consumers' in-home broadband traffic will traverse Wi-Fi.⁴⁴ Thus Wi-Fi is closely intertwined with both the continued efficiency of mobile networks and the continued expansion of Internet access, which both go to the core of the FCC's responsibilities.

B. Federal Law Has Prohibited Intercepting Radio Communications for over a Century

Today's Section 705(a),⁴⁵ a direct descendant of the earliest federal statute to protect the privacy of radio communications,⁴⁶ was enacted over a century ago when Congress first sought to impose order on the nation's airwaves.⁴⁷ Substantively, Section 705(a) contains of four prohibitory clauses, each banning a different permutation of intercepting and disclosing a communication.⁴⁸ Of importance to this Note is the second clause, which provides that "[n]o person not being authorized by the sender shall intercept any radio communication and divulge or publish the existence, contents, substance, purport, effect, or meaning of such intercepted communication to any person."⁴⁹ Courts have generally held that this clause prohibits actually

44. See The Future of Wi-Fi, supra note 19.

45. Until the 1980s, Section 705(a) was known as Section 605. See Susan M. Hart, Who Gets the Signal? Unauthorized Interception and Section 605 Now Section 705 of the Communications Act, 6 PACE L. REV. 391, 392 n.8 (1986). The provision was renumbered in 1984, and over the years, other subsections have been added, earning it the designation as subpart (a). Id. The new subsections primarily relate to the protection of is wirelessly transmitted subscription television programming. See 47 U.S.C. § 605 (2012). Despite being renumbered as Section 705(a) in the Communications Act, the section remains codified at Section 605(a) of Title 47 in the United States Code. Id.

46. *See* HBO, Inc. v. Advanced Consumer Tech., Movie Antenna, Inc., 549 F. Supp. 14, 17 (S.D.N.Y. 1981) ("The language of [S]ection [705(a)] is the modern embodiment of a provision that has been a part of communications law for almost seventy years.").

47. See Farina v. Nokia Inc., 625 F.3d 97, 105 (3d Cir. 2010).

48. See FISHMAN & MCKENNA, supra note 20, at § 2:134; see also 47 U.S.C. § 605(a) (2012).

49. 47 U.S.C. § 605(a) (2012) ("Except as authorized by chapter 119, Title 18, no person receiving, assisting in receiving, transmitting, or assisting in transmitting, any interstate or foreign communication by wire or radio shall divulge or publish the existence, contents, substance, purport, effect, or meaning thereof, except through authorized channels of transmission or reception, (1) to any person other than the addressee, his agent, or attorney, (2) to a person employed or authorized to forward such communicating centers over which the communication may be passed, (4) to the master of a ship under whom he is serving, (5) in response to a subpoena issued by a court of competent jurisdiction, or (6) on demand of other lawful authority. No person not being authorized by the sender shall intercept any radio

^{40.} See Part 15 Revision Fact Sheet, supra note 18.

^{41.} See Part 15 Revision Report and Order, supra note 23 (statement of Comm'r O'Rielly).

^{42.} Id.

^{43.} See Warning, supra note 36.

intercepting and divulging the contents of a communication by members of the general public.⁵⁰ When crafting Section 705(a), Congress provided a range of enforcement mechanisms—criminal, regulatory, and civil.⁵¹ Accordingly, a violation of Section 705(a) can be pursued by the Department of Justice in a criminal prosecution,⁵² by the FCC in an enforcement action,⁵³ and by private litigants in the federal courts.⁵⁴ Further, the FCC has held that it has jurisdiction to resolve private Section 705(a) disputes through the agency's internal adjudicatory process.⁵⁵

Understanding Section 705(a)'s modern meaning requires consideration of its historical development.⁵⁶ The first federal statute to protect the privacy of radio communications was Regulation 19 of the Radio Act of 1912.⁵⁷ Its language was later redrafted and recodified as Section 27

50. See Steven A. Bookshester & Toni N. Gilbert, Legal Minefield of Electronic Newsgathering, 13 COMM. LAW. 11, 12 (1995) (citing Weiss v. United States, 308 U.S. 321 (1939)).

51. See sources cited infra notes 52-54.

52. See 47 U.S.C. § 605(e)(1)-(2). State authorities can also enforce the prohibitions on manufacturing or importing devices for intercepting radio communications in violation of Section 705(a). See 47 U.S.C. § 605(e)(6).

53. See 47 U.S.C. § 303(f), (m)(1)(A). (2012).

54. See 47 U.S.C. § 605(e)(3)-(4).

55. See Freemon v. AT&T, *Hearing Designation Order*, 9 FCC Rcd 4032, para. 8 (1994). Although the dispute in that case was between a consumer and a common carrier, the FCC held that it had jurisdiction to entertain section 705(a) disputes, independent of their common carrier authority. *See id* at para. 1 n.2.

56. *See* HBO, Inc. v. Advanced Consumer Tech., Movie Antenna, Inc., 549 F. Supp. 14, 17 (S.D.N.Y. 1981) ("Any attempt to construe [section 705(a)] requires one to examine the statute's origins, the legislative intent behind its enactment, and its regulatory history.").

57. Radio Act of 1912, Pub. L. No. 62-264, Regulation 19, 37 Stat. 302, 307 ("No person or persons engaged in or having knowledge of the operation of any station or stations, shall divulge or publish the contents of any messages transmitted or received by such station, except to the person or persons to whom the same may be directed, or their authorized agent, or to another station employed to forward such message to its destination, unless legally required so to do by the court of competent jurisdiction or other competent authority. Any person guilty of divulging or publishing any message, except as herein provided, shall, on conviction thereof, be punishable by a fine of not more than two hundred and fifty dollars or imprisonment for a period of not exceeding three months, or both fine and imprisonment, in the discretion of the court."); *see also* Reston v. FCC, 492 F. Supp. 697, 703 (D.D.C. 1980) ("Congress'[s] first legislative extension of the requirements of licensing under federal law to amateurs and its

communication and divulge or publish the existence, contents, substance, purport, effect, or meaning of such intercepted communication to any person. No person not being entitled thereto shall receive or assist in receiving any interstate or foreign communication by radio and use such communication (or any information therein contained) for his own benefit or for the benefit of another not entitled thereto. No person having received any intercepted radio communication or having become acquainted with the contents, substance, purport, effect, or meaning of such communication (or any part thereof) knowing that such communication was intercepted, shall divulge or publish the existence, contents, substance, purport, effect, or meaning of such communication (or any part thereof) or use such communication (or any information therein contained) for his own benefit or for the benefit of another not entitled thereto. This section shall not apply to the receiving, divulging, publishing, or utilizing the contents of any radio communication which is transmitted by any station for the use of the general public, which relates to ships, aircraft, vehicles, or persons in distress, or which is transmitted by an amateur radio station operator or by a citizens band radio operator.")

of the Radio Act of 1927,⁵⁸ to the same effect.⁵⁹ Section 27 was, in turn, incorporated nearly verbatim into the Communications Act provision now known as Section 705(a).⁶⁰

1. The 1968 Wiretap Act Exemptions

In 1968, Section 705(a) was amended for the last time with the passage of the Wiretap Act.⁶¹ The Wiretap Act removed wire communications from Section 705's purview and added an introductory clause cross-referencing the Wiretap Act, excepting any interceptions that were authorized under the 1968 Wiretap Act from Section 705(a)'s prohibitions.⁶²

This clause incorporated the Wiretap Act's exceptions, then codified at 18 U.S.C. § 2511(1)-(3), into Section 705(a). First, § 2511(1) included a structural exemption, permitting those interceptions specifically authorized pursuant to the Wiretap Act.⁶³ Next, § 2511(2) enumerated specific types of

59. See S. REP. No. 772, at 5 (1926) ("The provisions regarding the protection of . . . messages against reception and use by unauthorized persons are largely a redraft of existing law and seem necessary and proper provisions."); see also Hearings on S. 1 and S. 1754 Before the S. Comm. on Interstate Commerce, 69th Cong. 70-71 (1926).

60. See Sablowsky v. United States, 101 F.2d 183, 190 (3d Cir. 1938) ("The provisions of Section 605 seem to have been lifted almost bodily from Section 17 of the Radio Act of 1927."); see also Middleton, supra note 11, at 601, 601 n.83 (quoting Glen O. Robinson, *Title I of The Federal Communications Act: An Essay on Origins and Regulatory Purposes*, in A LEGISLATIVE HISTORY OF THE COMMUNICATIONS ACT OF 1934 3 (Max D. Paglin ed., 1989)) ("The most novel feature of the 1934 legislation [was] the merging of the telecommunications common carrier and radio regulation.").

61. *See* Wiretap Act, Pub. L. 90-351, tit. III, § 802, 82 Stat. 212 (1968) (codified at 18 U.S.C. §§ 2510-2520 (2012)) From then on, the Wiretap Act governed the interception of oral and wire communications, while Section 705(a) governed radio communications.

62. *See* 47 U.S.C. § 605(a) (2012).

63. See 18 U.S.C. § 2511(1) (1970) ("Except as otherwise specifically provided in this chapter any person who [commits one of the enumerated acts] shall be fined not more than \$10,000 or imprisoned not more than five years, or both."). The Wiretap Act had imposed new

initial imposition of a ban on the disclosure of radio transmissions are found in the [Radio Act of 1912].").

Radio Act of 1927, Pub. L. No. 69-632, § 27, 44 Stat. 1162, 1172 ("No person 58. receiving or assisting in receiving any radio communication shall divulge or publish the contents, substance, purport, effect, or meaning thereof except through authorized channels of transmission or reception . . . no person not being authorized by the sender shall intercept any message and divulge or publish the contents, substance, purport, effect, or meaning of such intercepted message to any person; and no person not being entitled thereto shall receive or assists in receiving any radio communication and use the same or any information therein contained for his own benefit or for the benefit of another not entitled thereto; and no person having received such intercepted radio communication or having become acquainted with the contents, substance, purport, effect, or meaning of the same or any part thereof, knowing that such information was so obtained, shall divulge or publish the contents, substance, purport, effect, or meaning of the same or any part thereof, or use the same or any information therein contained for his own benefit or for the benefit of another not entitled thereto: Provided, That this section shall not apply to the receiving, divulging, publishing, or utilizing the contents of any radio communication broadcasted or transmitted by amateurs or others for the use of the general public or relating to ships in distress."); see Lauritz S. Helland, Section 705(a) in the Modern World: A Response to Di Geronimo, 40 FED COMM. L.J. 115, 116, 116 nn.8-9 (1988).

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interceptions that "shall not be unlawful under this chapter." ⁶⁴ First, it permitted interceptions by common carriers' employees that are made either in the ordinary course of business, ⁶⁵ or when assisting an authorized law enforcement investigation. ⁶⁶ Next, it allowed FCC employees to intercept communications while undertaking the Commission's statutorily-assigned monitoring duties. ⁶⁷ Furthermore, it allowed persons acting under color of law to intercept communications with one party's consent. ⁶⁸ Persons not acting under color of law were permitted to intercept their own communications or, with the consent of a party, others' communications, unless done for tortious, criminal, or other injurious purposes. ⁶⁹ Finally, § 2511(3) created a national security exemption that permitted the president to authorize reasonable interceptions to protect the United States.⁷⁰

66. See id. § 2511(2)(a)(ii) ("It shall not be unlawful under this chapter for an officer, employee, or agent of any communication common carrier to provide information, facilities, or technical assistance to an investigative or law enforcement officer who, pursuant to this chapter, is authorized to intercept a wire or oral communication.").

67. See id. § 2511(2)(b) ("It shall not be unlawful under this chapter for an officer, employee, or agent of the Federal Communications Commission, in the normal course of his employment and in discharge of the monitoring responsibilities exercised by the Commission in the enforcement of chapter 5 of title 47 of the United States Code, to intercept a wire communication, or oral communication transmitted by radio, or to disclose or use the information thereby obtained.")

68. See id. \$2511(2)(c) ("It shall not be unlawful under this chapter for a person acting under color of law to intercept a wire or oral communication, where such person is a party to the communication or one of the parties to the communication has given prior consent to such interception.").

69. See id. § 2511(2)(d) ("It shall not be unlawful under this chapter for a person not acting under color of law to intercept a wire or oral communication where such person is a party to the communication or where one of the parties to the communication has given prior consent to such interception unless such communication is intercepted for the purpose of committing any criminal or tortious act in violation of the Constitution or laws of the United States or of any State or for the purpose of committing any other injurious act.").

70. See id. § 2511(3).

and novel warrant requirements on law enforcement seeking wiretaps to gather evidence. *See id.* §§ 2515-2518. The language of Section 2511(1) clarified that those court-authorized interceptions were not otherwise unlawful under the Act.

^{64.} See id. § 2511(2)(a)-(d).

^{65.} See id. § 2511(2)(a)(i) ("It shall not be unlawful under this chapter for an operator of a switchboard, or an officer, employee, or agent of any communication common carrier, whose facilities are used in tile transmission of a wire communication, to intercept, disclose, or use that communication in the normal course of his employment while engaged in any activity which is a necessary incident to the rendition of his service or to the protection of the rights or property of the carrier of such communication: *Provided*, That said communication common carriers shall not utilize service observing or random monitoring except for mechanical or service quality control checks.").

2. The 1986 Electronic Communications Privacy Act Exemptions

Later, Congress enacted the 1986 Electronic Communications Privacy Act, which was designed to help the Wiretap Act adapt to new technologies.⁷¹ ECPA is codified alongside the Wiretap Act and is sometimes referred by courts and litigants to as part of the Wiretap Act itself.⁷² ECPA contains a host of exemptions, which were codified alongside the Wiretap Act exemptions and authorizations in 18 U.S.C. §§ 2511-2519. Today, both ECPA and Section 705(a) govern the interception of radio communications.⁷³ The two provisions create duplicative liability and Congress intended for Section 705 to cover some circumstances not covered by ECPA.⁷⁴

II. UNCERTAINTY HAS EMERGED AMONG COURTS AND THE FCC REGARDING SECTION 705(A)'S SCOPE AND APPLICABILITY

The authorities have not reached a consensus as to the appropriate construction of Section 705(a).⁷⁵ Discordant constructions have created substantial uncertainty, hindering enforcement and leaving Wi-Fi unprotected.⁷⁶ But the persistent uncertainty and ambiguity over Section 705(a)'s scope imperil important interests. Statutory protections for communications privacy are important to American society. Laws protecting private communications ultimately increase public trust in the means of those communications, ⁷⁷ which in turn serves two important goals: the encouragement of private speech and the adoption of new communications technologies.⁷⁸ Despite these important values, Congress has been unwilling

^{71.} *See* Bartnicki v. Vopper, 532 U.S. 514, 524 (2001) ("As enacted in 1968, Title III did not apply to the monitoring of radio transmissions. In the Electronic Communications Privacy Act of 1986, 100 Stat. 1848, however, Congress enlarged the coverage of Title III to prohibit the interception of 'electronic' as well as oral and wire communications.").

^{72.} See Joffee v. Google, Inc., 746 F.3d 920, 930 (9th Cir. 2012) (referring to ECPA provisions as Wiretap Act provisions). *But see* Konop v. Hawaiian Airlines Inc., 302 F.3d 868, 874-79 (9th Cir. 2002) (referring to ECPA provisions as ECPA provisions); *In re* Pharmatrak, Inc., 329 F.3d 9 *passim* (1st Cir. 2003) (referring to ECPA provisions as ECPA provisions).

^{73.} See S. REP. No. 99-541 (1986), as reprinted in 1986 U.S.C.C.A.N. 3555.

^{74.} See id.

^{75.} See, e.g., Reston v. FCC, 492 F. Supp. 697, 706 (D.D.C. 1980); Unredacted Google Notice, supra note 1, at para. 53.

^{76.} See Unredacted Google Notice, supra note 1, at para. 53.

^{77.} In fact, there has been some concern that they may increase public confidence too much. *See* Letter from John R. Bolton, Asst. Att'y Gen. of the U.S. for Legis. & Governmental Affairs, to Rep. Robert Kastenmeier, Chairman, Subcomm. on Courts, Civil Liberties, & the Admin. of Justice of the H. Comm. on the Judiciary (Apr. 15, 1986), *reprinted in Electronic Communications Privacy Act of 1985: Hearings on H.R. 3378 Before the Subcomm. on Courts, Civil Liberties, and the Admin. of Justice of the House Comm. on the Judiciary*, 99th Cong. 290 n.1 (1986) (expressing the FCC's concern that the ECPA might "create unmerited expectations of privacy among the general public" because of the state of technology at that time).

^{78.} See id. at 155.

or unable in recent years to craft new legislation, and so existing law must be repurposed, to the extent possible, to cover new forms of communication.

A. Currently, there is Substantial Uncertainty over What Protections the Law Affords to Unencrypted Wi-Fi Communications.

Wi-Fi's prevalence, paired with the current uncertainty over its legal protections, has left Americans' Internet activity vulnerable to eavesdropping.⁷⁹ The recent controversy over Google's data collection activities is a prime example of this vulnerability.⁸⁰ In a blog post on May 14, 2010, Google admitted that its "Street View" cars, which capture street-level images for its Google Maps program, had also been collecting Wi-Fi payload data from unencrypted wireless networks.⁸¹ The resulting scandal came to be known as "Wi-Spy" in the press.⁸²

Many Internet users were angered by the revelation, leading to class action lawsuits around the country.⁸³ While private litigation is still ongoing, investigations launched by the Federal Trade Commission, the Department of Justice, and the FCC have since concluded⁸⁴ without taking enforcement actions.⁸⁵

On April 13, 2012, the FCC concluded its Google investigation and adopted its Notice of Apparent Liability for Forfeiture. ⁸⁶ The FCC's investigation determined that a Google employee intentionally programmed equipment on board the Google Maps cars to collect payload data from all Wi-Fi networks they encountered and to store the unencrypted Wi-Fi payload data. The employee had then shown the data to at least two other Google employees.⁸⁷ The Notice officially fined Google \$25,000 for obstructing the

http://epic.org/privacy/streetview/DOJ-Google-Street-View-Investigation-Letter-

87. See id. at paras. 21-26, 30.

^{79.} See Unredacted Google Notice, supra note 1, at para. 53.

^{80.} See id.

^{81.} Unredacted Google Notice, supra note 1, at para. 9.

^{82.} See, e.g., Kashmir Hill, "Wi-Spy" Continues to Haunt Google: Federal Court Says It May Have Violated Wiretap Act, FORBES (Sept. 10, 2013, 3:41 PM),

http://www.forbes.com/sites/kashmirhill/2013/09/10/wi-spy-continues-to-haunt-google-federal-court-says-it-may-have-violated-wiretap-act/.

^{83.} *See In re* Google Inc. St. View Elec. Comm. Litig., 733 F. Supp. 2d 1381, 1382-83 (J.P.M.L. 2010) (consolidating various Google class actions from federal courts across the country).

^{84.} *See* Letter from E. Ashton Johnston, Counsel, Google Inc. to P. Michele Ellison, Chief, FCC EB (Apr. 26, 2012), https://epic.org/privacy/streetview/documents/google-response-to-fcc.pdf.

^{85.} *See Unredacted Google Notice, supra* note 1, at para. 15; *see also* Letter from Paul J. Fishman, U.S. Att'y, to Albert Gidari & Michael A. Sussman (May 27, 2011),

^{05272011.}pdf; Letter from David C. Vladeck, Dir., FTC Bureau of Consumer Prot., to Albert Gidari (Oct. 27, 2010),

https://www.ftc.gov/sites/default/files/documents/closing_letters/google-inquiry/101027googleletter.pdf.

^{86.} See Unredacted Google Notice, supra note 1.

FCC's investigation and submitting non-compliant document certifications.⁸⁸ Despite the fine, the FCC declined to take any enforcement action for the underlying conduct.⁸⁹ When declining to take action under Section 705(a), the agency cited a lack of FCC precedent regarding the Section's applicability to Wi-Fi communications, legal uncertainty over the scope of the Section's prohibitions and its interaction with the Wiretap Act and ECPA, and a lack of evidence regarding whether the corporation itself made use of the information.⁹⁰

The legal uncertainty over the scope of Section 705(a) and its interaction with the Wiretap Act and ECPA arose from Google's argument that "the Wiretap Act permits the interception of unencrypted Wi-Fi communications, and [that] some case law suggests that Section 705(a)'s prohibition on the interception or unauthorized reception of interstate radio communications excludes conduct permitted (if not expressly authorized) under the Wiretap Act." 91 In addition to the disagreement over the applicability of these exceptions, the meaning of the underlying exception is hotly disputed. Lawsuits arising from the Google interceptions were premised on the civil remedies available for violations of § 2511.92 Examining the same "readily accessible" exception that the FCC found to be a bar to its enforcement authority, the Northern District of California found that the § 2510(16) definition of readily accessible was inapplicable, and that under its own analysis, the communications were not readily accessible to the public.93 This view was later affirmed by the Ninth Circuit.⁹⁴ This has left the current status of the legal protection afforded to American's Wi-Fi communications unclear, despite the fact that such protections serve important economic and social objectives.

III. CORRECTLY INTERPRETED, SECTION 705(A) PROTECTS AMERICANS' UNENCRYPTED WI-FI COMMUNICATIONS

It is well established that where Section 705(a)'s prohibitions attach, it is unlawful to intercept and divulge a radio communication without authorization.⁹⁵ Although Section 705(a) has never been applied to it, Wi-Fi falls squarely within the statutory definition of "radio communications"

94. See Joffe v. Google, Inc. (*Joffe I*), 729 F.3d 1262, 1264 (9th Cir. 2013), amended on reh'g, Joffe v. Google, Inc. (*Joffe II*), 746 F.3d 920 (9th Cir. 2013).

95. See 47 U.S.C. § 605(a) (2012).

^{88.} See id. at para. 1

^{89.} See id. at paras. 53-54.

^{90.} See id. at para. 53.

^{91.} Id.

^{92.} See In re Google Inc. Street View Elec. Communs. Litig. (In re Street View Litig.), 794 F. Supp. 2d 1067, 1070 (N.D. Cal. 2011)

^{93.} See id. at 1082. But see In re Innovatio IP Ventures, LLC Patent Litig., 886 F. Supp. 2d 888, 893-94 (N.D. Ill. 2012) (holding that although Section 2510(16) definition was inapplicable to Wi-Fi sniffing, the communications were still "readily accessible to the general public").

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subject to Section 705(a)'s protections because it transmits "writing, signs, signals, pictures, and sounds" by radio.⁹⁶ Thus, the argument that the prohibitions do not apply to Wi-Fi sniffing hinges on incorporating § 2511's "readily accessible to the general public" exception into Section 705(a).⁹⁷ To reconcile this interpretive quagmire, courts and the FCC should interpret Section 705(a) using the well-established canons of statutory construction and construe the provision in light of its statutory purpose.

A. Section 705(a) Does Not Incorporate the Readily Accessible to the General Public Exception, According to Well-Established Canons of Statutory Construction, Congressional Intent, and Early Interpretations of the Section's Meaning.

The "readily accessible" exception of § 2511 is not applicable to Section 705(a)'s prohibition on intercepting and divulging radio communications because Section 705(a) was amended to include the "except as authorized by . . . " language by the Wiretap Act of 1968.⁹⁸ At that time, the Wiretap Act did not contain the "readily accessible" exceptions;⁹⁹ they were added by the Electronic Communications Privacy Act of 1986, which was codified alongside the Wiretap Act.¹⁰⁰ Thus, without more indicia of congressional intent to do so, the exception should not be read into the earlier statute.

1. The Reference Statute Canon Does Not Allow for the "Readily Accessible" Exception to be Read into Section 705(a).

It is inappropriate to read the "readily accessible" exception into Section 705(a) in light of the well-established reference statute canon.¹⁰¹ Because Section 705(a) refers to a specific statutory provision, it is a "specific reference" statute, which incorporates only those authorizations that existed at the time the "reference" was enacted.¹⁰²

^{96.} See 47 U.S.C. § 153(40) (2012); see also supra Section I.A (discussing technical characteristics of Wi-Fi).

^{97.} See Unredacted Google Notice, supra note 1, at para. 53; see also United States v. Gass, 936 F. Supp. 810 (N.D. Okla. 1996).

^{98.} *See* Omnibus Crime Control and Safe Streets Act of 1968, Pub. L. 90-351, § 803, 82 Stat. 197, 223.

^{99.} See 47 U.S.C. § 2511 (1970); see also supra Section I.B.1.

^{100.} *See* Electronic Communications Privacy Act of 1986, Pub. L. 99-508, § 101(b), 100 Stat. 1848, 1849-51 (1986); *see also supra* Section I.B.2.

^{101.} The Supreme Court first used the reference statute canon in 1838, when construing a statute regarding jurisdiction of the Circuit Court for the District of Columbia. *See* Kendall v. United States *ex rel.* Stokes, 37 U.S. (12 Pet.) 524, 555 (1838).

^{102.} See 2B Norman Singer & Shambie Singer, Sutherland Statutory Construction 51:8 (7th ed.).

A reference statute is one that incorporates another law or body of law by reference.¹⁰³ There are two types of reference statutes: specific reference statutes, which refer "to a particular statute by its title or section number," and general reference statutes, which refer to an area or body of law," for example "in accord with the law of property."¹⁰⁴ By virtue of the clause conditioning its protections on the authorizations of Chapter 119 of Title 18,¹⁰⁵ Section 705(a) is a reference statute. Because it refers to a particular statutory provision, Chapter 119 of Title 18, Section 705(a) is a specific reference statute.

The distinction is important because the applicability of subsequent amendments depends upon whether Section 705(a) is a general or specific reference statute. Specific reference statutes incorporate the referee statute as it existed at the time of adoption and neither subsequent amendment nor repeal should not be read into the reference statute.¹⁰⁶ While it is true that there is an exception to the general principle that subsequent amendments to the reference statute should not be read into a specific reference statute when the legislature has evinced an intent that such amendments should be,¹⁰⁷ this is not the case here. In fact, in the case of the 1986 ECPA amendments, the opposite is true.¹⁰⁸

2. Congress Did Not Intend for the "Readily Accessible" Exception to Be Carved Out of Section 705(a).

When Congress enacted ECPA, it repeatedly expressed its intent that the Act's provisions were not meant to detract from those of Section 705(a).¹⁰⁹ Interpreting it to the contrary, such that ECPA's exceptions would undercut Section 705(a)'s protections, violates the well-established maxim that "a construction adopted should not be such as to nullify, destroy, or defeat the intention of the legislature."¹¹⁰ All other rules of statutory construction are designed to achieve that end and should not be applied so as to achieve a contrary result.¹¹¹

111. See id. § 60 (footnotes omitted) ("[T]he cardinal rule of statutory construction is to effectuate legislative intent with all rules of construction being aides to that end. The fundamental question in all cases of statutory interpretation is legislative intent, and the rules of statutory construction are designed to ascertain and enforce the intent of the legislature. The rules of grammar and canons of construction are but tools, guides to help courts determine likely legislative intent.").

^{103.} Id. § 51:7.

^{104.} *Id.*

^{105. 47} U.S.C. § 605(a) (2012).

^{106.} See SINGER & SINGER, supra note 102, § 51:8.

^{107.} See id. § 51:8 n.2.

^{108.} See infra introduction.

^{109.} See S. REP. NO. 99-541, supra note 73, at 14.

^{110.} BARBARA J. VAN ARSDALE ET AL., 73 AM. JUR. 2D STATUTES § 59 (2016 update).

ECPA's legislative history illustrates that Congress did not intend its exceptions be read into Section 705(a). The Senate Report accompanying ECPA's passage states that "[a]lthough radio communications are within the scope of the Act, the provisions of the [ECPA] directed specifically to radio do not affect the applicability of Section 705 of the Communications Act of 1934, as amended, to actions by members of the public."¹¹² When introducing the Act, ECPA sponsor Senator Charles Mathias took the Senate floor and remarked that some "interceptions are already covered by [S]ection 705 of the Communications Act. The provisions in this legislation are in addition to any remedies that may be available to the Government or to a private party under the Communications Act."¹¹³ Later, in response to an inquiry by Senator John Danforth, Senator Mathias plainly stated that "conduct which is not prohibited by the [ECPA], but which is prohibited by the Communications Act, still will be subjected to the full range of remedies and penalties under the Communications Act."114 These statements show that Congress neither intended nor expected ECPA's exceptions to be read into Section 705(a).

Furthermore, the Senate's regulatory impact statement notes that "after due consideration, the Committee [on the Judiciary] concluded that the changes in existing law contained in the bill will not increase or diminish any present regulatory responsibilities of the U.S. Department of Justice or any other department or agency affected by the legislation."¹¹⁵ If Congress intended to gut Section 705(a), it would have considered that such a change would lessen the FCC's regulatory burden.

In addition, at the time it enacted Section 705(a)'s introductory clause, Congress did not intend for "readily accessible" communications to be excepted from its operation. To construe the passage in a manner that the drafters did not intend would violate the "primary," "fundamental," or "cardinal" rule of statutory construction, which is to determine and give effect to the intention of the legislature. ¹¹⁶ The argument that the "radio communications exception" renders Section 705(a) inapplicable to Wi-Fi rests on the introductory phrase, "[e]xcept as authorized by chapter 119, Title

^{112.} S. REP. No. 99-541, supra note 73, at 14.

^{113. 132} CONG. REC. 26,765 (1986) (floor speech of Sen. Mathias proposing ECPA amendments to the Wiretap Act).

^{114. 132} CONG. REC. 26,768 (1986) (floor debate) (response of Sen. Mathias). The full exchange went as follows:

[&]quot;Mr. DANFORTH. This legislation covers some conduct that also is prohibited under section 705 of the Communications Act of 1934. Do I understand correctly that the sanctions contained in this legislation would be imposed in addition to, and not instead of, those contained in section 705 of the Communications Act?

Mr. MATHIAS. That is correct. This legislation is not intended to substitute for any liabilities for conduct that also is covered by section 705 of the Communications Act. Similarly, it is not intended to authorize any conduct which otherwise would be prohibited by section 705. The penalties provided for in the [ECPA] are in addition to those which are provided by section 705 of the Communications Act."

^{115.} S. REP. NO. 99-541, *supra* note 73, at 52.

^{116. 73} AM. JUR. 2D STATUTES, *supra* note 110, § 59 ("In the interpretation of statutes, the legislative will is the all-important or controlling factor.").

18," which qualifies its prohibitions.¹¹⁷ However, the exception should be interpreted as Congress understood it at the time of enactment.¹¹⁸ In 1968, when Congress amended Section 705(a) to include this language, chapter 119 of Title 18 contained neither the readily accessible exception nor the subsidiary "unencrypted radio communication" exception.¹¹⁹ The exception is a provision of the Electronic Privacy Communications Act of 1986.¹²⁰ Thus, Congress did not mean to exempt communications that are readily accessible to the general public from Section 705(a)'s protections.

3. Early Interpretations of Section 705(a) Support This Interpretation.

In the immediate aftermath of the ECPA's passage, it appears that courts and commentators did not consider its exceptions applicable to Section 705(a). Until the mid-1990s, a decade after ECPA's enactment, courts and commentators appear to have taken for granted that the ECPA exceptions were not incorporated into Section 705(a). For example, in the 1994 case *Snider Communication Corp. v. Cue Paging Corp.*,¹²¹ there was a dispute over pages transmitted over the FM band.¹²² The court analyzed Section 705(a)'s provisions, including the introductory clause, but never so much as mentioned that the "readily accessible" ECPA exception,¹²³ which would apply when transmitting on an FM band.¹²⁴ In fact, there was an entire law review article premised on the unconstitutionality of Section 705(a), as applied to the press, because it lacked an exception for police scanners, although ECPA contains just such an exception.¹²⁵ These interpretations from immediately after the act's passage are particularly important and given special consideration when constructing a statute.¹²⁶

One could argue that despite Congress's intent, the text of Section 705(a) seems to incorporate the ECPA exceptions by referencing all of Chapter 119 of Title 18, which is in fact where the ECPA is codified.¹²⁷ Several considerations counsel against this approach. At the time the incorporation clause was written, the section did not contain the "readily

^{117. 47} U.S.C. § 605(a) (2012).

^{118.} Perrin v. United States, 444 U.S. 37, 42 (1979) ("A fundamental canon of statutory construction is that, unless otherwise defined, words will be interpreted as taking their ordinary, contemporary, common meaning . . . at the time Congress enacted the statute.").

^{119.} See Wiretap Act, Pub. L. 90-351, § 802, 82 Stat. 212, 214 (1968).

^{120.} See Electronic Communications Privacy Act of 1986, Pub. L. 99–508, § 101(b)(4), 100 Stat. 1848, 1850.

^{121.} See Snider Comm. Corp. v. Cue Paging Corp., 840 F. Supp. 664 (E.D. Ark. 1994).

^{122.} See id. at 665-67.

^{123.} See id. at 667-70.

^{124.} See Middleton, supra note 11, at 602-03, 690-91 nn.90-91.

^{125.} See id. at 596, 596 n.51; Electronic Communications Privacy Act of 1986 § 101(b)(4).

^{126.} SINGER & SINGER, supra note 102, § 49:7, 49:7 n.2.

^{127.} See 47 U.S.C. § 605(a) (2012).

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accessible to the public" provisions.¹²⁸ In addition, the text of the ECPA itself provides that nothing in Chapter 119 nor Section 705 of the Communications Act should be construed to effect the operation of interception activities authorized by the Foreign Intelligence Surveillance Act of 1978.¹²⁹ That reference to Section 705(a) would be meaningless, if its prohibitions were already circumscribed by the ECPA.

It may initially seem less than ideal to apply a law essentially drafted in 1912 to today's communications systems, but Section 705 was crafted with the flexibility to cover new forms of radio communication. First, the text of the act only refers to "radio communication," not specific technological means. ¹³⁰ If Congress had intended to limit the Act to the particular technologies it had in mind at the time of enactment (i.e., telegraphs),¹³¹ it could have. Moreover, although Wi-Fi necessarily does not come up in the legislative history of any of the acts at issue here, the Supreme Court "has never required that every permissible application of a statute be expressly referred to in its legislative history."¹³²

There is, however, legislative history endorsing the idea that Section 705 is flexible in its applicability to new forms of radio communication. In 1984, when amending Section 705 to add subsection (b), Congress was careful to note that Section 705 "not only prohibits unauthorized interception of traditional radio communications, but also communications transmitted by means of new technologies." ¹³³ Further, this admonition is especially poignant in context because, when enacting Section 705(b), Congress intended to abrogate a line of cases that had limited Section 705's application to new technology and "to preserve this broad reach of existing [Section 705] and to make clear that all communications covered under [Section 705] will continue to be protected."¹³⁴ This history confirms that in the face of courts' efforts to limit its reach to new technology, albeit of a different variety than those at issue here, Congress undertook to clarify that Section 705 should be interpreted to reach emerging technologies and that its protections should be broadly construed.

B. Seemingly Contrary Case Law Is Not Dispositive on the Issue of Incorporating the ECPA Exceptions into Section 705(a).

When resolving its investigation into Google, the FCC decided not to take enforcement action because "some case law suggests that Section 705(a)'s prohibition on the interception or unauthorized reception of

^{128.} See Omnibus Crime Control and Safe Streets Act of 1968, Pub. L. 90-351, § 802, 82 Stat. 197, 214.

^{129.} Electronic Communications Privacy Act of 1986 § 107.

^{130.} See 47 U.S.C. § 605(a).

^{131.} See 1912 Hearings, supra note 5, at 6.

^{132.} Moskal v. United States, 498 U.S. 103, 104 (1990).

^{133.} Int'l Cablevision, Inc. v. Sykes, 75 F.3d 123, 133 (2d Cir. 1996) (citing 130 CONG.

REC. S14,285 (daily ed. Oct. 11, 1984) (statement of Sen. Packwood)).
134. See Cal. Satellite Sys., Inc. v. Nichols, 216 Cal. Rptr. 180, 186 (Cal. Ct. App. 1985).

interstate radio communications excludes conduct permitted (if not expressly authorized) under the Wiretap Act."¹³⁵ To support that proposition, the FCC cited *United States v. Rose*,¹³⁶ *Edwards v. State Farm Ins. Co.*,¹³⁷ and *United States v. Gass*.¹³⁸ The first two cases have no bearing on the question of the applicability of ECPA exceptions to Section 705(a) and the third is of limited precedential value.

In both *Rose* and *Edwards*, the courts did nothing more than apply exceptions from the 1968 Wiretap Act to Section 705(a). In *Rose*, the First Circuit incorporated the Wiretap Act's "reasonable expectation of privacy" exception.¹³⁹ The Fifth Circuit in *Edwards* based its reasoning on *Rose* and applied the Wiretap Act's statutory exception for "oral communications."¹⁴⁰ Because these cases apply only exceptions from the 1968 Act, they are consistent with the reference statute canon.

In *Gass*, the court applied the "readily accessible" exception to Section 705(a)¹⁴¹ The government argued that, despite its introductory language, the Wiretap Act does not alter Section 705(a)'s prohibition on intercepting and divulging radio communications. ¹⁴² To support their argument, the government pointed to a lone journal article from 1985.¹⁴³ Accordingly, the issue of ECPA's applicability, as distinguished from that of the Wiretap Act, was not actually argued. Furthermore, the issue the court did actually consider—that the Wiretap Act exceptions apply to Section 705(a)—is consistent with the reference statute canon.

C. In the Face of Persistent Uncertainty Regarding the Scope of ECPA's Protections, Interpreting and Applying Section 705(a) to Protect Unencrypted Wi-Fi Would Serve Important Economic and Social Objectives.

The current uncertainty surrounding the protection for unencrypted Wi-Fi payload data implicates compelling economic and social policy objectives. First, studies show that privacy protections are important to consumer confidence in and concomitant with adoption of new communications technology. Second, when individuals' communications lack privacy protections, there is a chilling effect on private speech—correspondingly privacy laws can foster private speech, thereby effectuating First Amendment values. By properly construing and applying Section 705(a) to protect these private communications, courts and regulators can further these objectives.

^{135.} Unredacted Google Notice, supra note 1, at para. 53.

^{136.} United States v. Rose, 669 F.2d 23 (1st Cir. 1982).

^{137.} Edwards v. State Farm Ins. Co., 833 F.2d 535 (5th Cir. 1987)

^{138.} United States v. Gass, 936 F. Supp. 810 (N.D. Okla. 1996).

^{139.} See Rose, 669 F.2d at 26-27.

^{140.} See Edwards, 833 F.2d at 539-40.

^{141.} See Gass, 936 F. Supp. at 816.

^{142.} See id. at 815.

^{143.} See id. at 811.

1. Protecting Private Communications Spurs Economic Growth by Fostering Public Trust in New Technologies Which in Turn Encourages Adoption.

Section 705(a), which was originally proposed by a telegraph company executive, ¹⁴⁴ was enacted to help communications industries grow by protecting the integrity of their messages.¹⁴⁵ At that time, telegraph communications were unencrypted and were increasingly being intercepted by amateur radio operators and the press, who would then report on their contents.¹⁴⁶ These interceptions and disclosures shook consumer confidence in sending messages by telegraph, casting doubt on the technology's reliability and prudence.¹⁴⁷ As a result, Americans opted to continue sending important messages by first class mail, which enjoys absolute privacy protections, despite the substantial efficiencies of telegraph communication.¹⁴⁸ The heavy fines imposed by the new law discouraged the press's behavior and helped the telegraph industry gain consumer confidence and grow.¹⁴⁹

This consumer trepidation is not a phenomenon unique to centuries past. A recent survey of Americans' response to government surveillance revelations shows a trend towards forgoing technological benefits because of privacy concerns.¹⁵⁰ For example, over a third of Americans who are aware of the surveillance programs taken at least one step to avoid the perceived risk of eavesdropping.¹⁵¹ Some of these behavioral changes have a clear economic effect. For example, privacy concerns have lead 15% of Americans to use certain online platforms less often, 15% to avoid certain software, and 13% reported that they uninstalled software.¹⁵² Most strikingly, in a close analogy to the telegraph example, 14% reported speaking more in person rather than online or by phone,¹⁵³ forgoing the efficiencies of online communication in favor of the assurance of privacy.

The economic import of these consumer concerns is especially compelling in the Wi-Fi context, because recent estimates put the value of the

^{144.} See 1912 Hearings, supra note 5, at 80-82.

^{145.} *See* United States v. Russo, 250 F. Supp. 55, 58 (E.D. Pa. 1966) ("The purpose of [S]ection 605 is to prohibit blatant public or private encroachments on the privacy of messages and the integrity of communication systems. The only way to secure this integrity is to insure that, as much as possible, only the person entitled to receive a communication learns of its contents.") (citing Nardone v. United States, 302 U.S. 379, 383 (1937)).

^{146.} See Middleton, supra note 11, at 596, 596 nn.50-51.

^{147.} See 1912 Hearings, supra note 5, at 81-82.

^{148.} See Middleton, supra note 11, at 592-93, 598.

^{149.} See id.

^{150.} See Martin Shelton et al., Pew Research Center, Americans' Privacy Strategies Post-Snowden (2015),

http://www.pewinternet.org/files/2015/03/PI_AmericansPrivacyStrategies_0316151.pdf.

^{151.} See id. at 3. The survey showed that nearly ninety percent of Americans are aware of the programs. See id.

^{152.} See id.

^{153.} See id.

Wi-Fi and other open wireless technology industries at \$50-100 billion annually.¹⁵⁴ At the same time, Internet content providers consider Wi-Fi's expansion essential to the industry's continued growth and have been pushing hard to open up more airwaves to Wi-Fi.¹⁵⁵

A lack of consumer trust in Wi-Fi networks, through which we frequently send our most sensitive communications, will stifle their growth in this economically important sector. As the FCC recently acknowledged in another context, "consumers concerned about the privacy of their personal information will be more reluctant to use the Internet, stifling Internet service competition and growth," and enforcing Communications Act privacy protections "will help spur consumer demand for . . . Internet access."¹⁵⁶ Thus, Section 705(a) can serve important economic objectives by encouraging consumer confidence in Wi-Fi networks.

2. Protecting Private Communications Effectuates First Amendment Values by Encouraging Private Speech.

At the same time that protecting Wi-Fi serves commercial and economic interests, it also serves consumers and social interests as well. The Supreme Court has explained that laws, like Section 705(a),¹⁵⁷ that prohibit the disclosure of illicitly intercepted communications "encourag[e] the uninhibited exchange of ideas and information among private parties,"¹⁵⁸ even "encourag[ing] conversations that otherwise might not take place."¹⁵⁹ Conversely, in the absence of such laws, "the fear of public disclosure of private conversations might well have a chilling effect on private speech."¹⁶⁰ This chilling effect is not a mere abstraction—it can be empirically observed. A recent Pew study found that in response to news of government surveillance, 13% of Americans have avoided using certain words in online communications.¹⁶¹ The study demonstrates that concern over prying eyes and ears leads Americans to self-censor in their private communications.¹⁶²

^{154.} See About Us, WE HEART WI-FI, http://weheartwifi.com/about/ (last visited Sep. 24 2016).

^{155.} See, e.g., Kate Tummarello, Tech Industry Pushing FCC for More Wi-Fi Airwaves in 2015 Spectrum Auction, HILL (Mar. 21, 2014 6:08 AM EDT),

http://the hill.com/policy/technology/203916-tech-industry-pushing-fcc-for-more-open-airwaves.

^{156.} See Protecting and Promoting the Open Internet, *Report and Order*, 30 FCC Rcd 5601, para. 54 (2015) (footnotes omitted).

^{157.} Section 705(a) prohibits not the mere act of unauthorized interception, but only when the contents of the unauthorized interception are also disclosed. *See* 47 U.S.C. § 605(a) (2012).

^{158.} Bartnicki v. Vopper, 532 U.S. 514, 532 (2001).

^{159.} *Id.* at 537 (Breyer, J., concurring) (citing Harper & Row, Publishers, Inc. v. Nation Enters., 471 U.S. 539, 559 (1985) (describing "freedom not to speak publicly")).

^{160.} *Id.* at 533.

^{161.} See SHELTON ET AL., supra note 150, at 3.

^{162.} See id.

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The value of uninhibited private speech does not just accrue to the unencumbered speakers individually; rather, as the Supreme Court has noted, the privacy of communications is essential to a democratic society.¹⁶³ Laws that shield private communications, like Section 705(a), serve an important societal purpose by effectuating First Amendment values.¹⁶⁴ As New York's high court famously explained:

The essential thrust of the First Amendment is to prohibit improper restraints on the voluntary public expression of ideas; it shields the man who wants to speak or publish when others wish him to be quiet. There is necessarily, and within suitably defined areas, a concomitant freedom not to speak publicly, one which serves the same ultimate end as freedom of speech in its affirmative aspect.¹⁶⁵

This "freedom not to speak publicly, to speak only privately, is violated whenever an illegally intercepted conversation is revealed."¹⁶⁶ Like other communications privacy protections, enforcement of Section 705(a) would contribute to the vibrant national conversation protected by the First Amendment. Through enforcement of Section 705(a), benefits would accrue to individuals and society by protecting private speech and in turn encouraging it.

IV. CONCLUSION

Despite persistent interpretive confusion in recent history, courts and regulators should interpret Section 705(a) of the Communications Act to include unencrypted radio communications within the scope of the communications that the act protects from interception and divulgence. So construed, Section 705(a) prohibits intercepting unencrypted Wi-Fi communications. This prohibition would further important economic and social policies by encouraging technology adoption and fostering private speech.

^{163.} Bartnicki, 532 U.S. at 533.

^{164.} See id. at 533-34.

^{165.} Hemingway's Estate v. Random House, Inc., 244 N.E.2d 250, 255 (1968) (quoted with approval in *Bartnicki*, 532 U.S. at 537 n.20; Pacific Gas & Elec. Co. v. Pub Utils. Comm'n of Cal., 475 U.S. 1, 11 (1986); *Harper & Row*, 471 U.S. at 559).

^{166.} Boehner v. McDermott, 191 F.3d 463, 469 (D.C. Cir. 1999), *vacated*, 532 U.S. 1050 (2001) (remanding for reconsideration in light of Court's decision in *Bartnicki*).