



**CITIZENS
AGAINST
GOVERNMENT
WASTE**

Thomas A. Schatz, President
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November 21, 2017

Ms. Marlene H. Dortch, Secretary
Office of the Secretary
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

Re: Restoring Internet Freedom, WC Docket No. 17-108

Expanding the Economic and Innovation Opportunities of Spectrum
Through Incentive Auctions and related issues, GN Docket No. 12-268; ET
Docket No. 14-165; MB Docket No. 15-146; ET Docket No. 16-56

National Highway Traffic Safety Administration, Federal Motor Vehicle
Safety Standards No. 150, Vehicle-to-Vehicle Communications, Docket No.
NHTSA-2016-0126; ET Docket No. 13-49

Dear Ms. Dortch,

On November 21, 2017, Citizens Against Government Waste (CAGW) Technology and Telecommunications Policy Director Deborah Collier met in an *ex parte* meeting with Mr. Travis Litman, Chief of Staff and Senior Legal Advisor for Federal Communications Commissioner Jessica Rosenworcel, and Umair Javed, Commissioner Rosenworcel's Wireless and International Legal Advisor to discuss and present on the following items:

Restoring Internet Freedom Notice of Proposed Rulemaking (WC Docket No. 17-108) – Ms. Collier presented Mr. Litman and Mr. Javed with comments submitted during the comment period, noting the inclusion in their reply comments of a filing submitted earlier by South Carolina State Representative Garry Smith, who had researched the number of consumer complaints prior to passage of the Open Internet Order. (Attachments A and B).

The Use of TV White Space to Help Bridge the Digital Divide (GN Docket No. 12-268; ET Docket No. 14-165; MB Docket No. 15-146; ET Docket No. 16-56) – Ms. Collier shared a letter submitted to the FCC by Mr. Schatz on September 14, 2017 (Attachment C), which requested reserving some of the TV white space during the spectrum repacking from the recent reverse and forward broadcast auctions for innovative uses relating to bridging the digital divide, and encouraging private sector initiatives for use of those spectrum bands for further technology developments. This spectrum presents an opportunity for innovative uses, particularly in rural areas where wireless and wireline connections may be difficult to achieve. Ms. Collier noted that she had heard about some innovative uses of the TVWS channels that enabled farmers to track their herds and provided the ability for a student in rural Virginia to do his homework, and

encouraged Commissioner Rosenworcel's staff to continue to review this effort as a means to bridge the rural/urban divide.

Vehicle-to-Vehicle Communications Spectrum (Docket No. NHTSA-2016-0126; ET Docket No. 13-49) – Ms. Collier shared a letter sent from CAGW President Tom Schatz to Secretary of Transportation Elaine Chao on September 7, 2017, requesting that the Department of Transportation withdraw the rulemaking on Vehicle-to-Vehicle Communications, which specifies the use of dedicated short-range communications (DSRC) to be installed in all new vehicles sold in the United States by 2023 (Attachment D). Ms. Collier noted that this technology is already out of date, and that the spectrum that had been dedicated strictly for this use should be returned to the FCC for other purposes.

Pursuant to Section 1.1206(b)(2) of the Commission's rules, an electronic copy of this letter is being filed in the above-referenced dockets. Please direct any questions regarding this filing to Deborah Collier.

Respectfully submitted,

A handwritten signature in black ink that reads "Thomas Schatz". The signature is written in a cursive, slightly slanted style.

Thomas A. Schatz
President



Thomas A. Schatz
President

July 14, 2017

Chairman Ajit Pai
Commissioner Mignon Clyburn
Commissioner Michael O'Rielly
Commission Secretary
Office of the Secretary
Federal Communications Commission
445 12th Street, SW, Room TW-A325
Washington, DC 20554

RE: Restoring Internet Freedom (WC Docket No. 17-108)

Dear Chairman Pai, Commissioner Clyburn, and Commissioner O'Rielly:

On behalf of the more than one million members and supporters of Citizens Against Government Waste, I submit the attached public comments to the Federal Communications Commission in reference to the Notice of Proposal Rulemaking in the Matter of Restoring Internet Freedom (WC Docket No. 17-108).

If you have any questions or concerns, please contact either myself or Deborah Collier at (202) 467-5300. Thank you for your consideration of our remarks.

Sincerely,



President
Citizens Against Government Waste

**BEFORE THE
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C.**

In the Matter of)	
)	
Restoring Internet Freedom)	WC Docket No. 17-108
)	

Comments of
Thomas A. Schatz
President
Citizens Against Government Waste

July 14, 2017

Citizens Against Government Waste (CAGW) is a private, nonprofit, nonpartisan organization dedicated to educating the American public about waste, mismanagement, and inefficiency in government. On behalf of the more than one million members and supporters of CAGW, I offer the following comments in support of restoring internet freedom to the countless Americans who use this vital service.

On February 8, 1996, when President Bill Clinton signed the Telecommunications Act of 1996, which was the first major overhaul of the Communications Act in more than 60 years, he stated that the law would “help connect every classroom in America to the information superhighway by the end of the decade. It will protect consumers by regulating the remaining monopolies for a time and by providing a roadmap for deregulation in the future.”¹ The 1996 Act, which classified the internet as an information service under Title I of the Communications Act of 1934, subjected the online world to a light-touch regulatory regime, which allowed the internet and the economy to grow and flourish.

¹ William J. Clinton: “Statement on Signing the Telecommunications Act of 1996,” February 8, 1996, online by Gerhard Peters and John T. Woolley, *The American Presidency Project*.
<http://www.presidency.ucsb.edu/ws/?pid=52289>.

The Federal Communications Commission (FCC) voted on February 26, 2015 to adopt the Open Internet Order (OIO) on a 3-2 party-line vote, reclassifying the internet as a telecommunications/telephone service under Title II of the Communications Act of 1934.² This utility-style big brother approach to regulating the internet was a problem in search of a solution, and a massive overreach of authority by the agency.

CAGW believes the adoption of the OIO was a misguided attempt to solve a crisis that didn't exist. Proponents of net neutrality want the online world to be forced "open" at the expense of successful internet providers, but fail to recognize the many tradeoffs to "openness," such as increased spam, fewer privacy controls, slower service, and, perhaps most importantly, decreased incentives for investment and innovation.

In 2004, then-FCC Chairman Michael Powell offered four guiding principles of internet freedom: the freedom to access lawful content on the internet; the freedom to use applications; the freedom to attach personal devices to the network; and, the freedom to obtain service plan information.³ The FCC unanimously adopted these four reasonable principles in its Internet Policy Statement in 2005.⁴ The principles provided internet service providers (ISPs) with direction devoid of the heavy hand of government that could have stymied innovation, and provided a truly open internet to all without burdensome regulations.

The notion of equality on the internet may sound reasonable, but the concept of net neutrality has been reinterpreted to mean a government-managed internet at the expense of private-sector business models. This does little to promote investment in infrastructure development, nor does it promote a truly free and open internet by failing to recognize the many

² In the Matter of Protecting and Promoting the Open Internet (GN Docket No. 14-28), Federal Communications Commission, FCC 15-24, February 26, 2015, https://apps.fcc.gov/edocs_public/attachmatch/FCC-15-24A1.pdf.

³ Michael K. Powell, Chairman, Federal Communications Commission, Preserving Internet Freedom: Guiding Principles for the Industry, Silicon Flatirons Symposium on "The Digital Broadband Migration: Toward a Regulatory Regime for the Internet Age," University of Colorado School of Law, Boulder, Colorado, February 8, 2004, https://apps.fcc.gov/edocs_public/attachmatch/DOC-243556A1.pdf.

⁴ Appropriate Framework for Broadband Access to the Internet over Wireline Facilities; Review of Regulatory Requirements for Incumbent LEC Broadband Telecommunications Services; Computer III Further Remand Proceedings; Bell Operating Company Provision of Enhanced Services; 1998 Biennial Regulatory Review-Review of Computer III and ONA Safeguards and Requirements; Inquiry Concerning High-Speed Access to the Internet Over Cable and Other Facilities Internet Over Cable Declaratory Ruling; Appropriate Regulatory Treatment for Broadband Access to the Internet Over Cable Facilities, GN Docket No. 00-185, CC Docket Nos. 02-33, 01-33, 98-010, 95-20, CS Docket No. 02-52, Policy Statement, 20 FCC Rcd 14986 (2005), https://apps.fcc.gov/edocs_public/attachmatch/FCC-05-151A1.pdf.

tradeoffs to “openness,” such as increased spam, fewer privacy controls, slower service, and, perhaps most importantly, decreased incentives for investment and innovation.

The reclassification of the internet under the OIO was not about net neutrality. It was instead a decision to apply several provisions of Title II to ISPs (renamed in the OIO as “broadband internet access service [BIAS] providers”). An April 25, 2017 study by Dr. George Ford, an economist at the Phoenix Center for Advanced Legal & Economic Public Policy Studies (Phoenix Center), found that had Title II reclassification not been imposed on internet providers, an additional \$150-200 billion would have been invested in infrastructure.⁵ In a follow-on to this study, Dr. Ford further reiterated on May 16, 2017 that “Investment in telecommunications is below expectations by about 25 percent since the FCC’s introduction of Title II reclassification.”⁶

As noted by the Free State Foundation in its comments to the FCC regarding the Annual Report and Analysis of Competitive Market Conditions with Respect to Mobile Wireless, Including Commercial Mobile Services (WT Docket No. 17-69), the “correlation between the Commission’s decision to impose common carrier-like regulation on wireless broadband for the first time and declines in wireless broadband infrastructure investment should not be dismissed lightly.”⁷

CAGW fully supports reinstating the classification of ISP/BIAS services as “information services” under Title I of the Communications Act of 1934, and work towards a meaningful solution to reduce the regulatory burdens on ISPs/BIAS providers. CAGW also urges the commission to review the adverse effects reclassifying the internet under Title II has had on investment and innovation.

⁵ Dr. George S. Ford, “Net Neutrality, Reclassification and Investment: A Counterfactual Analysis,” Perspectives, Phoenix Center for Advanced Legal & Economic Public Policy Studies, April 25, 2017, <http://www.phoenix-center.org/perspectives/Perspective17-02Final.pdf>.

⁶ Dr. George S. Ford, “Net Neutrality, Reclassification and Investment: A Further Analysis,” Perspectives, Phoenix Center for Advanced Legal & Economic Public Policy Studies, May 16, 2017, <http://www.phoenix-center.org/perspectives/Perspective17-03Final.pdf>.

⁷ In the Matter of Implementation of Section 6002(b) of the Omnibus Reconciliation Act of 1993, Annual Report and Analysis of Competitive Market Conditions with Respect to Mobile Wireless, Including Commercial Mobile Services (WT Docket No. 17-69), Comments of The Free State Foundation, May 8, 2017, http://www.freestatefoundation.org/images/FSF_Comments_-_Annual_Report_and_Analysis_of_Competitive_Market_Conditions_with_Respect_to_Mobile_Wireless_050817.pdf.

In addition, CAGW supports Section IV, Part C of the NPRM, which proposes to conduct a cost-benefit analysis (CBA). On April 5, 2017, Chairman Pai announced that he would be creating a new Office of Economics and Data.⁸ Economic analysis is critical to determine the impact of new regulations on broadband deployment and the economy. Had a cost-benefit analysis of the OIO been done prior to adoption, the outcome of the rulemaking may have been quite different. CAGW encourages the FCC to perform a CBA on each provision of the NPRM, as well as the overall cost of the entire NPRM.

Another consequence of reclassifying the internet as a Title II public utility was the removal of the jurisdiction of the Federal Trade Commission (FTC) over privacy enforcement for ISPs/BIAS. Consumer information privacy for data held by ISPs/BIAS became subject to the provisions of Title II, Section 222 of the Communications Act of 1934, which states in section (c)(1), “Except as required by law or with the approval of the customer, a telecommunications carrier that receives or obtains customer proprietary network information by virtue of its provision of a telecommunications service shall only use, disclose, or permit access to individually identifiable customer proprietary network information in its provision of (A) the telecommunications service from which such information is derived, or (B) services necessary to, or used in, the provision of such telecommunications service, including the publishing of directories.”⁹ Section (c)(2) states, “A telecommunications carrier shall disclose customer proprietary network information, upon affirmative written request by the customer, to any person designated by the customer.”¹⁰

This means that an ISP/BIAS must receive a customer’s consent before it can sell, or otherwise disseminate any personal information. The NPRM, if adopted, would have the effect of restoring internet privacy enforcement to the FTC.

FCC Chairman Ajit Pai and Acting FTC Chairman Maureen Ohlhausen issued a joint statement on March 1, 2017, that noted they would work together to bring a consistent approach

⁸ FCC Chairman Ajit Pai, “The Importance of Economic Analysis at the FCC,” Speech before the Hudson Institute, Federal Communications Commission, April 5, 2017, https://apps.fcc.gov/edocs_public/attachmatch/DOC-344248A1.pdf.

⁹ U.S. Code, Title 47, Chapter 5, Subchapter II, Part I, U.S. Code § 222 – Privacy of Customer Information, Legal Information Institute, Cornell University Law School, viewed May 4, 2017, <https://www.law.cornell.edu/uscode/text/47/222>.

¹⁰ Ibid.

to regulating internet privacy.¹¹ They said that jurisdiction over privacy and data security related to broadband providers should go back to the FTC, and that every actor “in the online space should be subject to the same rules, enforced by the same agency.” They added, “The federal government shouldn’t favor one set of companies over another ... we will work together to establish a technology-neutral privacy framework for the online world. Such a uniform approach is in the best interests of consumers and has a long track record of success.”

With respect to the use of authority granted under Section 706 of the Telecommunications Act of 1996 as a basis for regulating the internet, that section specifically grants the FCC authority to “encourage the deployment on a reasonable and timely basis of advanced telecommunications capability to all Americans (including, in particular, elementary and secondary schools and classrooms).” That “capability” has further been defined as broadband. The Merriam-Webster dictionary defines the word “encourage” as “to help the growth or development of.”¹² CAGW believes that Section 706 does not grant the commission broad authority to mandate its will on telecommunications by requiring providers to deploy services, but instead is intended to help clear a pathway for deployment by removing barriers.

In January, 2014, the D.C. Circuit Court of Appeals, in Verizon v. FCC, upheld certain FCC prerogatives, including provisions requiring transparency from industry partners and an affirmation of FCC authority to regulate ISPs, including broadband.¹³ Based on rulemaking adopted by the commission under former Chairman Wheeler, it appears that section 706 has been broadly interpreted in order to justify an expansionist view of the FCC’s power, including adding to the agency’s authority the ability to preempt state laws.¹⁴ However, in his dissent to the

¹¹ “Joint Statement of Acting FTC Chairman Maureen K. Ohlhausen and FCC Chairman Ajit Pai on Protecting Americans’ Online Privacy,” Federal Trade Commission, March 1, 2017, <https://www.ftc.gov/news-events/press-releases/2017/03/joint-statement-acting-ftc-chairman-maureen-k-ohlhausen-fcc>.

¹² “Synonyms and Antonyms of ENCOURAGE,” Merriam-Webster, viewed June 29, 2017, <https://www.merriam-webster.com/thesaurus/encourage>.

¹³ United States Court of Appeals for the District of Columbia Circuit, Verizon, Appellant v. Federal Communications Commission, Appellee, Argued September 9, 2013, Decided January 14, 2014, No. 11-1355, [http://www.cadc.uscourts.gov/internet/opinions.nsf/3AF8B4D938CDEEA685257C6000532062/\\$file/11-1355-1474943.pdf](http://www.cadc.uscourts.gov/internet/opinions.nsf/3AF8B4D938CDEEA685257C6000532062/$file/11-1355-1474943.pdf).

¹⁴ Remarks of Tom Wheeler, Chairman, Federal Communications Commission, National Cable & Telecommunications Association, April 30, 2014, <http://www.fcc.gov/document/chairman-tom-wheeler-remarks-ncta>.

Verizon decision, Senior Circuit Judge Laurence Silberman wrote the following, with specific emphasis on section 706:

Nevertheless, the Commission justifies its aggressive, prophylactic regulation by asserting that the negative consequences of regulation (preserving the status quo) are likely to be minor, while the consequences of allowing the broadband market to evolve without regulation could be drastic and permanent. 25 F.C.C.R. at 17909 ¶ 12. I think this is quite wrong, but in any event, the agency's judgment about the propriety of leaping before looking cannot displace the judgment of Congress which, in enacting section 706, did not so broadly empower the Commission. Rather, Congress required the agency to identify an actual barrier to infrastructure investment or a threat to competition, and the agency must have evidence that the barrier or threat exists.¹⁵

Both Chairman Ajit Pai and Commissioner Michael O'Rielly presented dissenting statements regarding using section 706 to justify over-regulating the internet during the rulemaking period for the OIO, echoing Judge Silberman in challenging the majority's reliance on section 706 in such matters.

As stated by Commissioner O'Rielly, "I have already expressed my views that Congress never intended section 706 to be an affirmative grant of authority to the Commission to regulate the internet. At most, it could be used to trigger *deregulation*."¹⁶ Chairman Pai directly countered former Chairman Wheeler's proposition that the FCC should expand broadband regulation in order to improve competition: "...pursuing net-neutrality regulations under section 706 or Title II places in jeopardy every other goal of this Commission in the communications marketplace ... threatening the \$60 billion a year that private companies invest in their broadband networks.... This brave new world will deter new entrants and reduce competition in the broadband market."¹⁷

¹⁵ Verizon v. Federal Communications Commission, p. 64, [http://www.cadc.uscourts.gov/internet/opinions.nsf/3AF8B4D938CDEEA685257C6000532062/\\$file/11-1355-1474943.pdf](http://www.cadc.uscourts.gov/internet/opinions.nsf/3AF8B4D938CDEEA685257C6000532062/$file/11-1355-1474943.pdf).

¹⁶ Dissenting Statement of Commissioner Michael O'Rielly, FCC 14-61, Federal Communications Commission, May 15, 2014, <http://www.fcc.gov/article/fcc-14-61a6>.

¹⁷ Dissenting Statement of Commissioner Ajit Pai, FCC 14-61, Federal Communications Commission, May 15, 2014, <http://www.fcc.gov/article/fcc-14-61a5>.

Finally, the OIO created a general Open Internet conduct standard that ISPs cannot harm consumers or edge providers. The vaguely-worded general conduct rule is designed to protect consumers against neutrality violations that are not classified as blocking, throttling, or paid prioritization.¹⁸ On February 26, 2015, former Chairman Wheeler described the role of the FCC under the general conduct standard as that of a referee when disagreements occur, stating, “We don’t really know ... where things go next.”¹⁹ This creates a dangerous precedent for overly strict interpretation by an activist commission for regulating new innovations and consumer offerings on the internet. CAGW believes these vague standards create confusion for providers and customers on what practices are and are not permitted under the current rules. CAGW recommends that this language be dropped from the final rule, and consumer protection enforcement returned to the Federal Trade Commission and individual state attorneys general.

CAGW supports the FCC’s reconsideration of the OIO, and is encouraged by the NPRM for Restoring Internet Freedom (WC Docket No. 17-108). Should the order be approved by the commission, a free and open internet will be reinstated, while economic growth will flourish through a light-touch regulatory approach to internet governance.

¹⁸ Jon Healey, “New FCC net neutrality standard leaves ISPs guessing,” *Los Angeles Times*, March 13, 2015, <http://www.latimes.com/opinion/opinion-la/la-ol-net-neutrality-wireless-zero-rating-data-caps-20150312-story.html>.

¹⁹ “Clip of Federal Communications Commission News Conference, Wheeler on General Conduct Standard,” C-SPAN, February 26, 2015, <https://www.c-span.org/video/?c4534447/wheeler-general-conduct-standard>.



Thomas A. Schatz
President

August 15, 2017

Chairman Ajit Pai
Commissioner Mignon Clyburn
Commissioner Michael O'Rielly
Commission Secretary
Office of the Secretary
Federal Communications Commission
445 12th Street, SW, Room TW-A325
Washington, DC 20554

RE: Restoring Internet Freedom (WC Docket No. 17-108)

Dear Chairman Pai, Commissioner Clyburn, and Commissioner O'Rielly:

On behalf of the more than one million members and supporters of Citizens Against Government Waste, I submit the attached public reply comments to the Federal Communications Commission in reference to the Notice of Proposal Rulemaking in the Matter of Restoring Internet Freedom (WC Docket No. 17-108).

If you have any questions or concerns, please contact either myself or Deborah Collier at (202) 467-5300. Thank you for your consideration of our remarks.

Sincerely,

A handwritten signature in black ink that reads "Thomas Schatz". The signature is written in a cursive, slightly slanted style.

President
Citizens Against Government Waste

**BEFORE THE
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C.**

In the Matter of)	
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Restoring Internet Freedom)	WC Docket No. 17-108
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Reply Comments of
Thomas A. Schatz
President
Citizens Against Government Waste

August 15, 2017

Citizens Against Government Waste (CAGW) is a private, nonprofit, nonpartisan organization dedicated to educating the American public about waste, mismanagement, and inefficiency in government. On behalf of the more than one million members and supporters of CAGW, I offer the following comments relating to the consumer protection aspects of the Matter of Restoring Internet Freedom (WC Docket No. 17-108).

The Federal Communications Commission (FCC) voted on February 26, 2015 to adopt the Open Internet Order (OIO) on a 3-2 party-line vote, reclassifying the internet as a telecommunications/telephone service under Title II of the Communications Act of 1934.¹ This utility-style big brother approach to regulating the internet was a problem in search of a solution, and a massive overreach of authority by the agency.

The adoption of the OIO stemmed in part from a misguided belief that since a company might have the capability of doing harm to its customers and subscribers, it will do so. Not only did the OIO create rules for only internet service providers (ISPs) that differed from the rules for the rest of the internet ecosystem, it also created problems for consumer protection and privacy.

¹ In the Matter of Protecting and Promoting the Open Internet (GN Docket No. 14-28), Federal Communications Commission, FCC 15-24, February 26, 2015, https://apps.fcc.gov/edocs_public/attachmatch/FCC-15-24A1.pdf.

On July 10, 2017, South Carolina State Representative Garry R. Smith (District 27 – Greenville County) filed comments with the FCC regarding this proceeding. Rep. Smith noted that an inquiry with the South Carolina Attorney General’s Office and the Department of Consumer Affairs found only a “handful of internet-related complaints, most of which related to billing practices, internet service speed, or improper representations of available internet service speeds. The state entities were unable to identify any actual harms resulting from light-touch regulation. In fact, quite the contrary is true. The entities identified several specific instances of actual consumer harm, which harms ISPs addressed through the consumer complaint administrative processes.”² Rep. Smith further noted that based on information he received from the South Carolina State Attorney General’s office, “South Carolinians have not experienced any of the hypothetical harms recited in the Title II Order.”³ (Rep. Smith’s full comments appear in Appendix A of this filing).

On July 17, 2017, Federal Trade Commission (FTC) Acting Chairman Maureen Ohlhausen filed comments relating to the Restoring Internet Freedom NPRM. She referred to the June 2007 FTC Staff Report, “Broadband Connectivity Competition Policy,”⁴ and noted, “Ten years later, the 2007 FTC Staff Report remains remarkably relevant. Indeed, the various arguments for and against net neutrality regulation are largely unchanged today. And between 2007 and the FCC’s 2015 Order, no pervasive marketplace problem emerged. In fact, the FCC’s 2015 Open Internet Order cited only four real-life examples of potentially problematic practices.”⁵ She further stated that in 2007, reclassifying broadband as a Title II common carrier services “was not even on the table.”

Acting Chairman Ohlhausen added that through its complementary competition and consumer protection tools, the FTC is well-equipped to protect consumers online. The agency’s antitrust mission serves to protect competition and provide protections for consumers, as well as the products and services they wish to access. The FTC’s deception authority prohibits

² Comments in Support of Proposed Rulemaking *In the Matter of Restoring Internet Freedom*, WC Docket No. 17-108, Hon. Garry R. Smith, District No. 27 – Greenville County, July 10, 2017.

³ *Ibid.*

⁴ “Broadband Connectivity Competition Policy,” Federal Trade Commission, Staff Report, June 2007, <https://ecfsapi.fcc.gov/file/10717290541490/FTC%20Broadband%20Connectivity%20Competition%20Report.pdf>.

⁵ Comments of Maureen K. Ohlhausen, Acting Chairman, Federal Trade Commission, *In the Matter of Restoring Internet Freedom*, WC Docket No. 17-108, Federal Communications Commission, July 17, 2017, [https://ecfsapi.fcc.gov/file/10717290541490/Ohlhausen%20Comment%20\(7-17-2017\).pdf](https://ecfsapi.fcc.gov/file/10717290541490/Ohlhausen%20Comment%20(7-17-2017).pdf).

companies from selling consumers one product or service but delivering another. As the Acting Chairman further noted, since ISPs have explicitly promised to adhere to net neutrality principles, their promises are now enforceable by the FTC, once its jurisdiction over them is restored through the NPRM. She further stated that the FTC is currently using its deception and unfairness authority to address alleged practices that are similar to those noted in the OIO. (Acting Chairman Ohlhausen's comments appear in Appendix B of this filing).

FCC Chairman Ajit Pai and Acting Chairman Ohlhausen issued a joint statement on March 1, 2017, that they would work together to bring a consistent approach to regulating internet privacy.⁶ They said that jurisdiction over privacy and data security related to broadband providers should go back to the FTC, and that every actor "in the online space should be subject to the same rules, enforced by the same agency." They added, "The federal government shouldn't favor one set of companies over another ... we will work together to establish a technology-neutral privacy framework for the online world. Such a uniform approach is in the best interests of consumers and has a long track record of success."

CAGW fully supports reinstating the classification of ISP services as "information services" under Title I of the Communications Act of 1934 and reducing the regulatory burdens on ISPs. Adoption of the NPRM will also lead to the return of consumer protection to the Federal Trade Commission and individual state attorneys generals.

⁶ "Joint Statement of Acting FTC Chairman Maureen K. Ohlhausen and FCC Chairman Ajit Pai on Protecting Americans' Online Privacy," Federal Trade Commission, March 1, 2017, <https://www.ftc.gov/news-events/press-releases/2017/03/joint-statement-acting-ftc-chairman-maureen-k-ohlhausen-fcc>.



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Management
Ways and Means
Healthcare Subcommittee
Member, Legislative Audit
Council

July 10, 2017

Marlene H. Dortch, Secretary
Federal Communications Commission
Office of the Secretary
445 12th Street,
SW Room TW-B204
Washington, DC 20554

Re: Comments in Support Proposed Rulemaking *In the Matter of Restoring Internet Freedom*, WC Docket No. 17-108

Dear Secretary Dortch,

I am Garry Smith, Representative in the South Carolina House of Representatives for the 27th District. I reviewed the Notice of Proposed Rulemaking (NPRM) referenced by the docket number above and am submitting this comment in support of the Commission's efforts to reclassify broadband internet access services as an information service under Title I of the Telecommunications Act.¹

I thought the Commission could use the perspective of a state legislator and of various entities responsible for protecting consumers in the State of South Carolina.

Introduction

Part of the NPRM, and the prior order it seeks to reverse,² discusses harms that either could be suffered by consumers or were suffered by consumers. The two orders present two different paradigms, with one paradigm assuming regulations should be based on actual harms suffered by

¹ See e.g., 47 U.S.C. §§ 153(24), (53) and 230.

² *In the Matter of Protecting and Promoting the Open Internet*, Report and Order on Remand, Declaratory Ruling, and Order, 30 FCC Rcd 5601 (2015) (hereafter "Title II Order").

consumers while the other paradigm averring regulations should be based on hypothetical harms consumers may endure.

To assist the Commission in reaching its decision, I asked the South Carolina Attorney General's Office and the Department of Consumer Affairs (DCA) several questions. Those questions were designed to answer the questions of what type of harms are consumers actually enduring and to help determine whether the relevant agencies received complaints regarding actual harms identified in the Title II Order prior to 2015, whether complaints increased after the Title II Order.

I believe the answers will demonstrate to the Commission that the consumer protection regime existing in South Carolina prior to the Title II Order is sufficient to protect consumers from any actual harm.

Summary

There are several instances in the NPRM where the Commission asked specific questions regarding consumer protections. Some of those questions asked whether Title II was necessary to protect against certain harms, whether hypothetical or actual. My goal was to discover what complaints consumers filed against ISPs in South Carolina in an attempt to figure out the concrete harms constituents face and how often those harms occur.

In summary, the State of South Carolina through the appropriate division of its Attorney General's office and the DCA identified a handful of internet-related complaints, most of which related to billing practices, internet service speed, or improper representations of available internet service speeds. The state entities were unable to identify any actual harms resulting from light-touch regulation. In fact, quite the contrary is true. The entities identified several specific instances of actual consumer harm, which harms ISPs addressed through the consumer complaint administrative process.

Contrary to the Title II Order, neither the State Attorney General's Office nor the DCA were able to identify consumer complaints relating to any of the Title II Order's recited hypothetical harms. Instead, the Attorney General's office and the DCA identified a flourishing and robust state consumer protection model, which addressed the real concerns of, and harms suffered by, South Carolina's hardworking residents.

The rest of this Comment is divided into several sections. First, I briefly address specific paragraphs piquing my interest in the NPRM; Second, I summarize and explain the responses to questions I received from the South Carolina DCA; and Thirdly, I summarize and explain the responses to questions I received from the South Carolina Attorney General's Office.

Specific Paragraphs in the NPRM Addressed

In paragraph 39 of the NPRM, the Commission stated its belief that "under Democratic and Republican leadership [it] was correct to classify broadband internet access service as an

information service.” As part of the requests for comment from this paragraph, the Commission asks whether any actual harms, if any, resulted from light-touch regulation.

Neither the DCA nor the Attorney General’s office were able to identify any actual harms resulting from the information service categorization of broadband internet access services. The types of harms consumers complained of pre- and post- Title II Order remained largely the same. These entities did not see an increase in consumer complaints filed as a result of the Title II Order.³

Similarly, in paragraph 50, the Commission observed the Title II Order focused extensively on hypothetical actions Internet service providers “might” take, and how those actions “might” harm consumers. The Commission asked a number of questions related to this observation. I wanted to focus on the broader observation and used the specific questions in the paragraph to guide my inquiries of the Attorney General’s office and the DCA. To that end, I asked the Attorney General’s office and the DCA if they encountered any complaints related to the specific hypothetical harms cited by the Title II Order.

Responses from the DCA

Consumer Complaints against ISPs Trends

I asked the DCA to divide responses to the questions into pre-Title II complaints and post-Title II complaints. For ease of reference, the “pre-Title II” period roughly corresponds to complaints received from 2009-2013/14 while the “post-Title II” period roughly corresponds to complaints received 2014/15-2016.

According to the DCA, a review of the complaints received both pre- and post-Title II indicates that it did not receive complaints about ISP blocking, throttling, or paid prioritization. The majority of the complaints during both periods were service or billing related. There were several complaints regarding internet service speeds or interruptions, but an examination of those complaints reveals none of them relate to blocking or throttling. The examples provided by the DCA are discussed in the next section.

According to DCA officials, the agency receives “approximately 4,000 complaints annually.” This figure includes all complaints, not just internet or ISP-related complaints. From 2009-2013, the agency received roughly 164 internet-related complaints.⁴ Based on the estimated number of annual complaints, during this five-year span, the agency would have received a total of roughly 20,000 complaints. Of those roughly 20,000 complaints, the 164 internet or ISP-related

³ Per an email from the DCA, cited below, information regarding complaints in South Carolina falls into two chronological categories. In 2014, the DCA “implemented a new online complaint system” that allowed officials “to obtain a lower level of detail for those most recently filed complaints. The data from 2009-2013 is not as granular.

⁴ See email dated June 22, 2017 from Carri Lybarker, Esq., Administrator/Consumer Advocate at the SC Department of Consumer Affairs, attached as Appendix 1.

complaints represented less than one-percent of the total number of complaints the agency received. Further, of those 164 complaints, a majority of them related to billing issues.

From 2014-2016, less than one-percent of the “internet-related complaints” received by the DCA “were based on service [or] speed issues.”⁵ The remaining 99 percent related to “billing issues.”

Specific Consumer Complaints against ISPs

The DCA provided copies of consumer, internet-related complaints. Each of the complaints has a companion response from the service provider. The response detailed the investigation conducted by the provider, an explanation of the underlying issue, and a description of the resolution.

The complaints may be divided into two categories: Pre-Title II Order (2014)⁶ and Post-Title II Order (2015).⁷ A review of the complaints demonstrates that the complaints received did not substantially change pre- and post- Title II Order.

Before the Title II Order, the complaints provided for 2014 all relate to internet service speeds. All the consumers complained that their ISPs were not delivering the speeds promised or represented. Two consumers complained they were promised 6 Mbps, but were only receiving a maximum of 1.3-1.5 Mbps. Other consumers paid for internet services of 60 Mbps but were receiving service at no more than one-tenth of the promised speeds.⁸

Based on the responses from the ISPs provided by the DCA, some problems related to customer expectations versus the service to which he subscribed, Other problems related to geography and infrastructure deployment, while other problems related provider equipment and network management issues.⁹

After the Title II Order in 2015, the complaints remained largely the same. At least one complaint addressed near constant service interruptions, while another complaint addressed data package capabilities. A third complaint addressed speeds and reliability.¹⁰

Once again, based on the responses from the ISPs provided by the DCA, the ISPs made every effort to remedy the problems. In two of the instances, the providers sent technicians to the residences and/or the nearby service stations. For both those instances, the providers did what they could to remedy the hardware or network problem. For another one of the complaints, the

⁵ *Id.*

⁶ Copies of the Pre-Title II Consumer Complaints are attached at Appendix 2. The Complaints also include responses from the ISP.

⁷ Copies of the Post-Title II Consumer Complaints are attached at Appendix 3. The Complaints also include responses from the ISP.

⁸ See note 6, above.

⁹ See *id.*

¹⁰ See note 7, above.

service provider tried to remedy the issue, but the customer cancelled before it could send a technician to diagnose it.¹¹

Information from the State Attorney General's Office

I asked the Attorney General's office some pointed questions regarding any potential complaints received regarding content blocking, whether ISPs restricted access to lawful content, restricted the use of apps or other software applications, and so on. While the specific response from the office is attached to this comment,¹² I will summarize the answers provided.

Broadly speaking, answers from the Attorney General's Office indicate South Carolinians have not experienced any of the hypothetical harms recited in the Title II Order. The Office has not received any complaints from 2003 through 2016 of any ISP blocking websites or restricting other content, preventing personal devices from connecting to a home network, LAN, or VPN. Similarly, the Office has not received any complaints that an ISP has harmed consumers by either blocking content from competitors or providing an unfair competitive edge for content or programming it generates.¹³

Conclusion

The Department of Consumer Affairs and the Attorney General's Office do yeomen's work protecting South Carolinians from harmful practices. The information received from these entities appear to reveal no problems prior to the Title II Order which would justify it. There is no evidence that the hypothetical harms recited by the Title II Order materialized at any time in South Carolina. The light touch regulatory scheme that existed before the Title II Order—that is to say, the dual state and federal consumer protection regimes—adequately protected South Carolinians when they encountered issues with ISPs.

Based on the information gleaned from these entities, it is my respectful opinion that the Commission's efforts to Restore Internet Freedom through the NPRM are grounded and will preserve the consumers' rights to seek redress through state and federal consumer protection agencies.

Respectfully Submitted,



Garry R. Smith

¹¹ See *id.*

¹² See email dated on or about June 22, 2017 from John P. Hazzard, V, Deputy Attorney General and Special Counsel in the State Attorney General's Office, attached at Appendix 4.

¹³ See *id.*

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554**

In the Matter of)	
)	
)	WC Docket No. 17-108
Restoring Internet Freedom)	
)	
)	
)	

To: The Federal Communications Commission
Date: July 17, 2017

**Comment of Maureen K. Ohlhausen,
Acting Chairman, Federal Trade Commission**

I write to support the Federal Communications Commission’s Notice of Proposed Rulemaking (NPRM) on Restoring Internet Freedom.¹

The FTC’s Bureau of Consumer Protection, Bureau of Competition, and Bureau of Economics have filed a separate comment.² Their comment supports the NPRM’s proposal to reverse the FCC’s 2015 Title II classification of broadband internet access service (BIAS), noting that this will “restore the FTC’s ability to protect broadband consumers under its general consumer protection and competition authority.”³ The comment also surveys the FTC’s extensive privacy and data security expertise.⁴ It explains that restoring FTC jurisdiction over BIAS providers will enable it to apply this privacy and data security expertise⁵ and its general

¹ Restoring Internet Freedom, Notice of Proposed Rulemaking, WC Docket No. 17-108, FCC 17-60 (released May 23, 2017), *published in* 82 Fed. Reg. 25568 (proposed June 2, 2017) [hereinafter NPRM].

² Comment of the Federal Trade Commission Bureau of Consumer Protection, Bureau of Competition, and Bureau of Economics, WC Docket No. 17-108 (filed July 17, 2017) [hereinafter Bureau Comment]. Due to the current status of the Commission, with only two Commissioners, the Bureaus are filing their comment without a Commission-level vote. Commissioner McSweeney has filed a separate comment that reflects her views.

³ Bureau Comment at 2.

⁴ *Id.* at 3-11.

⁵ *Id.* at 12-21.

consumer protection authority.⁶ Finally, it discusses how the FTC's competition authority would again apply to BIAS providers if the Title II classification were reversed.⁷

I fully support the Bureau Comment on these points. I comment separately to further highlight the FTC staff's long-standing position on the topic of net neutrality and to address several additional issues raised in the NPRM.

I. The Bipartisan 2007 FTC Staff Broadband Connectivity Competition Policy Report on Net Neutrality Regulation

Ten years ago, the FTC unanimously approved a report stating the FTC staff's position on net neutrality regulation.⁸ Under Chairman Deborah Platt Majoras, I led the FTC's Internet Access Task Force, which was charged with evaluating issues related to internet access and net neutrality.⁹ After holding a two-day workshop on these issues and gathering public comment, the Task Force drafted a report "focus[ed] on the consumer welfare implications of enacting some form of net neutrality regulation."¹⁰ And in June 2007, the FTC unanimously adopted that report (2007 FTC Staff Report or Report). The findings and recommendations of that report remain highly relevant today. Indeed, several of the report's recommendations are borne out by market and regulatory developments during the past decade.

The 165-page report comprehensively examines the net neutrality issue circa 2007. It sets the foundation by describing the technical functioning of the internet and the legal and regulatory

⁶ *Id.* at 21-23.

⁷ *Id.* at 23-29.

⁸ FEDERAL TRADE COMM'N, *FTC Issues Staff Report on Broadband Connectivity Competition Policy*, <https://www.ftc.gov/news-events/press-releases/2007/06/ftc-issues-staff-report-broadband-connectivity-competition-policy>.

⁹ FEDERAL TRADE COMM'N, BROADBAND CONNECTIVITY COMPETITION POLICY 1, June 2007 [hereinafter Broadband Report], <https://www.ftc.gov/sites/default/files/documents/reports/broadband-connectivity-competition-policy/v070000report.pdf>.

¹⁰ *Id.* at 4.

developments driving the debate in 2007. (Chs. I & II) It then catalogs the various arguments for and against net neutrality. (Ch. III)

Next, the report analyzes the consumer welfare effects of potential conduct by internet service providers (ISPs). After examining various types of vertical integration of broadband with internet services (Ch. IV), the report concludes that, consistent with well-established antitrust and economic principles, vertical integration has the potential to benefit or harm consumers and competition, depending on the circumstances.¹¹ While integration could prompt blocking, degrading, and higher prices, it could also offer procompetitive and pro-consumer efficiencies, such as facilitating infrastructure investment and spurring the entry of new competitors. Similarly, after evaluating a wide variety of possible data prioritization techniques (Chs. IV & V), the report determines that such techniques promise significant benefits to consumers and competition but also have some risks depending on the specific technique and use.¹²

The report then evaluates the current and likely future state of competition in broadband internet access. (Ch. VI) At that time, as today, there was considerable debate about the level of competition in the broadband market. This is an important question. Many of the potential harms to consumers or competition are premised on market power, and nearly all arguments for net neutrality regulation assert a lack of sufficient broadband competition. The report emphasizes the importance of determining the state of competition through careful product and market definition, including analysis of the disciplining effect of substitutes and potential entrants.¹³

¹¹ *Id.* at 82.

¹² *Id.* at 96-97.

¹³ *Id.* 99-100, 104-05.

Ten years later, however, despite the centrality of market power analysis to arguments for regulation, most broadband market competition analysis is even less rigorous than in 2007. Many advocates casually conclude that BIAS providers have market power or are monopolists.¹⁴ Others cite the national percentage of consumers with access to one wireline broadband service at an arbitrary speed threshold as the primary or sole data point needed to demonstrate market power.¹⁵ This imprecision in the current debate may reflect the FCC 2015 Order's wholesale rejection of market power analysis.¹⁶ I agree with the 2007 FTC Staff Report's recommendation that a decision to adopt net neutrality regulation should be based on a rigorous market power analysis.

Having analyzed the core policy issues in the net neutrality debate, the 2007 FTC Staff Report turns to the application of antitrust and consumer protection law to various potential BIAS provider practices and business arrangements. (Chs. VII & VIII) It then outlines the various regulatory, legislative, and other proposed solutions. (Ch. IX)

Finally, based on all of the previous analysis, the 2007 FTC Staff Report offers guiding principles for policy makers "to consider prior to enacting any new laws or regulations" regarding net neutrality.¹⁷ (Ch. X) Specifically, the report concludes:

"Policy makers should be wary of calls for network neutrality regulation simply because we do not know what the net effects of potential conduct by broadband providers will be

¹⁴ See John Gasparini, "Fact-Checking ISPs' Claims of Support for Net Neutrality," <https://www.publicknowledge.org/news-blog/blogs/fact-checking-isps-claims-of-support-for-net-neutrality> ("[T]hese monopolistic, noncompetitive companies keep insisting they love net neutrality..."); Free Press, Press Release, "FCC Commissioner Pai Is Dead Wrong on Investment and Net Neutrality," Feb. 29, 2016, <https://www.freepress.net/press-release/107327/fcc-commissioner-pai-dead-wrong-investment-and-net-neutrality>.

¹⁵ Tom Wheeler, Chairman, Federal Comm'n's Comm'n, Prepared Remarks at 1776 Headquarters: The Facts and Future of Broadband Competition 4, (Sept. 4, 2014) ("At 25 Mbps, there is simply no competitive choice for most Americans."), https://apps.fcc.gov/edocs_public/attachmatch/DOC-329161A1.pdf.

¹⁶ See *In the Matter of Protecting & Promoting the Open Internet*, 30 FCC Red 5601, 5633 (2015); see also Maureen K. Ohlhausen, *Antitrust Over Net Neutrality: Why We Should Take Competition in Broadband Seriously*, 15 COLO. TECH. L.J. 119, 129 (2016).

¹⁷ Broadband Report at 5.

on consumers, including, among other things, the prices that consumer may pay for Internet access, the quality of Internet access and other services that will be offered, and the choices of content and applications that may be available to consumers in the marketplace.”¹⁸

In fact, as the Report explains, broadband providers, even *assuming* they have market power, face mixed incentives.¹⁹ Some align with subscribers’ interests and some are contrary, and “[i]n the abstract, it is not possible to know which of these incentives would prove stronger.”²⁰ The Report explains that many of the practices involved are the types of vertical arrangements that economists generally, but not always, find to improve consumer welfare.²¹ According to the Report, providers’ competing incentives “raise complex empirical questions and may call for substantial additional study” of the general or local market or of specific transactions.²²

Having explained the difficulty of evaluating the net consumer welfare effects of various practices *ex ante*, the Report expresses concern about the “potentially adverse and unintended effects of regulation... particularly those imposing general, one-size-fits-all restraints on business conduct.”²³ For example, the Report notes that regulation “could result in a long-term decline in investment and innovations in broadband networks,” because “providers that cannot differentiate their products or gain new revenue streams may have reduced incentives to upgrade their infrastructure.”²⁴ The Report argues that these concerns are heightened in the broadband industry, which is relatively young, quickly evolving, and moving in the direction of more, not less, competition.²⁵

¹⁸ Broadband Report at 157.

¹⁹ *Id.*

²⁰ *Id.*

²¹ *Id.* at 70.

²² *Id.* at 82.

²³ *Id.* at 159-60.

²⁴ *Id.* at 160.

²⁵ *Id.*

After cautioning against prescriptive regulation, the Report explains that the FTC will “continue to devote substantial resources to maintaining competition and protecting consumers ... in the area of broadband Internet access.”²⁶ In enforcing the antitrust laws, “because the various conduct and business arrangements at issue in the broadband area have both procompetitive and anticompetitive potential, the FTC would carefully analyze the net effect of particular conduct or arrangements on consumer welfare, rather than challenge them as *per se* illegal.”²⁷ The Report also states that the FTC will continue active consumer protection enforcement. In particular, the Report suggests that providers should clearly and conspicuously disclose the material terms of broadband internet access, particularly if they engage in various traffic-shaping practices.²⁸

Ten years later, the 2007 FTC Staff Report remains remarkably relevant. Indeed, the various arguments for and against net neutrality regulation are largely unchanged today.²⁹ And between 2007 and the FCC’s 2015 Order, no pervasive marketplace problem emerged. In fact, the FCC’s 2015 Open Internet Order cited only four real-life examples of potentially problematic practices.³⁰

However, a few important things have changed. Over that ten-year span, broadband speed has accelerated and – with mobile – taken flight. Broadband speeds over the past 10 years have soared, with average *wireless* 4G LTE speeds today more than three times faster than

²⁶ *Id.* at 161.

²⁷ *Id.* at 161-62.

²⁸ *Id.* at 162.

²⁹ See *id.* at 51-69 (summarizing arguments for and against net neutrality regulation).

³⁰ See generally Timothy Brennan, *The Post-Internet Order Broadband Sector: Lessons from the Pre-Open Internet Order Experience*, 50 REV. IND. ORGAN. 469 (2016) (discussing the four examples at length), available at <https://link.springer.com/article/10.1007/s11151-016-9551-y>.

average *wireline* speeds were in 2007.³¹ But probably the biggest marketplace difference is the rise of mobile internet access. The first iPhone hit the market in June 2007 (the same month the FTC released its report) and mobile internet usage has since exploded. By late 2016, mobile visits to websites exceeded desktop visits worldwide, and in the U.S. more than 42% of U.S. webpage visits were from mobile devices.³² Mobile devices can and do easily switch between Wi-Fi and wireless provider networks, suggesting that the four national and numerous regional wireless providers (as well as countless Wi-Fi hotspot providers) likely already discipline wireline broadband provider behavior. And the next generation of wireless technology promises speed and performance that rival even advanced wireline networks.³³ These developments further support the 2007 Staff Report's observation of a trend toward more broadband competition.³⁴

A less positive change since 2007 provides the main impetus of the NRPM: the tool the FCC chose to implement net neutrality rules. To adopt rules in 2015, the FCC reclassified broadband as a common carrier service under Title II of the Communications Act. Yet in 2007, reclassifying broadband as a Title II service was not even on the table.³⁵ Indeed, in 2007,

³¹ As of Q1 2007, average U.S. wireline broadband speeds only totaled 4.8 Mbps [download]. See ITIF, ASSESSING BROADBAND IN AMERICA 4 (Apr. 2007), <http://www.itif.org/files/BroadbandRankings.pdf>. By Q1 2017, average U.S. wireline broadband speeds had almost quadrupled, reaching 18.7 Mbps. See Akamai, STATE OF THE INTERNET REPORT 12 (May 2017), <https://www.akamai.com/fr/fr/multimedia/documents/state-of-the-internet/q1-2017-state-of-the-internet-connectivity-report.pdf>. Meanwhile, mobile broadband speeds are nearly 40x faster than in 2007, with average 4G LTE speeds approaching 17 Mbps – more than three times the previously mentioned average wireline speed in 2007. See CTIA, WIRELESS SNAPSHOT 2017 4 (May 2017), <https://www.ctia.org/docs/default-source/default-document-library/ctia-wireless-snapshot.pdf>.

³² *Mobile and Tablet Internet Usage Exceeds Desktop for First Time Worldwide*, STATCOUNTER (Nov. 1, 2016), <http://gs.statcounter.com/press/mobile-and-tablet-internet-usage-exceeds-desktop-for-first-time-worldwide>.

³³ See, e.g., *Makeover for Mobile Phones*, THE ECONOMIST (Apr. 20, 2017), <https://www.economist.com/news/science-and-technology/21720916-ready-or-not-5g-wireless-preparing-its-big-day-makeover-mobile-phones> (“[I]f it lives up to expectations, 5G wireless could put some fixed-line internet connections to shame, even at the lower end of its performance range.”).

³⁴ Broadband Report at 160, Chapter VI.B.

³⁵ Broadband Report at 139 n.683 (quoting Gigi Sohn, “I don’t know anybody who is talking about going back to Title II ... [T]hat is not what this debate is about.”).

stakeholders on all sides of the issue recognized the negative impact a Title II approach would have on FTC jurisdiction and emphasized the importance of FTC jurisdiction over BIAS providers.³⁶

The 2007 FTC Staff Report warned about the potential adverse consequences of regulation. While a healthy debate rages about other effects of the 2015 Order, one negative side effect cannot be disputed: the 2015 Order stripped the FTC of jurisdiction over broadband providers, creating a consumer protection gap that remains unfilled.³⁷

Together, the developments over the past ten years demonstrate that the FTC was correct in its unanimous, bipartisan 2007 recommendation that regulators “proceed[] with caution before enacting broad, *ex ante* restrictions in an unsettled, dynamic environment.”³⁸ Today, there is still no evidence of sustained injury to consumers or to competition. Instead, the internet ecosystem has remained vibrant over the past decade. And the most indisputable side effect of the 2015 Order, the stripping of FTC jurisdiction, is a clearly an adverse outcome for consumers.

A unanimous, bipartisan FTC approved the 2007 FTC Staff Report. What was good advice in 2007 remains good advice ten years later. I reiterate that advice today by filing the Report as an attachment to this comment.

II. The FTC’s Tools are Capable of Protecting Consumers and Competition Online

The FTC’s dual mission is to protect consumers and promote competition. The essence of this mission is to ensure that consumers can efficiently pursue their many, varying market preferences, whether those preferences are for low prices, new goods, or certain features such as

³⁶ See generally Broadband Report at 138-40.

³⁷ In late 2016, the FCC adopted a set of privacy rules for BIAS providers, which never went into effect. Those rules were flawed and still left a substantial consumer protection gap. See, e.g., Maureen Ohlhausen, Acting Chairman, Federal Trade Comm’n, Remarks of Acting Chairman, Keynote Address at Internet Privacy: Technology and Policy Developments, (May 1, 2017), https://www.ftc.gov/system/files/documents/public_statements/1213203_ohlhausen_-_internet_privacy_remarks_rayburn_hob_5-1-17.pdf.

³⁸ Broadband Report at 155.

neutrality. The FTC's complementary competition and consumer protection tools work together to protect consumers and competition online.

A. Antitrust Protects Competition, Which Drives Firms to Match Consumer Preferences

The FTC's antitrust tools are powerful protectors of market competition. The FTC's antitrust authority can and has addressed a wide range of harmful behavior across a nearly all U.S. industries. As highlighted in the Bureau Comment, some of the harmful practices that the FTC can address include: foreclosing rival content in an exclusionary or predatory manner; problematic conduct relating to access, discrimination, pricing, bundling, and regulatory evasion; harmful exclusive contracts; agreements between competitors to fix prices, reduce output, or allocate customers; and problematic vertical mergers that could deny competitors access to essential inputs or to downstream distribution outlets.³⁹ Many of the practices that concern advocates of net neutrality regulation fall within one or more of these categories of anticompetitive actions and therefore could be addressed by the FTC's antitrust enforcement.

Furthermore, these antitrust tools do not solely protect attributes such as price and output. Instead, antitrust protects competition, which delivers the qualities that consumers demand. Therefore, antitrust can help protect any feature or quality that consumers demand, including free speech and democratic participation. Advocates vigorously argue, citing surveys, anecdotes, and counts of comments filed, that consumers place great value in the equal treatment of data by ISPs.⁴⁰ In that case, any ISP that systemically degrades applications and content that its subscribers demand will face a consumer backlash. There is strong evidence that edge providers

³⁹ Bureau Comment at 23-29.

⁴⁰ See Harper Neidig, *Poll: GOP Voters Support Net Neutrality Rules, Oppose AT&T-Time Warner Merger*, THE HILL (Jul. 13, 2017), <http://thehill.com/policy/technology/341850-poll-gop-voters-support-net-neutrality-rules-oppose-att-time-warner-merger>; see also Elliot Harmon, *Historic Day of Action: Net Neutrality Allies Send 1.6 Million Comments to FCC*, ELEC. FRONTIER FOUND. (Jul. 12, 2017), <https://www EFF.ORG/deeplinks/2017/07/net-neutrality-allies-send-16-million-comments-fcc>.

are quite capable of mobilizing their customers to make known their demands.⁴¹ Indeed, the limited number of non-neutral practices even before the 2015 Order suggests that ISPs are already accommodating consumer demands. In such circumstances, there may not be a need for regulation. In fact, prescriptive regulation risks cementing in place practices that may need to evolve as consumer preferences change. I have addressed these issues at further length in a journal article, which I also attach.⁴²

B. Consumer Protection

Likewise, the FTC's consumer protection tools are also powerful protectors of the market. We use our consumer protection tools to protect the integrity of the mutual beneficial exchange at the heart of the market process, by stopping practices that subvert that exchange. These tools are as applicable to the provision of broadband service as to every other industry.

The practices that concern advocates of net neutrality regulation involve consumer protection issues. For example, much of the concern about Comcast's alleged treatment of certain BitTorrent streams was that it was not apparent to consumers, and therefore Comcast allegedly deceived consumers about the service they purchased.⁴³ Indeed, according to the D.C. Circuit, the "upshot" of the 2015 Order is to "fulfill the reasonable expectations of a customer who signs up for a broadband service that promises access to all of the lawful internet."⁴⁴

The FTC's consumer protection tools are well suited to ensure the fulfillment of consumers' reasonable expectations about their broadband service. Our deception authority

⁴¹Harmon, *supra* note 40.

⁴²Ohlhausen, *supra* note 16, at 119.

⁴³ See Fred von Lohmann, *FCC Rules Against Comcast for BitTorrent Blocking*, ELEC. FRONTIER FOUND. (Aug. 3, 2008), <https://www EFF.org/deeplinks/2008/08/fcc-rules-against-comcast-bit-torrent-blocking> (referring to the blocking as "surreptitious"); Ryan Singel, *Comcast Sued Over BitTorrent Blocking – Updated*, WIRED (Nov. 14, 2007), <https://www.wired.com/2007/11/comcast-sued-ov/> (citing court complaint filed that alleges false and misleading advertising by Comcast).

⁴⁴ United States Telecom Ass'n v. FCC, 825 F.3d 674 (D.C. Cir 2016), *reh'g en banc denied*, United States Telecom Ass'n v. FCC, 855 F.3d 381, 389 (D.C. Cir. 2017) (concurring statement of Judge Srinivasan and Judge Tatel).

prohibits companies from selling consumers one product or service but providing them something different. It ensures consumers get what they were promised. Notably, many major BIAS providers have now explicitly promised to adhere to net neutrality principles.⁴⁵ These kinds of promises are enforceable by the FTC, assuming it has jurisdiction over the BIAS provider. Our deception authority also requires companies to disclose material information if not disclosing it would mislead the consumer.⁴⁶ Therefore, if a broadband provider failed to disclose blocking, throttling, or other practices that would matter to a reasonable consumer, the FTC's deception authority would apply.

In addition to deception, the FTC's unfairness authority prohibits practices, even absent any promise, where the actual or likely consumer injury is substantial, unavoidable by the consumer, and not outweighed by benefits to consumers or to competition. The FTC has used this authority to hold liable companies that unilaterally change their past promises to consumers even where there was no deception.⁴⁷

Indeed, the FTC is currently using both its deception and unfairness authority to address alleged practices similar to net neutrality violations. In its case against AT&T Mobility, the FTC alleges that the wireless provider deceptively and unfairly "misled millions of its smartphone customers by charging them for 'unlimited' data plans while reducing their data speeds, in some

⁴⁵ See John Eggerton, *NCTA Places 'Washington Post' Ad Committing to Open Internet*, BROADCASTING & CABLE (May 17, 2017), <http://www.broadcastingcable.com/news/washington/ncta-places-washington-post-ad-committing-open-internet/165896>. And the D.C. Circuit has suggested that if an ISP discloses that it is not a neutral, indiscriminate conduit to the internet, it is not subject to the rules in FCC's 2015 Order. See 855 F.3d at 389; see also Daniel Lyons, *Can ISPs Simply Opt Out of Net Neutrality?*, FORBES (May 15, 2017), <https://www.forbes.com/sites/washingtonbytes/2017/05/15/can-isps-simply-opt-out-of-net-neutrality/>.

⁴⁶ FEDERAL TRADE COMM'N, FTC POLICY STATEMENT ON DECEPTION 3 (Oct. 14, 1983), https://www.ftc.gov/system/files/documents/public_statements/410531/831014deceptionstmt.pdf.

⁴⁷ *Orkin Exterminating Co., Inc.*, 108 F.T.C. 263 (1986); *aff'd.*, *FTC v. Orkin*, 849 F.2d 1354 (11th Cir. 1988).

cases by nearly 90 percent.”⁴⁸ That litigation continues, but provides a good example of the FTC’s willingness to apply our consumer protection authority to a complex technical practice of a network provider that harms consumers.

C. Advantages of Enforcement Approach

Both of these market-preserving tools – antitrust and consumer protection – have structural advantages over prescriptive rules. Both rely on case-by-case enforcement, applying general legal principles to specific facts, constrained by certain institutional features and a focus on addressing real harm. And in both areas, the FTC can take action where private litigants would lack the incentives or resources to bring a case.

In dynamic, innovative industries like internet services, an *ex post* case-by-case enforcement-based approach has advantages over *ex ante* prescriptive regulation. It mitigates the regulator’s knowledge problem and allows legal principles to evolve incrementally.⁴⁹ A case-by-case approach also focuses on actual or likely, specifically-pled harms rather than having to predict future hypothetical harms.

Of course, case-by-case enforcement without constraining principles and processes is problematic. FTC enforcement seeks to balance flexibility and predictability. Our antitrust and consumer protection enforcement rely on long-standing legal precepts that are themselves hemmed in by case law, statute, and by our own policy statements. Our complaints and settlements are analyzed not just by lawyers but also by our Bureau of Economics and must be approved by the Commissioners. These institutional features build consensus and limit overreach. And perhaps most importantly, the FTC focuses on harm to consumers and to

⁴⁸ FEDERAL TRADE COMM’N, *FTC Says AT&T Has Misled Millions of Consumers with ‘Unlimited’ Data Promises*, <https://www.ftc.gov/news-events/press-releases/2014/10/ftc-says-att-has-misled-millions-consumers-unlimited-data>.

⁴⁹ See Maureen K. Ohlhausen, *The FCC’s Knowledge Problem: How to Protect Consumers Online*, 67 FED. COMM. L.J. 203 (Apr. 2015), https://www.ftc.gov/system/files/documents/public_statements/818521/1509fccoohlhausen.pdf.

competition, both when considering whether to bring a case and in calculating remedies.

Focusing on harm not only ensures that FTC enforcement actually makes consumers better off, it also creates more business certainty.

Some have criticized the FTC's case-by-case approach as reactive, with no capability to prevent future injuries. Yet civil law enforcement has always served as both a *corrective* for the specific behavior of the defendant as well as a *deterrent* against similar future actions by the same or other actors. Like the common law, the FTC's process of applying general principles to specific facts enables flexibility yet yields outcomes that serve as guidance for future compliance, as those familiar with the FTC's case law recognize.⁵⁰ Furthermore, even prescriptive rules must be enforced, and the outcomes of such enforcement actions are not inherently predictable, particularly when the prescriptive rules are out of date or applied to technologies and business models that were not contemplated when the rules were adopted.

III. A Benefit-Cost Analysis Ought to Consider the Wide Range of Existing Tools to Address Net Neutrality-Related Concerns, Should They Arise

The FCC has sought analysis of the costs and benefits of the various proposals in the NPRM.⁵¹ Quite appropriately, the NPRM states that such analysis ought to compare the effects of today's status quo regulation to the effects of protections that would remain in place if the proposals were adopted.⁵² This "but for" world ought to include market mechanisms, facilitated by long-standing competition and consumer protection law enforced by the FTC, the Department of Justice, state attorneys general, and private litigants. The FTC Bureau comment and my comment have described the FTC's powerful tools to protect consumers and competition.

⁵⁰ See, e.g., Daniel J. Solove & Woodrow Hartzog, *The FTC and the New Common Law of Privacy*, 114 COLUM. L. REV. 583, 621-22 (2014).

⁵¹ NPRM ¶ 105.

⁵² NPRM ¶ 106.

This comment (and my attached paper) further describe some of the market forces that incentivize firms to match consumer preferences, including non-pecuniary values. The FCC also ought to include in its baseline the capability of advocacy groups to rally grassroots action for various “net neutrality” causes. This advocacy serves as a strong constraint on the ability of BIAS providers to violate norms these groups support. Indeed, the potent reactions to past actions by BIAS providers have demonstrated the potential of such market feedback mechanisms to affect firm behavior.⁵³

IV. Conclusion

For the reasons described in the comments above and the documents attached, I urge the FCC to return broadband internet access service to a Title I classification and to take other actions consistent with this submission.

⁵³ See, e.g., Adam Liptak, *Verizon Reverses Itself on Abortion Messages*, N.Y. TIMES (Sept. 27, 2007), <http://www.nytimes.com/2007/09/27/business/27cnd-verizon.html>.

September 14, 2017

Chairman Ajit Pai
Federal Communications Commission
445 12th Street, SW
Washington, D.C. 20554

Commissioner Mignon Clyburn
Federal Communications Commission
445 12th Street, SW
Washington, D.C. 20554

Commissioner Michael O'Rielly
Federal Communications Commission
445 12th Street, SW
Washington, D.C. 20554

Commissioner Jessica Rosenworcel
Federal Communications Commission
445 12th Street, SW
Washington, D.C. 20554

Commissioner Brendan Carr
Federal Communications Commission
445 12th Street, SW
Washington, D.C. 20554

Re: Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions (GN Docket No. 12-268); Amendment of Part 15 of the Commission's Rules for Unlicensed Operations in the Television Bands, Repurposed 600 MHz Band, 600 MHz Guard Bands and Duplex Gap, and Chanel 37 (ET Docket No. 14-165); Amendment of Parts 15, 73 and 74 of the Commission's Rules to Provide for the Preservation of One Vacant Channel in the UHF Television Band for Use by White Spaces Devices and Wireless Microphones (MB Docket No. 15-146); Amendment of Part 15 of the Commission's Rules for Unlicensed White Space Devices (ET Docket No. 16-56)

Dear Chairman Pai and Commissioners Clyburn, O'Rielly, Rosenworcel, and Carr:

As the Federal Communications Commission (FCC) begins to repackage spectrum following the conclusion of the incentive auction, the undersigned organizations urge you to set aside at least three 6 MHz television white space channels in each media market across the United States to help enable affordable broadband internet access in regions where deployment has otherwise been difficult to achieve.

According to the 2016 Broadband Progress Report, 34 million (10 percent of all Americans) do not have access to broadband service at current FCC minimum standards of 25 Mbps download/3Mbps upload speeds for fixed services; 23 million people (39 percent of rural Americans) lack access to broadband; and 1.6 million people (41 percent of Americans living on tribal lands) do not have access to broadband.¹ The unused spectrum between broadcast television stations, also known as television white spaces (TVWS), represents a valuable opportunity to expand broadband in these areas of the country.

TVWS can be used to access broadband internet using a database manager and white space radios. TVWS signals have the ability to travel further than standard Wi-Fi signals, and, in the

lower frequencies, can penetrate through obstacles and cover uneven ground with less infrastructure.² TVWS therefore has the potential to revolutionize broadband internet accessibility in rural areas.

Technology companies are proposing the use of TVWS to help bridge the digital divide. For example, on July 11, 2017, Microsoft announced it would be starting TVWS broadband programs in 12 states, including Arizona, Kansas, New York and Virginia.³ One would expect that as this technology evolves, other companies will quickly follow suit.

The FCC should maintain the rules it adopted in its Unlicensed Operations in the TV Band proceeding (ET Docket No. 14-165), which enables devices to operate on channel 37 (608-614 MHz) as well as within the duplex gap (652-663 MHz), which was created by the incentive auction. In addition, we urge the commission to finalize the vacant channel proceeding (MB Docket 15-146), and preserve a vacant channel in each market in the post-auction broadcast TV band (54-608 MHz).

By ensuring that three usable TV channels are available for white space broadband transmission purposes in every market in the country, the commission will free spectrum from existing regulatory limitations and make it available for highly beneficial and efficient broadband internet use.⁴

We appreciate and support your efforts to provide for new, innovative uses of TVWS in order to increase access to broadband internet service.

Sincerely,

American Conservative Union
American Consumer Institute
Citizens Against Government Waste
Free the People
FreedomWorks
Heritage Action
Less Government
Small Business & Entrepreneurship Council
Taxpayers Protection Alliance
The Committee for Justice

¹ "2016 Broadband Progress Report," Federal Communications Commission, January 29, 2016, <https://www.fcc.gov/reports-research/reports/broadband-progress-reports/2016-broadband-progress-report>.

² "TV White Space – Breakthrough Technology," Carlson Wireless, <http://www.carlsonwireless.com/tv-white-space/>.

³ Celia Kang, "To Close Digital Divide, Microsoft to Harness Unused Television Channels," *The New York Times*, July 11, 2017, <https://www.nytimes.com/2017/07/11/technology/to-close-digital-divide-microsoft-to-harness-unused-television-channels.html>.

⁴ Alden Abbot, "Microsoft's Plan to Expand Broadband Would Benefit Rural Americans," *The Daily Signal*, August 7, 2017, <http://dailysignal.com/2017/08/07/microsofts-plan-to-expand-broadband-would-benefit-rural-americans/>.



**CITIZENS
AGAINST
GOVERNMENT
WASTE**

Thomas A. Schatz, President
1100 Connecticut Ave., N.W., Suite 650
Washington, D.C. 20036
cagw.org

September 7, 2017

The Honorable Elaine Chao
Secretary
U.S. Department of Transportation
1200 New Jersey Avenue, S.E.
Washington, D.C. 20590

Ref: Federal Motor Vehicle Safety Standards: V2V Communications
Docket No. NHTSA-2016-0126

Dear Secretary Chao:

On behalf of the more than one million members and supporters of Citizens Against Government Waste, I urge you to direct the National Highway Traffic Safety Administration (NHTSA) to withdraw the Notice of Proposed Rulemaking (NPRM) on Federal Motor Vehicle Safety Standards: Vehicle-to-Vehicle (V2V) Communications (Docket No. NHTSA-2016-0126).

This regulation, issued in the waning days of the previous administration, is an unfunded mandate on automobile manufacturers that requires them to install Dedicated Short Range Communications (DSRC) devices on all light vehicles sold in the United States by 2023. DSRC is an outdated technology that has already been overtaken by newer, more reliable technologies that provide many safety features that DSRC would take years to achieve, if at all. These technologies include the use of cameras and Light Detection and Ranging (LIDAR) sensors to provide blind spot information, automatic lane controls, highway traffic management systems, and automated parking assistance. Requiring DSRC in every new vehicle will divert money and interest away from these proven technologies, and slow investment and innovation in autonomous vehicle technology of the future.

On April 12, 2017, the Mercatus Center of George Mason University filed public interest comments in the docket raising several concerns with the technology-specific mandate described in NHTSA's NPRM, including the potential for cybersecurity threats to DSRC, concerns about the reliability of DSRC technology, and issues with safety when DSRC is used for V2V communications. CAGW would like to associate itself with these comments, which are attached for your further review.

Withdrawing NHTSA-2016-0126 and closing the rulemaking process will also allow the FCC to move forward with its pending proceeding to examine how the 5.9 GHz band, currently allocated for DSRC, can be most efficiently used.

Thank you for your consideration of my request that you direct NHTSA to withdraw the NPRM on Federal Motor Vehicle Safety Standards: V2V Communications (Docket No. NHTSA-2016-0126).

Sincerely,

A handwritten signature in black ink that reads "Tom Schatz".

Thomas A. Schatz



MERCATUS CENTER
George Mason University

Bridging the gap between academic ideas and real-world problems

PUBLIC INTEREST COMMENT

THE DEPARTMENT OF TRANSPORTATION'S PROPOSED VEHICLE-TO-VEHICLE TECHNOLOGY MANDATE IS UNPRECEDENTED AND HASTY

BRENT SKORUP

Research Fellow, Mercatus Center at George Mason University

Federal Motor Vehicle Safety Standards; V2V Communications

Agency: Department of Transportation, National Highway Traffic Safety Administration

Proposed: January 12, 2017

Comment period closes: April 12, 2017

Submitted: April 12, 2017

Docket ID: NHTSA-2016-0126

“Connected cars” that use mobile connections to transmit and receive wireless data is a growing market. American automakers offered emergency services like OnStar for years and in recent years added wireless infotainment connections like 4G LTE and WiFi access. The next era in connected cars could be vehicle-to-vehicle (V2V) and vehicle-to-infrastructure technologies. V2V may someday alert drivers to potential collisions that are not visible to existing sensor-based technologies.¹ In December 2016 the National Highway Traffic Safety Administration (NHTSA) proposed to mandate a particular V2V technology standard—dedicated short-range communications (DSRC)—for all new light vehicles.² NHTSA, an agency within the US Department of Transportation (DOT), boasts that this is “the first proposed mandate of V2V technology worldwide.”³ Mandating an experimental technology like DSRC

1. GAO, Intelligent Transportation Systems: Vehicle-to-Vehicle Technologies 5, GAO-14-13, November 2013.

2. US DOT, Federal Motor Vehicle Safety Standards; V2V Communications, Notice of Proposed Rulemaking, National Highway Traffic Safety Administration, Dkt. No. NHTSA-2016-0126, 82 Fed. Reg. 3854 (January 12, 2017), <https://www.gpo.gov/fdsys/pkg/FR-2017-01-12/pdf/2016-31059.pdf>.

3. US DOT, NHTSA Issues Notice of Proposed Rulemaking and Research Report on Vehicle-to-Vehicle Communications 1, Fact Sheet (December 13, 2016).

For more information, contact
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V2V is premature. The technology has not been proven economic or safe, and there should be no device mandate for light vehicles at this time.

While foresight is admirable, a device mandate for a wireless technology still in development is unprecedented. Connected cars are “just another mobile device”⁴ and would benefit from the competitive pressures seen in other mobile device markets. The Federal Communications Commission (FCC), the nation’s primary wireless device regulator, generally avoids stringent device mandates because top-down control locks in technology long beyond its usefulness. Crucially, the FCC allows mobile device companies to develop their own standards and interoperability requirements.

The DOT acknowledges that “estimating the potential costs and benefits of V2V [is] quite difficult” because V2V “improve[s] safety only indirectly.”⁵ The indirect safety benefits, plus the long timeline before net benefits arise, plus the unreasonably optimistic predictions of market-ready units should counsel caution. The agency’s estimate⁶ that cumulative benefits will match cumulative costs in 2030 should be viewed skeptically.

At this early stage in V2V development, it is unclear whether DSRC will ever be a safe technology or whether V2V is the best way to improve auto safety. There is a significant likelihood that DSRC will be eclipsed by competing technologies, like lidar, radar, and cameras. Cellular technology may displace DSRC as a V2V technology. As ITS America has said about a parallel FCC proceeding, there is “significant regulatory uncertainty that is threatening to derail the progress that DSRC is making toward nationwide deployment.”⁷

Given the various regulatory uncertainties and DSRC’s technical drawbacks, it is far too early to mandate this technology for light vehicles. In this comment, I first describe DSRC’s government-directed development and slow progress. I then raise the strong possibility that other technologies will prove superior to DSRC if the market is permitted to develop, and I go on to describe DSRC’s severe reliability problems. Finally, I point out that firms can develop device interoperability without an interoperability mandate.

DSRC V2V TECHNOLOGY IS RIGIDLY PRESCRIBED AND UPDATES WILL BE SLOW AND COSTLY

It’s concerning to hear that NHTSA is considering prescriptive technology mandates in the fast-moving area of connected car technology. Innovation at the speed of government, it turns out, isn’t very speedy at all. Congress created the intelligent transportation system

4. Carolyn Duffy Marsan, Networks drive car of the future, 22 *Network World* 1, 72 (2005). SAS, *The Connected Vehicle: Big Data, Big Opportunities* 5 (2016), http://www.sas.com/content/dam/SAS/en_us/doc/whitepaper1/connected-vehicle-107832.pdf.

5. 82 Fed. Reg. 3854, 3858 (January 12, 2017).

6. NHTSA estimates that the breakeven year—when cumulative benefits exceed the cumulative costs—will be about 2030. 82 Fed. Reg. 3854, 3858 (January 12, 2017).

7. Comments of ITS America, In the Matter of Revision of Part 15 of the Commission’s Rules to Permit Unlicensed National Infrastructure Devices in the 5 GHz Band, ET Dkt. No. 13-49, p. i (May 28, 2013), <http://itsamerica.org/wp-content/uploads/2016/09/FINAL-ITS-America-Comments-5-GHz-NPRM.pdf>.

(ITS) program, which is administered by the DOT, in 1991.⁸ V2V communications is the first step towards a national ITS. The DOT has not wavered from its commitment in the 1990s to develop ITS infrastructure via “a top-down, systematic process”⁹ where, the Department says, “each component of the system” is prescribed by regulators.¹⁰ The notice of proposed rulemaking (NPRM) uses the language of markets, and it states that the mandate permits a “market-based approach to application development.”¹¹ A closer analysis reveals, however, a very limited ability to innovate upon the DSRC platform.

DSRC is a government-designed technology from top to bottom, which injects paralyzing rigidity into the system. The Federal Highway Administration considered putting DSRC in the 5.9 GHz band starting about 1996.¹² After public consultation, the FCC set aside 75 MHz of radio spectrum in the 5.9 GHz band for ITS uses in 1999¹³ based on a scant 19 comments and reply comments from outside parties.¹⁴ In 1999 and 2004, the FCC codified DSRC transmission standards,¹⁵ transmit power,¹⁶ emission mask requirements,¹⁷ priority framework,¹⁸

8. FCC, In the Matter of Amendment of the Commission's Rules Regarding Dedicated Short-Range Communication Services in the 5.850-5.925 GHz Band, WT Dkt. No. 01-90, para 6 (rel. Feb. 10, 2004).

9. US DOT, National ITS Program Plan: Synopsis 21, First Edition (March 1995), http://ntl.bts.gov/lib/jpodocs/repts_pr/3845.pdf.

10. US DOT, National ITS Program Plan: Synopsis 20, First Edition (March 1995), http://ntl.bts.gov/lib/jpodocs/repts_pr/3845.pdf. “An architecture is open if its documentation is in the public domain. An open architecture encourages competition among multiple vendors, with their success determined by capability, cost, and innovation. Supporting information in a ‘closed’ architecture usually is proprietary and consequently does not encourage competition among suppliers.”

11. 82 Fed. Reg. 3858 (January 12, 2017).

12. Spectrum Requirements for Dedicated Short Range Communications (DSRC): Public Safety and Commercial Applications 84, ARINC, July 1996, http://ntl.bts.gov/lib/jpodocs/repts_te/3943.pdf.

13. In the Matter of Amendment of Part 2 and 90 of the Commission's Rules to Allocate the 5.850-5.925 GHz Band to the Mobile Service for Dedicated Short Range Communications of Intelligent Transportation Services, ET Docket No. 98-95, RM-9006, Report and Order (rel. October 22, 1999). The spectrum is 5850 MHz to 5925 MHz.

14. In the Matter of Amendment of Part 2 and 90 of the Commission's Rules to Allocate the 5.850-5.925 GHz Band to the Mobile Service for Dedicated Short Range Communications of Intelligent Transportation Services, ET Docket No. 98-95, RM-9006, Report and Order, para 1.4 (rel. October 22, 1999).

15. See Amendment of the Commission's Rules Regarding Dedicated Short-Range Communication Services in the 5.850-5.925 GHz Band (5.9 GHz Band), WT Docket No. 01-90, Amendment of Part 2 and 90 of the Commission's Rules to Allocate the 5.850-5.925 GHz Band to the Mobile Service for Dedicated Short Range Communications of Intelligent Transportation Services, ET Docket No. 98-95, RM-9006, Report and Order, FCC 03-324, 19 FCC Rcd 2458 (2004). An outside standards organization adopted the DSRC standard in 2003. FCC, In the Matter of Amendment of the Commission's Rules Regarding Dedicated Short-Range Communication Services in the 5.850-5.925 GHz Band, WT Dkt. No. 01-90, para 19 (rel. Feb. 10, 2004). In 2004, the FCC required all DSRC units abide by those standards. FCC, In the Matter of Amendment of the Commission's Rules Regarding Dedicated Short-Range Communication Services in the 5.850-5.925 GHz Band, WT Dkt. No. 01-90, para 19 (rel. Feb. 10, 2004). Two years later, the FCC updated channel designations and power limits after parties petitioned for changes. FCC, In the Matter of Amendment of the Commission's Rules Regarding Dedicated Short-Range Communication Services in the 5.850-5.925 GHz Band, Memorandum and Order, WT Dkt. No. 01-90 (rel. July 26, 2006).

16. In the Matter of Amendment of Part 2 and 90 of the Commission's Rules to Allocate the 5.850-5.925 GHz Band to the Mobile Service for Dedicated Short Range Communications of Intelligent Transportation Services, ET Docket No. 98-95, RM-9006, Report and Order, para 1.24 (rel. October 22, 1999).

17. In the Matter of Amendment of Part 2 and 90 of the Commission's Rules to Allocate the 5.850-5.925 GHz Band to the Mobile Service for Dedicated Short Range Communications of Intelligent Transportation Services, ET Docket No. 98-95, RM-9006, Report and Order, para 1.25 (rel. October 22, 1999).

18. FCC, In the Matter of Amendment of the Commission's Rules Regarding Dedicated Short-Range Communication Services in the 5.850-5.925 GHz Band, WT Dkt. No. 01-90, para 31 (rel. Feb. 10, 2004).

antenna height,¹⁹ and equipment certification procedures.²⁰ For DSRC V2V devices, the FCC and NHTSA have prescribed or have proposed to prescribe²¹

- access technology (IEEE 802.11p),²²
- spectrum channels (10 MHz),²³
- spectrum bands (5.9 GHz),
- throughput (6 Mbps),²⁴ and
- communications technology (DSRC).

Even the DSRC device makers were hand-selected by DOT officials and subsidized.²⁵

The need to comply with the requirements from two federal agencies and satisfy multiple private and public organizations has contributed to DSRC's slow progress. The DOT started testing road safety technologies around 2000.²⁶ Nevertheless, only a few firms created DSRC prototypes, and these tended to be small firms. Before 2014, there was still little improvement, little commercial interest in DSRC devices, and the DOT "took a lead role in the device development process."²⁷

Contrast the slow progress of DSRC with cellular standards. The FCC codified DSRC standards over a decade ago, and DSRC—still in the experimental phase—seems destined for the stasis associated with other FCC-mandated technology standards, like broadcast TV, which lasted largely unchanged for over 60 years.²⁸ Cellular standards, on the other hand, the FCC leaves to market actors. Cellular standards have improved significantly since 2000 and have substantial market penetration, despite a lack of device mandates.

In the broader mobile communications market, access technology (WiMax, 4G LTE), spectrum channels (5 MHz pairs, 20 MHz pairs), spectrum bands (700 MHz, 1800 MHz) and

19. FCC, In the Matter of Amendment of the Commission's Rules Regarding Dedicated Short-Range Communication Services in the 5.850-5.925 GHz Band, WT Dkt. No. 01-90, para 39 (rel. Feb. 10, 2004).

20. FCC, In the Matter of Amendment of the Commission's Rules Regarding Dedicated Short-Range Communication Services in the 5.850-5.925 GHz Band, WT Dkt. No. 01-90, para 44 (rel. Feb. 10, 2004).

21. 82 Fed. Reg. 3854, 3857 (January 12, 2017).

22. 82 Fed. Reg. 3854, 3893 (January 12, 2017).

23. FCC, In the Matter of Amendment of the Commission's Rules Regarding Dedicated Short-Range Communication Services in the 5.850-5.925 GHz Band, WT Dkt. No. 01-90, para 27 (rel. Feb. 10, 2004).

24. 82 Fed. Reg. 3854, 3886 (January 12, 2017).

25. US DOT, Safety Pilot Model Deployment: Lessons Learned and Recommendations for Future Connected Vehicle Activities 51, FHWA-JPO-16-363, Final Report (September 2015) <http://ntl.bts.gov/lib/59000/59300/59361/FHWA-JPO-16-363.pdf>; Comments of ITS America, In the Matter of Revision of Part 15 of the Commission's Rules to Permit Unlicensed National Infrastructure Devices in the 5 GHz Band, ET Dkt. No. 13-49, p. 21 (May 28, 2013), <http://itsamerica.org/wp-content/uploads/2016/09/FINAL-ITS-America-Comments-5-GHz-NPRM.pdf>.

26. Paul Kirby, FCC Adopts Regulations For Highway Communications, 70 Telecomm. Reports 1, 24 (2004).

27. US DOT, Safety Pilot Model Deployment: Lessons Learned and Recommendations for Future Connected Vehicle Activities 50, FHWA-JPO-16-363, Final Report (September 2015) <http://ntl.bts.gov/lib/59000/59300/59361/FHWA-JPO-16-363.pdf>.

28. The FCC established the National Television System Committee in 1940. The first NTSC standards were created in 1941, and most broadcasters, after FCC pressure, had moved to digital standards by 2009. See Stuart Minor Benjamin, The Logic of Scarcity: Idle Spectrum as a First Amendment Violation, 52 DUKE L.J. 1, 18 n.57 (2003).

communications technology (CDMA2000 1xRTT, VoLTE) change regularly in response to consumer demands, industry standards, and input availability and prices.

The competitive churn and consumer benefits are noticeable. Around 1990, AMPS, a first-generation cell phone standard, was the dominant US cell phone standard. But since then, AMPS was replaced by D-AMPS, GSM, CDMA2000, WiMax, and then 4G LTE technologies. The competition generated by cellular technologies has induced hundreds of billions of dollars in investment and consumer spending.²⁹ This is a remarkable contrast to DSRC, which, despite the full support of the US government and the nominal support of dozens of auto and device companies, has generated marginal commercial interest.

Private companies see slow progress in many technical areas, and V2V technology poses unique technical issues. But private companies are subject to competitive pressures and consumer demands. A dead-end technology in the private sector is eventually shelved, and resources shift to promising (profitable) new developments. With government-mandated technology adoption, however, there are no competitive pressures and regulators are spending taxpayer money. As FCC's history shows—in obsolete technology standards like NTSC broadcast standards, FireWire,³⁰ and CableCard³¹—dead-end consumer technology that is mandated by government can live on, zombielike, for years or decades after the market has moved on.

OTHER TECHNOLOGIES WILL LIKELY OVERTAKE NHTSA'S MANDATED DEVICES

Prior predictions of DSRC deployment have been unreasonably optimistic. DSRC has failed to gain commercial traction, and the DOT appears to believe a mandate will save the federal government's sunk costs into DSRC. After assigning free spectrum for DSRC and codifying technology standards in 2004, the FCC believed there would be “rapid development and deployment of DSRC equipment.”³² In January 2004, DOT officials told reporters they expected DSRC to be commercially available sometime in 2005.³³ Yet, 12 years later, the DOT is still waiting for DSRC deployment.

The rapid development of cellular-based technologies poses the biggest competitive threat to DSRC. ITS proponents envisioned 32 different DSRC user services when DSRC spectrum

29. From 2003 to 2013, wireless carriers invested over \$300 billion into networks and devices. Coleman Bazelon & Guilia McHenry, *Mobile Broadband Spectrum: A Vital Resource for the U.S. Economy* 4-5 n.5, CTIA (May 11, 2015), http://www.ctia.org/docs/default-source/default-document-library/brattle_spectrum_051115.pdf.

30. Todd Spangler, *FCC Douses FireWire Requirement for Set-Tops With IP*, Multichannel News, June 21, 2010, <http://www.multichannel.com/news/news/fcc-douses-firewire-requirement-set-tops-ip/378067>.

31. Nate Anderson, *FCC admits CableCARD a failure, vows to try something else*, Ars Technica, December 4, 2009, <https://arstechnica.com/tech-policy/2009/12/fcc-admits-cablecard-a-failure-vows-to-try-something-else/>.

32. FCC, *In the Matter of Amendment of the Commission's Rules Regarding Dedicated Short-Range Communication Services in the 5.850-5.925 GHz Band*, WT Dkt. No. 01-90, para 20 (rel. Feb. 10, 2004).

33. Paul Kirby, *FCC Adopts Regulations For Highway Communications*, 70 *Telecomm. Reports* 1, 24 (2004) (“The agency said it had been working cooperatively with the auto industry in hopes of making the technology commercially available by 2005.”)

was set aside in 1999.³⁴ However, while ITS firms and the DOT have slowly developed DSRC, a robust wireless ecosystem of cellular technology, devices, and applications developed. Many of those 32 services have already been “solved” by non-DSRC technologies, including “map and music data updates,” video uploads, parking lot payment, rollover warning, “driver’s daily log,” and “enhanced route planning and guidance.”³⁵ The DSRC V2V mandate is intended to provide drivers imminent collision warnings, but competing technologies like radar and lidar are already in the market. Automatic braking systems have been around for years, and research from the Insurance Institute for Highway Safety suggests that such systems are preventing more rear-end accidents than warning systems³⁶ like the one NHTSA contemplates for its mandate.

Other technologies are improving fast and may prove superior to DSRC if the connected car market is permitted to develop. 3GPP, the global cellular standards body, for instance, released its initial V2X (vehicle to anything) standard in September 2016.³⁷ In fact, as technology publications have reported, China is likely to use a cellular-based system, and Europe may follow.³⁸ DSRC may prove to be a viable technology in other countries eventually, but it appears unlikely that, for instance, Japan or South Korea will mandate DSRC.³⁹

DSRC IS NOT SAFE AND RELIABLE TODAY AND MAY FAIL TO BE ROADWORTHY

The V2V network NHTSA is proposing to mandate is a mesh network, which means nodes communicate directly and without an intervening network. While mesh networks generated substantial academic interest circa 2000 when DSRC was developed, they have proven to be notoriously complicated and expensive to deploy. To my knowledge, aside from small experiments, there are no real-time communication mesh networks in existence. Perhaps predictably, researchers have found DSRC V2V units are subject to the reliability and resource management problems associated⁴⁰ with mobile mesh networks.

34. In the Matter of Amendment of Part 2 and 90 of the Commission’s Rules to Allocate the 5.850-5.925 GHz Band to the Mobile Service for Dedicated Short Range Communications of Intelligent Transportation Services, ET Docket No. 98-95, RM-9006, Report and Order, para 1.10 (rel. October 22, 1999).

35. See 5.9 GHz Dedicated Short Range Communication (DSRC) Overview 29, http://rsl.ece.ubc.ca/archive/DSRC_Tutorial_06-10-021.pdf.

36. Crashes Avoided: Front crash prevention slashes police-reported rear-end crashes, Status Report Vol. 51, January 28, 2016, <http://www.iihs.org/iihs/news/desktopnews/crashes-avoided-front-crash-prevention-slashes-police-reported-rear-end-crashes>.

37. Dino Flore, Initial Cellular V2X standard completed, 3GPP, September 26, 2016, http://www.3gpp.org/news-events/3gpp-news/1798-v2x_r14.

38. Junko Yoshida, V2X Radio War Still Smoldering in China, Europe, EE Times, October 25, 2016, http://www.eetimes.com/document.asp?doc_id=1330670.

39. Junko Yoshida, V2X Radio War Still Smoldering in China, Europe, EE Times, October 25, 2016, http://www.eetimes.com/document.asp?doc_id=1330670.

40. As one researcher put it: “Even in static environments with all nodes stationary, mesh network topologies remain dynamic due to variations in RF propagation and atmospheric attenuation. With mobile nodes, a mesh network’s constantly shifting topology dictates the need for dynamic routing allocation, resource management, and quality of service management—all of which must be precisely choreographed to ensure optimum performance and reliability.” Jason Melby, Mesh Networks: The Next Generation of Wireless Communications 103, Proceedings of the International Symposium on Advanced Radio Technologies, NTIA SP-04-409 (March 2004).

It's important to allow the nascent connected car, V2V, and vehicle sensor markets to develop. DSRC is not safe and reliable today and has severe technical deficiencies that may or may not be remedied. The following draws from several researchers and engineers but especially from a Booz Allen Hamilton report produced for NHTSA in May 2016,⁴¹ referred to heretofore as the "Booz Allen Report."

DSRC Uses Legacy Technology That Is Ill-Suited for Vehicle-to-Vehicle Communications

The DOT proposes to mandate DSRC, which incorporates the IEEE 802.11p communications standard.⁴² Some of DSRC's reliability problems stem from IEEE 802.11 technology, which is also used in WiFi devices. The IEEE 802.11 standard was not designed for moving vehicles, and technology choices that are appropriate for home WiFi might not be appropriate for millions of moving vehicles. Researchers noted in a recent Institute of Electrical and Electronics Engineers journal article about DSRC's technical challenges that

the typical use cases of IEEE 802.11 standards are sparse nomadic deployment with stationary channels. Consequently, existing commercial IEEE 802.11 chipsets are naturally optimized for best performance in such an environment. However, vehicular communications can happen among highly mobile vehicles, with multipath fading channel, and often in densely populated environments.⁴³

Further, different radio frequency bands have different transmission propagation characteristics. It's not clear that the 5.9 GHz band, assigned by the FCC in 1999 for DSRC, is optimized for V2V communications. Namely, as the DOT has acknowledged, non-line-of-sight transmissions suffer in the 5.9 GHz band.⁴⁴

Researchers have raised concerns for years about the reliability of DSRC transmissions under congested circumstances⁴⁵ because DSRC has a relatively long range (at least 300 meters) but relatively narrow communications channels (10 MHz). NHTSA boasts of DSRC's range relative to competing systems,⁴⁶ but extended range comes with downsides. With larger range,

41. Ed Adams et al., Development of DSRC Device and Communication System Performance Measures: Recommendations for DSRC OBE Performance and Security Requirements, Rep. No. FHWA-JPO-17-483 (May 22, 2016), <http://ntl.bts.gov/lib/60000/60500/60536/FHWA-JPO-17-483.pdf>.

42. 82 Fed. Reg. 3854, 3893 (January 12, 2017).

43. Xinzhou Wu et al., Vehicular Communications Using DSRC: Challenges, Enhancements, and Evolution, 31 IEEE J. Selected Areas in Comm. Supp. 399, 399 (2013).

44. "For optimal performance, it requires uninterrupted line-of-sight between the transmitter and receiver." US DOT, FHWA Vehicle-to-Infrastructure Deployment Guidance and Products 27, Rep. No. FHWA-HOP-15-015 (December 30, 2016), http://www.its.dot.gov/research_archives/safety/pdf/V2I_DeploymentGuidance12-30-2016.pdf.

45. "The current version of DSRC MAC is contention-based and thereby does not support efficient and reliable broadcast services. Specifically, the poor performance of the DSRC MAC in supporting safety applications is mainly due to the high collision probability of the broadcasted packets." Ning Lu et al., Connected Vehicles: Solutions and Challenges 5 (2014), https://ece.uwaterloo.ca/~n7lu/jrnl_14_IoTJ_LCZSM.pdf.

46. 82 Fed. Reg. 3854, 3855 (January 12, 2017) ("V2V also offers an operational range of 300 meters or farther between vehicles, nearly double the detection distance afforded by some current and near-term vehicle-resident systems.").

contention between vehicle device transmissions increases, and as researchers have found with DSRC simulations, larger ranges reduce the probability of channel access significantly.⁴⁷

In short, DSRC reliably plummets when many units are transmitting at the same time. The decision to have 10 MHz channelization for DSRC was chosen at an early stage in DSRC development.⁴⁸ This decision was made because DSRC device makers could use existing, circa 2000, Wi-Fi chipsets.⁴⁹ While this might have made sense 15 years ago, as Booz Allen⁵⁰ and others⁵¹ have noted, 10 MHz channels underutilize the capability of current wideband technology. Namely, with 10 MHz channels, “channel congestion is a serious issue” and in dense traffic, “the occurrence of message losses” owing to congestion is “highly likely.”⁵²

Booz Allen assessed how well DSRC units worked in a report for NHTSA.⁵³ Their assessment is not encouraging. The Booz Allen Report goes on to note that the existing DSRC standards are “an inefficient use of the DSRC band” when used for V2V.⁵⁴ This inefficiency means that even modest traffic can cause network congestion. “With perfect Carrier Sense Multiple Access (CSMA) performance,” Booz Allen researchers said, “the system can support at most 204 vehicles transmitting BSMs at 10 Hz.”⁵⁵

Another potential impediment to V2V effectiveness is how device updates are accomplished. DSRC units, like all mobile devices, will require periodic updates. The problem with a V2V-only network like the one NHTSA is proposing is that it doesn’t have a pervasive, intervening network that can push updates.⁵⁶ This flaw may be why the DOT’s original DSRC plan was to

47. Shahzad A. Malik et al., Performance Evaluation of IEEE 802.11p MAC Protocol for VANETs, 4 Australian Journal of Basic and Applied Sciences 4089, 4097 (2010).

48. Xinzhou Wu et al., Vehicular Communications Using DSRC: Challenges, Enhancements, and Evolution, 31 IEEE J. Selected Areas in Comm. Supp. 399, 405 (2013).

49. “The 5.9 GHz DSRC spectrum is divided into seven 10 MHz bands. A main motivation behind such channelization is the ability to utilize the market penetration of existing Wi-Fi chipsets that operate over 20MHz channels. The original chips can be run ‘half-clocked’ to achieve a 10 MHz bandwidth and be made more suitable for the highly mobile and frequency selective vehicular channels.” Xinzhou Wu, Vehicular Communications Using DSRC: Challenges, Enhancements, and Evolution, 31 IEEE J. Selected Areas in Comm. Supp. 399, 403 (2013).

50. Ed Adams et al., Development of DSRC Device and Communication System Performance Measures: Recommendations for DSRC OBE Performance and Security Requirements 41, Rep. No. FHWA-JPO-17-483 (May 22, 2016), <http://ntl.bts.gov/lib/60000/60500/60536/FHWA-JPO-17-483.pdf>.

51. Xinzhou Wu, Vehicular Communications Using DSRC: Challenges, Enhancements, and Evolution, 31 IEEE J. Selected Areas in Comm. Supp. 399, 403 (2013).

52. Ed Adams et al., Development of DSRC Device and Communication System Performance Measures: Recommendations for DSRC OBE Performance and Security Requirements 41, Rep. No. FHWA-JPO-17-483 (May 22, 2016), <http://ntl.bts.gov/lib/60000/60500/60536/FHWA-JPO-17-483.pdf>.

53. Ed Adams et al., Development of DSRC Device and Communication System Performance Measures: Recommendations for DSRC OBE Performance and Security Requirements 107, Rep. No. FHWA-JPO-17-483 (May 22, 2016), <http://ntl.bts.gov/lib/60000/60500/60536/FHWA-JPO-17-483.pdf>.

54. Ed Adams et al., Development of DSRC Device and Communication System Performance Measures: Recommendations for DSRC OBE Performance and Security Requirements 42, Rep. No. FHWA-JPO-17-483 (May 22, 2016), <http://ntl.bts.gov/lib/60000/60500/60536/FHWA-JPO-17-483.pdf>.

55. Ed Adams et al., Development of DSRC Device and Communication System Performance Measures: Recommendations for DSRC OBE Performance and Security Requirements 41, Rep. No. FHWA-JPO-17-483 (May 22, 2016), <http://ntl.bts.gov/lib/60000/60500/60536/FHWA-JPO-17-483.pdf>.

56. Xinzhou Wu et al., Vehicular Communications Using DSRC: Challenges, Enhancements, and Evolution, 31 IEEE J. Selected Areas in Comm. Supp. 399, 405-06 (2013).

deploy V2I networks first and V2V technology later.⁵⁷ It is unclear to this researcher why the DOT's model changed over the years. It is premature to mandate DSRC V2V when it is unclear if updates can be effectively pushed to V2V units.

The Safety Pilot Model Deployment Reveals That DSRC Is Not a Reliable Anti-Collision Technology and May Never Be Safe for Mass Use

NHTSA grossly overstates DSRC's roadworthiness and underplays the serious upgrades needed before DSRC V2V devices are reliable and safe. For instance, NHTSA states that "DSRC is the only mature communication option that meets" the necessary requirements for collision avoidance⁵⁸ and that it is effective at preventing potential crashes.⁵⁹

NHTSA points to real-world testing of DSRC in the Safety Pilot Model Deployment (SPMD),⁶⁰ which purportedly "demonstrated the readiness of DSRC-based connected vehicle safety applications for nationwide deployment."⁶¹ NHTSA says that the SPMD showed that DSRC V2V devices "have proven effective in mitigating or preventing potential crashes" and need only "additional refinement."⁶²

The truth is that the SPMD revealed serious problems with DSRC and had limited value in showing safety. The SPMD field tests were delayed, lasted only a few weeks, and were beset by technical problems.⁶³ As NHTSA states in the NPRM, the deployment analysis was limited: it assessed "*whether* the prototypes and the system worked, but not necessarily *how well* they worked."⁶⁴ The DOT noted that "every DSRC device deployed had to be recalled at least once during the SPMD to identify and correct issues."⁶⁵ False alerts were a particular problem.⁶⁶

57. US DOT, Notice of Ex Parte Presentation 9, WT Dkt. No. 01-90 and ET Dkt. No. 98-94, November 17, 2010, <https://ecfsapi.fcc.gov/file/7020920834.pdf>.

58. 82 Fed. Reg. 3854, 3864 (January 12, 2017).

59. 82 Fed. Reg. 3854, 3864 (January 12, 2017).

60. US DOT, Safety Pilot Model Deployment: Lessons Learned and Recommendations for Future Connected Vehicle Activities 2, FHWA-JPO-16-363, Final Report (September 2015) <http://ntl.bts.gov/lib/59000/59300/59361/FHWA-JPO-16-363.pdf>. "Overall, the Safety Pilot Program was a major success and has led the USDOT to initiate rulemaking that would propose to create a new Federal Motor Vehicle Safety Standard (FMVSS) to require V2V communication capability for all light vehicles and to create minimum performance requirements for V2V devices and messages."

61. US DOT, Safety Pilot Model Deployment: Lessons Learned and Recommendations for Future Connected Vehicle Activities 2, FHWA-JPO-16-363, Final Report (September 2015) <http://ntl.bts.gov/lib/59000/59300/59361/FHWA-JPO-16-363.pdf>.

62. 82 Fed. Reg. 3854, 3867 (January 12, 2017).

63. "There were a number of gaps in the device requirements that impacted the Test Conductor's ability to monitor and maintain the devices throughout the Model Deployment." US DOT, Safety Pilot Model Deployment: Lessons Learned and Recommendations for Future Connected Vehicle Activities 52-54, FHWA-JPO-16-363, Final Report (September 2015) <http://ntl.bts.gov/lib/59000/59300/59361/FHWA-JPO-16-363.pdf>.

64. 82 Fed. Reg. 3854, 3867 (January 12, 2017).

65. US DOT, Safety Pilot Model Deployment: Lessons Learned and Recommendations for Future Connected Vehicle Activities 55, FHWA-JPO-16-363, Final Report (September 2015) <http://ntl.bts.gov/lib/59000/59300/59361/FHWA-JPO-16-363.pdf>.

66. US DOT, Safety Pilot Model Deployment: Lessons Learned and Recommendations for Future Connected Vehicle Activities 73, FHWA-JPO-16-363, Final Report (September 2015) <http://ntl.bts.gov/lib/59000/59300/59361/FHWA-JPO-16-363.pdf>.

The Booz Allen analysts found that the DOT's 2014 Safety Pilot Model Deployment offered "relatively few vehicle interactions and *no known identified situations where vehicles were on collision courses and the system properly warned the driver*, or where vehicles were on a near miss course and the system accidentally warned the driver."⁶⁷ With no known situations testing collision avoidance, the analysts used DSRC device parameters to simulate collision situations.

They identified "significant issues with the accuracy requirements on the data in the BSM [basic safety message]."⁶⁸ The researchers found that "if the BSM data is only accurate to within the error tolerances stated for the Safety Pilot program, *the system will be able to reliably predict collisions only about 35% of the time*."⁶⁹ The current error tolerances for DSRC V2V units, they added, "will fail to provide the desired levels of intended and reliable safety benefits."⁷⁰

Alarming, in simulations DSRC units misclassified vehicle interaction (i.e., a collision or miss) 72 percent of the time five seconds away from impact.⁷¹ The report noted that "the chance of a misclassification [of a collision or near miss] occurring, even at 1 second prior to collision, is concerning."⁷² Error rates improve as vehicles approach each other, but even one second before a sure collision, DSRC devices had only an 80 percent rate of detecting the collision.⁷³ Since drivers need three or more seconds to respond to a collision warning, the researchers concluded the error rate "draws into question the safety integrity of the system."⁷⁴

The authors stated that "much tighter tolerances . . . are needed in order to assure data sent from vehicles can be used to reliably predict imminent collisions and generate driver warnings

67. Ed Adams et al., Development of DSRC Device and Communication System Performance Measures: Recommendations for DSRC OBE Performance and Security Requirements 107, Rep. No. FHWA-JPO-17-483 (May 22, 2016), <http://ntl.bts.gov/lib/60000/60500/60536/FHWA-JPO-17-483.pdf> (emphasis added).

68. Ed Adams et al., Development of DSRC Device and Communication System Performance Measures: Recommendations for DSRC OBE Performance and Security Requirements 5, Rep. No. FHWA-JPO-17-483 (May 22, 2016), <http://ntl.bts.gov/lib/60000/60500/60536/FHWA-JPO-17-483.pdf>.

69. Ed Adams et al., Development of DSRC Device and Communication System Performance Measures: Recommendations for DSRC OBE Performance and Security Requirements 5, Rep. No. FHWA-JPO-17-483 (May 22, 2016), <http://ntl.bts.gov/lib/60000/60500/60536/FHWA-JPO-17-483.pdf>.

70. Ed Adams et al., Development of DSRC Device and Communication System Performance Measures: Recommendations for DSRC OBE Performance and Security Requirements 5, Rep. No. FHWA-JPO-17-483 (May 22, 2016), <http://ntl.bts.gov/lib/60000/60500/60536/FHWA-JPO-17-483.pdf>.

71. Ed Adams et al., Development of DSRC Device and Communication System Performance Measures: Recommendations for DSRC OBE Performance and Security Requirements 100, Rep. No. FHWA-JPO-17-483 (May 22, 2016), <http://ntl.bts.gov/lib/60000/60500/60536/FHWA-JPO-17-483.pdf>.

72. Ed Adams et al., Development of DSRC Device and Communication System Performance Measures: Recommendations for DSRC OBE Performance and Security Requirements 102, Rep. No. FHWA-JPO-17-483 (May 22, 2016), <http://ntl.bts.gov/lib/60000/60500/60536/FHWA-JPO-17-483.pdf>.

73. Ed Adams et al., Development of DSRC Device and Communication System Performance Measures: Recommendations for DSRC OBE Performance and Security Requirements 100, Rep. No. FHWA-JPO-17-483 (May 22, 2016), <http://ntl.bts.gov/lib/60000/60500/60536/FHWA-JPO-17-483.pdf>.

74. Ed Adams et al., Development of DSRC Device and Communication System Performance Measures: Recommendations for DSRC OBE Performance and Security Requirements 100, Rep. No. FHWA-JPO-17-483 (May 22, 2016), <http://ntl.bts.gov/lib/60000/60500/60536/FHWA-JPO-17-483.pdf>.

or other mitigation actions.”⁷⁵ These improvements, the team says frankly, “may be challenging to achieve.”⁷⁶ The researchers concluded:

If the objective is that the system must not miss more than 5% of actual collisions, the resulting BSM parameter accuracy requirements will need to be much tighter. If the objective is 99.999% (0.001% classification failure) reliability, then the system is probably not viable.⁷⁷

Before mandating a specific V2V technology for light vehicles, NHTSA should first determine an acceptable collision rate. Without such, the agency may be mandating a technology that will never have acceptable reliability.

The agency proposes to require “that a message packet error rate (PER) is less than 10%.”⁷⁸ It is not clear that DSRC units satisfy this proposed standard. The Booz Allen analysis revealed significant signal degradation when dozens of DSRC units are in close proximity.⁷⁹ They estimated that if 256 devices were in a 100 x 100 meter area, packet error rates would exceed 45 percent.⁸⁰ Since heavy traffic of DSRC-connected cars would mean 400 to 600 vehicles within range of a DSRC device,⁸¹ the mandated device specifications may be inadequately safe.

DEVICES CAN INTEROPERATE WITHOUT A MANDATE

NHTSA asserts that “without government intervention,” V2V communications will not be standardized and interoperable.⁸² Scholars have found that the public sector is ill-suited to determine what specific technology will be the best option for the future, especially where complex information technologies are involved.⁸³

75. Ed Adams et al., Development of DSRC Device and Communication System Performance Measures: Recommendations for DSRC OBE Performance and Security Requirements 172, Rep. No. FHWA-JPO-17-483 (May 22, 2016), <http://ntl.bts.gov/lib/60000/60500/60536/FHWA-JPO-17-483.pdf>.

76. Ed Adams et al., Development of DSRC Device and Communication System Performance Measures: Recommendations for DSRC OBE Performance and Security Requirements 172, Rep. No. FHWA-JPO-17-483 (May 22, 2016), <http://ntl.bts.gov/lib/60000/60500/60536/FHWA-JPO-17-483.pdf>.

77. Ed Adams et al., Development of DSRC Device and Communication System Performance Measures: Recommendations for DSRC OBE Performance and Security Requirements 102, Rep. No. FHWA-JPO-17-483 (May 22, 2016), <http://ntl.bts.gov/lib/60000/60500/60536/FHWA-JPO-17-483.pdf>.

78. 82 Fed. Reg. 3854, 3884 (January 12, 2017).

79. The researchers assume 6 Mbps channels, NHTSA’s proposed throughput. Ed Adams et al., Development of DSRC Device and Communication System Performance Measures: Recommendations for DSRC OBE Performance and Security Requirements 41, Rep. No. FHWA-JPO-17-483 (May 22, 2016), <http://ntl.bts.gov/lib/60000/60500/60536/FHWA-JPO-17-483.pdf>. (“It is well understood that at this data rate [6 Mbps] channel congestion is a serious issue.”)

80. Ed Adams et al., Development of DSRC Device and Communication System Performance Measures: Recommendations for DSRC OBE Performance and Security Requirements 81, Rep. No. FHWA-JPO-17-483 (May 22, 2016), <http://ntl.bts.gov/lib/60000/60500/60536/FHWA-JPO-17-483.pdf>.

81. Ed Adams et al., Development of DSRC Device and Communication System Performance Measures: Recommendations for DSRC OBE Performance and Security Requirements 41, Rep. No. FHWA-JPO-17-483 (May 22, 2016), <http://ntl.bts.gov/lib/60000/60500/60536/FHWA-JPO-17-483.pdf>.

82. 82 Fed. Reg. 3854, 3856 (January 12, 2017).

83. John Palfrey & Urs Gasser, Interop: The Promise and Perils of Highly Interconnected Systems 175 (2012). See also Adam Thierer, What is “Optimal Interoperability”? A Review of Palfrey & Gasser’s “Interop,” Technology Liberation Front, June 11, 2012, <https://techliberation.com/2012/06/11/what-is-%E2%80%9COptimal-interop%E2%80%9D-a-review-of-palfrey-gasser%E2%80%99s-%E2%80%9Cinterop%E2%80%9D/>.

Mandating that other technologies have interoperability with DSRC, as NHTSA proposes,⁸⁴ adds to the complexity. This may cause firms to shy away from wireless communications technologies. “Interoperable” means many things when it comes to DSRC V2V, and certification testing alone will take time—perhaps years—to develop and operationalize.⁸⁵ Further, DSRC’s design-by-committee framework requires compromises between powerful tech, auto, and government interests that likely sacrifices speed, performance, or both.

The existing communications market reveals that interoperability arises without a government device mandate. Market processes do create reliable and interoperable networks. Cellular phones, for instance, absent regulatory mandates, have both interoperable elements (SMS messaging, VoLTE) and non-interoperable elements (IP messaging, CDMA versus GSM, operating systems, app stores).

Interoperability for critical services can be quite rapid even without a mandate. Tens of thousands of computer networks connecting billions of devices, for instance, interoperate and exchange IP traffic without a mandate to interoperate. Firms interoperate because interoperability increases the value of a platform. Verizon introduced VoLTE, an inter-carrier voice communications technology, to subscribers in 2014. By early 2017, most Verizon voice traffic was transmitted via VoLTE.⁸⁶ This is a remarkable example of a company developing an important application (voice) that interoperates across networks and across millions of devices.

NHTSA also proposes requiring non-DSRC technologies not merely to interoperate with DSRC technology when sending BSMs, but to have very similar technological characteristics.⁸⁷ In effect, NHTSA is mandating DSRC-like requirements for non-DSRC V2V wireless technology. These constraints are limiting, particularly the proposed requirement that non-DSRC technologies have a minimum 300-meter range.⁸⁸ Since this extensive range increases the chance for congestion, this requirement biases future technologies to low-throughput information. No one can be certain, *ex ante*, that the high-range, low-throughput applications NHTSA *de facto* requires will be more useful and lifesaving than low-range, high-throughput applications, or some other mix of capabilities.

CONCLUSION

DSRC V2V technology is far from roadworthy. Any technology “so good it must be mandated” warrants extreme skepticism. Many of DSRC’s technical elements were mandated over a decade ago and underutilize current wireless technology. Researchers have pointed out that

84. NPRM, p. 10.

85. Ed Adams et al., Development of DSRC Device and Communication System Performance Measures: Recommendations for DSRC OBE Performance and Security Requirements 138, Rep. No. FHWA-JPO-17-483 (May 22, 2016), <http://ntl.bts.gov/lib/60000/60500/60536/FHWA-JPO-17-483.pdf> (“Development of standardized certification processes is a sophisticated and challenging endeavor that could face many issues and require legal, policy, technical, and institutional decisions from a variety of perspectives.”).

86. Verizon Public Policy, “Verizon welcomes new ‘Cellular Service Reform’ rules,” Press Release (March 23, 2017), <http://www.verizon.com/about/news/verizon-welcomes-new-cellular-service-reform-rules>.

87. 82 Fed. Reg. 3854, 3896-97 (January 12, 2017).

88. 82 Fed. Reg. 3854, 3896 (January 12, 2017).

DSRC has many technical drawbacks and is unreliable. The Booz Allen Report concluded in 2016, a few months before the NPRM:

Ideally, these technical issues would be resolved before finalizing requirements, but given the NHTSA rule-making timeline, it may not be possible for complete solutions to be included in the first rule.⁸⁹

Modifying the DSRC standards would bring operational benefits, especially regarding congestion, but would require yet another lengthy FCC rulemaking.⁹⁰ Connected car and sensing technology is advancing rapidly. Given the dynamic marketplace, any connected car device mandate would not only be unprecedented, at this point in DSRC development, it would be dangerously hasty. The agency should halt this NPRM, resolve DSRC's many technical issues, and allow the connected car market to develop before proceeding.

89. Ed Adams et al., Development of DSRC Device and Communication System Performance Measures: Recommendations for DSRC OBE Performance and Security Requirements 107, Rep. No. FHWA-JPO-17-483 (May 22, 2016), <http://ntl.bts.gov/lib/60000/60500/60536/FHWA-JPO-17-483.pdf>.

90. Ed Adams et al., Development of DSRC Device and Communication System Performance Measures: Recommendations for DSRC OBE Performance and Security Requirements 42 n.4, Rep. No. FHWA-JPO-17-483 (May 22, 2016), <http://ntl.bts.gov/lib/60000/60500/60536/FHWA-JPO-17-483.pdf>.