IN THE UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT

UNITED STATES TELECOM ASSOCIATION, et al., *Petitioners*, v. FEDERAL COMMUNICATIONS COMMISSION, and UNITED STATES OF AMERICA, *Respondents*.	No. 15-1063 (and consolidated cases)

OPPOSITION OF INTERVENORS TO PETITIONERS' MOTION FOR STAY

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Cable Modem Order	In the Matter of Inquiry Concerning High-Speed Access to the Internet Over Cable and Other Facilities, *Declaratory Ruling and Notice of Proposed Rulemaking*, 17 FCC Rcd. 4798 (2003)
Brand X	*National Cable & Telecommunications Association, et al. v. Brand X Internet Services, Inc., et al.*, 545 U.S. 967 (2005)
Comcast	*Comcast Corp. v. FCC*, 600 F.3d 642 (D.C. Cir. 2010)
Communications Act	Communications Act of 1934, Pub. L. No. 73–416, 48 Stat. 1064
FCC	Federal Communications Commission
Internet Tax Freedom Act	Permanent Internet Tax Freedom Act, H.R. 3086, 113th Cong. (2014)
ISP	Internet Service Provider
Motion	Joint Motion for Stay or Expedition of United States Telecom Association, National Cable & Telecommunications Association, CTIA – The Wireless Association®, AT&T Inc., American Cable Association, CenturyLink, and Wireless Interent Service Providers Association, *United States Telecom Association v. FCC*, No 15-1063 (D.C. Cir. May 13, 2015)
Notice of Inquiry	Framework for Broadband Internet Service, *Notice of Inquiry*, 25 FCC Rcd. 7866 (2010)
Notice of Proposed Rulemaking	Protecting and Promoting the Open Internet, *Notice of Proposed Rulemaking*, 29 FCC Rcd. 5561 (2014)

Order	Protecting and Promoting the Open Internet, *Report and Order on Remand, Delaratory Ruling, and Order*, GN Docket No. 14-28, FCC 15-24, 80 Fed. Reg. 19,738 (rel. Mar. 12, 2015; pub. Apr. 13, 2015)
2010 Open Internet Rules	Preserving the Open Internet; Broadband Industry Practices, *Report and Order*, 25 FCC Rcd. 17905 (2010)
Verizon	*Verizon v. FCC*, 740 F.3d 623 (D.C. Cir. 2014)
Virginia Petroleum Jobbers	*Virginia Petroleum Jobbers Ass'n v. Federal Power Comm'n*, 259 F.2d 921 (D.C. Cir. 1958)
VoIP	Voice-over-Internet-Protocol
Wireline Broadband Order	Appropriate Framework for Broadband Access to the Internet over Wireline Facilities, *Report and Order and Notice of Proposed Rulemaking*, 20 FCC Rcd. 14853 (2005)

I. INTRODUCTION

In the *Order*, the FCC used the authority confirmed by the Supreme Court in *Brand X* and by this Court in *Verizon* to achieve an important goal. It classified broadband Internet access services as a telecommunications service and adopted rules that safeguard the public's ability to use the Internet—the indispensable communications medium of the modern era—without interference from Petitioners.

Intervenors, a diverse group of public interest organizations and private sector entities, come from all realms of the Internet economy—online video and VoIP telephone providers, competitive ISPs, Internet backbone operators, venture capitalists, and advocates for privacy, accessibility, consumers, and social justice. Their harms from a stay would dwarf the speculative injury Petitioners claim, none of which is irreparable and little, if any, of which qualifies as injury at all.

No Irreparable Injury from Rules. Petitioners delayed for nearly two months before seeking redress for their claimed injuries, creating an artificial emergency for this Court. Their litigation-driven rhetoric is belied by what many of their members have represented to the capital markets: "On Title II, it really hasn't affected the way we have been doing our business or will do our business." Comcast Corp., Q1 2015 Earnings Call Transcript at 16 (May 4, 2015). For their part, the capital markets have agreed with that business-as-usual assessment, as

Intervenors' expert economist, William Zarakas, testifies. Intervenors also submit evidence from a number of competitive ISPs such as ComSpan, DISH, Fatbeam, Google Fiber, and Sonic, showing that the incentive of ISPs to invest will not be chilled by the *Order* and may in fact be bolstered by it.

Petitioners suggest that they will be injured by the alleged vagueness of the new open Internet standards, even though many of them had advocated "case-by-case" adjudication without any bright-line rules at all. If the need to hire a lawyer for advice on a new rule were irreparable injury, all new agency rules would be stayed.[1] Petitioners claim they will not be able to charge for interconnection, even though the industry standard before the *Order* was no-charge, settlement-free peering. They say their marketing practices will be constrained by statutory requirements to protect their customers' privacy, despite evidence that strong privacy protections spur broadband adoption and therefore would appear to be a broadband marketer's ally, not her enemy.

Petitioners primarily offer protestations of injury by small ISPs. But a total of 14 ISPs provide broadband access to 80 percent of U.S. broadband households. *See* FCC, 2014 Measuring Broadband America Fixed Broadband Report at 5

[1] Nor does the cost of compliance or the risk of litigation qualify as irreparable injury. *See A.O. Smith Corp. v. FTC*, 530 F.2d 515, 527 (3d Cir. 1976); *FTC v. Standard Oil Co. of Calif.*, 449 U.S. 232, 244 (1980).

(2014). Few of those 14 supply any evidence of harm here. Petitioners appear to be presenting a front of small ISPs to divert the Court's gaze from the shrug with which the majority of the industry has greeted the *Order* below.

Injury from Stay. On the other side of the ledger, a diverse group of 16 declarants detail the harm that would result from a stay, much of it based on Intervenors' recent or current experience. These real harms stand in contrast to the hypothetical future evils postulated by Petitioners. Many Intervenors depend on the pipes controlled by Petitioners for their customers to access Intervenors' services, even as they compete with Petitioners themselves in the provision of those services. This should come as no surprise to this Court, which previously found that gatekeeper ISPs have the incentive and ability to favor their services while disadvantaging "over-the-top" competitors. *See Verizon*, 740 F.3d 623, 645-46 (D.C. Cir. 2014).

A stay would allow ISPs with this gatekeeper power to continue harming consumers and edge providers through service degradation. The notorious episodes of the degradation of Netflix's service by a number of ISPs are illustrative. And some of the harm is not only recent; it is unfolding in real time: Cogent explains how ISP refusals to augment interconnection capacity cause congestion and hamper uses of the Internet such as teleworking applications today.

In a tactical maneuver, Petitioners say they do not request a stay of the three bright-line rules (no blocking, no throttling, and no paid prioritization); rather, they request a stay "only" of the general conduct requirements and Title II rules—including the prohibitions on undue interference and unreasonable discrimination.

As Intervenors' declarants testify, however, in the absence of the general conduct standards, ISPs would have virtual *carte blanche* to circumvent the bright-line prohibitions through techniques such as degrading their connections to the Internet to impede the flow of Internet content, and using discriminatory data caps to favor an ISP's affiliated services over those of rivals.

No Substantial Likelihood of Success. Intervenors refer the Court to the FCC's discussion of the merits, but they are particularly mystified by Petitioners' argument that they lacked sufficient notice of the FCC's Title II reclassification under the Administrative Procedure Act. The FCC's belt-and-suspenders approach—a *Notice of Inquiry* as well as a *Notice of Proposed Rulemaking*—was so successful in publicizing the possibility of Title II that it attracted nearly four million comments (including substantial comments from Petitioners) and became fodder for cartoons and talk shows, leaving a claim of ignorance open perhaps to hermits, but not to Petitioners.

II. PETITIONERS DO NOT SHOW IRREPARABLE INJURY

A. Petitioners' Conduct and the Markets Contradict the Alleged Harms

Petitioners' claims of irreparable injury are belied, first of all, by their insouciant languor. Petitioners waited almost two months from the release of the *Order* to ask the FCC for a stay, leaving the agency and this Court with only one month to evaluate the stay request before the rules become effective on June 12, 2015. Courts look askance when a party claiming imminent injury takes its time in trying to avert it. *See Fund for Animals v. Frizzell*, 530 F.2d 982, 987 (D.C. Cir. 1975); *Newdow v. Bush*, 355 F.Supp. 2d 265, 292 (D.D.C. 2005) ("[U]nexcused delay in seeking extraordinary injunctive relief may be grounds for denial because such delay implies a lack of urgency and irreparable harm.").

Petitioners' claims are also belied by public statements of their own members. Here is Comcast Cable CEO Neil Smit: "[o]n Title II, it really hasn't affected the way we have been doing our business or will do our business." Comcast Corp., Q1 2015 Earnings Call Transcript at 14 (May 4, 2015). And Cablevision CEO James Dolan: "to be honest, we don't see at least what the [FCC] Chairman has been discussing as having any real effect on our business." *See* Shalini Ramachandran & Michael Calia, *Cablevision CEO Plays Down Business Effect of FCC Proposal*, WALL STREET JOURNAL, Feb. 25, 2015.

That view is confirmed by other ISPs. Sprint's Chief Technology Officer considers those alleging significant harm from the rules to be "representing a situation that won't play out." Malathi Nayak, *Sprint Says U.S. Telecoms Will Invest Despite Stronger Net Neutrality*, REUTERS, Feb. 11, 2015. The markets, too, seem to have shrugged off any adverse effect of the rules on the ISP industry. *See* Zarakas Decl. ¶¶ 5, 9-10.

B. The Rules Are Likely to Bolster, Not Chill, Infrastructure Investment

Petitioners assert that complying with the new rules will result in "diminished investment," citing testimony from only three small, rural ISPs able to show specific examples. Motion at 28; Wisper ISP Decl. ¶ 14; KWISP Internet Decl. ¶ 13; Aristotle Inc. ¶ 13. This bleak view is not shared by all Petitioners: none of the other declarations provides concrete allegations of decreased investment incentives. In fact, AT&T and Time Warner Cable seem to be actively pursuing significant network upgrades, even in the face of this purported regulatory uncertainty.[2]

[2] Press Release, AT&T, AT&T Eyes 100 U.S. Cities and Municipalities for its Ultra-Fast Fiber Network (Apr. 21, 2014); James Aldridge, *Time Warner Cable Deployed $1 Billion in Capital on Digital TV, Faster Internet*, SAN ANTONIO BUSINESS JOURNAL, Apr. 30, 2015. Nor has the *Order* dampened enthusiasm for acquisitions of broadband ISPs. *See, e.g.*, Liana B. Baker, *Altice Eyes U.S. with TWC, Suddenlink Buys*, REUTERS, May 19, 2015.

In any event, Intervenors submit evidence that the claimed harm to broadband investment is unlikely to materialize. The FCC's reclassification of broadband access under Title II will not chill DISH Network's willingness to continue investing in broadband access networks. DISH Decl. ¶ 6. Similarly, ComSpan, a small ISP in rural Oregon, does "not view the FCC's new rules as creating any new substantial burdens for [it]," but rather believes "that the rules will . . . help promote competition among [ISPs]." ComSpan Decl. ¶¶ 5, 10. ISP Fatbeam "intends to continue to expand its networks, deploy fiber and provide smaller third and fourth tier markets with competitive fiber optic broadband options." Fatbeam Decl. ¶ 6. In the words of ISP Sonic CEO Dane Jasper: "[w]ith the new rules in place, Sonic intends to continue to expand its network footprint." Sonic Decl. ¶ 9. And Brad Burnham testifies that a stay would make his venture capital firm, Union Square Ventures, "reluctant to invest in web companies that rely heavily on ISPs to carry traffic to and from customers." Union Square Ventures Decl. ¶ 13; *see also* Vonage Decl. ¶ 23.

C. Petitioners Claim to Be Hurt by Vague Standards Even Though Many Had Previously Asked for No Bright-Line Rules at All

Petitioners claim to be irreparably harmed by the "sweeping yet indeterminate 'Internet conduct standard,'" Motion at 26, and would prefer a Napoleonic Code of precise, granular prohibitions, with no "catch-all." Previously, however, many Petitioners and their members had emphatically requested the

opposite—case-by-case adjudication with no bright-line rules. ACA supported an assessment on a "case-by-case basis rather than adherence to . . . 'one-size-fits-all' prescriptions"; AT&T supported a "'commercial reasonableness' requirement"; CenturyLink supported "a rigorous *ex post* process," as "opposed to overly prescriptive rules"; NCTA supported a "multi-factor, case-by-case standard"; TWC opposed a "prescriptive technical standard which will quickly become outdated," and supported a "case-by-case review . . . in contrast to the categorical ban"; and Verizon opposed a "prescriptive approach."[3] All of these approaches would have relied on case-by-case adjudication to a greater extent than the *Order* below, because they would not have been aided by any bright-line rules, suggesting that Petitioners have seized on vagueness as a pretext.

Moreover, as the *Order* notes, the carefully tailored general conduct standards are designed to account for the fact that the bright-line rules are in fact narrower than the 2010 rules, which included a broad prohibition against discrimination based on a four-factor test. *Order* ¶ 138.

[3] ACA, Comments, GN Docket No. 14-28, at 27-28 (July 17, 2014); Letter from Henry Hultquist, AT&T, to Marlene Dortch , GN Docket No. 14-28, at 4 (Oct. 24, 2014); CenturyLink, Comments, GN Docket No. 14-28, at 36 (July 17, 2014); NCTA, Reply Comments, GN Docket Nos. 14-28, 10-127, at 24-25 (Sept. 15, 2014); Time Warner Cable, Inc., Reply Comments, GN Docket No. 14-28, at 5, 15 (Sept. 15, 2014) (citations omitted); Verizon, Comments, GN Docket Nos. 10-127, 14-28, at 18 (July 15, 2014).

D. Petitioners' Other Claimed Injuries Are Hypothetical or Nonexistent

Privacy. Many Petitioners complain that the need to respect their customers' privacy will constrain their marketing efforts and harm sales. Motion at 29-30. These complaints, most of which are hedged by the telltale "[t]o the extent that" qualifier, *see, e.g.*, WinDBreak Decl. ¶¶ 7-8, 14, 19; Bagley Util. Decl. ¶¶ 7-8, 14, do not establish irreparable harm.

First, it would appear that greater respect for privacy is a potential asset, not a liability, for an ISP's marketing team: increased privacy protections have the potential to "overcome some obstacles that consumers face in the adoption and use of broadband." PRC Decl. ¶ 7.

Second, Petitioners try to manufacture an injury out of a gift. They complain that the privacy requirements are vague because the FCC forbore from applying the full set of its detailed rules applicable to voice telephony in favor of a more streamlined treatment—relief in which Petitioners, once more, see injurious vagueness. In fact, the Public Notice issued this past Wednesday by the FCC specifies that, should ISPs have questions, they need only ask. *See* FCC, Public Notice, Enforcement Advisory No. 2015-03, DA 15-603 (May 20, 2015).

Third, Petitioners must abide by at least comparable—if not more stringent—privacy requirements today. ISPs' telephone or cable businesses must comply with FCC privacy protections. And all of the declarants' broadband

Internet access offerings are currently subject to the FTC's broad Section 5 jurisdiction. 15 U.S.C. § 45. Petitioners cannot fairly claim irreparable injury as a result of transitioning from the jurisdiction of one regulator to another. AT&T, for its part, prefers to find itself in a regulatory no-fly zone: it is asking another Court of Appeals to dismiss an FTC action regarding broadband access on the ground that the FTC is preempted by the FCC's oversight while also asking this Court to exempt it from the FCC oversight after all. *See FTC v. AT&T Mobility LLC*, No. C-14-4785 (N.D. Cal. May 15, 2015) (order granting AT&T's motion to certify to the Ninth Circuit the question of whether the FCC's *Order* stripped the FTC of jurisdiction over AT&T's mobile broadband services).

State Burdens and Pole Attachments. Petitioners raise the specter of additional state taxes and fees or new franchise requirements as a result of reclassification. But no Petitioner shows that such burdens depend on the FCC's determination, as opposed to state or local law. In any event, the Internet Tax Freedom Act prohibits states and localities from imposing taxes on Internet access; on that basis, the *Order* specifically prohibits the imposition of new state taxes and fees as a result of reclassification.

Petitioners look a gift horse in the mouth once again in their claims regarding pole attachments. The FCC's *Order* makes it easier for ISPs to obtain access to the utility poles at issue—providing a significant, new benefit to ISPs.

Google Decl. ¶ 7. Petitioners merely speculate that increased pole attachment fees are contractually possible, but they provide no contracts and no evidence that such increases will actually occur, let alone that they would be unable to recoup those costs in the unlikely event they succeed on the merits here.

Interconnection. Petitioners make only one claim of current, as opposed to potential future, harm. They maintain that the FCC's oversight of an ISP's connection to the Internet—which was not addressed by the *2010 Open Internet Rules*—has resulted in demands for significant changes to so-called interconnection agreements.

Here is the reality: 99% of ISPs have not, and do not, seek to charge Internet companies when those companies deliver content requested by the ISPs' own subscribers.[4] Only a handful, the especially dominant ones that cover a large portion of the nation's population, have recently embarked on an effort to extract payment for access to their networks to deliver content requested by their own customers. Cogent Decl. ¶¶ 10-11; Level 3 Decl. ¶ 12; Vimeo Decl. ¶ 12. That small minority of dominant ISPs could eliminate the possibility of FCC review of their interconnection practices simply by adhering to the historical norm of

[4] *See, e.g.*, Netflix, Inc., Amended Petition to Deny, MB Docket No. 14-57, at 49 (Aug. 27, 2015); Declaration of Kevin McElearney, MB Docket No. 14-57, ¶ 3 (Sept. 19, 2014) (Exhibit 4 to Comcast Corp., Opposition to Petitions to Deny and Response to Comments, MB Docket No. 14-57 (Sept. 23, 2014)).

maintaining sufficient interconnection capacity and allowing customers to access the content for which they have already paid. Cogent Decl. ¶ 18. And so, when Petitioners complain they are asked to agree to interconnection without payment, their real grievance is that they do not want to maintain the historical status quo of no-charge interconnection. Level 3 Decl. ¶¶ 6, 12.

When a consumer attempts to access an Internet video, for example, a small message travels from her home over an ISP's network to the point at which the ISP connects to the Internet. Cogent Decl. ¶ 5; Netflix Decl. ¶ 6; Vimeo Decl. ¶¶ 8-9. From there, the request can travel over countless routes to an OVD such as Hulu. The OVD responds by sending the video over the Internet using any number of the competitive Internet transit providers or CDNs to the ISP's doorstep. Cogent Decl. ¶ 14; Netflix Decl. ¶ 8. It is at this doorstep that the competitive ecosystem of the Internet terminates, Cogent Decl. ¶ 14; Level 3 Decl. ¶ 10, Netflix Decl. ¶¶ 9-10, and the ISP has total control over whether it will open its door to allow the video to travel the "last mile" to its customer. Level 3 Decl. ¶¶ 10-11; Netflix Decl. ¶¶ 9-10.[5]

[5] Nor does the FCC's oversight of interconnection extend to the vast and complex web that represents the Internet backbone, as CenturyLink implies. CenturyLink Decl. ¶¶ 10-13. Rather, it extends only to the ISP's doorstep. Netflix Decl. ¶ 11, Figure 1.

Moreover, Petitioners' claim that the possibility of a *future* dispute at the FCC already is resulting in irreparable harm fails because every ISP has adequate defense measures at its disposal: for example, it can seek a declaratory ruling from the FCC or a stay of an FCC action based on those particular and definite circumstances and in an as-applied challenge to the FCC's authority. Even if no stay is obtained, the ISP can easily reverse any previously required system upgrades if it ultimately prevails on the merits. The only risk of harm in such a case is that the ISP's customers might have become accustomed to receiving better service for a period of time. Cogent Decl. ¶ 16.

III. GRANTING A STAY WOULD RESULT IN SUBSTANTIAL HARM TO OTHER PARTIES

Petitioners give short shrift to the idea that anyone else would be harmed by grant of a stay, stating that a stay would not harm third parties or the public because it would preserve a regulatory regime that has "greatly benefited consumers." Motion at 34-35. Not so.

Degradation of Consumers' and Businesses' Internet Access. Consumers and businesses today are being harmed by ISPs that continue to degrade their points of interconnection. Cogent Decl. ¶¶ 11-12; Level 3 Decl. ¶ 13. This behavior threatens the very fabric of the Internet—which works precisely because it allows consumers and businesses to have unfettered access to "all or

substantially all Internet endpoints," *Order* ¶ 25, and is at odds with the ISPs' promise to consumers of high-speed access to the Internet.

This harm is tangible and continues today. The graph from the attached declaration of Cogent CEO Dave Schaeffer demonstrates that Time Warner Cable's facilities in Dallas, Texas are congested to the point where a consumer's ability to access content is degraded for substantial portions of the day. Cogent Decl. ¶¶ 8-9. This harms consumers, who cannot access content using bandwidth for which they have paid, and also harms the Internet companies originating and delivering the content to the consumer. *Id.* ¶¶ 11-12.

The best-documented examples of such harm involve online video. Many ISPs have the incentive to harm distributors of online video content, which threaten the ISPs' video distribution businesses. *Order* ¶ 20; *see also* Vonage Decl. ¶ 21. Although the online video industry is nascent, traffic from existing online distributors represents over 50 percent of all Internet traffic requested by the ISPs' customers. *Id.* ¶ 197 n.490. It is not surprising, therefore, that the FCC concluded that "anticompetitive and discriminatory practices in this portion of broadband Internet access service can have a deleterious effect on the open Internet." *Id.* ¶ 195. Declarations from DISH Network, Netflix, and Vimeo demonstrate that the threat of disruption continues to loom over the heads of all OVDs—both big and small. DISH Decl. ¶ 13; Netflix Decl. ¶¶ 18-19; Vimeo Decl. ¶¶ 12-13. In essence,

Petitioners ask the Court to eliminate the FCC's ability to protect against harms to half of all traffic that their broadband subscribers request and for which they pay.

The harm from degradation of Internet connectivity extends well beyond the consumption of online video, and threatens all edge providers. *See* Etsy Decl. ¶ 8. For example, companies increasingly use the Internet to give their employees the ability to work remotely. If a company uses an Internet transit provider such as Cogent to allow employees to connect through an ISP that is degrading its connectivity, the remote-work application will not function. Cogent Decl. ¶ 12. This concern is not speculative. Devan Dewey, Chief Technology Officer for NEPC, LLC, states that over the course of two months, his employees in the Boston area were often unable to telework because of degradation caused by Verizon and Comcast—the dominant ISPs for the Boston-area employees. NEPC Decl. ¶¶ 6-7, 9-11.

Similarly, a Measurement Lab ("M-Lab")[6] study concluded that customers of five of the largest ISPs—AT&T, CenturyLink, Comcast, Time Warner Cable, and Verizon—experienced sustained performance degradation when the

[6] M-Lab provides the world's largest collection of open Internet performance data, and its datasets have been used by a number of parties, including in the proceedings below, to evaluate interconnection performance. M-Lab Decl. ¶ 2.

customers' communications passed through interconnection points with Cogent, Level 3, and XO. *See* M-Lab Decl. ¶ 3.

Although the ISPs' degradation strategies harm their own customers, the lack of meaningful broadband competition, high switching costs, and opaqueness as to the degradation's cause, largely immunizes them from the possibility that their customers will terminate service or switch providers.[7] Cogent Decl. ¶ 14; Level 3 Decl. ¶¶ 13-14. Since Petitioners have failed to show irreparable harm, the stay analysis should be at an end. *Chaplaincy of Full Gospel Churches v. England*, 454 F. 3d 290, 297 (D.C. Cir. 2006) ("A movant's failure to show any irreparable harm is therefore grounds for refusing to issue a preliminary injunction, even if the other three factors entering the calculus merit such relief.").

The Risk from Circumvention of Bright-Line Rules. The FCC below was faced with a challenge common to all regulators and competition authorities: how

[7] The FCC found that roughly 17% of broadband customers change providers annually, and 7% when corrected for people who moved residences. *See* FCC, *Broadband Decisions: What Drives Consumers to Switch—or Stick With—Their Broadband Internet Provider*, at 5-6 (Dec. 2010). This is true even though many ISPs remain at the bottom on consumer satisfaction surveys. Press Release, American Consumer Satisfaction Index, ACSI: Subscription TV and ISPs Plummet, Cell Phone Satisfaction Climbs (May 20, 2014).

to protect the public against known and unknown unreasonable practices that arise from Petitioners' own anticompetitive incentives.[8]

It is difficult to predict with certainty how Petitioners may implement these incentives, and how these strategies would harm consumers or competitors in the Internet ecosystem. Etsy Decl. ¶ 11. Few predicted that ISPs would degrade interconnection points. As a result, the FCC is at a disadvantage in knowing what future conduct will harm the ecosystem, making bright-line rules necessary but insufficient. Petitioners suggest that consumers will be adequately protected if the Court were to grant their motion for a stay, preserving only the FCC's bright-line rules. That is not the case.

Degradation at the interconnection point is one example. When prohibitions similar to the bright-line rules were adopted as part of the 2010 Open Internet Rules, several ISPs began to "engineer" around them to harm distributors of online video content by degrading the ISPs' points of interconnection.[9] It is precisely for

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[8] The FCC has long ago identified the ability and incentive of Petitioners to engage in behavior that harms the Internet ecosystem—a finding this Court upheld. *See Verizon*, 740 F.3d at 646 (citation omitted).

[9] *See, e.g.*, Letter from Markham Erickson, Counsel to COMPTEL, to Marlene Dortch, FCC, GN Docket No. 14-28, at 2 (Feb. 19, 2015); Letter from Angie Kronenberg, COMPTEL, to Marlene Dortch, FCC, GN Docket No. 14-28, at 2-5 (Jan. 13, 2015); Letter from Christopher Libertelli, Netflix, to Marlene Dortch, FCC, GN Docket No. 14-28, at 1-2, 5-6 (Nov. 5, 2014).

this reason that the bright-line rules would become a dead letter if unaccompanied by a general conduct standard preventing Petitioners from unreasonably interfering or disadvantaging consumers and edge providers.

Data caps are another example: Petitioners are able to set a ceiling on the amount of content a consumer can access under a "data plan," and they can apply those caps in a discriminatory manner by exempting their affiliated content from such limits. DISH Decl. ¶ 12; Vimeo Decl. ¶ 13. The use of discriminatory data caps is increasingly commonplace. The FCC chose not to impose a bright-line rule against the use of data caps, relying instead upon case-by-case adjudication under its general conduct standard to police this conduct. *Order* ¶ 153.

In a marketplace where Internet companies swim or sink at an unprecedented pace, the FCC's ability to investigate complaints of behavior antithetical to an open Internet but otherwise not covered by the enumerated bright-line rules is crucial. A stay of the "no unreasonable interference/disadvantage" standard would provide ISPs with a window of opportunity for harming rivals or extracting rent from a dynamic marketplace where competitors can go from charmed to bankrupt in the span of a few months.

Accessibility. A stay of the FCC's accessibility authority will also harm the most vulnerable. The FCC's rules for telecommunications accessibility, based on Section 255 of the Communications Act, now apply to ISPs. *Order* ¶ 472. Those

rules help ensure that "network services and equipment do not impair or impede accessibility," as well as other protections that do not otherwise apply to ISPs. *Order* ¶ 474. Staying them would hinder a variety of services on which people with disabilities depend on to live full and productive lives. TDI Decl. ¶ 4, 6.

Privacy. By providing a guarantee of privacy protection, the *Order* will benefit consumers (who often lack alternatives and self-help options) and companies that serve privacy-conscious Internet users.[10] Conversely, in the event of a stay, Internet users will have little recourse to prevent their private information from being used against their will. They will thus be harmed if the FCC's protections are set aside.

Pole Attachments. Delayed application of the FCC's pole attachment authority is also likely to have a detrimental effect on broadband deployment. Costs associated with pole attachments "can total up to 20% of the cost of a fiber optic deployment." Google Decl. ¶ 8. Absent expansion of the FCC's authority over pole attachments to ISPs not offering cable or telephony services, such ISPs can face significant delays and obstacles in obtaining access to poles and similar

[10] As this Court has previously recognized, there are real harms from even the temporary loss of privacy protections—harms that would not be prevented by the bright-line rules alone. *See National Cable & Telecommunications Assocation v. FCC*, 555 F.3d 996, 1001 (D.C. Cir. 2009); *Verizon California, Inc. v. FCC*, 555 F.3d 270, 344-45 (D.C. Cir. 2009).

infrastructure, which can cause network deployment costs to increase. *Id.* ¶ 9. The *Order* thus "remove[s] unpredictability associated with negotiating for permission to use existing poles, ducts, and conduits in the absence of access rights, thus speeding and lowering the cost" of an ISP's "deployment of new broadband networks." *Id.* ¶ 10. Petitioners' stay request would therefore inhibit and delay "competition as well as broadband investment and deployment." *Id.* ¶ 8.

* * *

The harms demonstrated in each of the attached declarations submitted here are far more compelling than those asserted by Petitioners, militating against grant of Petitioners' stay request. *See Washington Metro. Area Transit Comm'n v. Holiday Tours, Inc.*, 559 F.2d 841, 844 (D.C. Cir. 1977); *Comm. on the Judiciary, U.S. House of Representatives v. Miers, et al.*, 575 F.Supp. 2d 201, 208 (D.D.C. 2008) (stating that "the non-moving party . . . need only explain why it will suffer *substantial* harm.") (emphasis in original).

IV. CONCLUSION

For the reasons discussed herein, Intervenors ask the Court to deny Petitioners' request for a stay. Intervenors support expedited briefing on the merits.

* * *

/s/ *Pantelis Michalopoulos*

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RULE ECF-3(B) ATTESTATION

In accordance with D.C. Circuit Rule ECF-3(B), I hereby attest that all other parties on whose behalf this joint motion is submitted concur in the motion's content.

/s/ Pantelis Michalopoulos
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May 22, 2015

CERTIFICATE OF SERVICE

I hereby certify that on this 22nd day of May 2015, I caused true and correct copies of the foregoing Intervenors' Motion of Opposition to Petitioners' Motion for Stay to be filed electronically with the Clerk of the Court using the Case Management and Electronic Case Files ("CM/ECF") system for the D.C. Circuit. Participants in the case will be served by the CM/ECF system or by U.S. Mail.

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IN THE UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT

UNITED STATES TELECOM ASSOCIATION, et al., *Petitioners*, v. FEDERAL COMMUNICATIONS COMMISSION, and UNITED STATES OF AMERICA, *Respondents.*	No. 15-1063 (and consolidated cases)

EXHIBITS TO OPPOSITION OF INTERVENORS TO PETITIONERS' MOTION FOR STAY

Exhibit 1	Declaration of Dave Schaeffer, Cogent Communications
Exhibit 2	Declaration of Mark Scully, ComSpan Communications, Inc.
Exhibit 3	Declaration of Roger Lynch, DISH Network Corp.
Exhibit 4	Declaration of Chad Dickerson, Etsy, Inc.
Exhibit 5	Declaration of Gregory Green, Fatbeam
Exhibit 6	Declaration of John Toccalino, Google Inc.
Exhibit 7	Declaration of Mark Taylor, Level 3 Communications, LLC
Exhibit 8	Declaration of Chris Ritzo, Measurement Lab
Exhibit 9	Declaration of Devan F. Dewey, NEPC, LLC
Exhibit 10	Declaration of Ken Florance, Netflix, Inc.

Exhibit 11	Declaration of Beth Givens, Privacy Rights Clearinghouse
Exhibit 12	Declaration of Dane Jasper, Sonic Telecom
Exhibit 13	Declaration of Claude Stout, Telecommunications for the Deaf and Hard of Hearing
Exhibit 14	Declaration of Brad Burnham, Union Square Ventures
Exhibit 15	Declaration of Kerry Trainor, Vimeo, LLC
Exhibit 16	Declaration of Brendan Kasper, Vonage Holdings Corp.
Exhibit 17	Declaration of William P. Zarakas and Matthew Aharonian, The Brattle Group

Exhibit 1

Declaration of
Cogent Communications

IN THE UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT

UNITED STATES TELECOM ASSOCIATION, *et al.*,	)	
Petitioners,	)	
v.	)	**No. 15-1063 (and consolidated cases)**
FEDERAL COMMUNICATIONS COMMISSION and UNITED STATES OF AMERICA,	)	
Respondents.	)	

DECLARATION OF DAVE SCHAEFFER

1. My name is Dave Schaeffer. I am the Founder and Chief Executive Officer of Cogent Communications. I submit this declaration in connection with the above-captioned proceeding based upon facts of which I have personal knowledge or information provided to me.

2. Cogent is a multinational Internet provider. Our purpose-built, facilities-based Internet Protocol network spans across North America, Europe and Asia. Cogent has nearly 60,000 route miles of intercity fiber and more than 27,000 metro fiber miles. Our network provides service to over 180 major markets and interconnects with over 5,000 other networks, including those of customers and

other Internet providers. Interconnection is the process through which networks exchange Internet data or traffic.

3. Cogent serves two general categories of customers. First, we provide high-speed Internet access service to corporate customers, typically small- and medium-sized businesses. Second, we provide high-bandwidth Internet connectivity to our "NetCentric" customers, such as other ISPs and Internet application or content providers, including Netflix and YouTube.

4. To understand the fallacy of Petitioners' claims of irreparable harm associated with the Federal Communications Commission's (the "Commission") decision to address interconnection disputes on a case-by-case basis, it is first necessary to briefly explain how consumers access Internet content.

5. Suppose, for example, that a broadband Internet access service ("BIAS") customer of a mass market ISP (*e.g.*, Time Warner Cable) wants to watch a streaming video from an online content provider (*e.g.*, Netflix). Further suppose that Netflix has contracted with Cogent to provide Internet connectivity. In this example, the customer—who has paid Time Warner Cable for access to all lawful Internet content—would access their chosen video as follows:

a. The customer opens a Netflix application on a tablet or smartphone or goes to Netflix's website and selects the video of their choice;

b. That request is carried from the customer by Time Warner Cable and passed off to Cogent at an interconnection point—the place where two Internet networks exchange Internet traffic;

c. Cogent carries that request to its customer, Netflix;

d. In response to the request, Netflix sends the video over Cogent's network, and then Cogent delivers that Internet traffic (*i.e.*, the video) to Time Warner Cable at an interconnection point; and

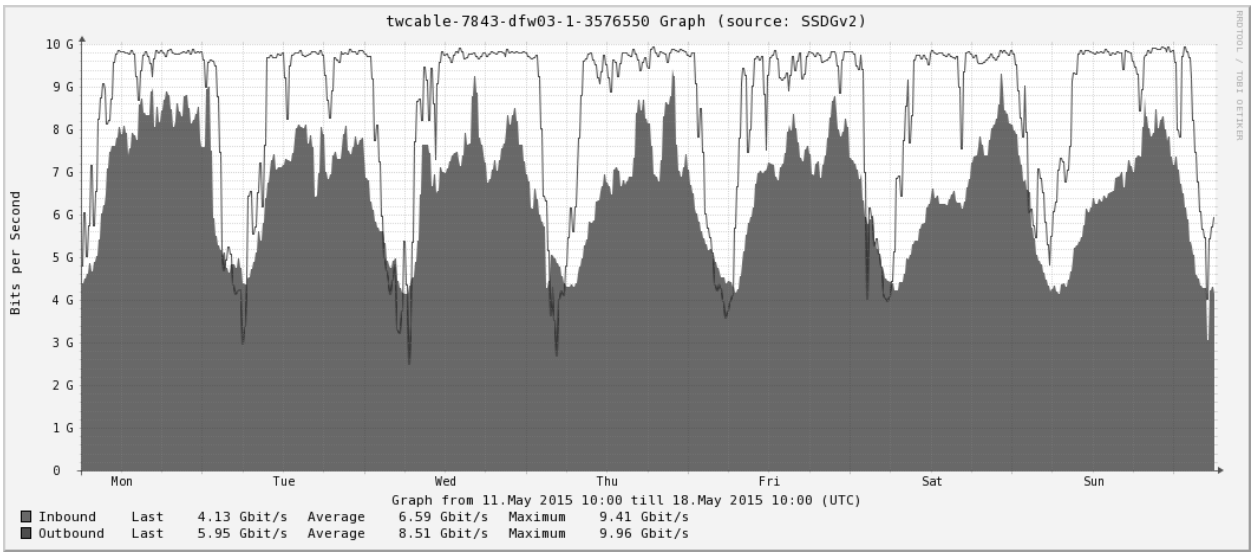
e. Time Warner Cable, in turn, accepts the video and delivers it to its customer.

6. In a properly functioning Internet ecosystem this exchange of Internet traffic happens quickly and at high quality.

7. For that to happen, however, there must be sufficient interconnection capacity between the Cogent and Time Warner Cable networks. If there is not, then the delivery of the video is degraded and customers receive a sub-optimal broadband experience. Unfortunately, a lack of sufficient interconnection capacity has become the norm for a handful of the largest BIAS providers.

8. An example of this problem can be seen by examining the exchange of Internet traffic between Cogent and Time Warner Cable in Dallas, Texas for the week of May 11, 2015.

TWCable-Cogent Dallas, 10G capacity, week of 5-11-15 – 9,886.5 DPM



9. As illustrated in the foregoing graph, Cogent's interconnection facilities with Time Warner Cable in Dallas are congested. The top lines represent traffic being delivered from Cogent to Time Warner Cable in response to requests from Time Warner Cable customers.[1] For substantial portions of the day, that traffic is very close to the capacity of the interconnection port. Most concerning, during such times the traffic exceeds by a significant amount the level at which congestion leads to dropped packets (*i.e.*, data that does not get through) which cause a degradation in Internet service, especially for bandwidth-intensive or latency-sensitive content and applications.

10. It is critical to understand that this congestion is not attributable to network capacity issues on either side of the interconnection. Nor is it attributable

[1] The shaded portion of the graph represents traffic flowing from Time Warner Cable's network to Cogent's network.

to the costs it would take to remedy the congestion, which are modest.[2] Rather, it is attributable to the decision by certain large BIAS providers like Time Warner Cable to let congestion persist, notwithstanding the absence of any technical or financial impediments to remedying it and ensuring optimal broadband experiences for their own customers.

11. Although the largest BIAS providers are facing increasing threats to their legacy voice and video businesses from innovative online competitors, whether that is the reason for their congestion-creating strategy is beside the point for present purposes.[3] What matters is that American broadband consumers have

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[2] In fact, in March of 2014 Cogent offered to pay the capital costs associated with upgrading its interconnection facilities with AT&T, Comcast, Time Warner Cable and Verizon. *See* "Cogent Offers to Pay Capital Costs Incurred by Major Telephone and Cable Companies Necessary to Ensure Adequate Capacity," Press Release, Mar. 21, 2014, *available at* http://www.cogentco.com/en/news/press-releases/631-cogent-offers-to-pay-capital-costs-incurred-by-major-telephone-and-cable-companies-necessary-to-ensure-adequate-capacity. Not one of these BIAS providers accepted that offer, although recently Cogent entered into a new interconnection agreement with Verizon. *See* "Cogent and Verizon Enter Into Interconnection Agreement," Press Release, May 1, 2015, *available at* http://www.cogentco.com/en/news/press-releases/714-cogent-and-verizon-enter-into-interconnection-agreement. As noted in the press release, "As the Internet continues to grow and evolve, Internet service providers are negotiating business agreements that allow exchange of Internet traffic in a scalable, resilient and reliable manner. Focusing on the customer, this agreement allows consumers of both Cogent and Verizon to enjoy high-performance speeds to enable new, high-bandwidth applications."

[3] It is worth noting, however, that the tactics used by some of the largest BIAS providers is of relatively recent vintage. Historically, such networks interconnected with transit or backbone networks like Cogent on a settlement-free

been hurt by these practices, are being hurt today, and will continue to be hurt unless the largest BIAS providers change course.

12. It is also worth noting that the harm inflicted on Americans is not simply a diminished online entertainment experience. Increasingly, consumers rely on the Internet for a wide variety of uses. For example, a working mother who wants to stay home with a sick child and telecommute must have Internet access to connect with her corporate network. However, if that person's employer uses Cogent as their ISP and her home BIAS provider has congested interconnections with Cogent then that access will be impaired. This is not speculative. Cogent has received complaints from customers whose employees are functionally blocked from telecommuting because of such congestion.[4]

13. This example underscores a critical fact of Internet architecture: without interconnection, there is no Internet access, only access to a BIAS

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basis (*i.e.*, without monetary compensation in either direction) and regularly upgraded interconnection facilities when they approached the level at which packet loss and the resulting degradation of service occurred. The advent of those BIAS providers' attempts to extract access charges for accepting Internet traffic coincided with the emergence of online services that competed with their own video and voice offerings.

[4] *See also* Susan Crawford, *Jammed: The Cliff and the Slope*, Medium, https://medium.com/backchannel/jammed-e474fc4925e4 (Oct. 30, 2014) (explaining how congested interconnection facilities between transit and BIAS providers harm individual and business broadband users).

provider's own network. Likewise, without robust interconnection, there is no robust Internet access. Instead, there is impaired Internet access.

14. The problem is compounded by the fact that millions of American consumers have only one or two choices for obtaining broadband Internet access, and switching providers is notoriously difficult. Moreover, because the only way to reach a BIAS provider's customer is by interconnecting with a BIAS provider's network, such networks have and exercise terminating access control. This is in stark contrast to the robustly competitive Internet transit market in which Cogent competes. Put differently, while there are numerous options for a content provider like Amazon to reach a BIAS provider's network, all of those options ultimately must interconnect through the gate that the BIAS provider controls.

15. Ignoring (a) the concrete evidence of consumer harm, (b) the undisputed fact that the only Internet traffic delivered to BIAS providers by transit providers like Cogent is content requested and paid for by BIAS provider customers, and (c) the dynamics of the market in which BIAS providers operate, Petitioners claim that *they* will suffer irreparable harm if it turns out that one or more of them have to answer a complaint at the Commission challenging their interconnection practices. This claim cannot withstand scrutiny.

16. If such cases are filed—and if the complainants prevail—then a BIAS provider might be required to upgrade its interconnection facilities to relieve

congestion (*i.e.*, it would be ordered to revert to the historical norm). If that happens, at that point a BIAS provider who is subject to an enforcement action and is ordered to upgrade its interconnections (at a modest cost) can seek a stay of that particular remedy pending appeal of the decision or, if no stay is sought or obtained, easily reverse the upgrades if it succeeds on appeal. In that situation, the only risk of irreparable harm is that the BIAS provider's customers might have become accustomed to receiving better service for a period of time. That stands in stark contrast to the harm being inflicted on broadband customers right now as a result of congestion.

17. Finally, two additional points bear emphasis. First, it is worth noting that Petitioners' tactical exclusion of the so-called bright line rules (no blocking, no throttling, and no paid prioritization) from their stay petition does not cure the harm to consumers. That is because consistently congested interconnection facilities—for which a stay would eliminate any possible remedy—cause the same consumer frustrations and injury as blocking or throttling, and perhaps more, as they impact all bandwidth-intensive and latency-sensitive traffic that cross an interconnection point.

18. Second, the deliberate congestion of interconnection facilities that Petitioners seek to perpetuate through a stay is employed by only a small number of BIAS providers, albeit those who serve millions of consumers. As a result, the

overwhelming majority of BIAS providers who choose not to engage in such conduct, and never have, face zero risk from a case-by-case enforcement process relating to interconnection in which they will never be involved.

I declare under penalty of perjury under the laws of the United States that the foregoing is true and correct.

Executed on May 19, 2015

Dave Schaeffer
Chief Executive Officer
Cogent Communications

Exhibit 2

Declaration of ComSpan Communication, Inc.

IN THE UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT

UNITED STATES TELECOM ASSOCIATION, Petitioner, v. FEDERAL COMMUNICATIONS COMMISSION and UNITED STATES OF AMERICA, Respondents.	Case No. 15-1063 (and consolidated cases)

DECLARATION OF MARK SCULLY

I, Mark Scully, being over 18 years of age, swear and affirm as follows:

1. I make this declaration using facts of which I have personal knowledge or based on information provided to me, and in connection with the D.C. Circuit's review of the FCC's recent *Open Internet Order*.

2. I am the Chief Executive Officer of ComSpan Communications, Inc. and have primarily worked in secondary and rural markets since 1985 in the interexchange and enhanced services businesses immediately after the divestiture of AT&T; and in the competitive local exchange carrier and Internet service provider marketplace since the passage of the Telecommunications Act of 1996. My expertise is in launching early venture telecommunications companies when

the regulatory environment and new technologies allow for the introduction of innovative services.

3. ComSpan is a certified competitive local exchange carrier ("CLEC") providing fiber-to-the-premises ("FTTP") services to about 2,100 residential, commercial and governmental subscribers in four otherwise unserved and underserved rural communities in southwestern Oregon using fiber optic cable rings and direct lateral spurs.

4. ComSpan was formed in 1998 as a traditional switch-based CLEC after the implementation of the Telecommunications Act of 1996, initially providing voice services by investing heavily in local switching assets and other central office equipment while using the outside plant infrastructure of other telecommunications providers. In 2007 ComSpan made a substantial financial commitment for a long-term market presence to install its own fiber-optic cable plant facilities, including last mile access to over 6,000 properties, middle-mile backbone within town limits, and, when not present, its own intercity fiber-optic transport in the four rural communities it serves. Beyond investment in fiber-optic cable outside plant, ComSpan simultaneously invested in other technology to provide full-service solutions including additional local switching infrastructure, supporting central office equipment, a satellite earth station and a video headend, much of which has been subsequently upgraded due to the relative rapid speed of

obsolescence. This investment and subsequent upgrades have allowed us to provide a triple-play package to our customers—namely voice services, high-speed Internet access and video programming content. As a result, ComSpan became the only company offering FTTP to residences and businesses of all economic strata in the towns of Bandon, Myrtle Point, Coquille, and Reedsport, Oregon.

5. ComSpan supports the *Open Internet Order* and the Commission's new rules. We believe that these new rules are important for protecting consumers from intentional misconduct and overt malfeasance in our industry, as evidenced in past documented transgressions. But just as important, we believe that the rules will also help promote competition among broadband Internet access service ("BIAS") providers. Alternatively, without the *Open Internet Order,* companies such as ComSpan throughout the country have no practical timely recourse if harmed by dominant carriers abusing their market power.

6. I understand that some BIAS providers have suggested that the FCC's regulations will prevent network deployment. We simply do not see the FCC's regulations as adding much in the way of regulatory burdens. In our view, the real impediment to building additional outside plant is the increasing video programming costs related to providing linear video distribution services (i.e., cable television).

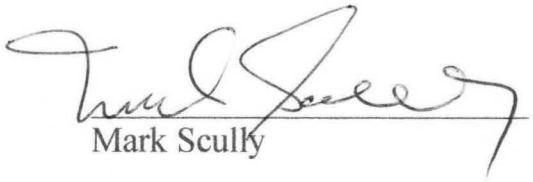
7. Today, many consumers expect and demand to purchase video services alongside of BIAS. However, video is a game of scale, and small operators like ComSpan simply have none. As a result, while traditional large cable companies such as Comcast, TimeWarner, Charter and now traditional large ILECs such as AT&T (i.e.: U-verse) and Verizon (i.e.: FiOS) are able to negotiate significant discounts from video programmers, we are required to pay whatever price the large programmers demand. ComSpan currently sells video services at a loss, simply so that we can maintain the complementary voice and data service subscriptions that utilize other major, but separate investments in our network.

8. There is hope on the horizon for small providers like ComSpan thanks to Internet-based services that have begun offering streaming video services that increasingly compete directly with traditional cable and satellite TV. Over time, we hope that the online video distribution industry (OVD) becomes robust enough to provide consumers with the ability to fully "cut-the-cord." If the OVD industry grows as expected, companies such as ComSpan will be able to eliminate their video programming costs by dropping our cable television offering and providing only high-speed broadband Internet access. Without having to provide video at a loss, we could further invest in our broadband infrastructure—potentially building out our network to more communities and providing competition to large BIAS providers.

9. I believe that the FCC's new rules—including the general conduct standards—are critical to ensuring the growth of the online video distribution industry. Large BIAS providers have very recently demonstrated their willingness to degrade even popular online video services, such as Netflix, by leveraging their control over the part of their networks that interconnects with the public Internet backbone. If large BIAS providers are able to suppress these new online video entrants, the value of a broadband-only offering will not grow to make a compelling enough product for consumers to want to cut-the-cord.

10. The possibility of increased competition in the BIAS market comes at a relatively low cost. I understand that some BIAS providers have suggested that their uncertainty as to the FCC's enforcement of various provisions of Title II will cause them to pull back on investment and buildout. While we are sensitive to new costs associated with regulatory burdens, we do not view the FCC's new rules as creating any new substantial burdens for us, changing how we interact with our subscribers, or substantially altering how we sell or market our services. As for legal costs, we do not foresee getting ourselves into situations in which we need to explain ourselves to the FCC. To the extent we need to seek clarity on any particular issue, we will likely be able to defray the costs of doing so through our participation in industry groups, such as COMPTEL or by utilizing the new advisory opinion process created by the FCC.

Pursuant to 28 U.S.C. § 1746, I hereby certify under penalty of perjury that the foregoing is true and correct. Executed this eighteenth day of May, 2015.



Mark Scully

Exhibit 3

Declaration of
DISH Network Corporation

IN THE UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT

UNITED STATES TELECOM ASSOCIATION, Petitioner, v. FEDERAL COMMUNICATIONS COMMISSION and UNITED STATES OF AMERICA, Respondents.	Case No. 15-1063 (and consolidated cases)

DECLARATION OF ROGER J. LYNCH

I, Roger J. Lynch, being over 18 years of age, swear and affirm as follows:

1. I make this declaration using facts of which I have personal knowledge or based on information provided to me, and in connection with the D.C. Circuit's review of the Federal Communications Commission's ("FCC") recent *Open Internet Order*.

2. I am currently Executive Vice President of the Advanced Technologies and International Group for DISH Network Corporation ("DISH"). I am also the Chief Executive Officer of *Sling TV*.

3. DISH is a satellite TV operator serving nearly 14 million subscribers, a distributor of online television programming in the form of the *Sling TV*, an

Internet Service Provider ("ISP") with customers across the country through its dishNET satellite broadband Internet offering, and the holder of more than 40 MHz of nationwide spectrum that could be used, among other things, to provide wireless broadband Internet access to consumers.

4. DISH has come to recognize that consumers increasingly view the Internet as an important source for their information and entertainment needs. This recognition has guided DISH's recent investments in: (1) wireless and satellite broadband Internet access services; and (2) the *Sling TV* service, which delivers multiple channels of live and on-demand programming to subscribers over the Internet.

The FCC's Adoption of Title II Will Not Harm DISH's Willingness to Invest in Broadband Internet Access Services

5. I understand that a number of broadband Internet access providers have claimed that – absent a stay pending appeal – they stand to suffer "irreparable injury" from the *Open Internet Order*, which imposes certain obligations on broadband Internet access providers, and that their investment in broadband access infrastructure will be chilled by the rules.

6. DISH's investments in its satellite and wireless broadband access networks, however, will not be adversely impacted by the *Open Internet Order,* and DISH will *not* be irreparably harmed if the Court denies the Petitioners' motion for a stay of the *Open Internet Order* during the pendency of the appeal.

***Sling TV* Relies Upon High-Speed Broadband Internet Access Controlled by Entities That Offer Competing Video Services**

7. In February 2015, DISH launched a new video service called *Sling TV*. *Sling TV* is a live-streaming over-the-top television service that delivers live sports, lifestyle, family, news, and information channels, video on-demand, and online video to broadband-connected devices over the subscriber's broadband Internet access service. *Sling TV* runs entirely over a customer's separately provisioned high-speed broadband connection, with no satellite dish or traditional cable box required.

8. The high-quality, high-speed broadband Internet access our customers need to access *Sling TV* is today controlled by a few gatekeepers—primarily telephone companies and cable operators. Many of these broadband Internet access providers, such as Comcast, Verizon, AT&T, and Time Warner Cable, provide video products with which *Sling TV* competes. The absence of open Internet rules would place *Sling TV* at the mercy of our competitors, posing an immediate and serious threat to us.

9. *Sling TV* is an innovative product that has been well-received by consumers and critics alike. But without open Internet protections, *Sling TV* would be at the mercy of the broadband access gatekeepers, many of which want to sell consumers their own video packages instead. This harm would persist even if the bright-line prohibitions on blocking, throttling, and paid prioritization were to

remain in place, but the prohibitions on undue interference or disadvantage and on unreasonable discrimination against edge providers (the "General Conduct Standards") were removed. In that case, broadband Internet access providers could use any of a variety of techniques to indirectly circumvent the prohibitions and hurt us in order to either win customers or extract payments from us.

The FCC's Adoption of General Conduct Standards Is Important for Investment in Sling TV

10. I understand that some broadband Internet access providers have said they will abide by the specific, bright-line prohibitions on blocking, throttling, and paid prioritization, but they want the Court to stay the General Conduct Standards. In my view, that would give broadband Internet access providers license to circumvent the rules against blocking, throttling, and paid prioritization by using a variety of techniques.

11. For example, when *Sling TV* content comes across certain interconnection "ports," the broadband Internet access providers can identify *Sling TV* traffic by means of techniques such as deep-packet inspection. Then the broadband Internet access provider can take actions that effectively block or throttle our traffic—seemingly under the guise of innocent interconnection practices. Or it can interfere with our transit or content delivery network provider to disrupt our service or raise our network costs.

12. Similarly, broadband Internet access providers can use discriminatory data caps to favor their own over-the-top video services and disadvantage our services. Some broadband Internet access providers today are either actively using data cap restrictions across their entire footprint or are working to implement them. The extent and implementation of such restrictions can have a significant effect on what sources of video content consumers use.

13. Neither of these actions—interconnection congestion or data caps—would be covered by the FCC's bright-line rules; to the contrary, I believe they would only be covered by the General Conduct Standards. Any delay in the implementation of these General Conduct Standards could subject *Sling TV* to the risk of interference by broadband Internet access providers, which could impact the customer experience and hurt the success of *Sling TV*.

The foregoing declaration has been prepared using facts of which I have personal knowledge or based upon information provided to me. I declare under penalty of perjury that the foregoing is true and correct to the best of my information, knowledge, and belief. Executed this 22nd day of May 2015.

_____

Roger J. Lynch

Exhibit 4

Declaration of Etsy, Inc.

IN THE UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT

UNITED STATES TELECOM ASSOCIATION, Petitioner, v. FEDERAL COMMUNICATIONS COMMISSION and UNITED STATES OF AMERICA, Respondents.	Case No. 15-1063 (and consolidated cases)

DECLARATION OF CHAD DICKERSON

I, Chad Dickerson, declare as follows:

1. I am CEO and Chairman of Etsy, Inc. ("Etsy"). I submit this declaration in support of the Joint Intervenors' Opposition to Petitioners' Motion for a Stay Pending Appeal. I make this declaration on personal knowledge except where indicated otherwise.

2. I have been the Chairman of Etsy since 2014 and CEO since 2011. Previously I was the Chief Technology Officer ("CTO") of Etsy from 2008 until 2011. I have worked in the technology industry for most of my career – teaching myself how to code while working at The (Raleigh, NC) News & Observer, and holding several engineering positions at the Atlanta Journal-Constitution, CNN,

and CNN/Sports Illustrated. I served as CTO at Salon.com and InfoWorld Media Group, and led the Brickhouse/Advanced Product team at Yahoo! prior to joining Etsy.

About Etsy

3. Founded in 2005, Etsy is a marketplace (available at http://www.etsy.com) where people connect, both online and offline, to make, sell and buy unique goods. We are based in Brooklyn, New York, and employ over 700 people worldwide. As of December 2014, Etsy hosted 1.4 million active sellers who together grossed over $1.93 billion in 2014.

4. The vast majority of US-based Etsy sellers – 86% – are women, most of whom are sole-proprietors working out of their homes. In many ways, Etsy functions as an on-ramp to entrepreneurship, enabling sellers to get their creative businesses off the ground without the barriers traditionally associated with launching a business – 42% sold their goods for the first time on Etsy. These micro-entrepreneurs are building businesses in their own right. Fully 79% of Etsy sellers consider their shops a business, and 90% aspire to grow their sales in the future. Thanks to the Internet, Etsy sellers can start a business and access a global market of consumers, all for the price of an Internet connection.

5. Etsy sellers use creative business income to support themselves and their families. For 18%, their creative business is their sole occupation. For the

rest, it provides an important source of supplemental income. When I testified before Congress about the proposed FCC Order, I shared the words of Tina, a seller from Spring Valley, Illinois, who had told the FCC that her family relies on "all my sales to make ends meet. Any change in those and it's the difference between balanced meals for my children and cereal for dinner."

6. Etsy's business model supports sellers. We have made a conscious, values-based choice to take only 3.5% of each sale, and charge just $0.20 to list an item. We made that decision to ensure that the widest range of sellers would have access to the marketplace. Our business model depends not on extracting as much value as possible from the marketplace, but on leveraging the network effects that emerge once the marketplace reaches a certain size. In other words, more sellers attract more buyers, and more buyers attract more sellers. Growth begets growth, and Etsy succeeds by taking a very small percentage of many more transactions.

How Etsy Reaches Buyers and Sellers

7. Our platform connects millions of Etsy sellers and buyers globally, making it one of the largest online marketplaces in the world. The vast majority of Etsy's users are individual consumers and micro-businesses, both of which typically use both wireline and wireless broadband ISPs to access the Internet. Etsy traffic passes through ISP networks in two ways. *First*, sellers upload images and other content to Etsy in order to market their goods. *Second*, Etsy delivers that

user-generated content and the Etsy website experience to consumers, who can search for and purchase goods from Etsy sellers through our website. Etsy buyers and sellers access our online services through both fixed broadband and mobile devices, as well as our suite of mobile apps.

Speed Matters Online

8. In e-commerce, speed has a direct impact on revenue. Research from Google and others (*see* http://radar.oreilly.com/2009/07/velocity-making-your-site-fast.html) demonstrates that delays of milliseconds have long-term negative impacts:

- Research from Bing found that a two second delay changed queries per user by -1.8% and revenue per user by -4.3%.
- Research from Google Search found that a 400 millisecond delay resulted in a -0.59% decrease in searches per user. Even after the delay was removed, these users still had -0.21% fewer searches.
- A performance redesign by Shopzilla resulted in a 5 second improvement in load time, resulting in a 25% increase in page views and a 7-12% increase in revenue.

The evidence demonstrates that load times impact revenue. If customers click on an Etsy seller's shop and perceive images loading slowly, they will click away, and that seller will lose the sale. That's why Etsy devotes considerable engineering resources to increasing the speed at which our pages and images load. Speed doesn't just impact high-bandwidth service such as video. It impacts

any business that depends on the Internet to reach consumers, including the small businesses on Etsy.

The FCC's Order Protects Etsy and Our Customers

9. I believe, based on previous rulings of this court, that reclassification under Title II was necessary to adopt clear, bright line rules that prevent blocking, throttling, and paid prioritization online. These rules are the core of the FCC order and are necessary to protect Etsy and our sellers from discrimination online. The majority of Etsy traffic comes from mobile sources, and we expect an increasing amount of traffic will come from mobile devices. Users expect to access websites from both fixed and mobile devices. In particular, mobile commerce is increasingly important in online retail; comScore estimated that since the first quarter of 2013, consumers visiting online commerce sites spent more than half of their browsing time on mobile devices. For this reason, it is essential that the FCC order apply equally to broadband and mobile.

10. I also believe that other aspects of the FCC's order impact forces that are unlikely to be restrained by the market. For example, Etsy is affected by issues that happen at the point of "interconnection," where ISPs connect to the rest of the Internet. As we understand it, ISPs have the ability to cause bottlenecks at interconnection and the ability to charge fees to get traffic through. Although Etsy does not itself connect directly with ISP networks, it uses content delivery

networks (CDNs) that do. To the extent ISPs could slow traffic or demand arbitrary fees, such effects would likely reverberate to websites like Etsy, causing either slow delivery of our content or increased costs in the form of higher CDN fees.

11. In addition, I believe that the general conduct rule protects Etsy and our community of sellers from new, previously unanticipated forms of discrimination. For example, if ISPs discriminated against Etsy or e-commerce platforms generally through the use of caps on users' broadband usage, we would have no meaningful way to challenge such conduct in the absence of the general conduct rule. Having worked in this industry for most of my adult life, I know how quickly technologies change and that even subtle changes can have significant effects that are not easily reversed.

I declare under penalty of perjury pursuant to 28 U.S.C. § 1746 that the foregoing is true and correct.

Dated: May 20, 2015
Brooklyn, New York

Chad Dickerson

Exhibit 5

Declaration of Fatbeam

IN THE UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT

UNITED STATES TELECOM ASSOCIATION, Petitioner, v. FEDERAL COMMUNICATIONS COMMISSION and UNITED STATES OF AMERICA, Respondents.	Case No. 15-1063 (and consolidated cases)

DECLARATION OF GREGORY GREEN

1. My name is Gregory Green. I am the Co-Founder and President of Fatbeam, a competitive broadband access service provider. I have had more than 20 years of senior management experience in the telecommunications industry.

2. Fatbeam has deployed fiber optic broadband networks in more than 18 third- and fourth-tier markets (less than 150,000 population) in the states of Washington, Idaho, Montana and Wyoming and currently has a network under construction in Oregon. Fatbeam is a competitive broadband access provider delivering wholesale and retail broadband access services to business enterprise, healthcare, education and government customers throughout the Western United

States. We offer fiber optic bandwidth starting at 1 gigabit Ethernet and extending to 400 gigabit. We also offer dark fiber.

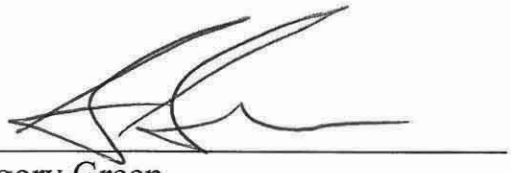
3. Fatbeam often enters markets by building fiber optic networks for individual school districts. Once the network is fully constructed and operational, Fatbeam offers broadband capacity to other entities in the community, including hospitals, local government offices, banks and telecommunications and Internet service providers.

4. Fatbeam supports the efforts of the Federal Communications Commission ("FCC") to ensure an open and robust Internet experience for all.

5. Fatbeam provides broadband Internet access services to schools and school districts that rely on E-rate funding. Those services are subject to the FCC's Open Internet Order and rules.

6. With the new rules in place, Fatbeam intends to continue to expand its networks, deploy fiber and provide smaller third and fourth tier markets with competitive fiber optic broadband options. The availability of robust, high speed broadband fiber optic access service is a powerful catalyst for economic growth and development and such growth and development benefit all residents of the community.

Pursuant to 28 U.S.C. § 1746, I hereby certify under penalty of perjury that the foregoing is true and correct. Executed this 18 day of May 2015.



Gregory Green

Exhibit 6

Declaration of Google Inc.

IN THE UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT

UNITED STATES TELECOM ASSOCIATION, Petitioner, v. FEDERAL COMMUNICATIONS COMMISSION and UNITED STATES OF AMERICA, Respondents.	Case No. 15-1063 (and consolidated cases)

DECLARATION OF JOHN TOCCALINO

I, John Toccalino, being over 18 years of age, swear and affirm as follows:

1. I am employed by Google Inc. as Manager, Outside Plant Engineering. In that role, I work on the competitive fiber-to-the-home builds being performed by Google Fiber Inc. ("Google Fiber") in areas including the Kansas City market area in Kansas and Missouri, Provo and Salt Lake City, Utah, Austin, Texas, Atlanta, Georgia, Charlotte and Raleigh-Durham, North Carolina, and Nashville, Tennessee. My responsibilities have included, among other matters, designing Google Fiber's network and obtaining proper construction permits. For the Kansas City and Provo projects, I oversaw the contractors that built the network by installing fiber on utility poles and in ducts and conduit.

2. I have been asked by COMPTEL, an intervenor in this case, to address the importance to Google Fiber of infrastructure access rights under 47 U.S.C. § 224.

3. Google Fiber currently offers a basic residential Internet service that is available on a standalone basis, Gigabit Internet service alone or in conjunction with an Internet Protocol video service, and a Gigabit small business offering. To offer these services in competition with telecommunications carriers and cable corporations on a timely and affordable basis, Google Fiber needs to attach fiber cables and associated equipment to utility poles, as well as to utilize existing ducts and conduits in the public rights-of-way.

4. Section 224 confers upon cable system operators and telecommunications carriers the right of "nondiscriminatory access to any pole, duct, conduit, or right-of-way owned or controlled" by a utility. Although 20 states have exercised their right to opt-out of federal pole attachment regulation by engaging in reverse preemption of Section 224 for their jurisdiction, Section 224 is controlling law in 30 states.

5. Currently, a broadband Internet service provider like Google Fiber that does not offer its broadband Internet access service ("BIAS") on a common-carriage basis, and does not offer other cable television or telecommunications services over its network, lacks federal protections to access poles, ducts, conduits,

and rights of way afforded by Section 224 to traditional cable systems and telecommunications carriers.

6. Google Fiber's facilities are the same as existing wireline facilities attached to utility poles or placed in ducts or conduits by telecommunications carriers and cable systems. Thus, its facilities raise no technical or policy issues different than those of existing providers afforded protections pursuant to Section 224.

7. The Federal Communication Commission ("FCC") determined in its *Open Internet Order* that BIAS is a telecommunications service. Thus, going forward, Section 224 will afford Google Fiber and all other BIAS providers, as telecommunications carriers, the same statutory right of nondiscriminatory access to utility poles and other essential infrastructure that is held by other telecommunications carriers and cable systems.

8. Equal treatment of BIAS providers that are not cable system operators or telecommunications carriers promotes competition as well as broadband investment and deployment. Indeed, the FCC has recognized that timely and affordable access to poles, ducts, conduits, and rights of way is essential for rapid, widespread broadband deployment. As a general matter, obtaining permits and leasing space on poles and within the public right of way can total up to 20% of the cost of a fiber optic deployment.

9. Delays in obtaining access from owners of poles and other infrastructure, or unreasonable conditions on attachment, could cause Google Fiber's costs of deployment to increase and the speed of deployment to slow, particularly if Google Fiber was to be forced to place its wires in newly dug trenches underground. Shared use of infrastructure pursuant to Section 224 also ensures that existing poles and conduits are used to capacity before additional ones are installed, thus minimizing inconvenience, safety risks, noise, and aesthetic harms for communities.

10. By extending to BIAS providers the right of nondiscriminatory access to poles, ducts, conduits, and rights of way conferred by Section 224, the *Open Internet Order* removed unpredictability associated with negotiating for permission to use existing poles, ducts, and conduits in the absence of access rights, thus speeding and lowering the cost of Google Fiber's deployment of new broadband networks.

Pursuant to 28 U.S.C. § 1746, I hereby certify under penalty of perjury that the foregoing is true and correct. Executed this 21ST day of May, 2015.

John Toccalino

Exhibit 7

Declaration of
Level 3 Communications, LLC

IN THE UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT

UNITED STATES TELECOM ASSOCIATION, Petitioner, v. FEDERAL COMMUNICATIONS COMMISSION and UNITED STATES OF AMERICA, Respondents.	Case No. 15-1063 (and consolidated cases)

DECLARATION OF MARK TAYLOR

I, Mark Taylor, being over 18 years of age, swear and affirm as follows:

1. I make this declaration using facts of which I have personal knowledge or based on information provided to me, and in connection with the D.C. Circuit's review of the recent *Open Internet Order* adopted by the Federal Communications Commission ("FCC"). Level 3 Communications, LLC ("Level 3") participated in the open Internet proceeding before the FCC and also is a member of COMPTEL.

2. I am the Vice President of Engineering and Complex Solutions at Level 3. Prior to that, and until November 2014, I was Level 3's Vice President

responsible for the company's Content Delivery Network ("CDN") and IP data services, including transit services. In that capacity, I had responsibility for Level 3's peering relationships, including direct involvement with negotiating many of Level 3's peering agreements. I have spent a total of 29 years in the telecom industry and 10 years focused on issues involving Internet interconnection.

3. Level 3 is a premier global communications provider headquartered in Broomfield, Colorado, which provides communications services to enterprise, government, and carrier customers. Level 3 is a Tier 1 Internet Service Provider ("ISP"), which means that the entire Internet can be reached through the Level 3 network or through the network of one of Level 3's peers. Among Tier 1 ISPs, Level 3 is generally recognized as one of the most important Internet backbones in the world. Dyn Research (formerly Rensys) publishes a widely regarded ranking of Internet backbone service providers. The ranking, which is not a market share ranking or a ranking of how much data each provider carries relative to the others, ranks providers by how interconnected they are to the networks that make up the Internet—in other words, a ranking of how much of the global Internet they serve to tie together. Level 3 has been ranked as the most interconnected backbone network since 2008 (*see* http://research.dyn.com/category/bakers-dozen).

4. Level 3's network connects six continents—every continent but Antarctica—reaching more than 500 markets in over 60 countries. Level 3

leverages that network to sell Internet connectivity to customers globally—transporting traffic, for example, between carriers such as Verizon or CenturyLink and Level 3's customers in the United States and around the world.

5. Despite the considerable amount of infrastructure that we built and maintain, we are only one part of the global Internet. When we sell Internet connectivity, we have to give our customers access to every single route on the Internet—not just the routes we own. That means we have to provide access to all of the networks owned and operated by others, which currently means about 46,000 other networks—many of which also make use of Level 3's fiber and bandwidth services. To do this, Level 3, like the other networks that make up the Internet, interconnects its network with other networks, each of which provides access to a portion of the rest of the Internet.

6. I submit this declaration for two reasons. First, I understand that certain broadband Internet access service ("BIAS") providers have asserted that they will be irreparably harmed by the FCC's recent decision to regulate Internet traffic exchange agreements, sometimes referred to as interconnection agreements, because the BIAS providers will not be able to charge providers like Level 3 fees to connect with the BIAS providers' networks. As I explain below, the effort of certain BIAS providers to charge access fees is a dramatic and unjustified deviation from historical practice. This practice has come about through BIAS

providers exercising the same terminating access monopoly power that forced the FCC to adopt bright-line rules to protect consumers. Second, I understand that these same BIAS providers have asserted that backbone providers like Level 3 will not be harmed if the FCC's ability to regulate the BIAS providers' conduct is taken away. This is not true. Without FCC oversight, BIAS providers can engage in conduct that is both harmful to consumers and to Internet backbone providers like Level 3. Specifically, as set forth in greater detail below, BIAS providers can cause congestion at the points of interconnection between their networks and the networks of providers like Level 3, which degrades the exchange of data between the two networks. Level 3, its customers, and the public are currently being harmed by such conduct. This harm cannot be cured after the fact.

Background on Internet Backbone Services

7. The key difference between a traditional network and the global Internet is interconnection. There are many communications networks across the globe. The Internet is, however, a network of networks. In essence, what makes the Internet the Internet is that the interconnection of these networks permits them to transmit and receive data across network boundaries, providing access to resources on any connected network no matter where it is located. BIAS providers, when they sell Internet services to their end-user customers, are accordingly primarily selling the ability to transmit data to and from the other

networks that make up the Internet. More particularly, BIAS providers sell, and their customers purchase, the ability for a customer to access content and resources located anywhere on the global Internet, whether on the provider's own network or elsewhere.

8. When a BIAS provider's customer requests content from an Internet content company such as Hulu, Twitter, or Amazon, the Internet content company has a number of options to deliver such content to the BIAS provider's network. Typically, the Internet content company contracts with a company like Level 3 to deliver the content to the BIAS provider's network. Level 3 and other providers also offer CDN services, which can store popular content close to the BIAS provider's network so it does not have to frequently transport such traffic long distances.

9. Level 3 and other transit and CDN providers operate in a highly competitive market, and Internet content companies have myriad options to choose from when deciding how to deliver traffic long distances to a BIAS provider. This competition has kept prices for transit and CDN services low and service levels high.

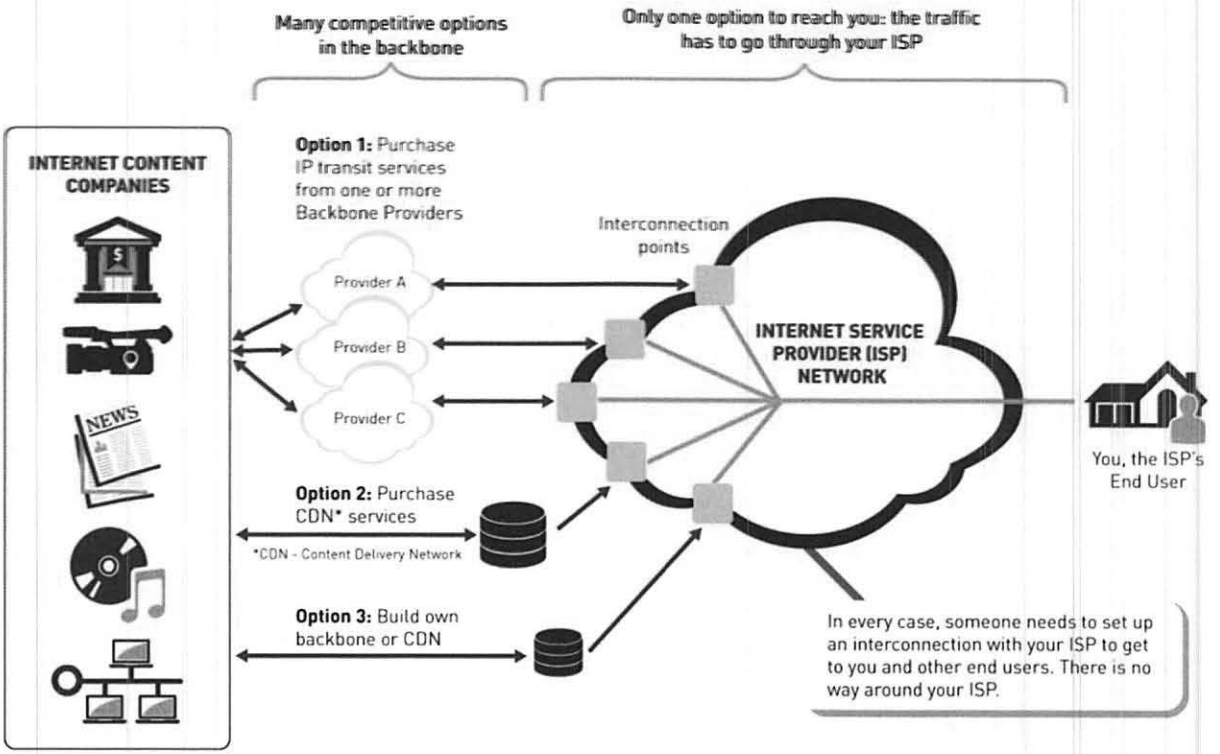
The Current Problems Facing Backbone Providers

10. This competitive ecosystem ends at the doorstep of the BIAS provider's network. When Level 3 delivers traffic requested by the BIAS

provider's customer, Level 3 must deliver such traffic to the BIAS provider's network and rely on the BIAS provider to deliver the traffic to the customer's home. This dynamic results in the BIAS provider having what is frequently called "gatekeeper power" or a "terminating access monopoly," which is to say that the BIAS provider has exclusive and complete control over access to the end users that use their services. Notably, many BIAS providers offer services that compete either with content available over the Internet (such as video services) or services that compete with Internet backbone providers like Level 3 (such as data transmission or CDN services).

11. The diagram below illustrates the gatekeeper power that BIAS providers have over access to their end users, notwithstanding the fact that the markets for transit and CDN services are highly competitive. The diagram shows that an Internet content company has a variety of options for delivering Internet content: it may (option 1) purchase IP transit services from a provider such as Level 3 or Cogent; it may (option 2) purchase CDN services from a provider such as Akamai, Limelight, or Level 3; or it may (option 3) build its own backbone or CDN capability, as many large providers have done, including Netflix. An Internet content company also may employ several of these options at once. Traffic traveling along any of these paths, however, must eventually enter the BIAS provider's network through an interconnection point over which the BIAS provider

has complete control.



12. In recent years, a few of the largest BIAS providers have attempted to leverage their gatekeeper power over their many millions of customers to demand new "access" fees from Level 3. Specifically, the BIAS providers have refused to provision sufficient capacity at the entrance to their networks to allow Internet traffic to enter their networks, demanding that Level 3 pay new fees before the BIAS providers will provision adequate interconnection capacity, by deploying additional interconnection "ports." These tactics are a dramatic change from the prior industry norm in which peers would add additional interconnection capacity to ensure that interconnection ports did not routinely congest.

13. Engaging in these tactics causes the BIAS providers' own customers to experience severe problems with accessing popular content. For example, a consumer may purchase BIAS with an advertised download speed of 50 Mbps, but if the BIAS provider does not provision sufficient network capacity at the point of interconnection, the consumer will never actually see effective download speeds close to that level for services accessible over congested interconnection links. To consumers, who have been assured by their BIAS provider that they purchased a 50 Mbps service (frequently referred to as a "best efforts" service), this can look like a problem with their chosen content provider—a belief that is often encouraged by the BIAS providers.

14. Our business customers look to us to provide them with sufficient connectivity to fulfill their own retail customers' needs. That creates incredible pressure on companies like Level 3 to "pay up" to relieve the congestion caused by the BIAS provider's refusal to allocate sufficient port capacity. The BIAS provider could engage in such behavior without fear that its own subscribers would flee because of the lack of competition among BIAS providers, the high switching costs consumers face to leave one provider for another, and customers' imperfect understanding of why a particular Internet company's service is not accessible.

15. Today, some BIAS providers continue to congest the entrances to their networks, and to allow their customers to suffer, until Level 3 and other

Internet content distributors pay new access fees. Far from providing "best efforts" service, these BIAS providers deliberately refuse to provision capacity that is necessary to make good on their promise to provide BIAS to their customers, with the goal to create congestion so as to force Level 3 or its customers to pay new fees. The FCC's open Internet rules provide Level 3 and the millions of other persons affected by a BIAS provider's congestion strategies the ability to petition the FCC to investigate the behavior and to require the BIAS provider to exchange Internet traffic on just and reasonable terms.

16. Some BIAS providers have argued that these new access fees are necessary to cover the costs of interconnection. This is false. When Level 3 connects with a BIAS provider's network, each party pays symmetrical costs to interconnect. Each party must deploy similar network equipment, and if the networks are interconnected in a neutral facility, rent space to house the equipment, and purchase sufficient power and cooling. These costs generally amount to a few thousand dollars per interconnection port.

17. BIAS providers also suggest that access fees are an appropriate reflection of the send-to-receive ratio of traffic exchanged between Level 3 and a BIAS provider's network. The BIAS providers claim that Level 3 and others hand off more traffic than the BIAS providers return. There is no historical justification

for this argument. Moreover, this traffic imbalance is the natural result of how consumers use the Internet today.

18. When a BIAS subscriber wants to view a television show, for example, the subscriber "sends" a very small request (in terms of bandwidth used), and receives a very large amount of content in return. Because their subscribers consume far more data than they send, BIAS networks are generally built to be "out of balance"—offering their subscribers as much as 5 times the "download" speed (traffic going to subscribers) as "upload" speed (traffic coming from subscribers).

19. In addition, traffic send-to-receive ratios are unrelated to the cost of interconnection. The cost of transporting Internet traffic over a backbone network, or exchanging it between networks, is related to the amount of traffic carried and the distance it is carried, not the direction (to or from a particular network destination) it is carried. For example, if the traffic exchanged between Level 3 and CenturyLink were to switch directions, such that Level 3 were sending the amount of traffic to CenturyLink that CenturyLink is today sending to Level 3, and vice versa, the send-to-receive ratio would reverse, but the costs to support the interconnection of the two networks—the routers, the power and cooling costs, and the like—would be the same.

FCC Oversight Is Critical to Protecting Level 3 and the Public from Harm

20. The *Open Internet Order* does not address Internet traffic exchange practices directly through any of its bright-line rules. Instead, the Order provides Level 3 with the ability to complain to the FCC about practices that we believe are unjust or unreasonable and which effectively circumvent the FCC's bright-line open Internet rules. Following the announcement of the FCC's recent order, but before it has gone into effect, Level 3 has been able to reach new agreements with certain large BIAS providers. *See* http://level3.mediaroom.com/index.php?s=23600&item=137034 (AT&T); http://level3.mediaroom.com/index.php?s=23600&item=137023 (Verizon).

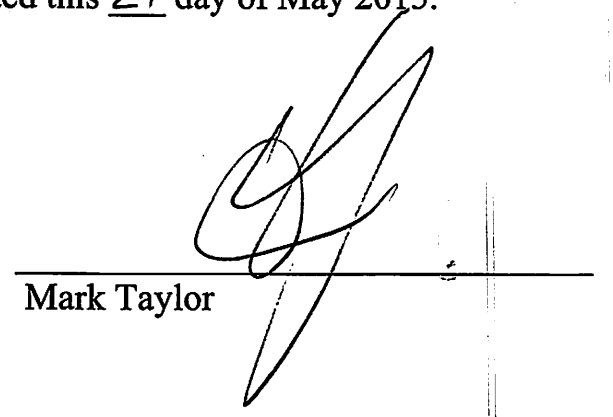
21. Notwithstanding this progress, not every BIAS provider has stopped using interconnection congestion to attempt to force Level 3 to pay new access fees. As a result, Level 3's business continues to be significantly harmed through the loss of business to competitors, harm that will continue until interconnection congestion is relieved. More important, Level 3 will inevitably lose the goodwill of our customers. None of these harms can be cured after the fact by this Court or the FCC.

22. BIAS providers' residential subscribers are also harmed by the strategy of congesting interconnection links. Interconnection congestion has different effects on different types of Internet applications. For example,

congestion may have little or no effect at all on electronic mail applications, because such applications are not sensitive to latency or packet loss. On the other hand, congestion has the potential to make it practically impossible, for example, to carry on a telephone conversation (including 911 calls) using "over-the-top" Internet telephony services; watch an online streaming video; or conduct commerce such as validating credit card information over the Internet.

* * *

Pursuant to 28 U.S.C. § 1746, I hereby certify under penalty of perjury that the foregoing is true and correct. Executed this 21st day of May 2015.



Mark Taylor

Exhibit 8

Declaration of Measurement Lab

IN THE UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT

UNITED STATES TELECOM ASSOCIATION, et al., *Petitioners*, v. FEDERAL COMMUNICATIONS COMMISSION, and UNITED STATES OF AMERICA, *Respondents.*	No. 15-1063 (consolidated)

MEASUREMENT LAB DECLARATION

1. My name is Chris Ritzo, and I am a Senior Technologist for New America's Open Technology Institute (OTI), Project Manager for Measurement Lab (M-Lab), and serve as OTI's Interim Director of Technology. In my capacity as the Project Manager for M-Lab, I coordinate the contributions of a team of project contributors spanning multiple organizations, teams, and partners working on various components of M-Lab, from systems engineering to research and secondary data analysis on our open dataset. I make this declaration using facts of which I have personal knowledge or based on information provided to me, and in

connection with the D.C. Circuit's review of the FCC's recent *Open Internet Order*.

2. The declaration below explains the methodology and technical findings of research conducted by the M-Lab team in 2014, examining trends in M-Lab's data on consumer broadband performance in the United States since at least February 2013. This research is detailed in a technical report (the "Interconnection Study") released by M-Lab on October 28, 2014, available online, and submitted to the FCC docket in Proceedings 10-127 and 14-28 October 30.[1] Additionally, the M-Lab dataset has used as a basis for evaluation of interconnection performance by third parties, including media organizations and parties to the Open Internet proceedings, prior and subsequent to the Interconnection Study.

Customers of Major Internet Service Providers Experienced Significant Degradation of Their Service for Several Months

3. Within the Interconnection Study, M-Lab documented sustained performance degradation as experienced by actual customers of the Access ISPs AT&T, Comcast, Centurylink, Time Warner Cable, and Verizon when their traffic passed over core interconnections with prominent Transit ISPs,

[1] http://www.measurementlab.net/static/observatory/M-Lab_Interconnection_Study_US.pdf

including Cogent Communications, Level 3 Communications, and XO Communications.

4. After the Interconnection Study, further degradation episodes were documented using the same datasets and methodologies for additional Transit ISPs, including between the Access ISPs AT&T, Comcast and Verizon to GTT Communications, as well as between AT&T and Zayo.

5. During the extended episodes of degradation observed in the M-Lab data, consumers using broadband services to reach the sites and services on the other side of impacted interconnections would have experienced median speeds less than 4 Mbps, less than the FCC's definition of broadband as the time of publication (a definition that has since been raised substantially in two separate contexts), and sometimes even as low as 0.5 Mbps.

6. The degradation of performance demonstrated in the M-Lab data occurred across the United States, for consumers in different markets testing against geographically-dispersed measurement endpoints. This widespread degradation indicates that the performance trends were unlikely to be the result of single points of technical failure. Moreover, at the times of degradation both the Access ISPs and Transit ISPs maintained uncongested interconnections with other parties, indicating that the degradation did not occur as a result of the congestion within solely the networks of either party.

7. From these observations, M-Lab concluded that ISP interconnection has a substantial effect on consumer Internet performance – sometimes a severely negative impact, and that business relationships between Access and Transit ISPs were likely the root of the problems observed in the M-Lab data. M-Lab can infer that performance degradation is interconnection-related based on trends in our data and our methodology relating to server placement; however, M-Lab does not have the contractual details and histories of individual interconnection agreements of Access and Transit ISPs.

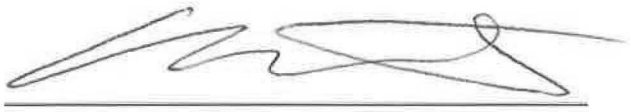
Methodology

8. By establishing a diverse set of measurement points in well-connected Transit ISPs, and allowing consumers to test their connection to these locations, M-Lab exposes diverse performance characteristics about the capacity between Access ISPs' networks (the service used by Access ISPs' consumers to access the Internet) and the Transit ISP networks on which the M-Lab measurement points (and much online content) are situated. M-Lab's data reflects how consumer Internet performance varies based on the network infrastructure that traffic traverses, including potential degradations caused by the conditions of interconnection points.

9. Measurement Lab's dataset consists of over a petabyte of data spanning six years of measurements on consumer broadband performance and connectivity from points of observation across the world. In conducting research for the Interconnection Study, M-Lab examined network measurement data submitted to the M-Lab platform by consumers across the US running Internet 2's Network Diagnostic Tool (NDT), to identify patterns of performance degradation that occurred wherever a given Access ISP and a given Transit ISP exchanged traffic over an interconnection point. We define "degradation" as a drop in download throughput, an increase in round trip time, or an increase in packet retransmission rate, measured against a respective baseline of historical performance on a given Access ISP/Transit ISP pair. A drop or increase in pertinent metrics occurs across multiple locations for the same Access ISP and Transit ISP pair for a large sample of users during the same time period indicates that degradation is not isolated to specific consumers or locations.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on 5/21/2015.



Chris Ritzo

Senior Technologist
and Interim Director of Technology,
New America's Open Technology Institute
Project Manager, Measurement Lab

Exhibit 9

Declaration of NEPC, LLC

IN THE UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT

UNITED STATES TELECOM ASSOCIATION, *et al*.,	
Petitioners,	
v.	**No. 15-1063 (and consolidated cases)**
FEDERAL COMMUNICATIONS COMMISSION and UNITED STATES OF AMERICA,	
Respondents.	

DECLARATION OF DEVAN F. DEWEY

1. My name is Devan F. Dewey. I am the Chief Technology Officer for NEPC, LLC, an investment consulting firm headquartered in Boston, Massachusetts. I have overall responsibility to implement and operate all information technologies deployed at NEPC, LLC including applications, computing resources, and voice and data networking. I submit this declaration based upon facts of which I have personal knowledge.

2. NEPC serves over 300 clients, many of whom are large institutional investors such as employee benefit plans, endowments, foundations, and wealth investment programs. As an investment consultancy, NEPC advises its clients on a

range of issues, including investment policy development, asset management, and alternative investment strategies.

3. The purpose of this declaration is to (a) summarize an episode in which the refusal by certain large ISPs to augment the capacity of interconnections with NEPC's corporate ISP severely compromised the ability of NEPC employees to work remotely, and (b) underscore the importance of the *Open Internet* Order's mechanism for addressing interconnection disputes to reducing the likelihood that NEPC and other small- and medium-sized businesses will be victimized by such episodes in the future.

4. Although it is based in Boston, NEPC currently maintains seven offices throughout the country. A network connects those offices to one another and to the Internet. And while Comcast and Verizon are the dominant ISPs in the Boston metropolitan area (for both residential and corporate purposes), for approximately 8 years NEPC's data center has connected to the Internet via Cogent Communications, Inc. ("Cogent"). During that time, Cogent consistently has provided NEPC with reliable, fast, and comparatively low-cost Internet access service.

5. The connectivity Cogent provides is particularly important to NEPC and its employees, many of whom telecommute on a regular basis. When working remotely, NEPC employees utilize virtual private network (VPN) software to

access their work files. Work-related phone calls are also routed across the Internet to reach the NEPC corporate network.

6. In September 2013, many NEPC employees working remotely began to experience intermittent delays when connecting to NEPC's network. Over the next two months, the disruptions increased in frequency and duration. By the end of 2013, many NEPC employees were effectively unable to telecommute altogether. This was particularly true of a three-week period in January 2014, during which degraded service to NEPC telecommuters peaked. During this time, certain employees simply could not access their NEPC work files. Moreover, the quality of phone calls routed over NEPC's network was also unreliable or, in some cases, non-existent.

7. The sudden inability of NEPC employees to work remotely negatively impacted employee productivity and morale. It also caused many employees to fundamentally alter their work habits. In some cases, employees who typically worked from home and lived far from NEPC's Boston headquarters, including our Controller, were forced to endure long commutes into the office. Other NEPC employees, including those working on the road, began working during the middle of the night (when Internet traffic, and thus congestion, decreases) so that they could take advantage of more reliable Internet connectivity.

8. As CTO, I led the investigation into what was causing the degradation of service to NEPC's telecommuters. In addition to a significant amount of time I spent dealing with these issues, there was also at least one NEPC engineer who worked on this problem for multiple hours each day for approximately five weeks. This significantly detracted from our ability to focus on our regular job responsibilities. In all, we spent approximately eight weeks closely inspecting NEPC's own network infrastructure and assisting NEPC employees in troubleshooting a variety of issues on their home networks. For most of that time, we were unable to determine a cause.

9. Finally, in January 2014, a deep network analysis using standard and specialty network analysis tools, including Pathview from AppNeta, ultimately led us to locate a bottleneck experiencing severe packet loss in New York City where Comcast and Verizon exchange traffic with Cogent. Since Cogent was NEPC's corporate ISP, and every NEPC telecommuter in the Boston metropolitan area used Comcast or Verizon as their residential ISP, this meant that any work files an NEPC employee sought to access would first need to traverse Cogent's network before being handed off to Comcast or Verizon in New York City, the closest place to Boston where those networks exchanged traffic. Similarly, any information that NEPC telecommuters wanted to send from their remote workstations would first

need to exit along Comcast's or Verizon's network before it was handed off to Cogent for delivery to its final destination.

10. During our investigation, we were told that at the same time NEPC employees were experiencing degraded service, Comcast and Verizon were refusing, for reasons having nothing to do with NEPC, to upgrade capacity at their respective New York City interconnection points with Cogent. Although I have seen reports indicating that the congestion between Cogent's network and the Comcast and Verizon networks coincided with Cogent's providing transit services to Netflix, the reasons why those ISPs failed to sufficiently provision their interconnection facilities is not my concern. What is my concern is that my company and its employees were injured bystanders in this interconnection dispute. As NEPC and its telecommuters learned, it does not take much in the way of packet loss—data that cannot make it through congested ports—to adversely and materially impact regular business operations.

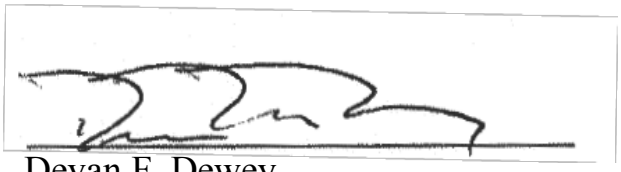
11. In order to address the situation, on January 28, 2014, NEPC entered into an agreement with a second corporate ISP to provide redundant Internet connectivity to and from NEPC's data center in Boston. While that solved the problem—at least for the time being—the congestion between Cogent, on the one hand, and Comcast and Verizon, on the other, forced NEPC to incur substantial additional costs for Internet access, given that we must now pay two providers.

12. Although for the time being NEPC has identified and solved the problem, I cannot be confident that this solution (even ignoring the added expenditure) is durable, because the additional ISP that we are using could at any point find itself facing the same type of congestion as Cogent.

13. Moreover, although NEPC had the expertise and resources to diagnose the problem and address it (again, at considerable expense), I believe that while many other small- and medium-sized businesses experience similar service degradation issues most would lack the means or wherewithal to investigate and address the problem. For this reason, a process by which potential interconnection abuses can be brought to the attention of and examined by the FCC is imperative. Without it, more businesses are likely to become unwitting victims or collateral damage in the ongoing battles between ISPs and transit/content providers.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on May 19, 2015



Devan F. Dewey
Chief Technology Officer
NEPC, LLC

Exhibit 10

Declaration of Netflix, Inc.

IN THE UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT

UNITED STATES TELECOM ASSOCIATION, Petitioner, v. FEDERAL COMMUNICATIONS COMMISSION and UNITED STATES OF AMERICA, Respondents.	Case No. 15-1063 (and consolidated cases)

DECLARATION OF KEN FLORANCE

I, Ken Florance, being over 18 years of age, swear and affirm as follows:

1. I make this declaration using facts of which I have personal knowledge or based on information provided to me and in connection with the D.C. Circuit's review of the FCC's recent *Open Internet Order*.

2. I am the Vice President of Content Delivery at Netflix. I have led the network architecture efforts for Netflix's streaming video service since its launch in 2007. I have held the position of Vice President of Content Delivery since 2012. In this role, I am responsible for the seamless delivery of streaming video content to Netflix's subscribers across the globe. In connection with these responsibilities,

I oversee Open Connect, Netflix's single-purpose content delivery network ("CDN") designed for Netflix streaming video. CDNs are a vehicle by which many online content companies connect with and deliver data to Internet access networks for transmission of that data to end-user customers.

3. In this declaration, I discuss how a broadband Internet access service ("BIAS") provider is able to degrade its customers' access to Internet content, including online video content, and at the same time harm online video distributors ("OVDs") like Netflix, through its exclusive control of the entrance to its Internet access network. I also discuss how BIAS providers used such control to degrade and sometimes make unwatchable Netflix videos their consumers attempted to watch.

4. Netflix is the world's leading Internet television provider. We serve more than 62 million members in more than 50 countries, who collectively enjoy more than one hundred million hours of TV shows and movies per day, including Netflix originals like *House of Cards* and *Orange is the New Black*.

5. Netflix is a pioneer in the business of online video, and we continue to innovate as new and exciting technologies emerge. As Internet speeds have increased, for instance, our service has begun to offer customers additional, innovative features, including higher resolution 4K content—a resolution that is

unavailable through traditional multichannel video programming distributors' ("MVPD") services.

6. When a consumer wants to watch a video from Netflix, the consumer sends a request through her Internet connection, which is typically provided by one of the Petitioners. The request travels from the consumer's residence through her broadband provider's pipe to the point at which the broadband provider connects to the Internet. The broadband provider makes its Internet connection through data ports that link the broadband provider (and its residential customer) to every point on the Internet.

7. The Internet was designed so that myriad applications could ride over top of the physical layers of the networks that comprise it. These networks are agnostic to the content and applications that travel over them. Netflix's video service, like all Internet content, travels "on top of" the physical infrastructure of the broadband provider's pipe. The distinction between the physical network and the content that travels on top of it is foundational to the Internet's growth as a platform. Historically, content traveling over the application layer has been unregulated, while owners of the physical infrastructure originally were subject to common carrier rules to ensure that they did not use the physical layer to discriminate against those sending traffic over the application layer. The dynamic is similar to traditional telephony, where voice traffic traveled over a telephone

company's wires. People's conversations were not regulated, but telephone companies were prevented from discriminating among those seeking to talk to each other or otherwise interfering with the conversation.

8. When Netflix receives the request to send a video to a Netflix subscriber, Netflix delivers its content to the "doorstep" of the subscriber's BIAS provider's last mile network. Netflix incurs all the costs involved with delivering content to that doorstep. The BIAS provider then transmits the data to the subscriber over that subscriber's broadband access connection.

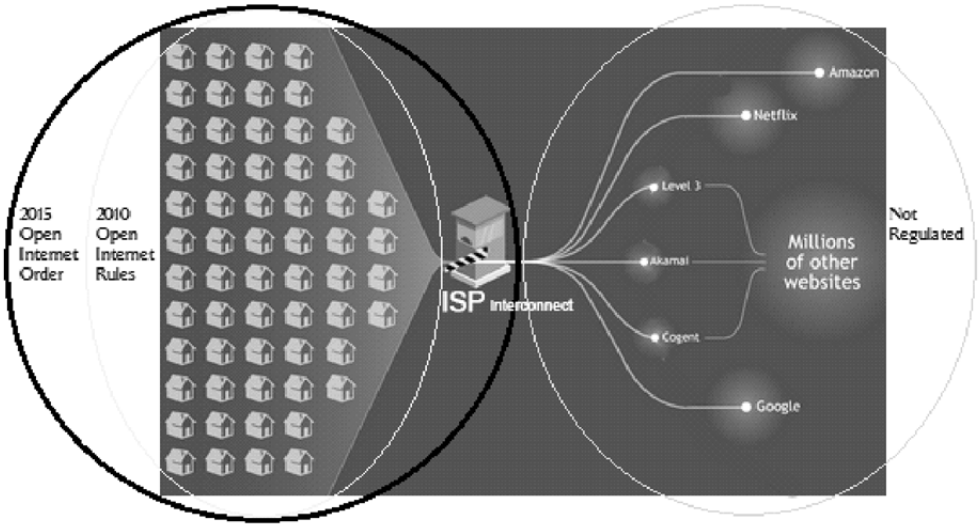
9. Netflix has multiple ways to deliver data to the BIAS provider's network because the marketplace for transporting content across most parts of the Internet is robust and competitive. The competitive ecosystem of the Internet, however, ends when it reaches the subscriber's BIAS provider. Only the BIAS provider can send content across its last mile to its subscribers. Ultimately, Netflix has no means to deliver the requested video to the subscriber other than by delivering the content to her BIAS provider's doorstep.

10. Once Netflix's content reaches the BIAS provider's doorstep, the provider has total control over whether it will open the door to its last mile network to allow the requested content to reach the subscriber.

11. The following chart illustrates how traffic travels from Netflix and millions of other Internet websites over the Internet in any number of ways to the

BIAS provider's doorstep and ultimately to the BIAS provider's subscribers. The circles on the left represent the parts of the BIAS provider's physical infrastructure subject to FCC oversight. The smaller circle represents the portion of the BIAS network subject to regulation under the 2010 rules. The larger circle represents the incremental addition of including the interconnection ports subject to the 2015 order, which is the network mechanism by which BIAS providers allow traffic on or off their network. The large circle on the right represents the Internet ecosystem, which remains unregulated by the FCC's rules.

Figure 1: An ISP's Connection to the Rest of the Internet



12. Beginning in 2010, a handful of BIAS providers began to demand payment from Netflix—or from the services that Netflix used to deliver content to the BIAS provider's network—in order to open the door for the videos to reach our subscribers.

13. These BIAS providers executed this strategy by allowing the data ports into their networks to congest and refusing to provide additional port capacity to relieve that congestion. Data ports are the doorways that allow Internet companies providing online content and services to connect with a BIAS provider's last mile network and reach their mutual customers.

14. As these data ports congested, a consumer's ability to watch Netflix content became seriously impaired because the rate at which data could travel through those ports and on to the last mile network was reduced. For example, in August 2013, we began to notice that the interconnection points where our content traveled onto Comcast's network were becoming congested. When Comcast's ports became congested, Comcast customers' ability to stream Netflix video declined as the connection speeds for Netflix's subscribers on Comcast's network started to fall.

15. Mutual customers of Netflix and Comcast saw dramatic declines in their service—dropping from HD quality to nearly VHS quality in some cases. In other cases, Netflix's subscribers were unable to view Netflix content at all. Instead, they may have been confronted with a fuzzing video or a rebuffering symbol, indicating that the consumer's connection to the Internet was not working as it should.

16. Netflix recommends at least 3 Mbps for DVD quality video and 1.5 Mbps for VHS quality. A drop below 1.5 Mbps can cause service interruptions. During the worst periods of congestion, some Comcast customers that subscribed to its 25 Mbps broadband service were receiving Netflix video at less than 1 Mbps. Because the problem arose at the interconnection point between Comcast's last mile network and the broader public Internet, Comcast customers paying more for faster broadband service were no better off than those paying for slower speeds.

17. Comcast had repeatedly said that it had significant excess capacity on its network, so we knew that Comcast had the ability to accept and deliver the Netflix traffic its customers had requested. Even if the issue was simply capacity constraints at interconnection points, Comcast could have easily, quickly, and, inexpensively fixed the problem by adding additional data ports. Netflix approached Comcast to discuss the congestion problem, and Comcast suggested that Netflix could resolve the issue by paying Comcast a fee unrelated to any cost of adding the needed ports.

18. Comcast continued to degrade the quality of Netflix's video until Netflix relented and finally paid Comcast. Soon thereafter, Netflix yielded and paid three other BIAS providers, including Petitioners in this case, that had engaged in a similar scheme to ensure that our mutual customers could access our service.

19. The FCC responded to this anti-consumer ISP behavior by establishing a procedure to safeguard consumer interests that could be harmed at the interconnection point. In so doing, the FCC appropriately declined to extend its jurisdiction to applications that ride over those interconnection links or websites in general. This represents a sound technological judgment that targets regulation to where it is most needed ("ISPs") and not to the highly-competitive market for Internet applications.

* * *

Pursuant to 28 U.S.C. § 1746, I hereby certify under penalty of perjury that the foregoing is true and correct. Executed this 21st day of May 2015.

Ken Florance

Exhibit 11

Declaration of
Privacy Rights Clearinghouse

IN THE UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT

UNITED STATES TELECOM ASSOCIATION, Petitioner, v. FEDERAL COMMUNICATIONS COMMISSION and UNITED STATES OF AMERICA, Respondents.	Case No. 15-1063 (and consolidated cases)

DECLARATION OF BETH GIVENS

I, Beth Givens, being over 18 years of age, swear and affirm as follows:

1. I am the founder and Executive Director of the Privacy Rights Clearinghouse ("PRC"), a 501(c)(3) nonprofit organization based in San Diego, California. In that capacity, I lead PRC in fulfilling its mission to engage, educate, and empower individuals to protect their privacy. I make this declaration using facts of which I have personal knowledge or based on information provided to me, and in connection with the D.C. Circuit's review of the FCC's recent *Open Internet Order*.

2. This declaration addresses the harms that consumers face from a lack of clear privacy and data security protections when using the Internet. Often, consumers who contact PRC do so because they are confused and uninformed about a company's privacy policies and practices, and they lack the resources to hire legal counsel who can explain to them their rights under privacy policies or applicable law. Consumers are often apprehensive of the services available to them via the Internet in part because they are concerned that their personal information can and will be collected, used and shared by entities that have access to it. Consumers who state that they are senior citizens, disabled, or unable to afford legal advice are particularly likely to contact PRC with their concerns about online privacy.

The Absence of Clear Requirements to Protect Customers' Proprietary Information Deters Consumers from Using Broadband and Online Services

3. PRC does not provide legal advice to consumers but does provide information on how to understand privacy policies, how to take proactive measures to protect individuals' personal information, and what steps to take in the case of data breaches or identity theft. PRC's website, which contains more than 80 guides on consumer privacy, receives between three thousand and seven thousand unique visitors per day. PRC receives roughly 2500 individual questions and complaints through our Online Complaint Center or phone calls each year from

consumers who have questions or concerns about the privacy of their personal information. Many of these questions or concerns regard information that consumers are considering making or have made available via the Internet, including information about the content or services they access via the Internet.

4. Consumers regularly contact PRC with questions about data breaches and identity theft. They also contact PRC with questions about the privacy practices and policies of entities that have access to their personal information, including those that provide broadband Internet access service. Consumers have expressed difficulties in understanding privacy practices and terms of privacy policies and whether they have the ability to prevent or condition the sharing of their personal information.

5. Many consumers who contact PRC express a lack of confidence in the commitment of parties who have access to their personal information, including those that provide broadband Internet access service, to adequately protect that information or limit the use and sharing of that information. Among the complaints that PRC has received regarding online privacy is that a broadband provider or its employee had shared a consumer's browsing history without notice or consent. As a result of such concerns, some consumers who contact PRC express reluctance to use the Internet for purposes and transactions that require them to share sensitive personal information, including employment applications,

obtaining credit reports, or inquiries about medical advice or treatment. Some consumers who contact PRC express a reluctance to even subscribe to services because of concerns about data breaches, identity theft, or unchecked distribution of their personal information.

6. Many consumers who contact PRC with questions and concerns about their online privacy state that they are senior citizens, disabled, or unable to afford legal counsel to help them understand their rights under privacy policies or applicable law. Individuals who state that they are senior citizens, disabled, or unable to afford legal representation regularly contact PRC with concerns that they have been victims of data breach, identity theft, or other uses of their personal information without consent. It is my understanding that broadband adoption and use by senior citizens and lower-income households is below the rates of adoption of households with higher incomes.

7. It is my understanding that the FCC's *Open Internet Order* will apply Section 222 of the Communications Act to broadband Internet access service. I further understand that the FCC has not yet promulgated rules pursuant to Section 222 but that the statute requires telecommunications carriers to protect the confidentiality of customers' proprietary information and limits carriers' use and disclosure of their customers' proprietary network information. Informing consumers that they have rights and protections with respect to broadband

providers' use and sharing of their personal information and information about their online activity will overcome some obstacles that consumers face in the adoption and use of broadband and services available via the Internet generally.

Pursuant to 28 U.S.C. § 1746, I hereby certify under penalty of perjury that the foregoing is true and correct. Executed this 20th day of May 2015.

Beth Givens
Executive Director
Privacy Rights Clearinghouse

Exhibit 12

Declaration of Sonic Telecom

IN THE UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT

UNITED STATES TELECOM ASSOCIATION, Petitioner, v. FEDERAL COMMUNICATIONS COMMISSION and UNITED STATES OF AMERICA, Respondents.	Case No. 15-1063 (and consolidated cases)

DECLARATION OF DANE JASPER

1. My name is Dane Jasper. I am the CEO and Co-Founder of Sonic Telecom, a midsize regional carrier offering competitive voice and broadband Internet access services to residential and small business customers. I serve on the Board of several competitive industry trade associations, including COMPTEL, Caltel, FISPA and CISPA.

2. Sonic was founded in 1994 to provide dial up Internet service in Santa Rosa, California. Today Sonic provides broadband Internet access service ("BIAS") in 125 cities in California, including the entire greater San Francisco Bay Area from Napa to San Jose, the greater Sacramento area, and recently the Los Angeles area.

3. Sonic provides BIAS using DSL technology as well as fiber optic facilities. Sonic's fiber facilities are capable of offering broadband speeds up to 1 gigabyte per second. Sonic also provides telephone service over its network facilities.

4. Sonic believes that every home and business in America should have fast, reliable and affordable access to an unfettered and open Internet where customers may access any lawful Internet content, application or service they choose. Sonic's BIAS services do not disadvantage any source or type of Internet traffic and they are not subject to usage caps. Sonic hosts its content delivery equipment as close to customers as possible to ensure that their Internet experience is the best that it can possibly be.

5. Sonic supports the Federal Communications Commission's ("FCC") Open Internet Order and rules not only because they will protect consumers from unreasonable behavior by their BIAS providers, but also because they will protect and promote competition among BIAS providers. I look forward to the day when broadband competition develops to the point where regulation of providers is no longer necessary, but that day has not yet arrived.

6. Unfortunately for consumers, BIAS has been dominated by a duopoly of the cable companies and the traditional incumbent local exchanges carriers ("ILECS"). In a marketplace dominated by so few carriers, scarcity and tolls have become the new normal, putting the very health of the Internet ecosystem as a center for

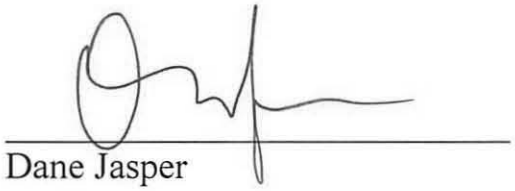
innovation, economic growth, and education at risk. Because Internet edge and content providers can only reach a broadband subscriber through the network of the subscriber's BIAS provider, BIAS providers can exercise gatekeeper control over their subscribers' access to the Internet and all that it has to offer.

7. Over the last year, large ILEC and cable BIAS providers have demonstrated that they have the ability and the willingness to degrade their customers' access to certain Internet content by failing to relieve network congestion in a timely fashion unless the content provider pays for access to the BIAS providers' customers. In a much publicized incident, the popular Netflix streaming video service was forced to pay Comcast so that the provider would add the additional interconnection capacity necessary to deliver the high quality video services Comcast's customers wished to download from the Internet. Time Warner Cable, AT&T and Verizon soon followed suit. Such access fees assessed by the gatekeepers raise the costs of edge providers seeking to reach consumers via the Internet.

8. When consumers purchase broadband Internet access services, Sonic believes they deserve access to the entire Internet at the speed for which they pay. At Sonic, we focus on delivering reliable, neutral, secure and private Internet access service. The FCC's Open Internet Order and rules will ensure that all BIAS providers are held to a similar standard.

9. Sonic is working hard to expand our reach, improve our performance and increase the value of our service. The FCC's new Open Internet rules will allow us to pursue that mission with renewed vigor. With the new rules in place, Sonic intends to continue to expand its network footprint, deploy fiber and provide more consumers with a competitive choice in broadband providers and services.

Pursuant to 28 U.S.C. § 1746, I hereby certify under penalty of perjury that the foregoing is true and correct. Executed this 21st day of May 2015.



Dane Jasper

Exhibit 13

Declaration of Telecommunications for the Deaf and Hard of Hearing

IN THE UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT

UNITED STATES TELECOM ASSOCIATION, et al., *Petitioners*, v. FEDERAL COMMUNICATIONS COMMISSION, and UNITED STATES OF AMERICA, *Respondents.*	No. 15-1063 (consolidated)

DECLARATION OF CLAUDE STOUT

1. My name is Claude Stout. I am the Executive Director of Telecommunications for the Deaf and Hard of Heading ("TDI"). In that capacity, I oversee TDI's mission of providing leadership in achieving equal access to telecommunications, media, and information technologies for deaf and hard of hearing people. I make this declaration using facts of which I have personal knowledge or based on information provided to me, and in connection with the D.C. Circuit's review of the FCC's recent *Open Internet Order*.

2. As TDI and other deaf and hard of hearing consumer groups, including the National Association of the Deaf, and the accessibility researchers at the Rehabilitation Engineering Research Center on Telecommunications Access

noted in our comments before the FCC, the Commission's re-application of Title II to broadband Internet access services ("BIAS") is an important step in securing the future accessibility of the Internet for the millions of Americans who are deaf or hard of hearing.[1] The re-implementation of Title II for BIAS has restored the portion of the Commission's statutory authority granted by Congress under Section 255 of the 1996 Act to ensure that such services are interoperable with other types of communications services, widely deployed, and accessible to people who are deaf or hard of hearing. Specifically, Section 255 requires "provider[s] of telecommunications services [to] ensure that the service[s] [are] accessible to and usable by individuals with disabilities, if readily achievable." 47 U.S.C. § 255(c). Staying the re-implementation of Title II for BIAS would limit the Commission's ability to use this portion of its authority to address BIAS accessibility issues and would thereby sustain present-day harms to people who are deaf and hard of hearing.

3. ***Lack of support for simultaneous real-time text and voice.*** People who are deaf, hard of hearing, or speech disabled have a spectrum of abilities that make distinct, multiple, and simultaneous modes of communication ideal. For example,

[1] *See generally* Comments Telecommunications for the Deaf and Hard of Hearing, National Association of the Deaf, Hearing Loss Association of America, Deaf and Hard of Hearing Consumer Advocacy Network, Rehabilitation Engineering Research Center on Telecommunications Access, GN Docket No. 14-28 (filed July 18, 2014).

some people who are deaf or hard of hearing can voice for themselves but need a response to arrive via text format because they cannot hear the other party's voice.

4. Services and devices exist that support simultaneous real-time text ("RTT") and voice as part of the same session. Regulations to ensure that these services and devices actually function for individuals who use them over a BIAS connection depend on the Commission's ability to exercise jurisdiction over BIAS, including under Section 255. Allowing for flexible, multimodal communications is critical to reducing latency and increasing accuracy and understanding, which can be important in myriad contexts, especially emergencies, communications with doctors and lawyers, and job interviews.

5. ***Lack of interoperability for non-voice media and services.*** At present, the only commonly interoperable communications medium is narrowband voice. There is no interoperability between communications systems that serve the needs of users with speech disabilities—whether video, RTT, or text messaging. While different types of relay systems interconnect certain applications with that telephone system, the use of those relay systems can impose significant layers of delay and mistranslation. There is such significant fragmentation among video, RTT and text messaging systems that people who rely on them as a primary means of communication have a difficult time with ubiquitous connectivity.

6. Due to this lack of interoperability for non-voice services, deaf and hard of hearing people often must undertake substantial additional efforts to communicate. For example, American Sign Language users may rely on Skype, FaceTime, and a Video Relay Service to be able to connect with all of their contacts. Moreover, to use such applications that run "over-the-top" of a communications network, such users often must cope with throttling issues, data caps, poor wireless connectivity, and significant expense—all of which impose a higher barrier to basic and ubiquitous communication than the one faced by people without hearing loss who can simply use a landline or cellular connection to call anywhere. Title II re-implementation for BIAS underscores that the FCC has immediate and unquestionable authority to craft necessary and appropriate policies to remedy these present and substantial harms endured by deaf and hard of hearing people—both to ensure that such integrated real-time text and voice applications function and are usable in the first place, and to ensure that users of these applications on BIAS networks have access to the basic consumer protections afforded by Section 255.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on this 21st day of May, 2015.

Claude L. Stout

Claude Stout
Executive Director, Telecommunications
for the Deaf and Hard of Hearing

Exhibit 14

Declaration of
Union Square Ventures

IN THE UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT

UNITED STATES TELECOM ASSOCIATION, Petitioner, v. FEDERAL COMMUNICATIONS COMMISSION and UNITED STATES OF AMERICA, Respondents.	Case No. 15-1063 (and consolidated cases)

DECLARATION OF BRAD BURNHAM

I, Brad Burnham, declare as follows:

1. I am a founding partner of Union Square Ventures, LLC ("USV"). I submit this declaration in support of the Joint Intervenors' Opposition to Petitioners' Motion for a Stay Pending Appeal.

2. USV is venture capital firm based in New York City with over $900,000,000 under management. I have been at USV for 12 years. Prior to USV, I was a partner at AT&T Ventures, a venture capital affiliate of AT&T where we

made a number of investments in Competitive Local Exchange Carriers (CLECS) and Data Local Exchange Carriers (DLECS).

3. Since 2004, USV has invested in over 70 web companies (or "edge providers"), which provide services to consumers through the Internet. USV has invested in Internet startups including Twitter, Zynga, Tumblr, Skillshare, SoundCloud, Coinbase, Foursquare, Kickstarter, Hailo, Stack Exchange, Dwolla. Kik Messenger, and Twilio. These companies, all of which were founded within the last decade, provide a diverse array of services including video delivery, security, cloud storage, and payment systems.

4. Based upon my experience and knowledge of the Internet, it is my belief that web companies like the ones in which USV has invested have been successful in part because of a number of characteristics of the open Internet.

5. First, because the Internet separates the network layer from the application layer, web applications can be built with no knowledge of the underlying network. This simplifies development, and lowers costs, reducing barriers to entry and opening the market to a diverse group of entrepreneurs.

6. Second, because users and web start-ups both pay last-mile providers (ISPs) for access to the open Internet, users were not required to pay ISPs to reach

specific services, and web start-ups were not required to pay ISPs or ask their permission to reach specific users.

7. Third, until recently, ISPs had not deployed the technology in their networks to enable them to selectively discriminate against different applications layer web services, so startups and investors like USV that fund those start-ups did not have to worry that ISPs might subtly discriminate against those start-ups services in favor of a paying partner or the ISPs own products.

8. These historical characteristics of the open Internet unleashed unprecedented investment in application layer services, and allowed start-ups to focus on building great products, getting those products into the market quickly, and managing the rapid growth driven by the latent consumer demand unleashed by this rapid innovation.

9. Investing in early stage start-ups carries inevitable risk. Success depends on getting many things right. But, again, until recently, we did not worry about distribution. The open Internet made it possible to get a web service in front of any potential customer. Now that ISPs have the technical ability to discriminate against specific applications, we have to worry that an application could be subtly disadvantaged by the ISP that controls access to consumers.

10. Unlike other risks that we can mitigate through due diligence or active management of our investments, there is nothing we can do to mitigate that risk. Without confidence that a web start-up service can reach consumers unfettered by that consumer's ISP, we would have to be much more selective about where we invest. We would, for instance, need to first convince ourselves that the service in question was not competitive with an ISP's current or planned services or those of their existing or future partners.

11. This would not be the first time USV has avoided investment opportunities where market incumbents act as gatekeepers. Until Apple introduced the iPhone and separated the applications environment from the underlying communications network, USV avoided investing in mobile phone-based applications because those applications had to be explicitly approved by the cellular carrier. Carriers evaluated applications based not on what was good for consumers, but what was good for carriers, so very few of the applications that carriers loaded "on deck" achieved significant consumer adoption. For the same reasons, we made very few investments in music services on the Internet despite the obvious opportunity and pent up consumer demand, because delivering music to consumers on the Internet required protracted negotiations and expensive

licensing deals with music rights holders acting as gatekeepers. Bottom line, if a startup could effectively be put out of business by a gatekeeper like an ISP, we would be less likely to invest in that startup.

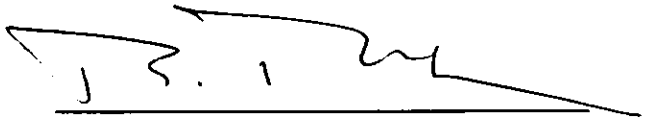
12. Because of the importance of an open Internet to USV's portfolio of businesses and the broader market of applications layer services we invest in, USV participated in this rulemaking proceeding and advocated for strong net neutrality rules. I understand that Petitioners have asked the Court to stay only the FCC's reclassification of broadband Internet access service as a Title II "telecommunications service" and FCC's so-called "general conduct" rule, but have not asked the Court to stay the so-called "bright-line" rules, which ban ISPs from blocking, throttling, or charging fees for traffic between edge providers and consumers.

13. I believe a stay of reclassification and general conduct rule would adversely impact USV's portfolio companies and make us reluctant to invest in web companies that rely heavily on ISPs to carry traffic to and from customers. Reclassification and the general conduct rule serve an important purpose: They prevent ISPs from circumventing the bright-line rules through various efforts that have the purpose and effect of discriminating against certain web applications or

classes of applications. There are too many ways that ISPs can subtly discriminate against edge providers. They can, for example, create data clogs at interconnection points with certain networks. They can also favor their own services or others in deciding what service usages will count toward a customer's data plan. Such discrimination makes it more difficult for edge providers to succeed and therefore makes it less likely USV will invest in those companies.

I declare under penalty of perjury pursuant to 28 U.S.C. § 1746 that the foregoing is true and correct.

Dated: May 21, 2015
New York, New York



Brad Burnham

Exhibit 15

Declaration of Vimeo, LLC

IN THE UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT

UNITED STATES TELECOM ASSOCIATION, Petitioner, v. FEDERAL COMMUNICATIONS COMMISSION and UNITED STATES OF AMERICA, Respondents.	Case No. 15-1063 (and consolidated cases)

DECLARATION OF KERRY TRAINOR

I, Kerry Trainor, declare as follows:

1. I am CEO of Vimeo, LLC ("Vimeo"). I submit this declaration in support of Intervenors' Opposition to Petitioners' Motion for a Stay Pending Appeal. I make this declaration on personal knowledge except where indicated otherwise.

2. I have been CEO of Vimeo since 2012. I have been working in the Internet application space since the late 1990s—when consumers accessed the Internet primarily through dial-up and DSL services. I have worked on variety of Internet application ventures, including those backed by AOL and Yahoo!.

The Vimeo Service

3. Founded in 2004, Vimeo operates an Internet-based video sharing and hosting service. Through its website (http://vimeo.com) and applications, Vimeo provides consumers with tools to upload, share, and watch videos and to communicate with others through a variety of Internet-connected devices. I believe that Vimeo occupies a unique position in the online video market in that it draws and makes available high-quality independent content that might not otherwise be found through traditional media or even other online video distributors ("OVDs").

4. Vimeo provides services to both film creators and viewers. Anyone may join Vimeo and upload videos for free. Creators who wish to obtain enhanced features can purchase a Vimeo Plus (http://vimeo.com/plus/) or a Vimeo PRO (http://vimeo.com/pro) subscription. Presently, Vimeo has over 35 million registered users who collectively upload over 500 hours of video every hour on average. The videos hosted by Vimeo are diverse: They include personal home videos, animation, documentaries, and narrative films uploaded by consumers, amateur and professional filmmakers, artists, entertainment companies, nonprofits, educational institutions, religious organizations, politicians, and assorted businesses with video hosting needs.

5. Anyone with Internet access can watch those videos (subject to the uploaders' privacy settings) through the Vimeo website (or Vimeo's mobile or connected TV applications) or through "embeds" of the Vimeo player on third party websites and applications. Part of what makes Vimeo unique is that Vimeo does not serve advertising within its video player and is therefore able to provide an uncluttered, high-quality viewing experience. Vimeo draws over 160 million unique viewers per month and routinely sees a billion videos plays per month.

6. Since March 2013, Vimeo has offered an on-demand service called Vimeo On Demand (http://vimeo.com/ondemand). This platform allows creators to sell their films to consumers through the Vimeo website or through their own or third party websites. Since its launch, Vimeo On Demand's library has grown to approximately 20,000 titles spanning numerous genres. Fans can purchase and later watch these films on any Internet-connected device.

7. Vimeo can be accessed through both mobile devices and Internet-connected television sets. More than 40% of Vimeo's visitors use mobile devices such as tablets and smartphones to access Vimeo. A growing number of visitors access Vimeo on their connected television sets through third party platforms like Apple TV, Roku, and Xbox. In this manner, Vimeo provides an "over-the-top" online video distribution service.

How Vimeo Reaches Its Consumers

8. All of Vimeo's services are provided through the Internet. The vast majority of Vimeo's users are individual consumers, independent film creators, and small businesses, all of which typically use broadband ISPs to access the Internet. Vimeo-related traffic passes through ISP networks when users upload videos and other content to Vimeo and when Vimeo streams videos and delivers other content to users at their request.

9. Vimeo uses third party content delivery network ("CDN") services to deliver videos to viewers. These CDNs, in turn, connect with ISPs, which in turn provide access to Vimeo's users. Vimeo does not have the ability to reach its users other than through last-mile ISP networks.

The Importance of Speed to Online Video

10. Online video hosting and sharing is a high-bandwidth service. Vimeo was the first online video hosting and sharing site to allow users to upload videos of unlimited length, and was the first such site to offer HD videos (in 2007). In December 2014, Vimeo added the ability of Vimeo PRO members and Vimeo On Demand sellers to allow users to download video files in ultra-HD 4K format.

11. Delivery speed is a critical aspect of the video viewing experience. A 2011 study by researchers at the University of Massachusetts, S. Shunmuga Krishnan and Ramesh K. Sitaraman, *Video Stream Quality Impacts Viewer*

Behavior: Inferring Causality using Quasi-Experimental Designs, Proceedings of the ACM Internet Measurement Conference (IMC), Boston, MA (Nov. 2012), http://people.cs.umass.edu/~ramesh/Site/PUBLICATIONS_files/imc208-krishnan.pdf at pp. 3-4, found that:

- A rebuffering rate of 1% (*i.e.*, a video pauses for 1 out of every 100 seconds) results in 5% less video watched overall.
- There is a "2-second rule" for video watching: People are willing to wait 2 seconds for a video to load, but the rate of abandonment increases significantly thereafter if the video doesn't load.
- Viewer patience is influenced by the expectation of speed from the viewing platform and the perceived value of the content.
- Bad viewing experiences lead not just to abandonment of a particular video, but also to a lower rate of watching *other* videos: Users who experienced a "failed visit" were 2.3% less likely to watch another video in a given week.

The FCC's Order Helps Curb Harmful ISP Practices

12. Although Vimeo does not connect directly with ISPs, it is nonetheless affected by issues that happen at the point of "interconnection," where ISPs connect to CDN and transit providers. Interconnection disputes between CDNs and ISPs can affect Vimeo in at least two ways. First, clogged routes caused by the failure of ISPs to upgrade ports can slow down all of a CDN's traffic, including traffic between Vimeo and its users. Second, because of their ability to cause traffic congestion at interconnection, certain large ISPs may be able to charge CDNs for interconnection fees even though, as I understand it, though such fees

have not historically been charged. Such fees are likely to be passed along to Vimeo in the form of higher CDN fees, which impacts the ability of Vimeo to both provide free and low-cost services to its users and compete with other OVD services including those owned by large ISPs. In my view, the FCC's rules covering interconnection are essential to curbing these harmful practices.

13. ISPs could also engage in harmful practices by discriminating against certain applications or classes of applications through the use of data caps and zero-rating. For example, an ISP may limit the amount of data that a subscriber can upload or download during a month before charging additional fees. At the same time, the ISP can exempt from these limits (and thus any additional fees) a customer's use of data relating to a specific applications (like Vimeo) or classes of applications (like video services generally). ISP practices that favor their own OVD services over Vimeo would distort the OVD market in favor of ISP-owned OVDs.

I declare under penalty of perjury pursuant to 28 U.S.C. § 1746 that the foregoing is true and correct.

Dated: May 21, 2015
New York, New York

Kerry Trainor

Exhibit 16

Declaration of Vonage Holdings Group

IN THE
UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT

UNITED STATES TELECOM ASSOCIATION, Petitioner, v. FEDERAL COMMUNICATIONS COMMISSION and UNITED STATES OF AMERICA, Respondents.	Case No. 15-1063 (and consolidated cases)

DECLARATION OF BRENDAN KASPER ON BEHALF OF VONAGE HOLDINGS CORP.

1. I am Brendan Kasper, Senior Regulatory Counsel for Vonage Holdings Corp ("Vonage").

2. Vonage is an industry leader in providing Voice over Internet Protocol service ("VoIP") to consumers and small and medium businesses.

3. I make this declaration using facts of which I have personal knowledge or based on information provided to me, and in connection with the D.C. Circuit's review of the FCC's recent Open Internet Order.

4. The purpose of my declaration is to explain how delaying implementation of the FCC's Open Internet Order will harm Vonage and pre-

sumably other similarly situated VoIP providers, as well as the consumers of these VoIP services.

5. Vonage is a provider of Voice over Internet Protocol ("VoIP") services to residential and business customers. Vonage's VoIP services allow its customers to transmit voice over the Internet to other Vonage customers and to customers of ordinary voice telephone service. While Vonage's service is not traditional telephone service, Vonage customers can use it in much the same way as traditional telephone service. In addition to the ability to make local and long distance phone calls, Vonage provides users with the ability to reach emergency calling services in compliance with the FCC's E911 mandates.

6. To enable this service, Vonage supplies its customers with an analog terminal adapter. (ATA). To use Vonage's VoIP service, a customer plugs the ATA into an ordinary telephone handset and his or her broadband service. The ATA converts the customer's voice into data "packets" which are transmitted over the Internet to the recipient of the transmission. If this recipient is another Vonage subscriber, the transmission is received at the device purchased by the recipient and converted back into voice. The recipient can then speak and his voice will be converted into packets by his device and back into voice by the sender's device. In this way, the two

parties can carry on two-way, real-time, telephonic-quality conversations. In the event the recipient is not a Vonage subscriber, the voice data packets are converted back to analog voice and transported to the recipient by a telephone service provider hired by Vonage. However, the effect is the same in that the parties can carry on two-way, real-time, telephonic-quality conversations.

7. In addition to allowing its customers to make VoIP calls from their homes or offices utilizing their fixed broadband service, Vonage's iOS and Android applications enable its customers to use their Vonage home or business VoIP service from their mobile wireless smartphones including receiving calls to their home or business VoIP service and originating calls using their home or business VoIP service telephone number. These services generally work as described above but instead of using a customer's fixed broadband service to transmit VoIP calls, they use either Wi-Fi or a wireless provider's mobile broadband service (*e.g.* 4G or 3G) for this transmission. Further description of Vonage's services can be found at www.vonage.com.

8. In order to use Vonage's VoIP services its customers must have a broadband connection to the Internet. Vonage generally does not provide this broadband service and instead the customer purchases this service from a broadband Internet access provider.

9. Vonage's VoIP services compete with traditional telephone services and with VoIP services offered by broadband Internet access providers, including telephone companies like AT&T and other members of the United States telecom Association, as well as VoIP services provided by cable television companies that are likely members of the National Cable and Telecommunications Association or the American Cable Association. In addition, Vonage's VoIP services compete with voice services offered by wireless broadband providers that are members of the CTIA.

10. Vonage has approximately 2.4 million VoIP lines with customers ranging from single line consumer accounts to business customers with 1,000 or more VoIP lines.

11. Consumers typically purchase Vonage service based on the value of the service; especially for users who make a lot of international calls. Vonage's leading consumer offer is Vonage World that includes unlimited calling to the U.S. and over 60 international countries. Consumers realize additional value because Vonage's iOS and Android applications let them use their Vonage home service on their smartphones. This allows them to make international calls from their smartphones without having to pay the mobile carrier for making an international call.

12. Like consumers, small and medium business customers also purchase Vonage services because of the value these VoIP services offer versus traditional voice services and the integration of the service into their mobile smartphones. In addition, Vonage business services offer an extensive of range of premium add-on features. One difference between the consumer and small/medium business sectors is that while the consumer segment is fairly mature, customers in the small and medium business sectors are just beginning to realize the benefits of VoIP services. One industry analyst projects that between 2015-2020, the small/medium business market for VoIP will grow at compound annual growth rate of 29.2%.[1]

13. Given the spread of VoIP services to a significant portion of the consuming public, it would be dangerous for broadband providers to throttle or degrade VoIP transmissions as some of those VoIP transmissions may be for emergency calling, or E911 service.

14. Further, Because Vonage's VoIP services compete directly with the voice services offered by traditional telephone and cable companies, (whether provided directly or through an affiliate) Vonage has always been sensitive to the fact that its customers' ability to use Vonage's service de-

[1] Frost & Sullivan, *Analysis of the North American Hosted IP Telephony and UCC Services Market - Innovative Business Models Boost Adoption*, August 2014.

pends on the availability of a reliable broadband connection supplied by a competitor.

15. Vonage has been able to grow its services and attract additional capital to expand its service to new markets because the FCC has long committed to protect the Open Internet.

16. In fact the FCC's ability to enforce Open Internet principles was important to the early stages of Vonage's growth. In 2005, when VoIP was a relatively new service, some broadband providers blocked their subscribers from using VoIP services, including Vonage.

17. The FCC investigated the blocking by one particular DSL broadband provider, a rural telephone company named Madison River Communications. Madison River entered into a consent decree with the FCC agreeing not to block VoIP services.[2] The consent decree expressly cited Section 201(b) which applied because at the time of the consent decree telephone company broadband was regulated as a telecommunications service.[3]

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[2] Declan McCullagh, CNET.com, *Telco agrees to stop blocking VoIP calls*, March 3, 2005. (Attached As Exhibit Von. 1).

[3] *Madison River Communications, LLC and affiliated companies*, File No. EB-05-IH-0110; Acct. No.; FRN: 0004334082, Consent Decree, 20 FCC Rcd 4295 (EB 2005). (Attached As Exhibit Von. 2).

18. Later that year, the FCC classified DSL and other wireline broadband services as an information service and in most cases deprived the FCC of the ability to use Title II to protect the Open Internet.

19. The FCC's inability to enforce its Open Internet rules became apparent after the Court's decisions in *Comcast v. FCC* in 2010 and *Verizon v. FCC* in 2014.

20. The FCC's Open Internet rules now clearly prohibit conduct like blocking or degrading VoIP traffic. And with the reclassification of broadband as telecommunications service, the FCC is now able to enforce its Open Internet rules and prohibit broadband providers from blocking or degrading third party applications or services.

21. This is particularly important for suppliers of Internet applications and services such as VoIP that compete directly with the voice offerings of broadband ISPs. Without Open Internet rules these companies would have the incentive and ability to discriminate against Vonage's services in favor of their own voice services. Such discrimination would deny consumers and small and medium businesses, the enhanced services and costs savings offered by Vonage and other similar VoIP providers. This could be particular harmful in the small/medium business sector where the realization of the value and enhanced capability of VoIP service is still at an early stage.

Vonage's need for Internet openness apply equally to both fixed and mobile broadband, as having VoIP service that works over mobile broadband is becoming increasingly important to attract and retain customers.

22. Without the proper legal foundation, the FCC would be unable to enforce its rules. If the court grants the petition for stay it will deprive the FCC of the legal foundation on which its rules are based.

23. At a minimum, the lack of a legal foundation for the Open Internet rules will create uncertainty for VoIP providers and other providers of edge applications that could jeopardize further investments in new services and applications.

24. Declarant sayeth no more.

I declare under penalty of perjury that the foregoing is true and correct.

Brendan Kasper
Senior Regulatory Counsel
Vonage Holdings Corp.

Executed on: May 21, 2015
Holmdel, New Jersey

Vonage Declaration of Brendan Kasper
Exhibit 1

March 3, 2005 1:08 PM PST

Telco agrees to stop blocking VoIP calls

By Declan McCullagh [mailto:declan.mccullagh@cnet.com?subject=FEEDBACK: Telco agrees to stop blocking VoIP calls]
Staff Writer, CNET News

A North Carolina telecommunications company accused of deliberately blocking Internet phone traffic has reached a deal with federal regulators to halt the controversial practice.

The Federal Communications Commission said Thursday that Madison River Communication will "refrain from blocking" VoIP, or voice over Internet Protocol, calls and will pay a $15,000 fine to the government.

"We saw a problem, and we acted swiftly to ensure that Internet voice service remains a viable option for consumers," FCC Chairman Michael Powell said in a statement. The consent decree [http://hraunfoss.fcc.gov/edocs_public/attachmatch/DA-05-543A2.pdf] prevents Madison River from VoIP blocking for 30 months.

Based in Mebane, N.C., Madison River reported $194.4 million in revenue for the 2004 calendar year from 120,649 residential voice subscribers, 60,563 business voice subscribers, and 39,562 DSL customers. The company has filed a registration statement for a proposed initial public offering.

VoIP provider Vonage confirmed that Madison River was the broadband provider it complained to the FCC about [http://www.cnet.com/Vonage-says-broadband-provider-blocks-its-calls/2100-7352_3-5576234.html] earlier this month, leading to the FCC's investigation.

"We're very pleased that the commission took very swift action to address the concerns that we had regarding an Internet service provider's ability to block our customers' communications with each other," Vonage CEO Jeffrey Citron said. "This sends a clear message that port blocking will not be tolerated."

Port blocking occurs when a company may prevent certain types of Internet traffic from traveling through its networks, for instance in an attempt to prevent voice subscribers

from switching to VoIP.

Port blocking isn't reserved for high-profile VoIP carriers like Vonage. Nuvio, a small Net phone service provider based in Kansas City, Mo., says its customers' calls have been affected by at least one cable operator. Nuvio has yet to make any formal complaint to the FCC, however. In September [http://www.cnet.com/VoIP-provider-fears-predatory-practices/2100-7352_3-5374268.html] , Nuvio told the FCC that port blocking was inevitable, given just how easy it was to do and the economic incentives for doing so.

Vonage's Citron said Madison River was the largest company to attempt port-blocking against Vonage customers. "We've identified one or two others that are very small," Citron said, adding that the information will be forwarded to the FCC. Many large cable companies have pledged never to engage in the practice.

Madison River did not immediately return phone calls.

CNET News.com's Ben Charny contributed to this report.

[]

3 comments

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close

Vonage Declaration of Brendan Kasper
Exhibit 2

Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	File No. EB-05-IH-0110
	)	
Madison River Communications, LLC and affiliated companies	)	Acct. No. 200532080126
	)	FRN: 0004334082
	)	

ORDER

Adopted: March 3, 2005 **Released: March 3, 2005**

By the Chief, Enforcement Bureau:

1. In this Order, we adopt a Consent Decree terminating an investigation into the compliance of Madison River Communication, LLC, its parent company Madison River Telephone Company, LLC, and its affiliated companies under common control or ownership of Madison River Telephone Company, LLC ("Madison River") with section 201(b) of the Communications Act of 1934, as amended (the "Act"), 47 U.S.C. § 201(b).

2. The Enforcement Bureau ("Bureau") and Madison River have negotiated the terms of a Consent Decree that would terminate the Bureau's investigation. A copy of the Consent Decree is attached hereto and incorporated by reference.

3. We have reviewed the terms of the Consent Decree and evaluated the facts before us. We believe that the public interest would be served by approving the Consent Decree and terminating the investigation.

4. Accordingly, IT IS ORDERED, pursuant to section 4(i) of the Communications Act of 1934, as amended, 47 U.S.C. § 154(i), and the authority delegated by section 0.111 and 0.311 of the Commission's rules, 47 C.F.R. §§ 0.111, 0.311, that the attached Consent Decree IS ADOPTED.

5. IT IS FURTHER ORDERED that the above captioned investigation IS TERMINATED.

FEDERAL COMMUNICATIONS COMMISSION

David H. Solomon
Chief, Enforcement Bureau

Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	File No. EB-05-IH-0110
	)	
Madison River Communications, LLC	)	Acct. No. 200532080126
and affiliated companies	)	
	)	FRN: 0004334082

CONSENT DECREE

I. INTRODUCTION

1. The Enforcement Bureau ("Bureau") of the Federal Communications Commission (the "FCC" or the "Commission") and Madison River Communication, LLC on behalf of itself, its parent company Madison River Telephone Company, LLC, and its affiliated companies under common control or ownership of Madison River Telephone Company, LLC ("Madison River" or the "Company"), by their authorized representatives, hereby enter into this Consent Decree to resolve an investigation (the "Investigation") by the Bureau regarding Madison River's compliance with section 201(b) of the Communications Act of 1934, as amended,[1] with respect to the blocking of ports used for Voice over Internet Protocol ("VoIP") applications, thereby affecting customers' ability to use VoIP through one or more VoIP service providers. The Investigation was undertaken pursuant to sections 4(i), 4(j), 218, and 403 of the Communications Act.[2]

II. DEFINITIONS

2. For the Purposes of this Consent Decree, the following definitions shall apply:

(a) "Adopting Order" means an Order of the Bureau adopting the terms and conditions of this Consent Decree without change, addition or modification.

(b) "Madison River" or the "Company" means Madison River Communications, LLC, and any affiliate, d/b/a, predecessor-in-interest, parent companies and any direct or indirect subsidiaries of such parent companies, or other affiliated companies or businesses, and their successors and assigns, including but not limited to, Madison River Telephone Company, LLC, and its direct and indirect subsidiaries.

(c) "Bureau" means the Enforcement Bureau of the Federal Communications Commission.

(d) "Communications Act" or "Act" means the Communications Act of 1934, as amended, 47 U.S.C. § 151 *et seq*.

(e) "Effective Date" means the date on which the Bureau releases the Adopting Order.

(f) The "FCC" or the "Commission" means the Federal Communications Commission.

[1] 47 U.S.C. § 201(b).

[2] 47 U.S.C. §§ 154(i), 154(j), 218 and 403.

(g) "Investigation" means the investigation commenced by the Bureau's Letter of Inquiry dated February 11, 2005.

(h) "Parties" means Madison River and the Bureau.

III. BACKGROUND

3. On February 11, 2005, the Bureau issued a Letter of Inquiry ("LOI") to Madison River, initiating an investigation. Specifically, the Bureau inquired about allegations that Madison River was blocking ports used for VoIP applications, thereby affecting customers' ability to use VoIP through one or more VoIP service providers.[3] Madison River submitted its initial response to the LOI on February 18, 2005, and supplemented that response on February 22, 2005.[4]

IV. AGREEMENT

4. To avoid the expenditure of additional resources that would be required to further litigate the issues raised in the Investigation, and in consideration for the termination of the Investigation in accordance with the terms of this Consent Decree, Madison River agrees to make a voluntary payment to the United States Treasury, without further protest or recourse to a trial *de novo,* in the amount of fifteen thousand dollars ($15,000.00) within ten (10) business days after the Effective Date of the Adopting Order. The payment may be made by check or similar instrument, payable to the order of the Federal Communications Commission. The payment must include the Acct. No. and FRN No. referenced above. Payment by check or money order must be mailed to Forfeiture Collection Section, Finance Branch, Federal Communications Commission, P.O. Box 73482, Chicago, IL, 60673-7482. Payment by overnight mail must be sent to Bank One/LB 73482, 525 West Monroe, 8th Floor Mailroom, Chicago, IL 60661. Payment by wire transfer must be made to ABA Number 071000013, receiving bank Bank One, and account number 1165259.

5. In order to resolve and terminate the Investigation, the Bureau requires, and Madison River agrees, that Madison River shall not block ports used for VoIP applications or otherwise prevent customers from using VoIP applications.

6. The Parties agree and acknowledge that this Consent Decree shall constitute a final settlement of the Investigation. In express reliance on the covenants and representations contained herein, and in order to avoid the potential expenditure of additional public resources, the Bureau agrees to terminate the Investigation. In consideration for the termination of this Investigation, Madison River agrees to the terms, conditions, and procedures contained herein.

7. The Bureau agrees that, in the absence of new evidence relating to incidents that were not the subject of the Investigation, the Bureau will not use the facts developed in the Investigation, or the existence of this Consent Decree, to institute, on its own motion, any new proceedings, formal or

[3] *See* Letter dated February 11, 2005 from Hillary S. DeNigro, Deputy Chief, Investigations and Hearings Division, Enforcement Bureau, FCC, to Steve Vanderwoude, Chairman & CEO, Madison River Communications, LLC, ("February 11 LOI").

[4] *See* Letter dated February 18, 2005 from Kenneth E. Hardman, Attorney for Madison River Telephone Company, LLC, et al., to Hillary S. DeNigro, Deputy Chief, Investigations and Hearings Division, Enforcement Bureau, FCC ("Madison River Response"); Letter dated February 22, 2005 from Kenneth E. Hardman, Attorney for Madison River Telephone Company, LLC, et al., to Hillary S. DeNigro, Deputy Chief, Investigations and Hearings Division, Enforcement Bureau, FCC ("Madison River Supplement").

informal, or to take any actions on its own motion against Madison River, including referral of this matter to any other government agency, concerning the matters that were the subject of the Investigation.

8. Madison River waives any objection to the authority of the Bureau to enter into and adopt this Consent Decree.

9. Madison River represents and warrants that it is the properly named party to this Consent Decree and is solvent and has sufficient funds available to meet fully all financial and other obligations set forth herein. Madison River further represents and warrants that it has caused this Consent Decree to be executed by its authorized representative, as a true act and deed, as of the date affixed next to said representative's signature. Said representative and Madison River respectively affirm and warrant that said representative is acting in his/her capacity and within his/her authority as a corporate officer of Madison River, and on behalf of Madison River and that by his/her signature said representative is binding Madison River to the terms and conditions of this Consent Decree.

10. The Parties agree that this Consent Decree does not constitute either an adjudication on the merits or a factual or legal finding regarding any compliance or noncompliance with the requirements of the Act and the Commission's orders and rules. The Parties agree that this Consent Decree is for settlement purposes only.

11. Nothing in this Consent Decree shall limit the Commission's authority to enforce this Consent Decree in accordance with its terms, nor shall anything in this Consent Decree limit the Commission's authority to consider and adjudicate any formal complaint that may be filed pursuant to section 208 of the Act, 47 U.S.C. § 208, and to take any action in response to such complaint.

12. Madison River waives any and all rights it may have to seek administrative or judicial reconsideration, review, appeal, or stay, or to otherwise challenge or contest the validity of this Consent Decree and the Order adopting this Consent Decree, provided the Order adopts the Consent Decree without change, addition, or modification.

13. Madison River's decision to enter into this Consent Decree is expressly contingent upon the Bureau's issuance of an Adopting Order.

14. In the event that this Consent Decree is rendered invalid by any court of competent jurisdiction, it shall become null and void and may not be used in any manner in any legal proceeding.

15. The Parties also agree that if any provision of this Consent Decree conflicts with any subsequent rule or order adopted by the Commission (except an order specifically intended to revise or otherwise modify the terms of this Consent Decree to which Madison River does not consent) that provision will be superseded by such Commission rule or order.

16. By this Consent Decree, Madison River does not waive or alter its right to assert and seek protection from disclosure of any privileged or otherwise confidential and protected documents and information, or to seek appropriate safeguards or confidentiality for any competitively sensitive or proprietary information. Nothing in this Consent Decree shall be deemed to prejudice Madison River's rights to seek exemption from disclosure pursuant to the Freedom of Information Act and the Commission's implementing regulations for documents provided by Madison River to the Commission, or for Madison River to contest any request for disclosure of agency records relating to the subject of this Consent Decree.

17. If either Party (or the United States on behalf of the Commission) brings a judicial action to enforce the terms of the Adopting Order, neither Madison River nor the Bureau shall contest the validity of the Consent Decree or the Adopting Order, and Madison River and the Bureau will waive any statutory

right to a trial *de novo* with respect to the issuance of the Adopting Order and shall consent to a judgment incorporating the terms of this Consent Decree.

18. Madison River agrees that any violation of the Consent Decree or the Adopting Order will constitute a separate violation of a Commission order, entitling the Commission, or its delegated authority, to exercise any rights or remedies attendant to the enforcement of a Commission order.

19. The Parties agree that the requirements of this Consent Decree shall expire on the earlier of thirty (30) months from the Effective Date, or the effective date of a federal statute or Commission rule or order declaring or clarifying that the conduct described in paragraph 5 above does or does not violate the Act or Commission rules.

20. This Consent Decree may be signed in counterparts.

For: Madison River Communications, LLC.

Date

Matt L. Springer
Vice President and General Counsel

For: Enforcement Bureau
Federal Communications Commission

March 3, 2005
Date

David H. Solomon
Chief, Enforcement Bureau

right to a trial *de novo* with respect to the issuance of the Adopting Order and shall consent to a judgment incorporating the terms of this Consent Decree.

18. Madison River agrees that any violation of the Consent Decree or the Adopting Order will constitute a separate violation of a Commission order, entitling the Commission, or its delegated authority, to exercise any rights or remedies attendant to the enforcement of a Commission order.

19. The Parties agree that the requirements of this Consent Decree shall expire on the earlier of thirty (30) months from the Effective Date, or the effective date of a federal statute or Commission rule or order declaring or clarifying that the conduct described in paragraph 5 above does or does not violate the Act or Commission rules.

20. This Consent Decree may be signed in counterparts.

For: Madison River Communications, LLC.

March 3, 2005
Date

Matt L. Springer
Vice President and General Counsel

For: Enforcement Bureau
Federal Communications Commission

Date

David H. Solomon
Chief, Enforcement Bureau

Exhibit 17

Declaration of William P. Zarakas and Matthew Aharonian

**IN THE UNITED STATES COURT OF
FOR THE DISTRICT OF COLUMBIA CIRCUIT**

UNITED STATES TELECOM ASSOCIATION, Petitioner, v. FEDERAL COMMUNICATIONS COMMISSION and UNITED STATES OF AMERICA, Respondents.	Case No. 15-1063 (and consolidated cases)

**DECLARATION OF WILLIAM P. ZARAKAS
AND MATTHEW AHARONIAN**

1. My name is William P. Zarakas. I am a Principal with The Brattle Group, an economics consulting firm, where I work primarily on economic and regulatory matters concerning the communications and energy industries. I have been involved in the economic analysis of issues facing these industries for roughly 30 years. I have provided reports and/or testimony before the Federal Communications Commission, the Federal Energy Regulatory Commission, the Securities and Exchange Commission, the Copyright Royalty Judges (Library of Congress), the U.S. Congress, state regulatory agencies, arbitration panels, foreign governments and courts of law. My CV is attached.

2. My name is Matthew Aharonian. I am a Senior Associate with The Brattle Group, where I focus on asset pricing, risk management, and capital markets. I have extensive experience in the design and implementation of event studies, and have consulted on financial issues in a

number of cases, including class actions on behalf of both plaintiffs and defense in securities litigations. My CV is also attached.

3. We have been asked by counsel for COMPTEL and DISH Network to examine whether or not there were significant stock price movements for a panel of publically traded companies on three specified FCC event dates in January and February 2015. The panel of companies included two publicly traded telephone companies (AT&T and Verizon) and four publicly traded cable companies (Comcast, Time Warner Cable, Cablevision and Charter), all of whom have significant broadband Internet access businesses.[1]

4. We were asked to analyze the movements of these companies' stock prices on the following days: 1) January 8, 2015, the day after FCC Chairman Wheeler gave a late afternoon (post market close) speech at the Consumer Electronics Show. We have been advised that this speech was received by industry participants as an indication that the FCC was seriously considering placing broadband Internet access under its Title II authority; 2) February 4, 2015, the day that Chairman Wheeler announced that he would circulate a draft order classifying broadband Internet access service as a telecommunications service subject to Title II; and 3) February 26, 2015, the day that the FCC adopted the draft order.

[1] It is worth noting that while Comcast, Time Warner Cable and Charter are included in the panel, these companies were involved in significant merger negotiations during this period. It is well recognized by financial economists that such merger transactions can break "normal" relationships between stock market returns for a company and returns on a general market index.

5. We find no evidence of statistically significant stock price movements for the panel companies on those dates that should, in our opinion, be attributed to the events described above. Specifically, we find no statistically significant changes in stock prices for either the telephone companies or the cable companies on the January 8th or February 26th event dates. In addition, we find there to be no statistically significant negative returns for any of the companies on the February 4th event date. However, for that date, we also found statistically significant *positive* returns for Comcast, Time Warner, and Charter; that is, the stock prices for those companies increased in a statistically significant way. In our opinion, this positive statistically significant result is more likely associated with the impact that the FCC event had on the prospects for completing the merger than it was related to an announcement about the FCC's Title II authority.

Approach

6. A primary method used by financial economists to assess the impact (positive or negative) of an event is through a stock market event study. The event study methodology is a widely accepted and standard statistical approach designed to determine whether or not an event is statistically significant in explaining changes in a company's stock price. As Professor MacKinlay notes in a widely-cited review article on event studies, "Using financial market data, an event study measures the impact of a specific event on the value of a firm."[2] Changes in stock prices are reasonable to use as an indicator of potential harm caused by an event because investors value assets based on their expectations about the assets' future operating free cash flow. Changes in expectations of future cash flows (because of an action or event) will therefore

[2] A. Craig MacKinlay, "Event Studies in Economics and Finance," *Journal of Economic Literature* 35, March 1997, p. 13. This article provides many citations to articles discussing event-study methods, as well as to examples of event studies.

generally lead to changes in asset values, which are readily translated into changes in equity values.[3]

7. For this case, we used the event study methodology to assess whether or not equity prices for the panel of companies described above declined in a statistically significant way when the likelihood increased that the FCC would classify broadband internet access services (BIAS) as a telecommunications service. More specifically, this analysis examines whether there were statistically significant price drops on the specified event dates that cannot be attributed to broader market movements, or to any other event. If so, that could be viewed as potential evidence that stock market investors (in the collective sense) agree with petitioners' claim that Title II regulation of broadband Internet access service will impose unrecoverable harms.

8. Event studies identify and test specific dates (as opposed to long trends) because stock markets readily and in short order respond to new information. That is, new information (e.g., conveyed through an announcement from a company or a ruling from a court of law) will be promptly processed by market participants and reflected in stock prices. Furthermore, the event study methodology provides an empirical framework for isolating the effects of the particular event being studied from the many factors and news items affecting stock prices at any given time. We follow the standard practice of removing the impact of general market movements by

[3] This reflects the informational efficiency of U.S. equity markets. See Eugene F. Fama, "Efficient Capital Markets: A Review of Theory and Empirical Work," Journal of Finance, v. 25, n. 2 (May 1970) 383-417. See also Eugene F. Fama, "Efficient Capital Markets: II," Journal of Finance, v. 46, n. 5 (December 1991) 1575-1617.

including a broad stock market index, specifically the S&P 500 Index, in the event study design.[4] Any residual price movements (i.e., after adjusting for general market movements) represent the variations in stock prices that coincide with the specified event, and are referred to as *abnormal returns*.

Results

9. **Table 1** (attached, Summary of Abnormal Returns for the Panel of Companies on the Specified Event Dates) summarizes the results of a statistical analysis of stock market abnormal returns on each of the three specified event dates. The table indicates that there were no statistically significant changes (positive or negative) in prices for either the telephone companies or the cable companies on the January 8th or February 26th event dates.[5] There are also no statistically significant abnormal negative returns for any of the companies on the February 4th event date. However, for that date, the analysis indicates statistically significant positive returns for Comcast, Time Warner, and Charter, the cable companies in our panel that were involved in a high profile merger negotiation at the time. As the only statistically significant results are associated with these three companies (combined with the fact that the

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[4] In many cases, it is common to include an industry index as part of the event study design in order to control for industry wide effects that are unrelated to the market. However, that is not appropriate here, because the impact of the FCC's classification of BIAS as a telecommunications service will, per the petitioner's allegations, affect a range of companies in the telecommunications industry. Thus, if the allegation is correct, including an industry index in the event study presented here would unduly bias results.

[5] To be complete in our analysis, we also examined the day prior to (to allow for events "leaking out" in advance of the publicized event) and subsequent to (in case the market is slow to respond) the specified event dates. We found that there is a negative and significant abnormal return for the telephone companies on January 7, 2015, the day of Chairman Wheeler's late afternoon speech (i.e., after the stock market had closed) at the Consumer Electronics Show. Our review of news feeds, blogs, social media and analyst reports indicates that no information about the Chairman's speech was conveyed prior to its delivery. As such, we have found no evidence to indicate that these negative abnormal returns could be attributed to the content of the Chairman's speech.

statistical significance is positive), we are led to believe that these results are related to the merger, rather than reflecting the FCC's views on Title II regulation.[6]

10. As a further check on the results, we considered the possibility that these individual events may have represented the onset of a series of subsequent, possibly smaller, events that collectively over time led to gradual changes in market expectations about the future regulatory environment. To the extent that the evolution of market expectations is more gradual (and to the degree they were relevant to investor valuations), they can be difficult to individually parse out from the "normal" amount of day-to-day price movement. However, the cumulative impact of such gradual changes can still be statistically studied using *cumulative abnormal returns* (CAR) over the relevant period. Thus, we also considered the cumulative effects following these events (i.e., stock market responses within 14 days of the event) in our analysis. The results of the statistical analysis of the cumulative events are provided in **Table 2** (attached, Summary of Cumulative Abnormal Returns for the Panel of Companies Over 14 Days from the Specified Event Dates). In this case, our results indicate that the panel companies experienced no statistically significant cumulative abnormal returns in the two weeks following the specified event dates.

11. We also attach a Summary of Event Study Design and Summary of Model Estimation, attached as **Tables 3** and **4**, respectively.

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[6] As part of our analysis, we also examined the news surrounding the specified event dates for potential evidence that other material events may have been experienced by the panel companies, and may have contaminated our results. We found no such events that we deemed material.

12. In summary, for the panel of companies analyzed, the results of the event studies described above reveal no negative, statistically significant stock price movements on the three event dates specified.

Pursuant to 28 U.S.C. § 1746, I hereby certify under penalty of perjury that the foregoing is true and correct. Executed this 22nd day of May 2015.

William P. Zarakas

Matthew Aharonian

Table 1: Summary of Abnormal Returns for the Panel Companies on the Specified Event Dates

	2015-01-08	2015-02-04	2015-02-26
AT&T	0.04%	0.47%	0.96%
Verizon	1.12%	0.22%	0.47%
Comcast	0.29%	3.07%***	-0.64%
Time Warner	0.08%	2.28%**	-1.31%
Charter	2.13%	3.59%**	0.08%
Cablevision	-0.28%	1.67%	1.84%

Note: *p<0.1; **p<0.05; ***p<0.01

Table 2: Summary of Cumulative Abnormal Returns for the Panel Companies Over 14 Calendar Days From the Specified Event Dates

	2015-01-08	2015-02-04	2015-02-26
AT&T	1.27%	-0.54%	-1.47%
Verizon	2.82%	1.27%	0.87%
Comcast	0.63%	2.34%	1.91%
Time Warner	-1.07%	0.89%	3.53%
Charter	-0.67%	7.09%	7.72%
Cablevision	1.01%	-1.25%	-0.64%

Note: *p<0.1; **p<0.05; ***p<0.01

Table 3: Summary of Event Study Design

Companies:	Telephone: AT&T, Verizon Cable: Comcast, Time Warner, Charter, Cablevision
Market Model:	$company_t = Intercept + \beta_1 \cdot S\&P500_t + \epsilon_t$ β is a number that represents the company stock's sensitivity to the market ϵ represents the model error (i.e., the factors not captured in the market factor)
Returns Frequency:	Daily
Estimation Window:	One year ranging from Jan 1, 2014 through Dec 31, 2014
Specified Event Dates:	Jan 8, 2015; Feb 4, 2015; Feb 26, 2015 For the CAR calculations, each date above through 14 calendar days
Factors:	***company:*** log(company total return) ***S&P 500:*** log(S&P 500 Total Return)

Table 4: Summary of Market Model Estimation

	Dependent variable: log(daily stock return) on:					
	AT&T	Verizon	Comcast	Time Warner	Charter	Cablevision
	(1)	(2)	(3)	(4)	(5)	(6)
S&P 500	0.564***	0.591***	1.054***	1.003***	0.949***	1.049***
constant	−0.0005	−0.0005	−0.0001	−0.0001	0.0003	0.00002
Observations	252	252	252	252	252	252
R^2	0.197	0.205	0.414	0.319	0.194	0.244
Adjusted R^2	0.193	0.202	0.412	0.316	0.191	0.241

Note: *p<0.1; **p<0.05; ***p<0.01

WILLIAM P. ZARAKAS
Principal

Cambridge, MA | +1.617.864.7900 | Bill.Zarakas@brattle.com

William P. Zarakas is a Principal with The Brattle Group, an economics consulting firm, and an expert on economic and regulatory matters involving the communications and energy industries. He has worked on a wide range of issues concerning the telecommunications and media industries, including cost and pricing analyses in regulated industries, economic feasibility analyses associated with building-out broadband infrastructure, valuation of wireless spectrum, and, analyses rates and the distribution of royalties in the cable and satellite television industries.

Mr. Zarakas also has extensive experience in analyzing the economics of regulated industries and the evolving factors that are affecting industry business models. Recent applications of this focus include the economics of broadband networks in the telecommunications industry and the of distributed generation resources on utility business models. Mr. Zarakas also works on matters pertaining to infrastructure resiliency, the regulatory frameworks, notably with respect to performance based regulation, and the valuations of infrastructure assets and businesses. He has also examined the impacts of investment levels, operational performance, operating cost levels, and rates on utility equity prices and on customer satisfaction.

Mr. Zarakas has provided testimony and expert reports before the Federal Communications Commission, the Federal Energy Regulatory Commission, the Securities and Exchange Commission, the Copyright Royalty Judges (Library of Congress), the U.S. Congress, state regulatory agencies, arbitration panels, foreign governments and courts of law. He has led (and authored reports concerning) special investigations on behalf of corporate boards of directors and audits of management practices and operational and financial performance on behalf of regulatory commissions. He holds an M.A. in economics from New York University and a B.A., also in economics, from the State University of New York.

Communications Economics and Valuations

- Cost Modeling: Developed model that estimated the cost of deploying mobile broadband in rural areas, on behalf of GCI. Authored expert report and presented model and conclusions to the FCC In The Matter Of Connect America Fund and Universal Service Reform – Mobility Fund.
- Spectrum Valuation: Directed, authored reports, and/or provided expert testimony in cases involving valuations of wireless spectrum valuation. Cases involved determining market comparable values and performing discounted cash flow (DCF) and econometric-based analyses. Analyses were conducted on behalf of communications carriers, regulatory and governmental agencies in the U.S. and abroad, capital management companies, financial institutions and debtors.

- Conducted analyses and authored expert report estimating value of Mobile Satellite Service (MSS) spectrum (i.e., the 2 GHz Band from 2000-2020 MHz and 2180-2200 MHz, the Big LEO from 1610-1626.5 MHz and 2483.5-2500 MHz, and the L-band from 1525-1559 MHz and 1626.5-1660.5 MHz) in several matters, including matters involving the Terrestar bankruptcy. Analyses included impact of incorporating FCC authorized ancillary terrestrial component (ATC) into MSS mobile broadband networks.
- Analyzed spectrum values in the 2.3 and 2.5 GHz bands for the U.S. market.
- Analyzed value of Advanced Wireless Services (AWS; 1.7 / 2.1 GHz) band for the U.S. market.
- Analyzed value of unpaired 2.1 GHz spectrum for the U.S. market.
- Analyzed value of 2.3 GHz (WCS) 3.5 GHz (FWA) spectrum in Canadian market.
- Authored report concerning market comparable analysis of U.S. PCS market.
- Provided expert testimony concerning potential value of wireless spectrum in the 700 MHz band.
- Analyzed value of Specialized Mobile Radio (SMR) and Private Land Mobile Radio Services (PLMRS) spectrum on behalf of utility operating companies in the U.S. market.
- Analyzed value of narrowband PCS and IVDS spectrum portfolio.
- Directed, led analysis and authored report concerning valuations of wireless spectrum in the Middle East-North African (MENA) region for an international wireless operator.
- Directed, led analysis and authored report concerning impact of additional wireless operators on spectrum values for the telecommunications regulator in the Kingdom of Jordan.

- Royalty Distribution: Analyzed costs and value of retransmitted television programming in cable and satellite video markets and determined distribution of copyright royalty fees among content providers. Authored expert report Before The Copyright Royalty Judges, Library of Congress, Washington D.C. In The Matter of Distribution of the 2004 and 2005 Cable Royalty Funds, Docket No. 2007-3 CRB CD 2004-20. June 1, 2009
- International Arbitration (satellite communications): Authored expert report concerning the impact of an alleged breach of contract on lost profits in a 23 country business operation concerning a satellite communications business. Performed detailed financial modeling to determine revenues, net income and net present value using risk adjusted discount rates for a satellite service provider.

- Commercial Litigation (broadband communications): Provided expert testimony concerning the estimate of commercial damages stemming from an alleged breach of contract associated with relocating infrastructure assets. Public Service Company of New Mexico vs. Smith Bagley, Inc. and Lite Wave Communications LLC In The United States District Court For The District of New Mexico. March 2007.
- Commercial Litigation (wireline communications): Developed analysis and supported expert testimony concerning damages associated with cable breaks and disruption of wholesale transport services. Analysis involved estimating lost profits and determining replacement cost of temporarily lost capacity. MCI WorldCom Network Services, Inc. v. MasTec, Inc. before the United States District Court Southern District of Florida, Case No. 01-2059-CIV-GOLD. May 2002.
- Asset Valuations: Directed and led multiple valuation analyses of telecommunications assets and businesses. Projects included valuations of infrastructure assets in multiple markets worldwide. Projects required comprehensive discounted cash flow and net present value analyses, as well as regression and statistical analyses of comparable market transactions. Projects resulted in valuations used in support of negotiations and/or in commercial litigation.

Rate, Cost, Pricing and Regulatory Analyses

- Performance Based Ratemaking Analyses. Conducted for utilities and regulators on matters concerning incentive regulatory frameworks as well as targeted performance incentives. Recent examples of authored expert reports and testimony: Massachusetts D.P.U. 12-120 and Hawaii Docket No. 2013-1041.
- Incentive Analysis for Electric Distribution Reliability. Comprehensive analysis of approaches to setting electric distribution reliability standards on behalf of the Australian Energy Market Commission (AEMC).
- Incentive Regulation. Comprehensive analysis of incentive systems to be applied to incumbent local exchange telephone carriers (ILECs) on behalf of the New York State Department of Public Service; involved modeling determining total factor productivity (TFP) based on empirical analysis and consideration of projected performance improvement initiatives.

- Electric Distribution Resiliency Analysis. Comprehensive benefit cost analysis employing value of lost load (VOLL) methodology conducted for Public Service Electric & Gas (PSE&G) in NJ BPU Docket No. EO13020155 and GO13020156.
- Cost and Rate Analyses:
    - Conducted for electric utilities concerning deployment of upgraded transmission and distribution infrastructure and smart grid applications.
    - Conducted on behalf of telecommunications and broadband companies in the United States, Europe and Asia concerning cost-of-service and incremental pricing principles for communications services products.
    - For a municipality deploying a Wi-Fi network by using street lights and utility infrastructure; analysis included determination of cost of service.
    - Expert Witness in the determination of the rates for pole attachments under the FCC's Cable Rate and Telecom Rate Formulas as applied to electric utility distribution assets. Scope of work included development of utility-specific data in place of FCC rebuttable presumptions.
    - Expert Witness in multiple U.S. state regulatory proceedings concerning analysis of rates for unbundled network elements (UNEs), undertaken in fulfillment of requirements associated with the Telecommunications Act of 1996, using the Total Element Long Run Incremental Cost (TELRIC) methodology.
- Financial and Pricing Analyses: Conducted comprehensive financial analysis for a broadband communications provider in the U.S. market, including: developing projections of demand, price elasticities, revenue and capital and operating costs, and pricing points.
- Transfer Pricing: Performed comprehensive studies of affiliate transactions and cost allocations between holding companies and operating subsidiaries on behalf of telecommunications carriers and electric and gas utilities. Report filed before state regulatory commissions and the Federal Communications Commission.
- Performance Analysis: Analyzed wholesale access performance measurement systems on behalf of SBC (now AT&T). Project scope included analysis of the statistical validity of performance measures agreed upon by SBC and regulators as part of approval of SBC's provision of long distance services (as part of proceedings concerning Section 271 of the Telecommunications Act of 1996) or are the outcome of negotiations among various parties

regarding proposed mergers. Work focused on detailed statistical testing of performance measures to determine whether measures reflected RBOC performance and supported regulatory goals of increased consumer welfare in local exchange markets.

- Regulatory Frameworks: Directed and led multiple engagements on behalf of telecommunications carriers, utilities and regulatory commissions concerning the analysis of changes in regulatory frameworks, including: theoretical and quantitative analysis of the impact of adoption of earnings-based and price-based incentive rate plans upon retail prices and service quality; and a study of the impact of alternative regulatory frameworks on ILEC deployment of advanced telecommunications services, performed on behalf of a state regulatory commission.

Utility Strategic and Management Analysis

- Investment Analysis: Authored expert report concerning the impact investments in electric and gas utility infrastructure on system reliability and resiliency, especially following major weather events. Primary area of analysis involved estimation of economic value of investments to customers using value of lost load (VOLL) metrics for electric system investments and consumer surplus and value added metrics for gas system investment.
- Strategic Option Analysis: Directed Strategic Organizational Analysis for the Long Island Power Authority. Project involved definition and analysis of organizational options (privatization, municipalization and outsourced management services arrangements) available to LIPA going forward. Options were evaluated based on rate impacts and risk factors, including risks associated with organizational transformation. Project required extensive modeling of LIPA operations and financing scenarios, as well as analysis of power and transmission markets. Project work also involved interaction with LIPA's management team, its Board of Trustees and Board sub-committees.
- Merger Analysis: Authored expert reports concerning prospective merger savings and divestiture losses for electric and gas utilities. Scope of work included analyses involved in determining the operating and capital impacts of mergers under multiple scenarios, and also involved the anticipated economic inefficiencies resulting from forced divestiture. Reports authored included studies of merger efficiencies and reports concerning Economic Loss Studies included in U-1 filings before the U.S. Securities and Exchange Commission. Economic Loss Studies are required under PUHCA Section 11 (b) (1) Clauses A, B, and C when utility merger results in the establishment of a registered holding company with

electric and gas businesses. Work in these areas included detailed analyses of current and hypothetical future electric and gas utility operations.

- Benchmarking Analysis: Conducted transmission and distribution (T&D) function benchmarking study for a major Midwestern U.S. electric utility. Study involved comprehensive analysis of capital and operating costs and reliability and the impact that changes in expenditure would likely have upon earnings and shareholder value as well as distribution system reliability.
- Valuation: Directed and advised board of directors of a major generation and transmission (G&T) cooperative and its member electric distribution cooperatives on matters concerning: asset valuations, risk management strategy, merger and acquisition options, and outlook for retail electric markets.
- Feasibility Analyses: Conducted financial analyses and economic feasibility studies of new business opportunities for electric and gas utilities (e.g., fuel cell and distributed generation technologies and alternative fuel transportation) on behalf on numerous clients.
- Transfer Pricing: Authored reports and provided expert testimony on matters of affiliate transfer pricing, corporate overhead allocation, cost allocation, and cross-subsidization, performed on behalf of electric utilities and regulatory commissions. Also, analyzed business separation and affiliate safeguards regarding flow of information, systems access, marketing controls, employee and intellectual transfers and cost allocations for U.S. utilities.
- Rate Analysis: Conducted analyses of major utility capital investment, demand and consumption and cost-of-service performed on behalf of multiple electric and gas utilities and applied in utility rate cases before state and federal regulatory commissions
- Valuation: Performed asset valuation project on generation, transmission and distribution assets for a U.S. municipal electric utility. Determined original, trended original and replacement costs, as well as development of depreciation costs. Analyses used in developing electric rates and in proceeding on municipal special franchise taxes.
- Shareholder Value Analysis: For an east coast electric utility, analyzed impact on stock prices of new and potential markets (for core and non-core utility services), pricing strategies, underlying costs, and regulatory options.
- Margin Analysis: Conducted revenue and margin, geographic impacts and value analysis of utility energy efficiency initiatives on behalf of a major west coast electric utility.

Forensic Analysis and Special Investigations

- Forensic Analysis and Special Investigation: Directed consulting team and authored report for the forensic analysis of the economics, financial reporting and accounting associated with allegation of accounting and financial improprieties by Global Crossing. Worked on behalf of the Special Committee on Accounting Matters composed of a subset of (and reporting to) the Board of Directors of Global Crossing Ltd. Analysis involved determination of basis for revenue recognition for concurrent (i.e., "swap") transactions. Analysis included in report by the Special Committee entitled "The Concurrent Exchange of Fiber Optic Capacity and Services Between Global Crossing and its Carrier Customers." January 2003.
- Commercial Litigation: Directed expert consulting team in litigation matter concerning the deployment schedule of bandwidth on a major undersea cable project. Case involved allegations of breach of contract. Case work involved modeling of undersea fiber optic bandwidth in major undersea crossings and financial analysis of project viability.
- Forensic Analysis and Securities Litigation: Directed consulting team and led technical analysis concerning accounting and financial disclosure on behalf of the defendant in a class action against corporate officers, directors, controlling shareholders and the company's outside auditors alleging violations of the Securities Act of 1993 and the Securities Exchange Act of 1934. Scope of case involved accounting and disclosure treatment of complex leases.
- Special Investigations and Audits: Directed project teams, led technical analysis and authored reports in multiple special investigations and audits of management, operations and finance and accounting on behalf of regulatory utility commissions. Special investigations and audits involved allegations of improper cross subsidization and/or transfer pricing practices by regulated utilities (telecommunications, electric and/or natural gas) and their effect on rates charged to consumers. Special investigations and audits were conducted for regulatory commissions in Alabama, Kentucky, Maryland, New York and Pennsylvania.

Financial and Business Analyses

- Commercial Litigation: Developed expert report concerning damages associated with alleged breach of contract concerning gaming licenses in Asian casino markets. Analysis involved estimating projected cash flows under current and "but-for" scenarios.

- Economic Impact Analysis: Directed analysis and authored report regarding the effects of changes in regulatory fees and taxes on mobile prices, penetration and the macro economies of 22 countries in the Middle East and Africa. Study, conducted on behalf of a major mobile operator, involved detailed analysis of the relationships between marginal cost and prices, market structure and concentration, and empirical relationships concerning mobile penetration and GDP.
- Demand Analysis: Directed analysis and modeling of multiple projects involving the estimation and projection of segmented customer demand.
    - Analyzed U.S. subscriber market for video services.
    - Analyzed subscriber demand for communications services in the United States, Europe, Asia and the Middle East.
    - Led comprehensive analysis of current and projected market shares and competition in the consumer and business markets for network devices. Scope of work included geographic and customer segmentation; modeling included estimation of revenue and margins by segment.
- Consumer Welfare Analysis: Directed multiple analyses of impact of changes in market structure upon consumers.
    - Performed empirical analysis on panel of approximately 50 countries to demonstrate the effect of changes in levels of competition on prices, investment and other areas of consumer welfare for the global mobile telecommunication industry.
    - Directed analysis and authored white paper on empirical analysis concerning the impact of changing the price of wholesale access and levels of investment in the U.S. telecommunications market. Results reported in white paper entitled: "Structural Simulation of Facility Sharing: Unbundling Policies and Investment Strategy in Local Exchange Markets."
- Business Case Analysis: Directed and led multiple projects concerning the financial feasibility of entering new lines of business.
    - Led feasibility study concerning development of publishing business for a major communications company. Work required comprehensive financial modeling.

- Performed comprehensive financial analysis for an infrastructure support company. Scope of work included market and competitive analyses, projections of market shares, cash flow modeling and pricing analysis.
- Performed comprehensive business case analysis of entry into the broadband market (including voice, internet access and video services) on behalf of a major U.S. electric utility. Scope of work included technology assessment and detailed financial modeling. Work included customer and geographic segmentation, pricing scenarios and elasticity analysis.
- Led comprehensive financial analysis concerning the deployment of a broadband communications network for an Asian electric utility. Related work included assessing transfer pricing methodologies regarding the use of utility assets, resources and easements by the broadband affiliate.
- Directed and led analysis of business diversification for multiple electric utilities. Business opportunities analyzed included dark fiber construction and third party use of utility poles, towers and conduit. Scope of analysis included financial modeling and transfer pricing.

TESTIMONY

Analysis of the FCC's Vertical Foreclosure and Nash Bargaining Models Applied To The Proposed Comcast-Time Warner Cable Transaction (December 21, 2014) and Supplemental Declaration: Analysis of the FCC's Vertical Foreclosure and Nash Bargaining Models Applied To The Proposed Comcast-Time Warner Cable Transaction (March 5, 2015) in Application of Comcast Corporation, General Electric Company and NBC Universal, Inc. for Comcast to Assign or Transfer Control of Licenses, Federal Communications Commission, MB Docket No. 10-56.

Before the Public Utilities Commission of the State of Hawaii, In The Matter of Public Utilities Commission Instituting an Investigation to Reexamine the Existing Decoupling Mechanisms for Hawaiian Electric Company, Inc., Hawaii Electric Light Company, Inc., and Maui Electric Company, Limited, Docket No. 2013-1041, On Behalf of the Hawaiian Electric Companies. Report: "Targeted Performance Incentives: Recommendations to the Hawaiian Electric Companies," Prepared For The Hawaiian Electric Companies, William P. Zarakas and Philip Q Hanser, September 15, 2014.

Before the New Mexico Public Regulatory Commission, In The Matter Of The Application of TECO Energy, Inc., New Mexico Gas Company, Inc. and Continental Energy Systems, LLC, For Approval of TECO Energy Inc.'s Acquisition of New Mexico Gas Intermediate, Inc. and For All Other Approvals and Authorizations Required To Consummate and Implement The Acquisition, Utility Case No. 13-00231-

UT, On Behalf of TECO Energy, Inc., New Mexico Gas Company, Inc. and Continental Energy Systems, LLC, Joint Applicants. March 2014.

"Analysis of Benefits: PSE&G's Energy Strong Program," by Peter Fox-Penner and William P. Zarakas. In the Matter of the Petition of Public Service Electric and Gas Company for Approval of the Energy Strong Program, NJ BPU Docket No. EO13020155 and GO13020156.

"Review and Analysis of Service Quality Plan Structure In The Massachusetts Department of Public Utilities Investigation Regarding Service Quality Guidelines For Electric Distribution Companies and Local Gas Distribution Companies." Philip Q Hanser, David E. M. Sappington and William P. Zarakas, Massachusetts D.P.U. 12-120, March 2013.

"Alaska Mobile Broadband Cost Model, Before The Federal Communications Commission In The Matter Of Connect America Fund and Universal Service Reform – Mobility Fund. WC Docket No. 10-90 and WT Docket No. 10-208A." William P. Zarakas and Giulia McHenry, February 2013

Expert Report of William P. Zarakas In The United States District Court For The Northern District of Florida MCI Communications Services, Inc., Plaintiff v. Murphree Bridge Corporation, Defendant, Case No. 5:09-cv-337, February 19, 2010.

Testimony of William P. Zarakas Before The Copyright Royalty Judges, Library of Congress, Washington D.C. In The Matter of Distribution of the 2004 and 2005 Cable Royalty Funds, Docket No. 2007-3 CRB CD 2004-20. June 1, 2009.

Declaration of William P. Zarakas In The Circuit Court of Fairfax County, Virginia In The Matter of Sharon Dougherty, Plaintiff Vs. Thomas J. Dougherty, Defendant Case No. CL 2007-008757. October 2008.

Expert report provided in Public Service Company of New Mexico vs. Smith Bagley, Inc. and Lite Wave Communications LLC In The United States District Court For The District of New Mexico. March 2007.

Expert report entitled "Comparative Market Value Analysis of Upper 700 MHz Public Safety Spectrum" in FCC WT Docket no. 96-86 (In the Matter of The Development of Operational, Technical and Spectrum Requirements for Meeting Federal, State and Local Public Safety Communications Requirements Through the Year 2010). June 2006.

Expert report entitled "Analysis of Potential Lost Profits Associated With The Alleged Breach of Contract Between Orbcomm and Orbcomm Asia Limited" before the American Arbitration Association. May 2006.

Direct testimony before the Federal Communications Commission in the matter of *Petition of ACS of Anchorage, Inc. Pursuant to Section 10 of the Communications Act of 1934, as amended, for Forbearance from Sections 251(c)(3) and 251(d)(1) In the Anchorage LEC Study Area*, WC Docket No. 05-281, January 9, 2006.

Expert report co-authored with Dorothy Robyn Before the U.S. House of Representatives Committee on Energy and Commerce and the U.S. Senate Committee on Commerce, Science and Transportation regarding the value of wireless spectrum in the 700 MHz band. Letters, May 18, 2005.

Direct and rebuttal testimony before the Federal Communications Commission in the matter of *Virginia Cable Telecommunications Association v. Virginia Electric and Power Company, d/b/a Dominion Virginia Power and Dominion North Carolina Power*, PA No. 01-005, December 21, 2001.

Expert report Before the U.S. Securities and Exchange Commission included in Form U-1 Application/ Declaration Under The Public Utility Holding Company Act of 1935 in the combination of Energy East Corporation with RGS Energy Group, Inc. (June 20, 2001) in Exhibit J-1, entitled "Analysis Of The Economic Impact Of A Divestiture Of The Gas Operations Of Rochester Gas And Electric Corporation," May 15, 2001.

Expert report Before the U.S. Securities and Exchange Commission included in Form U-1 Application/ Declaration Under The Public Utility Holding Company Act of 1935 in the acquisition by Sierra Pacific Resources of Portland General Electric Company, 2000 in Exhibit H-1, entitled "Analysis Of The Economic Impact Of A Divestiture Of The Gas Operations Of Sierra Pacific Resources," January 31, 2000.

Before the U.S. Securities and Exchange Commission included in Form U-1 Application/ Declaration Under The Public Utility Holding Company Act of 1935 in the combination of Energy East Corporation with CMP Group, Inc. and with CTG Resources, Inc. in Exhibit J-1, entitled "Analysis Of The Economic Impact Of A Divestiture Of The Gas Operations Of Energy East," October 29, 1999.

Before the Supreme Court of the State of New York, County of Niagara, Supplemental Affidavit in *Village of Bergen, et al. vs. Power Authority of the State of New York*, February 1999.

Rebuttal Panel Testimony of William P. Zarakas and D. Daonne Caldwell before the North Carolina Utilities Commission, Docket No. P-100, SUB 133D, Filed March 9, 1998; *In Re: Proceeding to Determine Permanent Pricing for Unbundled Network Elements*.

Direct Panel Testimony of William P. Zarakas and D. Daonne Caldwell before the North Carolina Utilities Commission, Docket No. P-100, SUB 133D, Filed December 15, 1997; *In Re: Proceeding to Determine Permanent Pricing for Unbundled Network Elements*.

Rebuttal Panel Testimony of William P. Zarakas and D. Daonne Caldwell before the South Carolina Public Service Commission, Docket No. 97-374-C, Filed November 25, 1997; *In Re: Proceeding to Review BellSouth Telecommunications, Inc.'s Cost Studies for Unbundled Network Elements*.

Direct Panel Testimony of William P. Zarakas and D. Daonne Caldwell before the Florida Public Service Commission, Docket Nos. 960757-TP/960833-TP/960846-TP/960916-TP/971140-TP, Filed November 13, 1997; *In Re: Petition of AT&T, MCI, and MFS for Arbitration with BellSouth Concerning Interconnection, Rates, Terms and Conditions of a Proposed Agreement*.

Direct Panel Testimony of William P. Zarakas and D. Daonne Caldwell before the South Carolina Public Service Commission, Docket No. 97-374-C, Filed November 3, 1997; *In Re: Proceeding to Review BellSouth Telecommunications, Inc.'s Cost Studies for Unbundled Network Elements*.

Rebuttal Panel Testimony of William P. Zarakas and D. Daonne Caldwell before the Tennessee Regulatory Authority, Docket No. 97-01262, Filed October 17, 1997; *In Re: Contested Cost Proceeding to Establish Final Cost Based Rates for Interconnection and Unbundled Network Elements*.

Direct Panel Testimony of William P. Zarakas and D. Daonne Caldwell before the Tennessee Regulatory Authority, Docket No. 97-01262, Filed October 10, 1997; *In Re: Contested Cost Proceeding to Establish Final Cost Based Rates for Interconnection and Unbundled Network Elements*.

Rebuttal Panel Testimony of William P. Zarakas and D. Daonne Caldwell before the Alabama Public Service Commission, Docket No. 26029, Filed September 12, 1997; *In Re: Generic Proceeding: Consideration of TELRIC Studies*.

Rebuttal Panel Testimony of William P. Zarakas and D. Daonne Caldwell before the Georgia Public Service Commission, Docket No. 7061-U, Filed September 8, 1997; *In Re: Review of Cost Studies, Methodologies and Cost-Based Rates for Interconnection and Unbundling of BellSouth Telecommunications Services*.

Rebuttal Panel Testimony of William P. Zarakas and D. Daonne Caldwell before the Louisiana Public Service Commission, Docket Nos. U-22022/22093, Filed September 5, 1997; *In Re: Review of Consideration of BellSouth Telecommunications, Inc.'s TSLRIC and LRIC Cost Studies to Determine Cost of Interconnection Services and Unbundled Network Components, to Establish Reasonable, Non-Discriminatory, Cost-Based Tariff Rates*.

Direct Panel Testimony of William P. Zarakas and D. Daonne Caldwell before the Alabama Public Service Commission, Docket No. 26029, Filed August 29, 1997; *In Re: Generic Proceeding: Consideration of TELRIC Studies*.

Direct Panel Testimony of William P. Zarakas and D. Daonne Caldwell before the Louisiana Public Service Commission, Docket Nos. U-22022/22093, Filed July 11, 1997; *In Re: Review of Consideration of BellSouth Telecommunications, Inc.'s TSLRIC and LRIC Cost Studies to Determine Cost of Interconnection Services and Unbundled Network Components, to Establish Reasonable, Non-Discriminatory, Cost-Based Tariff Rates*.

Direct Panel Testimony of William P. Zarakas and D. Daonne Caldwell before the Georgia Public Service Commission, Docket No. 7061-U, Filed April 30, 1997; *In Re: Review of Cost Studies, Methodologies and Cost-Based Rates for Interconnection and Unbundling of BellSouth Telecommunications Services*.

Direct and rebuttal testimony Before the Virginia State Corporation Commission on behalf of United Telephone - Southeast, Inc. and Centel Corporation, May 1994.

Direct and rebuttal testimony Before the Tennessee Public Service Commission on behalf of United Telephone - Southeast, Inc., Docket No. 93-04818, January 28, 1994.

Direct and rebuttal testimony Before the Florida Public Service Commission on behalf of Southern Bell Telephone & Telegraph Company, Docket No. 920260-TL, December 10, 1993.

Direct and rebuttal testimony Before the Tennessee Public Service Commission on behalf of South Central Bell, Docket Nos. 92-13527 and 93-00311, March 22 and March 29, 1993.

PAPERS AND PUBLICATIONS

"Investing In Electric Reliability and Resiliency," by William P. Zarakas, Presented at the NARUC 2014 Summer Meeting - Joint Electricity and Critical Infrastructure Committees, Dallas, TX, July 15, 2014.

"Utility Investments in Resiliency: Balancing Benefits with Cost in an Uncertain Environment," by William P. Zarakas, Sanem Sergici, Heidi Bishop, Jake Zahniser-Word and Peter S. Fox-Penner, *The Electricity Journal,* Volume 27, Issue 5, June 2014.

"Infrastructure and Competition in the Electric Delivery System," by William P. Zarakas, *The Electricity Journal*, Volume 26, Issue 7, September 2013.

"Low Voltage Resiliency Insurance, Portable small-scale generators could keep vital services on line during a major power outages," by William Zarakas, Frank Graves, and Sanem Sergici, forthcoming *Public Utilities Fortnightly* September 2013.

"Finding the Balance Between Reliability and Cost: How Much Risk Should Consumers Bear?," by William P. Zarakas and Johannes P. Pfeifenberger, presented at the Western Conference of Public Service Commissioners, Santa Fe, NM, June 3, 2013

"The Utility of the Future: Distributed or Not?," by William P. Zarakas, The Brattle Group, Inc., presented at Advanced Energy 2013, New York, NY, April 30, 2013

"Rates, Reliability, and Region," by William P. Zarakas, Philip Q Hanser, and Kent Diep, *Public Utilities Fortnightly*, January 2013

"Approaches to Setting Electric Distribution Reliability Standards and Outcomes," by Serena Hesmondhalgh, William P. Zarakas, and Toby Brown, The Brattle Group, Inc., January 2012

"Measuring Concentration In Radio Spectrum License Holdings," presented at the Telecommunications Policy Research Conference (TPRC), George Mason University, September 26, 2009 (with Coleman Bazelon).

"Structural Simulation of Facility Sharing: Unbundling Policies and Investment Strategy in Local Exchange Markets," White Paper, July 2005 (with Glenn A. Woroch, Lisa V. Wood, Daniel L. McFadden, Nauman Ilias, and Paul C. Liu).

"Betting Against The Odds? Why broadband over power lines (BPL) can't stand alone as a high-speed Internet offering." *Public Utilities Fortnightly*, April 2005, pp. 41-45 (with Kenneth J. Martinian).

"The Impact of the Number of Mobile Operators on Consumer Benefit," White Paper, March 2005 (with Kenneth J. Martinian and Carlos Lapuerta).

"Wholesale Pricing and Local Exchange Competition", Info, Volume 6, Number 5, 2004, pp. 318-325 (with Lisa V. Wood and David E. M. Sappington).

"Regulatory Performance Measurement Plans and the Development of Competitive Local Exchange Telecommunications Markets", Working Paper, November 2003 (with David E. M. Sappington, Lisa V. Wood and Glenn A. Woroch).

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Dr. Matthew Aharonian is a financial economist with expertise in asset pricing (equity and fixed income), risk management, capital markets, structured finance, and quantitative/statistical methods. His work at Brattle has spanned a variety of issues, including event study, the valuation of fixed income securities and derivatives, loss causation and damages estimation, financial modeling, business valuation, capital structure and cost of capital, and more generally the distillation of economic relationships from complex legal documents (e.g., structured finance).

Dr. Aharonian has consulted on financial issues in a number of high profile cases, including class actions on behalf of both plaintiffs and defense, and arbitrations/mediations between various financial institutions following the financial crisis. Outside of his securities work, Dr. Aharonian has supported valuation and economic substance testimony in tax disputes (on behalf of both government and taxpayer), and cost of capital testimony in state and federal regulatory proceedings. In Fall 2014, he also served as an Adjunct at Babson College, where he taught the Fixed Income course in the MBA program.

EDUCATION

Ph.D. in Economics , The University of British Columbia, Vancouver

M.A. in Economics, McGill University

B.A. (DHS) in Economics, The University of Western Ontario

AREAS OF EXPERTISE

- Event Study and Damages Estimation
- Fixed Income Securities and Derivatives (Valuation, Risk, and Markets)
- MBS and the Financial Crisis
- Financial Markets and Market Efficiency
- Valuation, Risk Management, and Capital Structure
- Cost of Capital and Regulatory Mechanisms
- Asset Pricing
- Securities Litigation
- Commercial Litigation

TESTIMONY

Askenazy et al. v. Tremont. Group Holdings et al., No. 10-04801-BLS2 (Massachusetts Superior Court). Submitted expert report (with Dr. Lynda Borucki) on damages to investors from losses related to the Madoff fraud. (Jan. 24, 2014)

CASE HIGHLIGHTS

Evaluation of the loss to two large mining companies from allegedly improper government actions. Evaluated the market value impact of the loss to the companies using an event study framework.

Evaluation of Due Diligence practices & policies by securities underwriters and mortgage originators in the creation and promotion of RMBS prior to the Subprime Crisis of 2007.

Valuation of lost opportunity to pursue a merger (International Arbitration). Worked with expert to structure an event study providing a market based estimate of damages to a company when it lost the option to pursue a merger. Project also involved detailed analysis of tick-level data and connecting price movements to information flows.

Jicarilla Apache Nation v. U.S.A. Led Brattle's support of expert testimony in the Jicarilla Apache Nation's successful suit against the U.S. government over imprudent management of tribal funds. Involved benchmarking performance of a fixed-income portfolio strategy over time and simulating alternative 'but-for' portfolio strategies.

Valuation of a large multinational food company's U.S. operations. Used both multiples and discounted cash flow techniques. Led Brattle's support of a valuation that required distilling appropriate segment data from consolidated statements, and projecting financials under various growth scenarios in consultation with management.

Abu Dhabi Commercial Bank, et al v. Morgan Stanley & Co. Inc., et al, No. 08 Civ. 7508(SAS) (S.D.N.Y.) Led Brattle's support of loss-causation testimony using an event study framework on behalf of more than a dozen institutional investors in their recent suit against (and settlement with) Morgan Stanley, Moody's, and S&P over losses tied to RMBS assets and the collapse of Cheyne SIV.

UK Windfall Tax Dispute. Led support of expert testimony in identifying the nature of the UK Windfall tax as an income versus value tax. Case was ultimately appealed to the U.S. Supreme Court, which unanimously affirmed the initial court ruling in favor of our client.

Large Multinational Bankruptcy. Performed in-depth analyses of cross-border structured finance arrangements by the multinational between the 1990s and its bankruptcy. Dr. Aharonian's role in this engagement was to i) understand and demonstrate the underlying economic relationships between parties involved, along with the business purposes of a series of transactions they undertook, and ii) assess certain representations of value made by parties subject to a class-action suit. The financial relationships and transactions in this engagement utilized complex structures involving special purpose vehicles (SPVs), complex financial instruments, and were designed around tax efficiency and balance sheet considerations. He unbundled the most complicated component of the structures, which involved SPVs, an international equity/debt hybrid investment with imbedded options and guarantees, and a number of accreting loans hedged by a set of interest rate swaps.

TEACHING

Fall 2014: Fixed Income Securities (MBA), Adjunct Lecturer, Babson College, Wellesley, MA

OVERVIEW OF CONSULTING EXPERIENCE

Securities Litigation and the Financial Crisis

- Investigated the due diligence procedures by a large investment bank in the origination and underwriting of tens of thousands of loans later securitized and sold to investors. Examined on masse the evolution of the underwriting issues using large data analysis techniques.
- Helped establish loss-causation and damages to investors from an alleged breach of fiduciary duties by their investment manager.
- Deconstructed a complex collection of structured finance transactions between a large hedge fund and an investment bank. Following the 2008 financial crisis, the value of different portions of the investment eroded significantly, and there was a dispute over the recovery of capital. An estimate of lost capital and damages was determined based on forensic examination of the related investment funds and based on a valuation of various risk-managing derivative contracts.
- Used an event study framework to estimate price inflation and damages in a class action of shareholders suing a monoline insurer with exposure to RMBS during the financial crises. The event study involved statistically separating the impacts of various confounding events.

General Securities Litigation and Investment Management

- Extensive experience in the development of event studies to estimate price inflation from claimed wrongful acts. These engagements often involve multiple and/or compound events and require estimating so-called "inflation ribbons" which identify day-by-day price inflation over a span of time (e.g., a class period). Damages are computed in various ways, including by calibrating various trading models to estimate the number of damaged shares on a daily basis, and then combining these estimates with the estimated inflation ribbon.

  Engagements have included, among others:

  - Settlement with a class alleging that a company failed to conform with its continuous disclosure obligations under prevailing securities laws
  - Estimating shareholder damages after a party allegedly breached its fiduciary duty and interfered with a merger that would allegedly have created substantial value

  - Losses suffered by a mining company after an alleged breach of its mineral rights
  - Losses to shareholders after an alleged breach of fiduciary duty and fraudulent misrepresentation under the direction and control of the majority shareholder

- Analyzed a structured finance deal involving share exchanges where the majority shareholder allegedly breached their fiduciary duty in a buyout of the minority shareholders. Helped determine whether or not the share exchanges had been conducted on a fair market value basis.
- Helped examine the role of a custodian bank in allegedly facilitating the continuation of a high profile fraud that caused losses to investors.
- Supported an expert opining on the prudence of an investment manager's portfolio decisions over a 20 year period. Specifically examined the liquidity requirements of the beneficiaries and the overall performance of the manager's investment strategies.

Valuation and Structured Finance

- Led the valuation of a Master Limited Partnership ("MLP") in a dispute between shareholders over expropriation of value and control in a closely held corporation. Dr. Aharonian relied on original valuation results for MLPs he previously derived as part of Brattle testimony to the Federal Energy Regulatory Commission ("FERC") on general partner valuation and MLP growth in the pipeline industry.
- Performed a valuation of options to repurchase pharmaceutical patent rights for a large European pharmaceutical company.
- Led Brattle's support of an expert testifying on the valuation of a large multinational dairy company's Brazilian operations. This involved evaluating various valuation methodologies and their appropriateness to the valuation issues at hand.
- Extensively researched control premiums and minority discounts in emerging markets, emerging country risk and credit markets, and certain international banking reforms as part of the class-action suit. This part of the engagement further involved his analyzing banking and financial statements prepared under differing accounting standards and business valuation through a variety of methods. Directed the analyses in coordination with the testifying expert, oversaw analyses by a team of research analysts, produced draft material for the expert's report, oversaw the general production of documents, and managed client interactions and requests.

- Performed numerous valuations of energy companies in various submissions by Brattle expert witnesses to state and federal regulatory commissions.

Tax Efficiency and Tax Motivated Transactions

- Analyzed a number of international leveraged lease transactions that were challenged by the IRS. The transactions were versions of both the Lease-in/Lease-out ("LILO") and Sale-In/Lease-Out ("SILO") format which transfers depreciation shields (and possibly other risks) from one entity to another in exchange for an upfront infusion of cash and other potential economic benefits.
- Evaluated the economic substance and business purpose of a series of transactions that were used to offset a significant amount of income in a taxpayer's filed income tax return. The taxpayer had used a short-sale of Treasury securities to purportedly hedge changes to the value of an accounts receivable portfolio as interest rates varied. The transaction involved a very short-lived partnership through which losses were transferred back to the taxpayer and used to offset their income. Analysis made use of Macaulay duration, which measures the sensitivity of fixed income asset values to changes in interest rates, to demonstrate that this short-selling strategy could never have performed the hedging function claimed. Excluding the tax-benefits from the strategy, the costs of actually purchasing the strategy resulted in a substantial expected loss that no reasonable investor would have participated in, but for the tax benefits.
- In coordination with the testifying expert and a Principal at Brattle, Dr. Aharonian evaluated the nature of a government tax and whether it should be characterized as an income tax. The engagement involved issues surrounding IPO pricing, the measurement of abnormal returns, and the economic interpretation of legal definitions of income.
- Additionally, Dr. Aharonian developed and supervised the analyses underlying expert testimony for a range of tax motivated transactions on behalf of the Department of the Justice. These engagements have involved deconstructing complex investment relationships and structured finance transactions to address the business purpose and economic substance of the overall strategies involved. Examples include:
    - the Customized Adjustable Rate Debt Structure ("CARDS")
    - the Family Office Customized investment structure ("FOCus")
    - Distressed Asset/Debt transactions ("DAD")

Bankruptcy Related Damages

- Advised on the correct methodology to compute damages as part of a settlement conference involving bankruptcy by a large energy utility. One party had defaulted on their obligations stemming from a long-term tolling agreement for power generation. The counterparty had been able to re-contract the generation capacity involved with a similar long-term tolling agreement. Parties were trying to settle the extent of the net damages that had been suffered as a result of the default. The contested issues were whether a dual-discount rate approach needed to be utilized in computing the difference between the value of the lost contract and the value of the new contract, and what the appropriate discount rate(s) should be. Dr. Aharonian recast the problem as a type of swap, which clarified which approach was appropriate and what discount rate(s) to use.

Cost of Capital

- Played an integral role in the cost of capital practice over his first years at Brattle. Either participated in or managed numerous cost of capital engagements, and has played an important role in refining estimation methodology, expanding the capacity and efficiency of producing cost of capital estimates, and in refining and expanding expert testimony. Industries have included Water, Electricity, and Natural Gas, both in the U.S. and Canada.
- Helped develop testimony on the correct way to value pre-tax cash flows from royalty fee arrangements. The work involved developing a framework for clearly establishing the relationship between after-tax discount rates and economically relevant "pre-tax" discount rates – when the latter exists.
- Developed a DCF based methodology for accurately estimating the cost of capital of a Master Limited Partnership. There are a number of complexities that arise in estimating a MLP's cost of capital, however, due to their unique distribution requirements, growth incentive mechanisms, and tax flow-through status. Dr. Aharonian's work established the underlying dynamics of how growth and risks are divided between a MLP's limited partners and general partner over time. Moreover, he developed a Benchmark Model within the DCF framework to properly account for these dynamics in cost of capital estimation.
- Authored a report on Cost of Capital Methodology with M. Vilbert and B. Villadsen in connection with an engagement by the Canadian Transportation Agency to help review its rate setting practices.

- Advised with the testifying expert as to whether or not a proposed revenue decoupling mechanism for water utilities would affect their cost of capital, and if so how. A key insight was that the mechanism could only affect the cost of capital if it altered the systematic risk of the utilities, which is that risk which cannot be diversified away by investors through diversified portfolios. Dr. Aharonian was part of a small team that developed a framework in which to analyze this issue.

Classification of Hybrid Financial Instruments

- Together with the testifying expert, advised as to whether certain claims were more properly characterized as debt or equity. As part of the "near" bankruptcy of a generating utility, debt-holders found themselves in the unwelcome position of taking ownership of the entity. This role was undesired and debt-holders took steps to establish an arms-length relationship with the utility. After completing a financial restructuring, a new equity investor was introduced who took full control of the generator. The contested issue here was whether interest expenses which had accrued during the financial restructuring were properly considered as a cost of debt, or whether the essential bankruptcy had temporarily transformed the claims of the debt-holders into equity. Dr. Aharonian proposed and developed a "continuity" theorem to argue that the essential nature of the debt-holders claims during the restructuring was rightly viewed as debt.

ACADEMIC HONORS AND FELLOWSHIPS

- UBC Department of Economics Graduate Fellowship & Teaching Assistantship (1997-2002)
- Canadian Federal Government Graduate Scholarship (2001)
- McGill Department of Economics Fellowship and Teaching Assistantship (1995-1996)

PUBLICATIONS

"Review of Regulatory Cost of Capital Methodologies," with Michael J. Vilbert and Bente Villadsen. Prepared for the Canadian Transportation Agency. September 2010.

"Dynamic Price Misalignments and Market Efficiency on the NYSE," Working Paper, 2006.

"SDF Based Measures of Price Misalignment and their Estimation," Working Paper, 2005.

"Financial Liberalization and Economic Growth in LDCs," Working Paper, 2001.

PRESENTATIONS

"The CDS Market Prior to the Financial Crisis", *The Brattle Group,* May 2009

"Cost of Capital Methodology," New Consultant Training, *The Brattle Group*, November 2007

"Dynamic Price Misalignments and Market Efficiency on the NYSE," Richard Ivey School of Business, University of Western Ontario, February 2007.

"Dynamic Price Misalignments and Market Efficiency on the NYSE," (Job Market Candidate Presentation) Department of Economics, University of Toronto, January 2006.

"Dynamic Price Misalignments and Market Efficiency on the NYSE," Department of Economics (Brown Bag Series), University of British Columbia, November 2005.

"SDF Based Measures of Price Misalignment and their Estimation," Department of Economics, University of British Columbia, September 2005.