

Written Statement of
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Before the

Congressional Forum on Net Neutrality

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I. Introduction: The FCC's Open Internet Proposal is Dangerous to Public Safety and Scuttles the Virtuous Cycle of Innovation

Congresswoman Matsui, I appreciate the opportunity to come before you today at this Congressional forum on net neutrality and thank you for convening this forum. I also appreciate FCC Commissioners Mignon Clyburn and Jessica Rosenworcel for participating in this important forum. Both Commissioners Clyburn and Rosenworcel said in their separate statements that they would have crafted the FCC's Open Internet proposals differently to protect the Internet and its role in our society as an engine for innovation. I concur. The FCC's Open Internet Notice of Proposed Rulemaking (NPRM) sanctions Internet Service Provider (ISP)-controlled negotiations to determine the price, terms, and availability of more than "minimum" Internet access, subject to FCC review under a "commercial reasonableness standard."² This proposal is *dangerous* to public safety, public health, national security, and Critical Infrastructure sectors including electric, gas, water, and communication utilities.

The FCC's Open Internet proposal increases operational risks and costs for Internet users. For utilities with a statutory duty to provide safe, reliable service at just and reasonable rates, and users that have an independent duty of care such as the

¹ This testimony reflects my own views as the California Public Utilities Commission acts only through a vote of a majority of Commissioners. Special thanks to my CPUC staff, Ditas Katague, Bill Johnston, Allison Brown, Amy Baker, and Valerie Malliett, for their invaluable assistance in drafting this testimony. Thanks to the CPUC's Legal Division, particularly Helen Mickiewicz and Kimberly Lippi, to the CPUC's Communications Division, particularly its Director, Ryan Dulin, and to Gina Adams of the CPUC's Rail Safety Division, for their drafting advice and assistance. Many thanks to my husband Steve Smith for his unending support. These remarks are my own and reflect my own research, analysis, and experience as a regulator.

² In the Matter of Protecting and Promoting the Open Internet, 29 F.C.C.R. 5561, GN Docket No. 14-28, ¶ 79 (FCC 14-61), (May 15, 2014). [hereinafter *Open Internet 2014 NRPM*].

health care profession, this proposal limits incentives to use Internet-based platforms to avoid compromising safety and reliability. The FCC's proposal increases transaction costs to negotiate fast Internet access. Competitors may bid up the price of Internet access or get exclusive deals with ISPs. The FCC gives ISPs discretion to determine who gets deals for speedy Internet access, and on what terms. ISP judgment as to who gets what level of Internet access at what price would not be limited by price but only by the FCC's *post-facto* determination of "commercial reasonableness." The potential for slowdowns to "minimum speeds" during negotiations with a content provider or a third party puts safe and reliable operation at risk if the user needs more than the FCC-determined "minimal access."

The FCC's Open Internet proposal does not even mention transaction costs, yet it subjects all Internet content providers ("edge providers") to closed negotiations with multiple ISPs to ensure that their messages get through and that others can reach them. For utilities with millions of customers such as Southern California Edison (SCE), an investor-owned electric utility (IOU) regulated by the CPUC, with over 4.9 million customer connections, negotiating Internet access agreements with multiple ISPs to reach their 14 million customers would be costly, risky, and fraught with uncertainty.

President Obama has designated certain sectors of the economy including utilities, emergency services, healthcare, transportation, information technology, and key manufacturing, business, and scientific industries as "Critical Infrastructure" vital to the nation's economy, security, and future.³ President Obama recognizes "energy and communications systems as uniquely critical due to the enabling functions they provide across all critical infrastructure sectors."⁴

³ Homeland Security, Critical Infrastructure Sectors, [hereinafter *Critical Infrastructure Sectors*], <http://www.dhs.gov/critical-infrastructure-sectors>.

⁴ *Id.*

Critical Infrastructure providers are regulated both at the state level by state public utilities commissions, and by federal agencies including the FCC, the U.S. Department of Energy (DOE), and the Federal Energy Regulatory Commission (FERC). Under the California constitution and California statute, the mission of the California Public Utilities Commission is to assure that utilities, including those deemed Critical Infrastructure, provide safe, reliable service at just and reasonable rates.⁵ For California, this means that:

“Every public utility shall furnish and maintain such adequate, efficient, just, and reasonable service, instrumentalities, equipment, and facilities, including telephone facilities... as are necessary to promote the safety, health, comfort, and convenience of its patrons, employees, and the public” (Cal. Pub. Util. Code Section 451).

The FCC’s proposal to allow ISPs to force “individualized” negotiations for “differentiated” Internet access undercuts the ability of the CPUC, other public utilities Commissions, and the FCC, to carry out their duties with regard to safety and reliability. For electric and natural gas utilities, water and sewer utilities, and small rural telephone corporations who are rate-regulated common carriers, the FCC’s proposal undermines their statutory obligation to charge only just and reasonable rates. The FCC’s NPRM enables ISPs and competitors to raise rivals’ costs, increases transaction costs and time to negotiate Internet access at sufficiently fast speeds, and imposes uncertainty about Internet costs and reliability.

Neither would any proposal to exempt Critical Infrastructure sectors from ISP negotiations over Internet speed and terms on a closed and differentiated basis protect American safety, security, the economy, and the polity. Innovation depends on openness, the entrepreneur’s idea, the National Lab’s, the scholar’s, or the student’s research, and the community’s input. A truly Open Internet facilitates innovation that

⁵ Cal. Pub. Util. Code § 451.

improves utility operations and saves lives. It enables new means to save energy such as using the Internet to send requests to people or connected devices to provide “demand response” to reduce load on the electric grid. The Internet invigorates public participation in regulatory proceedings that govern many of these sectors. It facilitates two-way and multi-party communication between customers, businesses, regulators, and the public. This communication is crucial during emergencies, and daily improves governance and operations, safety, and reliability.

The FCC’s NPRM, crafted under the aegis of Section 706(a) of the Telecommunications Act of 1996, codified as 47 U.S. Code 1302, strives to promote Internet deployment and adoption, while acknowledging that this proposal may thwart the investment and adoption it seeks to promote. Section 706 requires the FCC and the states to encourage access to advanced telecommunications services:

“The Commission and each State commission with regulatory jurisdiction over telecommunications services shall encourage the deployment on a reasonable and timely basis of advanced telecommunications capability to all Americans (including, in particular, elementary and secondary schools and classrooms) by utilizing, in a manner consistent with the public interest, convenience, and necessity, price cap regulation, regulatory forbearance, measures that promote competition in the local telecommunications market, or other regulating methods that remove barriers to infrastructure investment.”⁶

The FCC expressed hope that closed, differentiated ISP negotiations authorized under Section 706 may lead to benefits “in the short term,” but acknowledged that such a structure may “over the long run erode Internet openness, threaten to slow or even break the virtuous circle—chilling entry and innovation by edge providers, impeding competition in many sectors, dampening consumer demand, and deterring broadband deployment—in ways that may be irreversible or very costly to undo.”⁷ The FCC

⁶ 47 U.S. Code 1302, Pub. L. 104–104, title VII, § 706, 110 Stat. 153 (Feb. 8, 1996).

⁷ *Id.*

recognizes some of the risks of its proposals and “found that, despite the advantages of the virtuous circle, broadband providers have short-term incentives to limit openness, generating harms to edge providers and users, among others.”⁸

My testimony focuses on the barriers to Internet access the FCC proposal erects, and the risks it creates to Internet users including those in Critical Infrastructure fields for whom high reliability and safety is a statutory mandate. The FCC’s proposal creates disincentives to invest in Internet-enabled user platforms, devices, networks, and programs. It scuttles the virtuous cycle of innovation the Internet inspires and enables. It facilitates anti-competitive conduct through closed negotiations to get faster or cheaper Internet than a business competitor. It unduly burdens speech by allowing an opposing candidate, competitors, someone with a different point of view, or an ISP to foreclose avenues for speedy Internet communication through closed-door ISP deals. “Minimum” Internet access and *post-facto* “commercial reasonableness” assessments are inadequate backstops to prevent these harms.

I examine the FCC’s Open Internet proposal as a regulation of content/edge provider speech that limits First Amendment freedoms, requiring heightened constitutional scrutiny. The FCC would subject Internet users that provide or enable content (“edge providers”) to ISP-negotiation and FCC review of the “commercial reasonableness” of any transaction to obtain more than “minimum speed” Internet access. This proposal converts ISPs from neutral conduits of information into editors with the power to decide who gets fast Internet and on what terms. It sets up new hurdles for Internet speakers and those who would like to access them. Constitutional review indicates that the FCC’s proposed rules unduly burden speech by creating a new

⁸ *Open Internet 2014 NPRM, supra* note 2.

ISP and FCC-review process to obtain access to Internet service. These rules are a poor fit to the goal of promoting Internet deployment and access.

This testimony also examines the effect of the FCC's proposal on universal service programs such as FCC and state support for high cost areas, Lifeline to increase the access of low-income people to communications, telecommunications programs for the deaf and disabled, E-Rate and state programs to support schools, libraries, health care centers, and community-based organizations, and its effect on other common carriers whose traffic transits or is terminated in whole or in part on the Internet. The FCC's NPRM did not consider its interaction with universal service programs. Each of these programs is harmed by the FCC's Open Internet proposal. This plan sanctions ISP discrimination against common carriers. It risks spiking call completion failures and undercuts inter-carrier compensation mechanisms, results the FCC must avoid.

The FCC's Open Internet proposal is contraindicated by substantial evidence of the harm it would cause.⁹ To protect the Open Internet and all who use it, the FCC should classify broadband transport and access services as a telecommunications service under Title II, using a light regulatory touch to forbear where appropriate.

II. The Path to Protect the Open Internet

A. The 2010 Open Internet Order's "No Blocking" Rule

In its 2010 Open Internet Order, the FCC found that ISPs had three types of incentives to limit Internet openness: 1) economic incentives to block or disadvantage a particular edge provider or class of edge providers; 2) incentives to increase revenues by charging edge providers for access or prioritized access to the broadband provider's end users, and; 3) if providers could profitably charge edge providers, they would have an incentive "to degrade or decline to increase the quality of service they provide to

⁹ *Sorenson Comm. v. FCC*, ___ F.3d ___, 2014 WL 4290354 (D.C. Cir., 2014) (citing *In re Permian Basin Area Rate Cases*, 390 U.S. 747, 792 (1968)).

non-prioritized traffic.”¹⁰

In its 2010 *Open Internet Order*, the FCC adopted rules that to promote transparency and prohibit blocking of content and discrimination against content providers. The transparency rule survived the court challenge in 2014 in *Verizon v. FCC*, while the D.C. Circuit vacated the No-Unreasonable Discrimination and No-Blocking rules as imposing common carrier duties.¹¹ In the wake of the D.C. Circuit’s decision, the FCC’s 2014 Open Internet NPRM proposes to enhance its Transparency rule, and revises its 2010 “No Blocking” rule and “No Unreasonable Discrimination” rule.

The FCC’s 2014 Open Internet NPRM proposes to “exercise its authority under section 706 [of the Telecommunications Act of 1996], consistent with the D.C. Circuit’s opinion in *Verizon v. FCC*, to adopt [the] proposed rules.”¹² At the same time, the FCC also seeks comment on “the nature and the extent of the Commission’s authority to adopt Open Internet rules under Title II and other possible sources of authority, including Title III.”¹³

B. “No Blocking,” Subject to Individualized, Differentiated ISP Negotiations

The FCC’s 2014 Open Internet NPRM proposes continuing the “No-Blocking” rule it first adopted in the 2010 *Open Internet Order*, but makes that proscription subject to ISP negotiations for Internet speeds above “minimum speeds.” The FCC defines a “block” as “[t]he failure of a broadband Internet access service to provide an edge provider with a minimum level of access that is sufficiently robust, fast, and dynamic for effective use

¹⁰ *Open Internet 2014 NPRM*, *supra* note 2, at ¶ 6 (citing *Preserving the Open Internet*, GN Docket No. 09-191, WC Docket No. 07-52, Report and Order, 25 FCC Rcd 17905 ¶¶ 21, 24, 25, 29 (2010) (*2010 Open Internet Order*), [hereinafter *2010 Open Internet Order*]), *aff’d in part, vacated and remanded in part sub nom.* *Verizon v. FCC*, 740 F.3d 623 (D.C. Cir. 2014)).

¹¹ *Verizon v. FCC*, 740 F.3d 623.

¹² *Open Internet 2014 NPRM*, *supra* note 2, at ¶ 142.

¹³ *Id.*

by end users and edge providers.”¹⁴ The FCC rule forbids ISPs from blocking subscribers’ access to certain content, subject to “individualized, differentiated” negotiations:

No-Blocking: A person engaged in the provision of fixed broadband Internet access service, insofar as such person is so engaged, shall not block lawful content, applications, services, or non-harmful devices, subject to reasonable network management.

A person engaged in the provision of mobile broadband Internet access service, insofar as such person is so engaged, shall not block consumers from accessing lawful websites, subject to reasonable network management; nor shall such person block applications that compete with the provider’s voice or video telephony services, subject to reasonable network management.

The FCC proposes to adopt the text of the 2010 No-Blocking rule while separately clarifying that it would not preclude broadband providers from negotiating individualized, differentiated arrangements with similarly situated “edge providers,” subject to a standard of “commercial reasonableness.” The FCC envisions that, as long as broadband providers do not degrade lawful content or service to below a minimum level of access and strike a deal that is commercially reasonable, they would not run afoul of the proposed rule.¹⁵

The FCC’s 2014 Open Internet NPRM proposes to change both its interpretation of and rationale for the no blocking rule to allow for paid prioritization or “fast lanes” based on individual, non-transparent negotiations with ISPs. These negotiations would give ISPs the opportunity to provide different deals for Internet access to content providers (*e.g.*, Netflix, Amazon, the U.S. military, electric, gas, and water utilities,

¹⁴ *Id.*, at Appendix A.

¹⁵ *Id.*, at ¶¶ 89, 97.

hospitals, universities, businesses, families, and other Internet users), facilitating agreements for higher speeds unavailable to a competitor.¹⁶

As the D.C. Circuit posited in the *Verizon v. FCC* case, “Verizon might, consistent with the anti-blocking rule—and again, absent the anti-discrimination rule—charge an edge provider like Netflix for high-speed, priority access while limiting all other edge providers to a more standard service. In theory, moreover, not only could Verizon negotiate separate agreements with each individual edge provider regarding the level of service provided, but it could also charge similarly-situated edge providers completely different prices for the same service.”¹⁷ Neither would such a rule obligate ISPs to provide fast Internet access to all speakers who request it. Discriminatory access subject to ISP discretion and FCC commercial reasonableness assessment is what the FCC’s 2014 Open Internet NPRM proposes.

In oral arguments about the *Verizon v. FCC* case, Verizon’s lawyer made it clear that Verizon was interested in exploring paid prioritization arrangements and service pricing models. “I’m authorized to state from my client today that but for these rules we would be exploring those types of arrangements,” said Verizon lawyer Helgi Walker.¹⁸ The FCC proposes to facilitate such paid prioritization arrangements and pricing models based on individualized and differentiated, discriminatory, and non-transparent negotiations, despite cost shifts to Internet content providers and users, and its risks to the Internet’s openness and access.

¹⁶ A variation on this theme is seen in the arrangements certain wireless network operators have made with content providers like ESPN, whereby ESPN pays a fee to the wireless provider so that its programming is not subject to the data limits the wireless provider otherwise imposes on its customers. See Jon Brodtkin, *AT&T Turns Data Caps Into Profits With New Fees for Content Providers*, ARS TECHNICA (Jan. 6, 2014), <http://arstechnica.com/business/2014/01/att-turns-data-caps-into-profits-with-new-fees-for-content-providers/>.

¹⁷ *Id.*

¹⁸ Brian Fung, *Federal Appeals Court Strikes Down Net Neutrality*, THE WASHINGTON POST (Jan. 14, 2014), <http://www.washingtonpost.com/blogs/the-switch/wp/2014/01/14/d-c-circuit-court-strikes-down-net-neutrality-rules/>.

To avoid imposing common carrier regulation, the FCC proposes to allow ISPs to discriminate in their dealings with content/edge providers. The FCC proposal defines “edge provider” as: “Any individual or entity that provides any content, application, or service over the Internet, and any individual or entity that provides a device used for accessing any content, application, or service over the Internet.”¹⁹ In an age of telemedicine, interactive education, home-grown video, Facebook, email, the web, and other interactive services, whether novel, mundane, or critical to life, health, and safety, we are all edge providers.

The FCC acknowledges the broad reach of its proposals in imaging negotiations between ISPs and a musician who uploads a YouTube video.²⁰ As the FCC describes, “individuals are themselves quite capable of serving as edge providers, for example aspiring musicians who upload videos to sites such as YouTube.”²¹

The YouTube videos I recorded in Spanish and English to encourage people in Southern California to save power in the wake of the outage of the San Onofre nuclear power plant could be subject to forced ISP bargaining under this rule.²² Energy Upgrade California’s YouTube videos featuring an animated California Bear received more hits than my videos, and communicate tips to the public to help save energy and water during the California drought.²³ The FCC would subject the California Bear’s cyber-creators, regulator, utility, community organization, and individual pleas to save power or water to ISP negotiations for fast access to Internet channels.

This is regulation of speech, requiring constitutional scrutiny. It involves government action in that the FCC proposes and would police a system that determines who may be

¹⁹ *Open Internet 2014 NPRM*, *supra* note 2, Appendix A (c).

²⁰ *Id.*, at ¶ 136.

²¹ *Id.*

²² See, e.g., California PUC, *Commissioner Sandoval’s Message About Flex Alert (Spanish)*, YOUTUBE, <https://www.youtube.com/watch?v=V3zDCqKXLto&list=UUoDV-8KP0YzIQ-hyu9t-GZQ>.

²³ California PUC, *Energy Upgrade California*, YOUTUBE, <https://www.youtube.com/user/CaliforniaPUC>; California PUC, *Energy Upgrade California, Managing Water*, YOUTUBE, <https://www.youtube.com/watch?v=Bl9o4wdsNw>.

subject to ISP-controlled individualized, differentiated, non-transparent negotiations for Internet access. Unlike the 2010 Open Internet Order that restrained ISPs from blocking content in their roles as conduits for Internet traffic, the 2014 Open Internet Order NPRM makes the *provision of content the trigger* for whether a person is an “edge provider” subject to ISP demands and FCC post facto commercial reasonableness assessment. This proposal appears content-neutral in that it brings all Internet speakers into the ISP-negotiation and FCC mediation system due to their status as speakers, not their viewpoint, or the subject matter of their content. Content-neutral regulation, however, must be considered under Supreme Court standards governing speech regulation.

The FCC’s proposal does not address how it would treat emergency services, public safety agencies, Critical Infrastructure sectors, and all they need to connect to, or whether ISPs would be allowed to require such agencies to pay for prioritized traffic or be subjected to protracted negotiations with multiple ISPS. Lengthy negotiations with multiple ISPs over uncertain terms to access the Internet may delay the ability to communicate information to the public in a crisis, and slow the ability of those entities to share critical information.

Some have suggested that the importance of public safety messages supports prioritizing certain Internet content over other types of content. Such observations downplay that what is proposed is that all speakers PAY for priority, to be dispensed at the ISP’s discretion. As discussed in the constitutional examination of the FCC’s proposal below, even if such sectors were exempted from the NPRM’s proposal, the application of these rules to the remaining speakers would constitute content-based speech regulation, subject to strict scrutiny. Such a prospect also raises serious concerns about the proposal’s effect on free speech, and the Internet as a forum for the exchange of ideas and democratic engagement. This proposal turns the Internet inside out by shifting control from the Internet’s users to FCC-empowered ISPs.

This proposal is inconsistent with the values the FCC embraced for communications regulation in its 2014 IP Transitions order: Universal service, Public Safety, Competition and Consumer Protection.²⁴ The National Association of Regulatory Utility Commissioners (NARUC) in 2013 unanimously adopted Communications Principles for the 21st Century through its Federalism and Telco Task Force.²⁵ NARUC's principles are: 1) Consumer protection; 2) Network reliability and public safety; 3) Competition; 4) Interconnection; 5) Universal Service; 6) Regulatory diversity; 7) Evidence-based decision making, and 8) Broadband access, affordability, and adoption.²⁶

The FCC's proposal fails to protect consumers, undermines network reliability and public safety. It diminishes competition by allowing competitors to judge and set terms for Internet access. It undercuts interconnection and universal service by not addressing its implications for common carriers and interconnected VoIP providers. It creates disincentives to adopt broadband, decreases affordability by shifting costs to other sectors to send Internet content, and provides no guarantees that Internet access will increase or that ISPs would use the profits gained from two-sided deals with content providers to deploy or improve broadband networks or reduce congestion.

²⁴ Technology Transitions, Order, Report and Order and Further Notice of Proposed Rulemaking, Report and Order, Order and Further Notice of Proposed Rulemaking, Proposal for Ongoing Data Initiative, FCC 14-5, ¶ 23 (Jan. 31, 2014) (citing Stmt. of Comm'r Jessica Rosenworcel Before the Subcommittee on Financial Services and General Government Committee on Appropriations United States Senate, A Review of the President's FY2014 Funding Request and Justification for FCC (Sept. 11, 2013), <http://www.fcc.gov/document/commissioner-rosenworcel-senate-hearing-fcc-fy2014-appropriations>).

²⁵ NARUC Federalism Task Force Report, Cooperative Federalism and Telecom in the 21st Century, NARUC (Sept. 2013), <http://www.naruc.org/Publications/20130825-final-DRAFT-Federalism-Task-Force-Report.pdf>.

²⁶ *Id.*

III. FCC “Minimum Speed” Proposals Undercut Contracts, Internet Access, and Safe, Reliable Operation of Critical Infrastructure

A. The Diversity of Internet Users Defies Minimum Speed Standards

The FCC proposes to limit ISP negotiations with Internet users only as “commercially reasonable” and requires that ISPs “do not degrade lawful content or service to below a minimum level of access.”²⁷ The FCC sought comment on how to define a “minimum level of service,” to facilitate “robust, fast, and effectively usable access.”²⁸ The FCC asked “should we define the minimum level of access from the perspective of end users, edge providers, or both?”²⁹ The FCC proposed three alternative “minimum level of service” standards ISPs must provide during and as a result of individualized negotiations: 1) Best Effort; 2) Minimum Quantitative Performance, and; 3) An Objective, Evolving “Reasonable Person” Standard.³⁰ Verizon argued that requiring that all edge providers receive a minimum level of access, not subject to negotiation, may impose common carrier obligations with respect to that minimum level of service.³¹

As discussed below, any of the minimum level of access standards the FCC proposes would be insufficient to support the needs of a diversity of Internet users including Critical Infrastructure. Any such standard would deprive users of both the benefit of their current bargains for Internet access, and an open, transparent market.

Users have heretofore determined how much speed, bandwidth capacity, and what features they need and can afford from service offerings. Proposing a “minimum level of service” standard for all Internet users ignores the vast diversity of Internet users and the array of their needs. Internet and information technology needs differ for

²⁷ *Open Internet 2014 NPRM*, *supra* note 2, at ¶ 89.

²⁸ *Id.*, at ¶ 101.

²⁹ *Id.*

³⁰ *Id.*, at 102-104.

³¹ *Verizon v. FCC*, 740 F.3d 623, 658 (citing *FCC v. Midwest Video Corp.*, 440 U.S. 689, at 701 n. 9 (1979) (a carrier may “operate as a common carrier with respect to a portion of its service only”).

a nuclear power plant, gas-fired power plant, natural-gas provider, water treatment plant, a school, university, library, or hospital, a tribe, governmental body, a communications provider, and each individual.

While some Internet users primarily manage e-mails, others use the Internet to help manage nuclear waste, research an Ebola vaccine, or use high-definition video consultations to improve the medical outcomes for babies or burn victims before they are sent to a medical specialist by ambulance or helicopter. The FCC's one-size-fits-all proposal belies the diversity of Internet uses and users, and the critical nature of speed, latency, jitter, price, and terms of service to proper functioning or use of the Internet in myriad situations.

B. "Best Efforts" Minimum Speed Proposal

Under the proposed best effort standard, broadband providers must apply no less than a "best effort" to deliver traffic to end users. For any particular type of Internet traffic, best-effort delivery would represent the "typical" level of service for that type of traffic—in effect, routing traffic according to the "traditional" architecture of the Internet."³² Under this standard "Broadband providers would be free to negotiate "better than typical" delivery with edge providers, and would be prohibited (subject to reasonable network management) from delivering "worse than typical" service in the form of degradation or outright blocking."³³

Broadband providers and users could negotiate a "better than typical" deal exclusive to them and unavailable to competitors or other content providers. This may become a facilitating practice to raise rivals' costs, and disadvantage competitors or competitors' consumers. Such negotiations may become a platform for group boycotts,

³² *Id.*, at ¶ 102.

³³ *Id.*

price fixing, and collusive behavior. It may enable market manipulation in energy, securities, financial and other markets. It would disadvantage those unable to pay for the costs of ISP negotiations or to pay extra for Internet service above “minimum speeds.”

Bargaining for an exclusive deal for “better than typical” broadband service that conveys a non-transparent advantage to a bidder in an energy market raises market manipulation concerns in FERC energy markets such as California’s market run by California Independent System Operator (CAISO).³⁴ FERC forbids “anticompetitive conduct and conduct that threatens market transparency” because it “undermine[s] confidence in the energy markets and damage[s] consumers and competitors. Such conduct might involve the violations of rules designed to limit market power or to ensure the efficient operation of regulated markets.”³⁵

A FERC market participant who bargains to get better Internet speeds or lower prices than its competitors may be engaging in a practice that threatens market transparency and violates market rules. Concern about violating these rules would create disincentives for Internet users to negotiate. It would raise the need for enforcement investigations by multiple agencies including FERC, CAISO, public utilities commissions who depend on the energy and pricing that emerges from such markets, the Securities and Exchange Commission, and others who operate competitive markets founded on the principle of transparency.

A “best efforts” standard conflicts with duties of Telephone Corporations, common carriers, and providers interconnected to the Public Switched Telephone

³⁴ CAISO, FERC Electric Tariff, Fourth Replacement, Vol. 1, Rules of Conduct (“The specified Rules of Conduct are intended to provide fair notice to Market Participants of the conduct expected of them, to provide an environment in which all parties may participate on a fair and equal basis, to redress instances of gaming and other instances of anticompetitive behavior, and thereby to foster confidence of Market Participants, ratepayers and the general public in the proper functioning of the CAISO markets.” Violations are subject to fines up to \$10,000 per violation), <http://www.caiso.com/23d5/23d5cd07a480.pdf>.

³⁵ FERC, Prohibition of Energy Market Manipulation, <http://www.ferc.gov/enforcement/market-manipulation.asp>.

Network (PSTN) to carry and complete calls. California Public Utilities Code 558 requires: "Every telephone corporation and telegraph corporation operating in this State shall receive, transmit, and deliver, without discrimination or delay, the conversations and messages of every other such corporation with whose line a physical connection has been made." Eight States have similar laws that require telephone corporations to promptly carry and complete calls.³⁶

NARUC emphasized "the importance of call completion to public safety, the economy, and consumers, and the need for more analysis of whether the issues involve intrastate calls or holders of State-issued authorizations to offer interconnected telephone service."³⁷ California, Minnesota, Oregon, and Missouri are engaged in or have conducted investigations into call completion issues raised by the failure of some carriers or intermediaries to complete calls to other carriers, particularly in rural areas.³⁸ NARUC adopted several resolutions on call completion calling on the FCC to address the issue to protect public safety, the economy, and the communications system and those who depend upon its reliability.³⁹ NARUC argued that "No future legislation should undermine State laws that establish and create the basis for State enforcement of

³⁶ Chris Nelson, Chair, NARUC Telecommunications Committee, Letter to The Honorable Greg Walden, The Honorable Anna Eshoo, n. 43 (Aug. 4, 2014), <http://www.naruc.org/Testimony/14-0808-NARUC-response-House-wp-4-Interconnection-FINAL.pdf>. [hereinafter *NARUC Interconnection Comments*].

³⁷ *Id.*

³⁸ *Id.*, at n. 43 ("California has an *Order Instituting Rulemaking to Address Intrastate Rural Call Completion Issues*, I. 14-05-012. Minnesota conducted a proceeding on rural call completion, MPUC Docket No. P999/C1-12-1329. The Oregon PUC has issued an order addressing intrastate call termination problems, OAR 860-032-0007 (<http://apps.puc.state.or.us/edockets/docket.asp?DocketID=17675>). The Missouri commission conducted an extensive investigation of call completion problems there (File No. 2012-0112)).

³⁹ *Id.*, (citing NARUC, *Resolution on Federal-State Joint Efforts to Address and Resolve Call Termination Issues* (July 2011), <http://www.naruc.org/Resolutions/Resolution%20on%20Efforts%20to%20Address%20and%20Resolve%20Call%20Termination%20Issues.pdf>; *Resolution Addressing Rural Call Termination Issues* (July 2012), <http://www.naruc.org/Resolutions/12%200801%20Passed%20Resolution%20Addressing%20Rural%20Call%20Termination%20Issues.pdf>).

this critical duty.”⁴⁰ Neither should the FCC’s Open Internet rules undermine call completion.

The “best efforts” standard is inapposite when dealing with common carriers and telephone corporations, and those interconnected to the PSTN, subject to a duty to carry and complete calls. To stem call completion problems emerging throughout the country, the FCC made interconnected VoIP carriers subject to common carrier non-discrimination rules under sections 201 and 202 of Title II, and to the FCC’s orders and rules.⁴¹ FCC sanction of a “best efforts” standard to carry traffic including calls that terminate or transit through an ISP network may be inconsistent with state law duties to carry and complete calls, and the FCC’s determination that practices that lead to call termination or quality problems violate common carrier obligations under section 201 and 202.⁴² Failure to carry and complete calls undermines public safety, the communications network’s reliability, more than 1,100 rural common carriers, other common carriers, and the public who depend on the network.

C. Minimum Speed or Level of Service Proposal

Alternatively, the FCC proposes to set a “minimum speed” and asks “would it be preferable to identify specific problems that a minimum level of service would avoid (such as preventing latency and jitter for services that tolerate them poorly)?”⁴³ The FCC recognizes that not all broadband providers offer the same speeds and questions,

⁴⁰ *NARUC Interconnection Comments*, *supra* note 36, at n. 43 .

⁴¹ FCC, In The Matter Of Rural Call Completion, Report and Order and Further Notice of Proposed Rulemaking, 28 F.C.C.R. 16151, ¶ 7 (WC Docket No. 13-39, FCC 13-135) (“practices used for routing calls to rural areas that lead to call termination and quality problems may violate the prohibition against unjust and unreasonable practices in section 201 of the Act or may violate the carriers’ section 202 duty to refrain from unjust or unreasonable discrimination in practices, facilities, or services.”)[hereinafter *FCC, Call Completion Order 2013*].

⁴² *Id.*; *NARUC Interconnection Comments*, *supra* note 36, at n. 43.

⁴³ *Open Internet 2014 NPRM*, *supra* note 2, at ¶ 103.

“Would the Commission need to differentiate between different broadband access technologies?”⁴⁴ This effort to establish a “minimum speed” or minimum broadband characteristics ignores the diversity of arrangements Internet users have already made and the contracts they have entered into with ISPs and vendors to purchase speeds and features suitable to their needs.

Large users such as universities, hospitals, and Critical Infrastructure operators have invested substantial time and money negotiating speeds that are far greater than what a typical residential user would need. For example, Santa Clara University in Santa Clara, California has launched Internet speeds on campus of 1 Gigabit per second (Gbps) and has announced plans to provide speeds of 11 Gbps during Fall Semester 2014!⁴⁵ This will make Santa Clara University a world-class leader in the Internet speed it offers its community of 8,800 students, more than 800 faculty members and scholars, and 900 staff members including Jesuit members and clergy, greatly enhancing the University’s research and service capabilities. SCU is entitled to receive what it contracted for, world-class Internet service.

The Open Internet NPRM does not mention existing contracts. The FCC cannot excuse breach of contract or a violation of the pre-existing duty doctrine if ISPs sought to modify existing contracts and subject users to only “minimum levels of service,” regardless of the user’s current contract.⁴⁶ Neither does the NPRM address the tort of

⁴⁴ *Id.*, at ¶ 103.

⁴⁵ Santa Clara University, Information Technology, TechQual+ Survey 2014 - What We Are Planning, (“Coming this fall, a significant increase in Internet bandwidth will be available. Designs and vendor negotiations are near completion to increase our current 1 Gigabit per second (Gb/s) Internet connection to 11 Gigabit per second. There will be a 10 Gb/s main connection for greater capacity and faster speed, and a separate 1 Gb/s connection that will provide a separate alternate connection for reliability should an issue arise with the primary connection. We are anticipating the upgraded connections will be operational prior to the beginning of Fall term, 2014.”), <https://it.scu.edu/techqual/plans>.

⁴⁶ *See Alaska Packers' Ass'n. v. Domenico*, 117 F. 99, 104 (9th Cir. 1902) (“A promise by a party to do what he is bound in law to do is not an illegal consideration, but is the same as no consideration at all, and is merely void; in other words, it is insufficient, but not illegal.”); Doing or promising to do what one is

intentional interference with contract that could be alleged if an ISP's hard-bargaining with a third party resulted in slower internet speeds for the ISP's own subscriber. Such bargains in an aftermarket leave subscribers locked-in to their contracts while negotiations the subscriber is not made aware of result in less performance than was advertised or contracted for, and may raise prices to access content. This violates the FCC's transparency principle, and raises concerns under the Federal Trade Commission Act, the Sherman Act, state unfair competition laws, and under tort and contract law.

The FCC's proposal sanctions the prospect of Internet users experiencing "minimum speeds" during an ISP's negotiations with a content provider, despite the Internet user's contract that requires her to pay for much faster Internet speeds than any floor the FCC would adopt. Neither would the FCC require the ISP communicate to their customer about the reason for the customer's speed being slowed to the "minimum." Nor does the FCC consider whether such actions are consistent with the ISP customer's current contract.

An ISP could require a hospital or health care plan, for example, to bargain and pay more to reach rural health clinics, patients, doctors, or members. It may do so in a non-transparent way, and give a competitor hospital a better deal. This would raise health care costs and reduce reliability and innovation in medicine. After the billions spent in FCC, state, and federal programs to improve health care access to the Internet, including through the American Recovery & Reinvestment Act (ARRA),⁴⁷ this proposal undermines investment in telemedicine programs, research, equipment, and use. It puts

already legally bound to do cannot be consideration for a promise. *See* California Civil Code 1605, "Any benefit conferred, or agreed to be conferred, upon the promisor, by any other person, to which the promisor is not lawfully entitled, or any prejudice suffered, or agreed to be suffered, by such person, other than such as he is at the time of consent lawfully bound to suffer, as an inducement to the promisor, is a good consideration for a promise.").

⁴⁷ Health IT.gov, Meaningful Use Regulations, <http://www.healthit.gov/policy-researchers-implementers/meaningful-use-regulations>.

recipients of ARRA funding at risk of non-compliance in their efforts to implement “meaningful use” of Internet-based information technology to make health care records electronically accessible and improve patient care.⁴⁸ For the health care field, Critical Infrastructure and many users, reliable speeds are essential. Internet users, not the FCC or ISPs, should choose which speed is appropriate for their needs.

D. An Evolving “Reasonable Person” Minimum Speed Standard

Alternatively, the FCC proposes to define “minimum service levels” through a “reasonable person” standard of access.⁴⁹ The FCC notes that “a typical end user may reasonably expect the ability to access streaming video from any provider, place and receive telephone calls using the VoIP service of the end user’s choosing, and access any lawful web content. Under this approach, a broadband provider that satisfies these and other reasonable expectations would be in compliance with the no-blocking rule.”⁵⁰ This “reasonable person” standard based on a typical residential user doesn’t account for high or low bandwidth users who choose and pay for different levels of service, currently transparently available at stated prices to the public.

A high bandwidth residential user may want high speed Internet for online education. A doctor may need high speeds to review medical files at home, or to play video games that may prepare her to use medical robots.⁵¹ A researcher, environmental

⁴⁸ *See Id.* (“The Medicare and Medicaid EHR [Electronic Health Records] Incentive Programs provide financial incentives for the “meaningful use” of certified EHR technology. To receive an EHR incentive payment, providers have to show that they are “meaningfully using” their certified EHR technology by meeting certain measurement thresholds that range from recording patient information as structured data to exchanging summary care records.”).

⁴⁹ *Open Internet 2014 NPRM, supra* note 2, at ¶ 104.

⁵⁰ *Id.*

⁵¹ Tracy Hampton, *Can Video Games Help Train Surgeons*, BETH ISRAEL DEACONESS MEDICAL CENTER (March 2013) (“research indicates that the “training” they received through video games may provide young surgeons with better skills and hand-eye coordination, particularly for robotic and minimally invasive

sciences student, fire fighter, or a broadband mapping expert or contributor may download GIS maps with many data layers and fat files. The FCC's proposals do not recognize business, institutional, or individual users who want or need 100 Mbps, 1 Gbps, or more to work, study, research, engage in civic affairs, communicate, and make informed decisions.

This proposal diminishes the Internet's equalizing factor as an on-ramp without gatekeepers that does not require anyone's permission to launch innovations. It raises Internet access costs throughout the economy, and reduces confidence in Internet-based firms or applications. These disincentives may reduce investment in end user networks, equipment, programs, Apps, and innovation, and put Critical Infrastructure at risk. The FCC's proposals create neither guarantees for additional ISP investment in end-user networks, nor do they protect federal and state network investments supported by Universal Service funds that operate as common carriers.

IV. Speed Slowdowns During ISP Contract Negotiations

The FCC 2014 Open Internet NPRM seeks "identification of, and comment on, actions taken by broadband providers—both domestically and internationally—since the adoption of the *Open Internet Order* that have threatened or could potentially threaten the Internet's openness."⁵² Reports that Comcast subscribers experienced Internet speeds as low as 1.5 Mbps during Comcast's negotiations in 2013-2014 with Netflix and Cogent, foreshadow concern for FCC-sanctioned ISP negotiations.⁵³

surgeries."), <http://www.bidmc.org/YourHealth/Health-Notes/SurgicalInnovations/Advances/VideoGames.aspx>.

⁵² *Open Internet 2014 NPRM*, *supra* note 2, at ¶ 41.

⁵³ Melanie Pinola, *Is Your ISP Throttling Netflix Streaming Speeds*, IT WORLD (Feb. 11, 2014) ("Consumerist reports, for example, that starting in October, average speeds for Netflix users who used Comcast and Verizon Fios dropped from over 2 Mbps to 1.5 or 1.8 Mbps."), <http://www.itworld.com/consumerization-it/404510/your-isp-throttling-netflix-streaming-speeds>; Kate Cox, *Netflix Streaming Speeds Getting Worse*

Comcast's Internet subscribers complained on Comcast's User Forum about slow speeds during the Cogent negotiations. One Comcast Business service subscriber posted to the user forum "I regularly need to communicate from my Comcast Business site to a server that is colocated in a facility on Cogent's backbone network. Any transfer of data from this Cogent-backed server to my Comcast Business site starts out at a normal transfer speed then rapidly drops off after a minute or two. For instance, right now it's estimating 3 hours to complete a 2 GB transfer."⁵⁴

The business subscriber explained "We've spoken to Cogent about this and they told us that Comcast and Cogent are waging an ideological battle over Netflix (which also hosts on Cogent) and the tremendous amount of traffic Netflix generates. Thus, they allege, Cogent-to-Comcast traffic is shaped or otherwise limited after an initial burst."⁵⁵ The subscriber emphasized "This is a SERIOUS problem for me -- I want to be able to access this server at the full speed I'm paying for."⁵⁶ The business subscriber is a sophisticated user who had checked whether the problem was at his location or traced to network issues: "Before you ask, yes, I have ruled out the possibility of a problem at the server side. Data going from the Cogent site to another colocation facility on Level 3 is blazingly fast. Additionally data transfers from non-Cogent sites to Comcast Business are fast. Only transfers inbound from Cogent to my Comcast Business site are slow -- very, very slow."⁵⁷

Other Comcast users reported slow connections evidenced by tracers that showed traffic through Cogent servers that also hosted Netflix. "I've been having

For Comcast and Verizon FiOS Customers, CONSUMERIST (Feb. 11, 2014) ("Back when Netflix first started publishing their ISP speed rankings in 2012, FiOS and Comcast were in positions #2 and #3, right behind Google Fiber. They currently rank #7 and #14, respectively."), <http://consumerist.com/2014/02/11/netflix-streaming-speeds-getting-worse-for-comcast-and-verizon-fios-customers/>.

⁵⁴ Stevenf, *Cogent Throttled? Comcast Business, Connectivity*, (Oct. 11, 2013), <http://forums.businesshelp.comcast.com/t5/Connectivity/Cogent-throttled/td-p/8459>.

⁵⁵ *Id.*

⁵⁶ *Id.*

⁵⁷ *Id.*

League of Legends issues, VPN issues to work, Avaya Softphone issues, VOIP.ms issues.... all because Comcast/Cogent have this congestion issue.”⁵⁸ This user reports that the dispute with Cogent over Netflix affected a range of traffic from Cogent to Comcast, even interconnected VoIP services compliant with 911 and e911 standards.⁵⁹ Emergency calls including 911, e911, reverse 911, and information alert calls may be carried through VoIP or other technologies. With fires raging in many parts of California and other states, and several evacuation orders under way, difficulties in using interconnected VoIP amidst an ISP dispute with a server host or content provider raise grave concerns about public safety and network reliability.

The Cooperative Association for Internet Data Analysis (CAIDA) based at UC San Diego’s Supercomputer Data Center (SDSDC) found that modern peering disputes between ISPs and others who connect to the Internet including Content Data Networks (CDNs) “manifest as congested links.”⁶⁰ CAIDA noted “congestion on transit links affects everybody, not just parties to the peering dispute.”⁶¹ CAIDA reported that its analysis of three Comcast transit links in the San Francisco Bay Area over time from February 2013 to April-2014 showed “year-long, worsening congestion patterns until Netflix/Comcast peering arrangements.”⁶²

David Clark, a leader in the development of the Internet, and others observed that “incumbent ISPs have consistently failed to coordinate and service this end-to-end demand. This market failure helped provide entry incentives for third party

⁵⁸ Mastshake57, *Cogent and Comcast Issues*, COMCAST BASIC INTERNET CONNECTIVITY AND MODEM HELP (Nov. 17, 2013), <http://forums.comcast.com/t5/Basic-Internet-Connectivity-And/Cogent-and-Comcast-issues/td-p/1805678>.

⁵⁹ VoIP.ms (“We use e911 (Enhanced 911) and are 100% compliant with FCC and CRTC and cover 100% of USA/Canada”), <http://www.voip.ms/faq.php#911>.

⁶⁰ Matthew Luckie, Amogh Dhamdhare, Bradley Huffaker, Young Hyun, Pls KC Claffy, David Clark, *Internet Interdomain Congestion*, CAIDA.ORG, at 4, <http://www.caida.org/publications/presentations/2014/bitag-congestion/bitag-congestion.pdf>.

⁶¹ *Id.*

⁶² *Id.* at 19-20.

CDNs...who invest in caching technologies, hosting content closer to the "eyeballs" thereby incumbent ISPs have consistently failed to coordinate and service this end-to-end demand. This market failure helped provide entry incentives for third party CDNs...who invest in caching technologies, hosting content closer to the "eyeballs" thereby reducing transit costs."⁶³ Clark and others characterized ISP networks with subscribers/viewers as "Eyeball networks," and observed that "eyeball networks believe that the "natural" direction of value flow is toward them, rather than away from them."⁶⁴ They noted that as compared to content networks "last-mile networks of the broadband eyeball networks are more capital intensive, often involving "lumpy" investments, than are the long-haul and backbone networks of content-providers."⁶⁵ Clark reported that "congestion at interconnection points could signal: contention around business arrangements, strategic behavior, [and are] generally *not* a signal of a technical limit."⁶⁶

Using Internet-embedded probes of round-trip time and latency, Clark compared analysis of Internet congestion and delays in 2013-2014. He noted CAIDA's analysis of congestion in three Comcast transit links in the Bay Area in February 2013-April 2014. Clark reported "Looking At 4 major U.S. access ISPs, we see only a few congested links, aside from these major content flows."⁶⁷ More analysis of Internet congestion is needed, but Clark's initial analysis and the CAIDA studies indicate a lack of wide-spread congestion.

⁶³ Peyman Faratin, David Clark, Steven Bauer, William Lehr, Patrick Gilmore, Arthur Berger, *The Growing Complexity of Internet Interconnection*, 72 COMMUNICATIONS & STRATEGIES 51, 65 (4th Quarter, 2008) (citations omitted),

http://www.akamai.com/dl/technical_publications/growing_complexity_of_internet.pdf.

⁶⁴ *Id.*, at 59.

⁶⁵ *Id.*

⁶⁶ David Clark, *Measuring Internet Congestion, A Preliminary Report*, 3 (June 18, 2014), https://ipp.mit.edu/sites/default/files/Congestion-DC-June-2014-final_0.pdf.

⁶⁷ *Id.*, at 28.

The FCC does not attempt to justify its proposal to fundamentally shift power and payments to ISPs based on Internet congestion or conditions. The FCC's Open Internet proposals are neither well-calculated to alleviate congestion nor to support broadband deployment. The FCC proposals allow ISPs to obtain revenues from all content providers for speedy Internet access, but lack any obligation for ISPs to invest in Internet network deployment or to take steps to alleviate transit congestion.

ISP traffic slowdowns increase the likelihood of call completion problems. All calls, including 911, and e911 calls, must be promptly delivered and completed. I recommend that the FCC and state utility commissions investigate whether interconnected VoIP calls have been degraded during ISP negotiations with hosts, content providers, or other parties. The FCC must consider whether its proposal increases risks to communications utilities, services interconnected to the PSTN, public safety, reliability, consumer protection, and universal service.

V. Harms to Innovation, Investment, Critical Infrastructure, the Economy, and Democracy from the FCC's Open Internet Proposals

A. Critical Infrastructure Safety, Reliability, and Efficiency Depends on the Open Internet

The FCC's proposal to allow ISPs to determine Internet access speeds and terms is fundamentally at odds with laws that protect critical infrastructure. Presidential Policy Directive 21 (PPD-21) emphasizes the Internet's critical role in infrastructure operations and services.⁶⁸ "Today's electrical grid interconnects components of our traditional physical electrical infrastructure with less tangible information technology

⁶⁸ *Critical Infrastructure Sectors*, *supra* note 3.

(IT) components such as networks, software and data.”⁶⁹ President Obama signed an Executive Order in 2013 directing the critical infrastructure sectors to improve cybersecurity.⁷⁰ Preserving access to the Internet and smooth functioning of Internet-enabled operations is key for Critical Infrastructure and the public it serves.

Given their high reliability and security needs, certain elements of critical infrastructure are isolated from the Internet to create a buffer from cyber and other threats. “Computer systems that help operate nuclear reactors and their safety equipment are isolated from the Internet to protect against outside intrusion,” and “the nuclear industry takes measures to ensure that its nuclear plants are protected from cyber attacks.”⁷¹ Many water treatment plants isolate systems from the Internet to protect the safety of drinking water. Railroads bought spectrum licenses to enable Positive Train Control, to stop or slow a train through a remote signal. These systems do not operate on the Open Internet due to safety, security, and reliability concerns.

Railways do, however, make extensive use of the Internet for other operations, planning, reporting, research, and for communications with customers. Passengers can download train times and routes through the web or an App, as millions do for Amtrak, CalTrain, BART, and other rail schedules. Other critical infrastructure operators have integrated the Internet into many aspects of their operations to improve monitoring and detection, speed response time, and enable energy demand response. Electric, gas, water, or other communications utilities, or other critical infrastructure sectors use the

⁶⁹ Miles Keogh, Christina Cody, CYBERSECURITY FOR STATE REGULATORS, 2.0, 3-4 (Feb. 2013), <http://www.naruc.org/grants/Documents/NARUC%20Cybersecurity%20Primer%202.0.pdf>.

⁷⁰ Executive Order, Improving Critical Infrastructure Cyber Security (Feb. 12, 2013), <http://www.whitehouse.gov/the-press-office/2013/02/12/executive-order-improving-critical-infrastructure-cybersecurity>.

⁷¹ Nuclear Energy Institute, Issues and Policy, <http://www.nei.org/Issues-Policy/Safety-Security/Plant-Security>.

Internet to reach customers, emergency services, suppliers, power plants, water treatment plants, researchers, regulators, and the public.

ISP internet access negotiations impose additional costs and add unknown time on the clock to obtain high-speed Internet access. Delays and ISP ability to raise prices through closed negotiations on discriminatory terms would increase costs for utility ratepayers, and may compromise operational capabilities and efficiency.

Unquantifiable costs and unknown service characteristics or terms cannot be calculated in a rate case proposal to seek state regulatory approval to spend ratepayer dollars for systems and services that depend on high-speed Internet access. Utilities might consider moving more functions to private or proprietary networks, isolated from the Internet, to manage risks of protracted negotiations, high costs, and slow service at “minimum speeds.” Closed negotiations on discriminatory terms decrease incentives for Internet-enabled investments, ending the virtuous cycle of innovation.

Through the leadership of President Obama, the county has invested billions to turn the electric grid into a “smart grid.”⁷² Communications and information technology including Internet-enabled systems, are what makes the “Smart Grid” smart. The Electric Power Research Institute estimated that “implementation of smart grid technologies could reduce electricity use by more than 4 percent by 2030. That would mean a savings of \$20.4 billion for businesses and consumers around the country.”⁷³ The smart grid enables automatic command and response. It is designed to improve “situational awareness, prevention, management and restoration that, in spite of the new vulnerabilities it introduces... fundamentally makes the electric system more

⁷² The White House, President Obama Announces \$3.4 billion Investment to Spur Transition to Smart Energy Grid (Oct. 27, 2009), [hereinafter *White House, Smart Grid Investment*], <http://www.whitehouse.gov/the-press-office/president-obama-announces-34-billion-investment-spur-transition-smart-energy-grid>.

⁷³ *Id.*

secure and reliable. However, the smart grid enhances the need for cybersecurity because it adds a layer of computer systems and software – all with additional doors to be hacked – to existing utility infrastructure.”⁷⁴

The FCC’s proposal puts at risk this nation’s investment in the smart grid, demand response, home area networks, smart thermostats, smart appliances, and other innovations. For example, San Diego Gas & Electric (SDG&E) launched a program to reduce energy use by giving customers a free ecobee programmable thermostat when customers sign up for “Reduce Your Use Awards.”⁷⁵ The thermostat can be controlled remotely from a smart device, and provides reward credits for customers who use the thermostat to allow their “air conditioner to cycle or be raised 4 degrees.”⁷⁶ The Nest Learning Thermostat allows customers to use a smart phone to control the thermostat, and works with a carbon monoxide detector.⁷⁷ If ISP negotiations and demands hampered Smart Grid communication to the Internet-enabled backbone, electric grid operations could be compromised, and energy savings opportunities would be lost.

Re-engineering or investment in alternative, non-Internet based redundant systems may be necessary to protect reliability and safety. For Gas operations subject to state and federal regulation under the Federal Pipeline Safety Act and state laws, risks that Internet performance may be slowed due to negotiations with subscribers or third parties introduces a known hazard.⁷⁸ Gas pipeline operators must guard against undue hazards to protect life, property, and the environment. Under the Natural Gas Pipeline

⁷⁴ Keogh, Cody, *supra* note 69, at 8.

⁷⁵ SDG&E, Reduce Your Use Thermostat, <https://www.sdge.com/residential/reduce-your-use-thermostat>.

⁷⁶ *Id.*

⁷⁷ Nest, Life With Nest Thermostat, Nest on the Go, <https://nest.com/thermostat/life-with-nest-thermostat/>.

⁷⁸ 49 U.S.C. 60102.

Safety Act, criminal sanctions can be sought for knowing and willful violations, including record-keeping obligations.⁷⁹

Efforts to digitize records and make them accessible to field personnel through mobile phones and tablets could be thwarted by Internet slowdowns and demands to the utility or content providers along the chain of electronic record keeping platforms.⁸⁰ If access to electronic records is made unreliable by ISP negotiations with subscribers or third parties, gas utilities and state public utilities commissions would have to evaluate whether Internet-enabled record-keeping and retrieval systems are sufficiently reliable to warrant ratepayer investment. Swift and precise access to records protects lives, property, and public safety, and can prevent catastrophic explosions or dangers.

Any proposal to exempt Critical Infrastructure sectors from the FCC's proposal would be insufficient to protect American safety and security and the mission of these vital sectors of the economy. Innovation, safe, reliable, and efficient operation of Critical Infrastructure depends on openness to input from individuals, the community, customers, suppliers, businesses, universities, and government oversight. Preventing a fire or reporting a gas leak or explosion may depend on a phone call from an individual in a rural area reaching a gas operator in an urban area through paths that use the Internet for the middle mile or last mile. Critical Infrastructure must be able to communicate with everyone to ensure safe and reliable operations. The lack of an ISP gatekeeper role on the Internet today leads to innovation, efficiencies, and safety.

⁷⁹ 49 U.S.C. § 60123.

⁸⁰ See 49 U.S.C. § 60123 and 49 C.F.R. § 192.917(b) (requiring gathering and integration of relevant data to identify all potential threats to a gas transmission pipeline); 49 U.S.C. § 60123 and 49 C.F.R. § 192.709(a) (mandating maintenance of certain repair records for a gas transmission pipeline); 49 U.S.C. § 60123 and 49 C.F.R. § 192.917(a) (requiring identification and evaluation of potential threats to a gas transmission pipeline); 49 U.S.C. § 60123 and 49 C.F.R. § 192.919 (requiring that all potential threats be included through a suitable threat assessment method for a gas transmission pipeline).

B. The Open Internet Supports Critical Infrastructure Innovation, Renewable Energy, Reduces Fossil-Fuel Use and Pollution, and Forestalls Climate Change

An Open Internet facilitates innovation and safety as the example of Picarro's natural gas pipeline leak detection technology demonstrates. In July 2014, the CPUC approved PG&E's use of Picarro, a groundbreaking technology which detects gas leaks at a more granular level than ever possible.⁸¹ Picarro built a gas detection box that uses readily available GIS platforms and tablets to map gas leak readings and enable action.⁸² Picarro reports that its technology "is approximately 1,000-times more sensitive than traditional leak detection equipment...while reducing false positives from naturally occurring methane."⁸³

After the 6.0 earthquake in Napa in August 2014, PG&E deployed cars with Picarro technology to quickly survey earthquake damaged areas and identify and prioritize work to address gas leaks.⁸⁴ This technology saves lives, prevents devastating explosions, protects people and property, and saves natural gas customers money. This advance in gas leak detection and safety was made possible due to the Internet's open nature. Picarro developed the box to detect methane, but did not have to develop or ask an ISP for permission to use GIS mapping or the Internet to communicate the leak survey results. Picarro created a new field and jobs in leak detection technology.

⁸¹ See Picarro, Picarro Surveyor, <http://www.picarrosurveyor.com/>.

⁸² Picarro, PG&E's Use of Picarro Technology Enhances Natural Gas System Safety Throughout PG&E Service Area, ("In Santa Clara, Calif., PG&E crews had spent months searching for a very small leak on a distribution feeder pipe off the Lawrence Expressway. Picarro Surveyor was brought in and identified the location of the previously undetectable leak. Additional PG&E crews were mobilized to the site and quickly repaired the leak—improving public safety while allowing crews to continue monitoring other parts of PG&E's gas system."), <http://www.picarrosurveyor.com/press-release/pge%E2%80%99s-use-picarro-technology-enhances-natural-gas-system-safety-throughout-pge-service>.

⁸³ *Id.*

⁸⁴ Doug Johnson, PG&E Using New Technology to Spot Gas Leaks (Aug. 24, 2014), <http://fox40.com/2014/08/24/pge-using-new-technology-to-spot-gas-leaks/>.

The FCC lauded the Internet’s record of fostering investment and jobs, and expressed concern about its proposal’s deterrent effects. “But equally important are the jobs that could be—but might not be—created if edge innovation and investment were to be chilled by doubt that the Internet will remain open or, even worse, if openness were defeated.⁸⁵ An Open Internet was key to Picarro’s innovation and job creation.

Utilities also use their website and Apps to facilitate reports about electric and natural gas outages and the status of repairs. In the aftermath of the Napa earthquake PG&E provided customers with up to date information on outages. Timely information helps residents make decisions about whether to evacuate, particularly if a family member uses a medical device that requires access to electricity.

PG&E’s free Emergency Preparedness Mobile App “took the Gas Emergency Response Plan (GERP), which is currently distributed in oversized binders, and placed it into a mobile application that can be easily accessed. This application also includes a variety of training aids, a mobile version of the Incident Action Plan (IAP) and access to information sources that are used to better prepare and respond to gas emergencies.”⁸⁶ PG&E and its consultant noted “[t]he benefit of this project is our ability to update this information quickly, which was not previously possible. The new mobile capabilities provided by this project demonstrate how PG&E is expanding into the mobile market, as we are currently utilizing the iOS operating system on both iPhones and iPads.”⁸⁷

Open access to the Internet helps manage use of energy resources and foster renewable energy. Solar power developers use Google Earth to determine the energy

⁸⁵ *Open Internet 2014 NPRM*, supra note 2, at ¶8.

⁸⁶ Contingency Management Consulting Group, PG&E Emergency Preparedness Mobile Application (April 28, 2014), <http://cmcgllc.com/pge-emergency-preparedness-mobile-application/>.

⁸⁷ *Id.*

productivity potential of installing solar panels on a building's roof.⁸⁸ Using Google Earth to evaluate a potential solar site, whether on a rooftop, parking garage, parking lot, or in a field, dramatically cuts transaction costs and saves time. Google Earth uses satellite images to capture the solar gain at a site during different times of the day, enabling measurements that would be costly and difficult to replicate from the ground.

The CPUC has taken steps to support transparency and competition in energy markets such as by requiring utilities to post information about good potential locations for renewable developers to interconnect to the grid. Increased transparency reduces costs, increases efficiency, and enables competition and choice. An Order in the CPUC's Long Term Procurement Proceeding authorized Southern California Edison (SCE) to procure at least 400 MW [megawatts, units of power] and up to 700 MW of authorized additional energy capacity, from preferred resources [energy efficiency, demand response, and renewable energy] or energy storage.⁸⁹ The CPUC authorized San Diego Gas & Electric (SDG&E) to procure at least 200 MW, and up to 800 MW of authorized additional energy capacity, from preferred resources or energy storage.⁹⁰ The CPUC, utilities, private investors, air regulators, and communities are counting on these resources, many of which are Internet-enabled, to replace 20% of the power that was available from the San Onofre Nuclear Power Plant to Southern California, an area where more than 26 million people live.

⁸⁸ See, ICF International and Tohn Environmenta, Exhibit 21, Tier 1, Screening Tasks Prior to Site visit ("Evaluate solar exposure, Southern exposure offers the greatest potential for solar gain. Resource, Google Earth, Southern exposure? Yes No, Solar Potential, Assess shade, Large trees that shade the roof can obscure the needed sun., 95% unshaded solar access is ideal, Evaluate tree growth during site visit"), http://www.nchh.org/Portals/0/Contents/Solar_Screening_Tool.pdf.

⁸⁹ CPUC, Order Instituting Rulemaking to Integrate and Refine Procurement Policies and Consider Long-Term Procurement Plans, Track IV, R. 12-04-013, 2 (March 14, 2014), <http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M089/K008/89008104.PDF>.

⁹⁰ *Id.*

The energy procurement process depends heavily on the Open Internet as the utilities' post requests for offers, information about the bidding process, energy demand, resources, growth forecasts, and other relevant information. Renewable and fossil-fueled power generators alike rely on the Internet to assess a potential power plant site, to conduct their environmental assessment, for bidding, and if selected, use the Internet in plant operations and communications.

Renewable resources such as energy efficiency use the Internet for planning, customer communication, and demand response into the electric grid. The Internet is used to transmit video and photos of indoor and outdoor lighting to estimate the foot candles of illumination needed for energy efficient lighting, and the potential to incorporate demand response.

The Internet enables demand response resources to be bid into the grid as supply side resources. Quantifiable, dispatchable demand response has been the holy grail of this "negawatt" resource. Deploying demand response as an energy resource depends on Internet-based platforms to communicate requests to people and Internet-enabled things to draw less power.

Energy storage resources use the Internet for research and development, to analyze the state of the grid, and manage customer demand. Storage can be used to lower a customer's peak energy demand as the customer is toggled from grid-fed energy to storage-fed energy. Doing so requires sophisticated software, built on an Internet-enabled platform. The Internet also enables energy storage to be called as a distributed demand response resource to feed into the electric grid.

IOU Demand Response programs are subject to authorization from state utility commissions as they involve expenditure of rate-payer funds, and affect utility safety and reliability. The CPUC authorized electric and gas utilities to expend ratepayer

funds on demand response programs that call on people and connected devices to save power. These programs are activated during times of high demand, or when fire or other emergencies make conservation urgent. Internet-enabled demand response transforms load reduction into a supply-side energy resource that manages energy during critical events, and forestalls the need to build fossil-fueled power plants.⁹¹

In mid-September 2014, both Southern California Edison and the Los Angeles Department of Water & Power issued “demand response” calls to ask people to conserve power during a heat wave.⁹² SCE called five “save power days” in September 2014 to balance electric load with available supply.⁹³ SCE activated its “Demand Bidding” program three times in September 2014, soliciting bids through Internet-based platforms to reduce electric and natural gas demand, forestall the need to ask gas-fired peaker plants to turn on, and avoid power shortages and blackouts.⁹⁴

The California Independent System Operator (CAISO), a regional energy grid operator established under the supervision of FERC, oversees California’s electric grid to ensure its reliability and stability.⁹⁵ The Governor of California appoints the CAISO Governing Board and the CPUC, California Energy Commission, the California Air Resources Control Board, and many other state agencies and IOU and municipal utilities coordinate closely with CAISO to protect the stability and reliability of the

⁹¹ *Id.*, at ¶ 3.3.8.

⁹² Ashley Soley Cerro, Jennifer Gould, Christina Pascucci, Tracy Bloom, Chip Yost, and Steve Kuza, *Power Outages Reported Among All-time High for Electricity Demand During SoCal Heat Wave*, KTLA (Sept. 15, 2014) (“Earlier in the day, LADWP had advised customers to conserve energy in an effort to reduce the strain on the power grid and minimize the risk of potential power outages”), <http://ktla.com/2014/09/15/dangerously-hot-temperatures-may-reach-110-degrees-in-l-a-ventura-counties/>.

⁹³ SCE, Event History, Save Power Days (Sept. 21, 2014), <https://www.sce.openadr.com/dr.website/scepr-event-history.jsf>.

⁹⁴ SCE, Event History, Demand Bidding Program (Sept. 21, 2014), <https://www.sce.openadr.com/dr.website/scepr-event-history.jsf>.

⁹⁵ California ISO, Our Business (“As the impartial grid operator for the bulk of the state’s power grid, the ISO opens access to the wholesale power market that is designed to diversify resources and lower prices.”), <http://www.caiso.com/about/Pages/OurBusiness/Default.aspx>.

electric grid. Under FERC supervision, 10 regional power markets, Independent System Operators, use the Internet extensively to operate energy markets including bidding to buy or sell power, and monitoring the grid to detect the need for action to prevent “imbalances” that could lead to blackouts.⁹⁶

An example of the critical nature of this coordination and communication is illustrated by the events of Feb 6, 2014 when natural gas prices surged nationally due to a polar vortex. CAISO coordinated closely with California’s natural gas operators to ensure sufficient gas was available to operate electric power plants. CAISO requested demand response from the public through a state-wide “Flex Alert” to reduce electric and gas use to avoid blackouts, while curtailing the operation of a gas-fired power plant in Southern California.⁹⁷ CAISO uses many Internet-based channels and social media to communicate with the public, participants in the CAISO market, regulators and others including Twitter, Facebook, RSS feeds, Google Plus, and YouTube. CAISO encourages those who read its urgent messages to pass it on with a “Thanks for re-posting!”⁹⁸

C. Apps for Energy and Water Saving Depend on an Open Internet

The CPUC has also worked with utilities, the Department of Energy, UCLA, App developers, entrepreneurs, wireless companies such as AT&T, federal and state Lifeline providers, and the community to encourage the development of Apps for Energy and Apps to Save Water. In 2013 SDG&E hosted an “Apps for Energy Hackathon” to “serve as a catalyst for new innovations and entrepreneurial opportunities, providing attendees with the resources, education, environment and networking structure needed

⁹⁶ FERC, Electric Power Markets, National Overview, <http://www.ferc.gov/market-oversight/mkt-electric/overview.asp>.

⁹⁷ CAISO, CAISO Issues State Wide Flex Alert, Electricity conservation needed due to natural gas shortage curtailing fuel supplies to power plants, (Feb, 6, 2014), www.caiso.com/Documents/ISOIssuesStatewideFlexAlert.pdf.

⁹⁸ *Id.*

to produce quality apps in less time with fewer expenses.”⁹⁹ United States Deputy Chief Technology Officer Nick Sinai helped kick off the hackathon, with coaches and mentors from the San Diego tech community available throughout the weekend.

Participants also enjoyed access to the AT&T Application Programming Interface (API) Platform and SDG&E’s “Green Button” data, which provides consumers with access to data about their energy use.¹⁰⁰ APIs speed App innovation as developers are able to use tools such as geomapping to relate energy data to places. APIs are available on the Internet, along with other resources for App developers.¹⁰¹

“The Green Button Initiative is an industry-led effort that allows consumers to securely download details of their energy usage information in a consumer-friendly and computer-friendly format. The initiative was spurred in 2011 when the White House called on utilities throughout the country to provide customers with easy access to their energy usage data. Today, 35 utilities serving 36 million homes and businesses enable their customers with standard “Green Button” access to their own energy use.”¹⁰²

The Green Button enables access to both a user’s personal energy information data—what I call the dataset of one—and access to aggregated data that can be broken into categories to help understand trends, compare energy use, and innovate ideas about saving energy. The Green Button initiative builds on the Smart Grid and other energy resource data, much of it available through the web such as the CPUC’s energy

⁹⁹ SDG&E, San Diego Codes for a Better Planet, Energy Conservation Apps Created in Less Than 24 Hours (Nov. 11, 2013), <http://www.sdge.com/newsroom/press-releases/2013-11-11/san-diego-codes-better-planet-energy-conservation-apps-created#sthash.7T6O7aNt.dpuf> [hereinafter *SDG&E Codes, Energy Conservation Apps*].

¹⁰⁰ *Id.*

¹⁰¹ See Apple, iOS Dev Center, <https://developer.apple.com/devcenter/ios/index.action>

¹⁰² *SDG&E Codes, Energy Conservation Apps, supra* note 99; U.S. Dept. of Energy, Green Button (Green Button is a secure way to get your energy usage information electronically), <http://www.greenbuttondata.org/>.

efficiency database,¹⁰³ and DOE databases to harness the power of “Big Data” to address the nation’s energy challenges and fight climate change.

The U.S. Department of Energy’s American Energy Data Challenge requires participants to develop Apps that use certain datasets available on the Internet to be eligible for a contest prize.¹⁰⁴ The ability to harness the Open Internet to access these databases, imagine an App, and incorporate that data into an App that helps people save energy, is an example of the virtuous cycle of innovation the Internet supports.

The U.S. Department of Agriculture and my colleagues at the CPUC and I are collaborating to create a “Save Every Last Drop” Hackathon to engage developers to build Apps to Save Water, and address the embedded energy in water and the embedded water in energy, important goals during California’s drought. AT&T is coordinating with Hispanas Organized for Political Equality to initiate a Latina Entrepreneurs Hackathon to promote civic, business, and non-profit engagement by Latinas through App platforms.

Hackathons are fueled by ideas, energy, and often by pizza and Red Bull, but do not require the permission of an ISP to access or send data or make an App available to the world. Some are downloadable by the time of App contest judging, less than 24 hours from when the App contest began! Apps developed through the SDG&E Hackathon and the US DOE Hackathons are now being commercialized and some are available for free to help change the energy landscape and reduce climate change.

At the Communications-Energy/Water nexus Workshop my Office convened at the CPUC in September 2014, and the Water/Energy Nexus and the Drought workshop we held in August 2014, we explored ways to use new communications platforms

¹⁰³ CPUC, Database for Energy Efficiency Resources, <http://www.energy.ca.gov/deer/>.

¹⁰⁴ US DOE, American Energy Data Challenge, Featured Inputs, <http://energychallenge.energy.gov/a/pages/featured-inputs>.

including the Internet and Apps to save water and energy. While turning off the faucet while you brush your teeth is still good advice, initially publicized during California's last big drought of 1977, we don't need to fight the 2014 drought like disco still reigns. The biggest innovation since 1977 has been the Internet's emergence from the military and universities into a global engine of economic innovation.

At the CPUC Communications-Water/Energy Nexus Workshop, speakers discussed how we can use communications and the Internet to detect water leaks, improve agricultural, commercial and industrial, residential, tribal, and government water use.¹⁰⁵ Communications and the Internet can support new ways to manage forests to reduce wildfire danger, enhance use of biofuels for renewable energy, and increase water production for drinking water and hydro-electricity. The Internet and new communications platforms enable use of both Big Data and the DataSet of One-Data about one Household, business, or customer-to increase water and energy efficiency, consistent with privacy and cybersecurity. Communications and the Internet can increase the ability to manage and plan communications, water, and energy infrastructure. No one at these workshops imagined ISPs as the mediators or gatekeepers to decide whether these innovations could be deployed, and on what terms or speeds, to save water, energy, communities, and our planet.

The accessibility of Apps through mobile platforms, tablets, or more traditional computers makes them a tremendous resource for outreach to the community about programs that help customers save money and energy. At the Apps for Energy Hackathon SDG&E and AT&T hosted in November 2013, and at the American Energy Data Challenge Hackathons SDG&E hosted and UCLA hosted in January 2014,¹⁰⁶ in my

¹⁰⁵ CPUC Communications-Water/Energy Nexus Workshop, R. 13-12-011 (Sept. 10, 2014), [hereinafter *CPUC Communications-Water/Energy Nexus Workshop*], http://www.cpuc.ca.gov/PUC/Water/Communications_Water-Energy_Nexus_Workshop.htm.

¹⁰⁶ US Dept. of Energy, American Energy Data Challenge, <http://energychallenge.energy.gov/>.

welcoming remarks I reminded participants about the diversity of users for the Apps. Not all App users will speak English as a first-language or at all; some may be low-income; many will be renters and live in apartments or mobile homes, and; they will have a broad range of experience with the Internet and Apps.

At these Hackathons, I “ideated” an App that would allow eligible low-income Californians to apply for energy assistance through the California Alternative Rates for Energy (CARE) program, and for energy efficiency work to be done at their home through California’s Energy Savings Assistance Program (ESAP). SDG&E launched the first CARE/ESAP enrollment App in August 2014, enabling customers to save time and ratepayers to save money, and increasing the availability and effectiveness of these important resources. A web-based application is also available online, and SDG&E partners with community-based organizations, churches, and business partners to inform eligible Californians about this resource.¹⁰⁷

California spends more than \$5 billion over a three year cycle on CARE/ESAP, subsidizing the cost of energy usage, and striving to increase energy efficiency. Increasing the effectiveness of that program is imperative to prudent fiscal management and use of energy resources. The CPUC’s CARE/ESAP Decision adopted in August 2014, directed utilities to consider how they could use communications tools including the Internet and Apps to increase the program’s success.¹⁰⁸ The Decision ordered utilities to “Consider use of technologies such as apps, text, Internet services, calls, instant messages, community, tribal, and CBO-based outreach, media including non-English language media and social media, and other methods and avenues to achieve

¹⁰⁷ SDG&E, CARE/ESAP Application, <http://www.sdge.com/documents/careesap-application>

¹⁰⁸ Application of Southern California Edison Company (U338E) for Approval of its 2012-2014 California Alternative Rates for Energy (CARE) and Energy Savings Assistance (ESAP) Programs and Budgets, D. 12-08-044 (Aug. 2014), <http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M026/K217/26217743.PDF>.

program goals.”¹⁰⁹ CARE/ESAP, like many CPUC energy, water, communications, and transportation programs, extensively use Internet-based platforms to communicate with customers, analyze data and programs, and develop program proposals. ISPs should not be the gatekeepers of this innovation.

Today, the Internet supports the ability of users including energy utilities to communicate quickly and effectively with customers, regulators, community-based organizations, and the media about safety, the need to reduce power demand, operations, and other issues. Electric utilities use YouTube videos to warn people not to go near downed power lines to avoid electrocution hazards.¹¹⁰ A video demonstration about avoiding a downed power line communicates the hazard of a frayed, live power line laying on the ground more powerfully than a verbal or written warning. Videos posted on utility web sites and on YouTube encourage everyone to call before digging to avoid damage to natural gas lines, or to detect and report gas leaks. Video content sites such as YouTube enable cost-effective dissemination of life-saving information.

D. Media Access to an Open Internet is Crucial to Critical Infrastructure Operation, Broadcast Incentive Auctions, Economic Vitality, and Democracy

Under a “paid prioritization” regime, whether generated by ISP demands or the request of one or two users, an ISP could demand extra payments from a media outlet that Critical Infrastructure and others use to communicate with the public. ISPs could demand that television broadcasters, for example, negotiate with ISPs in closed-bargaining subject to “differentiated” access deals, to send content to the ISP’s

¹⁰⁹ *Id.*

¹¹⁰ SCE, *Downed Power Line PSA*, YOUTUBE, <http://www.youtube.com/watch?v=ZvazCzxZhVk>; Great River Energy, *Stay Away from Downed Power Lines*, YOUTUBE, <http://www.youtube.com/watch?v=zZL29pMRUfk>; So Cal Gas, *Call 811 Before You Dig*, YOUTUBE, http://www.youtube.com/watch?v=Qxf43_oNlrw; So Cal Gas, *Use Your Senses to Alert You to a Gas Leak*, YOUTUBE, http://www.youtube.com/watch?list=PL77ZHiqkxkonf-ZJvpjztCV-4nr8HfIsI_&v=MSdErbBjdUo.

subscribers at fast speeds. The media's role in helping utilities and others communicate with the public underscores the concerns the FCC proposal raises for public safety and civic discourse.

This prospect is made more worrisome by the affiliation of some ISPs with competing media outlets, cable, or Internet-based video providers. The FCC should consider whether ISPs, if allowed to obtain larger footprints, could use their enhanced power as ISPs to demand payments from content providers throughout their service territory. The FCC should examine whether a large ISP may have greater power to demand payments from content providers that provide rival content to the ISP and its affiliates, or offer no or poor terms for fast Internet access, and the ability to diminish competition in the video or content marketplace. Regardless of whether ISPs previously served the same set of Internet or video subscribers, the FCC should analyze whether their combination may enhance power to demand payments from rival video content providers for fast Internet access, as permitted by the FCC's Open Internet proposal.

The FCC's proposal creates uncertainties about the ability of broadcasters to rely on the Internet as a medium to communicate content to audiences. Broadcasters, licensed under Title III to use public airwaves, use the Internet as means to enhance and archive their broadcasts, provide fuller details than broadcast air time allows, and to foster discussion and social engagement about media stories. The process the FCC envisions for access to fast Internet access creates disincentives for broadcasters to put spectrum up for auction at the broadcast incentive auctions Congress authorized in 2012 to make more spectrum available to mobile and other users.

Through 47 USC 1452, Congress instructed the FCC to "conduct a reverse auction to determine the amount of compensation that each broadcast television licensee would accept in return for voluntarily relinquishing some or all of its broadcast television spectrum usage rights in order to make spectrum available for assignment through a system of competitive bidding under subparagraph (G) of section 309(j)(8) of

this title.” The FCC’s proposal deters auction participation by increasing transaction and access costs for Internet transmissions, newly mediated through non-transparent ISP negotiations. This erects barriers to switching audiences from spectrum-based over-the-air broadcast television to Internet-based viewing. Broadcasters who want to continue communicating content to audiences would confront the new barriers to doing so the FCC’s proposal erects.

The FCC’s Open Internet NPRM does not consider or raise the issue of how its proposal would affect Broadcast Incentive Auction participation, and the availability of spectrum to other users who are hoping to deploy that recovered spectrum. Yet, the FCC’s proposal makes relying on Internet-based communication precarious and dissuades broadcaster relinquishment of spectrum-based channels through the FCC’s planned incentive auction.

The potential for ISP discriminatory demands for Internet access from broadcasters and the media support FCC action to prevent control over the ISP gateway and last mile from muting competing voices including broadcasters.¹¹¹ Just as the FCC regulated behavior of early cable operators in *Southwestern Cable* and *MidWest Video*, so must the FCC act to ensure that ISPs cannot erect undue barriers to broadcasters’ ability to access the Internet.¹¹² I do not advocate resorting to “ancillary jurisdiction” under Title I to address the harmful effects of proposals to allow ISPs to charge all “edge providers” including broadcasters and other content providers for Internet access,¹¹³ as

¹¹¹ *Verizon v. F.C.C.*, 740 F.3d 623, 640 (D.C. Cir. 2014) (“Any regulatory action authorized by section 706(a) would thus have to fall within the Commission’s subject matter jurisdiction over such communications—a limitation whose importance this court has recognized in delineating the reach of the Commission’s ancillary jurisdiction.”).

¹¹² *United States v. Southwestern Cable Co.*, 392 U.S. 157 (1968); *United States v. Midwest Video Corp.*, 406 U.S. 649 (1972)).

¹¹³ *Cf.*, *Comcast v. FCC*, 600 F.3d 642 (2010) (“even though the then-existing Communications Act gave the Commission no express authority over cable television, the Commission could nonetheless regulate cable television to the extent “reasonably ancillary to the effective performance of the Commission’s various responsibilities for the regulation of television broadcasting.”” *U.S. v. Southwestern Cable*, 392 U.S. 157,

the FCC used in the 1960s and 1970s to ensure that the benefits of broadcasters' licenses were not undercut by actions of certain cable providers. The FCC should adopt a more effective and enforceable regime to prevent such discrimination, using a light-touch Title II approach, as discussed later in this testimony.

Preventing ISPs from raising the price of Internet access to rivals, speakers with whom they are not affiliated, who they do not prefer, or who cannot pay for fast Internet access above ISP-determined prices is critical to prevent impingement on First Amendment values and our democracy. The City of Los Angeles in its reply comments in this proceeding opposing the forced-ISP negotiation proposal observed "the City's creative industries—television, film, music, video games, publishing, advertising, product design, online/web, and others—all rely heavily upon the Open Internet to distribute their creative content to the world," as does the City of Los Angeles for public and governmental services.¹¹⁴

The Writers Guild of America, West observed: "It is fundamental to free speech and essential to fostering a diverse and dynamic marketplace where writers can bypass conventional distribution methods and deliver their product directly to the public. Writers are at the forefront of creating and distributing original content for the web."¹¹⁵ Los Angeles hosts a growing and thriving tech community, Silicon Beach, and the Open Internet without ISPs as gateways is critical to that innovation and investment.¹¹⁶ Stories, images, and ideas introduced or communicated by film, television-format

¹¹³ "Four years later, in *Midwest Video I*, the Court again sustained the Commission's use of its ancillary authority, this time to support issuance of a regulation that required cable operators to facilitate the creation of new programs and to transmit them alongside broadcast programs they captured from the air. 406 U.S. at 670.").

¹¹⁴ City of Los Angeles, Reply Comments, at 5, *FCC Open Internet 2014 NPRM*, <http://www.wga.org/content/default.aspx?id=2897>.

¹¹⁵ *Id.*

(citing Writers Guild of America, West, *available at*: <http://www.wga.org/content/default.aspx?id=2897>).

¹¹⁶ City of Los Angeles, Reply Comments, *FCC Open Internet 2014 NPRM*, at 5.

video, short video, whether carried through Hulu, YouTube, NetFlix, as a web page, or through other Internet media including video games, influence American opinion, democracy, culture, and the economy, and contribute to the marketplace of ideas.

In May 2014, I had the honor to consult with the Hoopa Valley Tribe in Northern California and learn about their youth-led project to use the X-box and the Internet to create Hoopa-designed video games. Through this project, Hoopa children use full-motion video to create an avatar of themselves, dress their avatar in traditional Hoopa clothing, speak in the Hoopa language, and do Hoopa dances in the video game.¹¹⁷ Internet-enabled platforms create new ways to preserve and perpetuate the tribe and its culture. Hoopa youth, living on a Northern California reservation with inadequate bandwidth to support the Internet-enabled Supervisory Control and Data Acquisition (SCADA) system for its water utility,¹¹⁸ use the Internet for learning, culture, and self-expression, with the support and encouragement of the tribe's council and members.

The Supreme Court has repeatedly emphasized the Commission's duty and authority under the Communications Act to promote diversity and competition among media voices. "It has long been a basic tenet of national communications policy that "the widest possible dissemination of information from diverse and antagonistic sources is essential to the welfare of the public."¹¹⁹ The FCC must not abandon this duty and allow ISPs to determine who gets preferential access, at what price, on what terms, and in a non-transparent way. To do so would undermine democracy and

¹¹⁷ See Hoopa Valley Tribe, Facebook ("Creating Na:tini:we Xbox Video Games at the Hoopa Tribe. Creating full immersion language skills. Instead of having our kids Play video games... we would like them to make video games. This is the fourth world to have been created [The first were with a pretty accurate Xonta lodge structures] All in the traditional language. Next is to remove all English speaking and replace it with full immersive Na:tini:we learning. — [Still in development at the Hoopa Valley Tribe] — with Danielle R. Vigil-Masten, Ralphy Peters, Patrick Jackson and Ryan Jackson at Tsewenaldin Inn."), <https://www.facebook.com/video.php?v=654635481276787>.

¹¹⁸ Barbara Ferris, Public Utilities Dept. Manager, Hoopa Tribe, Testimony, *CPUC Communications-Water/Energy Nexus Workshop*, *supra* note 105.

¹¹⁹ *Turner Broadcasting System, Inc. v. FCC*, 512 U.S. 622, 663 (1994) (quoting *United States v. Midwest Video Corp.*, 406 U.S. 649, 668 n.27 (1972)).

American freedom, and harm people, businesses, and institutions which depend on and invest in the Internet and create new uses at its edges.

E. Referral Recommendations for the FCC's Open Internet Proposals

In light of these concerns, I recommend that the FCC refer its proposal to allow ISPs to dictate terms of access in a non-transparent fashion to the federal-state Communications, Security, Reliability and Interoperability Council (CSRIC), to the U.S. Department of Energy, and to the U.S. Department of Homeland Security, and coordinate with FERC and state utilities commissions with responsibility for Critical Infrastructure oversight. I recommend that state public utilities commissions, state offices of emergency management, utilities, public safety agencies, local government, universities, schools, health care providers, and Critical Infrastructure sectors, and other participants of the economy and polity review this proposal for its implications for security, reliability, and accessibility of Internet use.

The FCC should also refer this proposal to the Federal State Joint Conference on Advanced Services (the 706 Joint Conference) and ask the state members, many of whom have responsibility for oversight of various Critical Infrastructure sectors, to weigh in on this proposal and its implications for utility service and access to advanced services. The FCC should also consider its regulatory options under Title II, Title III, and Section 706 of the Communications Act, and identify forbearance that would promote innovation and investment, protect Critical Infrastructure, and all who use the Internet as engines of innovation and communication.

VI. Federal and State Universal Service Programs and Public Safety Depend on an Open Internet Without Gatekeepers

A. Universal Service Depends on an Open Internet

An Open Internet, unmediated by ISP gatekeepers, is essential for the success of the federal and state universal service programs. These include state and federal high cost funds for common carrier telecommunications companies; state and federal Lifeline programs; state and federal Deaf & Disabled telecommunications programs; state and federal E-Rate funds and programs to support Internet access for schools, libraries, rural health care centers, and in California, community-based organizations. California also has a California Advanced Services Fund (CASF) that uses the Internet to map broadband availability, test the speed, latency, and jitter of carrier connections, and support deployment of advanced communications networks through California's \$225 million California Advanced Service Fund (CASF) program.¹²⁰

B. Federal and State High Cost Universal Service Programs and Call Completion Must Not be Undermined by ISPs

Federal High Cost programs support communications carriers in regions with elevated costs to deploy communications networks, many in rural, tribal, mountainous, or remote areas.¹²¹ In 2014 the FCC announced \$100 million to be used for "rural broadband experiments" to encourage deployment of "voice and broadband-capable networks in rural, high-cost areas, including extremely high-cost areas," advancing universal service goals under 47 U.S.C. 254, and increasing access to advanced services

¹²⁰ CPUC, California Advanced Services Fund, <http://www.cpuc.ca.gov/PUC/Telco/Information+for+providing+service/CASF/index.htm>.

¹²¹ FCC, Connect America Fund, <http://www.fcc.gov/encyclopedia/connecting-america>.

per Section 706 of the Communications Act.¹²² The networks built through those broadband experiments must support voice service, be 911/e911 compliant, and provide broadband access.¹²³ FCC “funding for the rural broadband experiments will be “subject to the applicable requirements of sections 214 and 254 of the Act and will be conditioned on complying with all relevant universal service rules that the Commission has adopted or may adopt in the future in relevant rulemaking proceedings.”¹²⁴

Some other states also support telephone service in high cost areas through state funds. California supplements FCC high cost programs through two state funds: The California High Cost-A Fund supports 13 rural telecommunications carriers. California’s High Cost-B Fund supports carriers of last resort who are not rate-regulated.¹²⁵

Under Section 214(e)(1) of the Communications Act, only common carriers are eligible for federal universal service support. A common carrier must be designated as an “eligible telecommunications carrier” by a state or the FCC to be eligible to receive universal service support in accordance with section 254 of the Communications Act.¹²⁶ The winning bidders from the FCC’s Connect America Fund Rural Broadband Experiments will operate their networks as common carriers, a requirement for eligibility for universal service support.

¹²² FCC, *In the Matter of Connect America Fund Annual Reports and Certifications*, 60 Communications Reg. (P&F) 1361 (F.C.C.), 2014 WL 3468893, ¶ 1 (July 14, 2014) [hereinafter, *FCC, CAF, Rural Broadband Experiments*]; FCC, *Rural Broadband Experiments*, <http://www.fcc.gov/encyclopedia/rural-broadband-experiments>.

¹²³ *FCC, CAF, Rural Broadband Experiments*, *supra* note 122, at ¶ 74, n. 112.

¹²⁴ *Id.*, at ¶ 72.

¹²⁵ CPUC, *California High Cost A-Fund*, <http://www.cpuc.ca.gov/PUC/Telco/Public+Programs/chcfa.htm>; *California High Cost B-Fund*, <http://www.cpuc.ca.gov/PUC/Telco/Public+Programs/chcfB.htm>; Senate Rules Committee, SB 1354, *Analysis* (“Annual expenditures of approximately \$40 million from the CHCF-A Fund until 2019 to support small rural telephone companies,” and “Annual expenditures of approximately \$25 million from the CHCF-B Fund until 2019 to support large telephone companies providing service in high cost areas.”).

¹²⁶ 47 USC 241(e)(1)(West).

Many common carrier calls are routed through and terminated on networks controlled by ISPs. Reliance on ISP networks for call completion and origination will increase through the FCC's Rural Broadband Experiments. To keep costs down, winners will likely build one broadband network to handle both voice and data traffic. The FCC's Open Internet Order does not address the conflicts it creates between ISP bargaining for Internet access on closed and discriminatory terms, and duties that apply to common carriers and interconnected VoIP providers including prohibitions against unjust or unreasonable discrimination.

The FCC's proposal establishes two categories with conflicting sets of legal obligations and incentives. On the one hand, Title II of the Communications Act charges common carriers with non-discrimination duties, proscriptions against unjust and unreasonable practices, and call completion obligations. The FCC has extended call completion duties and certain other common carrier obligations to interconnected VoIP providers.¹²⁷ The FCC's Open Internet proposal would allow ISPs, even those whose facilities or network sends or receives common carrier or interconnected VoIP traffic, to set prices and terms for Internet access above a minimum speed, without any prohibitions against unjust and unreasonable practices, including those that may interfere with call completion.

The FCC and the states recognize that call completion is vital to protect public safety, strengthen the economy, and provide universal service. The FCC concluded in its Call Completion Order that under 47 USC § 202, "practices used for routing calls to rural areas that lead to call termination and quality problems may violate the prohibition against unjust and unreasonable practices in section 201 of the Act or may violate the carriers' section 202 duty to refrain from unjust or unreasonable

¹²⁷ FCC, *Call Completion Order 2013*, *supra* note 41.

discrimination in practices, facilities, or services.”¹²⁸ Eight States including California have laws that require telephone corporations to promptly carry and complete calls.”¹²⁹

The imperative of call completion is highlighted during natural disasters, fire, and other emergencies. The wild fires California continues to battle require swift communication between the California Department of Forestry and Fire Protection (CalFire), the Office of Emergency Services (OES), and other personnel based in the state Capitol, Sacramento, or in other areas of the state, and areas served by rural common carriers including Sierra Telephone and Siskiyou Telephone where large fires raged in 2014.¹³⁰ Call completion and reverse 911/e911 calls saves lives. Reliable call completion facilitates coordination critical to control and fight fires. It limits harm to people, the economy, and the environment including carbon production from fire. The Rim Fire that burned near Yosemite in 2013 released an estimated 11 million metric tons of greenhouse gases, equivalent to the emissions of 2.3 million cars or the annual emissions of 3.2 gas-fired power plants.¹³¹

Today, public safety depends on more than 911/e911, it increasingly depends on broadband access, speed, and reliability. Using mobile phones and tablets in the field, fire and public safety agencies use GIS data files to track information about a fire including its location, wind, and lightning data, and to order and monitor fire-fighting

¹²⁸ *Id.*

¹²⁹ *NARUC Interconnection Comments*, *supra* note 36, at n. 43.

¹³⁰ The California Department of Forestry and Fire Protection (CalFire), *Junction Fire Incident Update*, SIERRA STAR (Aug. 23, 2014) (listing Sierra Telephone as a cooperating agency for fire response and coordination), <http://www.sierrastar.com/2014/08/20/69196/junction-fire-incident-update.html>; US Forest Service (USFS), *Happy Camp Complex Fire Update*, INCIWEB (Sept. 27, 2014), <http://inciweb.nwcg.gov/incident/4078/>; USFS, *July Complex Fire Update*, INCIWEB, (Sept. 27, 2014), <http://inciweb.nwcg.gov/incident/4035/>.

¹³¹ Sierra Nevada Conservancy, *Greenhouse Gas Emissions and Air Quality Impacts*, SIERRA NEVADA CONSERVANCE.GOV, <http://www.sierranevada.ca.gov/our-region/rim-fire/rimairqualityfacts.pdf> (last visited Sept. 15, 2014).

resources.¹³² The Fire and Resource Assessment Program run by Cal Fire, displays GIS data to track fire threats, fires, and manage forests and vegetation to help prevent devastating fires.¹³³ The US Forest Service also has a GIS-based Active Fire Mapping Program.¹³⁴ The Automated Lightning Mapping System allows downloads of “near real time lightning location information,” a frequent spark of wildfires.¹³⁵ ESRI provides publicly available GIS data on fires including topographic features, height contours, and overlays such as “Current Wind Conditions,” “Precipitation” and “Wildfire Potential.”¹³⁶ Internet-enabled networks and devices allow first responders to coordinate care for the injured using data from Internet-enabled “Smart Beds” at hospitals to identify available hospital beds in burn units or other specialty care wards.

Public agencies, businesses, and residents, Cal Fire, other fire fighters and first responders, use these maps to coordinate fire response, and determine whether to evacuate and make business, personal, and public policy decisions. GIS mapping and tracking information is so critical that in areas without mobile phone access or where getting to a wireline connection is infeasible, Cal Fire designates relay teams to gather information in the fire zone, drive out to get a cell phone signal to upload new ground-based information about the fire, order helicopters and fire-fighting resources,

¹³² ESRI, *Esri Provided Staff, Technology, and Resources; Applications Improved Collaboration, Integration, and Situational Awareness, GIS Helped Multiple Agencies Respond to Southern California Fires*, ARC NEWS Online (Fall 2007), <http://www.esri.com/news/arcnews/fall07/articles/california-fires-gis-helped.html>; Louise K. Comfort, Daniel Mosse, and Taieb Znati, *Managing risk in real time: Integrating information technology into disaster risk reduction and response*, 15 COMMONWEALTH: A JOURNAL OF POLITICAL SCIENCE, Vol. 4, 27–45 (2009), http://www.house.state.pa.us/CJPS/documents/15/v15_a4.pdf.

¹³³ CalFire, Fire and Resource Assessment Program, CA.GOV, <http://frap.fire.ca.gov/data/frapgisdata-subset.php> (last visited September 8, 2014).

¹³⁴ USDA, US Forest Service, Active Fire Mapping Program, <http://activefiremaps.fs.fed.us/>.

¹³⁵ National Wildfire Coordinating Group, GeoSpatial Subcommittee, Fire GIS Software Support Tools (March 17, 2014), http://gis.nwccg.gov/links_tools.html.

¹³⁶ Matt Peckham, *ESRI Public Information Map, Five Tools for Keeping Track of California's Monster Yosemite Wildfire, Need to Keep Tabs on the Sprawling Yosemite-area Wildfire*, TIME, (Aug. 26, 2013), <http://techland.time.com/2013/08/26/5-tools-for-keeping-track-of-californias-monster-yosemite-wildfire/>.

download updates, then drive back to the fire zone to pass on information, then send someone back out to repeat the round-trip cell phone access run.¹³⁷

GIS utilizes multiple layers of high-resolution images and graphics, and requires abundant data storage for the network, “and a connection with a speed of at least 10 Mbps to avoid significant latency while using the application.”¹³⁸ When several users run applications or have to access information, adequate bandwidth is even more crucial. “Multiple, simultaneous use of applications has been shown to negatively impact network performance, download and upload speeds, and user satisfaction with the connection.”¹³⁹

In August 2014, I asked the Chico State GIS Center which provides support for the CPUC broadband mapping work, to map the overlap between areas unserved and underserved by broadband, High Wildfire Danger areas, and tribal areas in California.¹⁴⁰ The maps showed a strong correlation between these layers.¹⁴¹ The FCC’s

¹³⁷ Meeting, CalFire Chief Pimlott with Catherine Sandoval and Ditas Katague, July 8, 2014, Sacramento, California; Robert Tse, Community Planning and Development Specialist, USDA-Rural Development, Panel, Forest, Public Safety, Water management, Bio-fuels & Water for Hydro & Other Water Needs, CPUC, *Communications-Water/Energy Nexus Workshop*, *supra* note 105, (describing U.S. Forest Service and Cal Fire establishing tag teams to drive out of fire zones to be able to access broadband internet to submit and download fire information and order resources for fire-fighting).

¹³⁸ Jeff D. Sanders, Charles R. McClure, and Lauren H. Mandel, *Broadband Applications, Categories, Requirements, and Future Frameworks*, 17 FIRST MONDAY, A PEER REVIEWED JOURNAL ON THE INTERNET, No. 11 (Nov. 5, 2012), <http://pear.accc.uic.edu/ojs/index.php/fm/article/view/4066/3355>, (citing Akamai Technologies, Inc., “Supercharge GIS applications using Akamai application performance services,” (2011), <http://www.nascio.org/events/sponsors/vrc/Supercharge%20GIS%20Applications%20Using%20Akamai%20Application%20Performance%20Services.pdf>)).

¹³⁹ Sanders, McClure, and Mandel, *supra* note 138 (citing Marshini Chetty, Richard Banks, Richard Harper, Tim Regan, Abigail Sellen, Christos Gkantsidis, Thomas Karagiannis, and Peter Key, *Who’s hogging the bandwidth? The consequences of revealing the invisible in the home*,” CHI ’10: PROCEEDINGS OF THE 28TH INTERNATIONAL CONFERENCE ON HUMAN FACTORS IN COMPUTING SYSTEMS 659–668 (April 10, 2010), <http://research.microsoft.com/apps/pubs/default.aspx?id=117911>).

¹⁴⁰ CPUC and Chico State GIS Institute, *Broadband Service Level and Fire Threat*, (August 2014) (on file with the author); CPUC and Chico State GIS Institute, *Broadband Availability and Fire Hazard Severity Zones*, (August 2014) (on file with the author).

proposed Internet access rules ask for no ISP commitments to deploy Internet networks in any area, let alone rural areas or areas at high risk for fire or other disasters, neither does it guarantee respect for call completion and reliability necessary to ensure public safety during fires and other emergencies.

The FCC's Open Internet rules envision "minimum access" sufficient to complete VoIP calls. I have discussed above why the FCC's proposed minimum access standards are infeasible and do not suit the needs of the diversity of Internet users. If ISP subscribers experience slowdowns in traffic as Comcast subscribers allege occurred during negotiations between Comcast, Netflix, and its host Cogent,¹⁴² and VoIP or interconnected voice traffic is unduly slowed or blocked, call completion problems could assume a new form and grow in size and scope. CAIDA noted that "Congestion on transit links affects everybody, not just parties to a peering dispute."¹⁴³ Some Comcast subscribers reported that during the Cogent dispute their Internet speeds were dramatically slowed to 1.5 mbps, affecting a range of applications including some interconnected VoIP services.¹⁴⁴

"Minimum speeds" proposed by the FCC may be insufficient to support fire fighters, first responders, and communities who use wireless networks through mobile phones and tablets, and wireline networks to access data to track a fire, order and monitor resources to fight a fire, call for evacuations, and facilitate the public's safe return. Any proposal to exempt first responders and public safety officials from the FCC's Open Internet proposals misses the fact that the public, suppliers such as GIS

¹⁴¹ Cathy Emerson, Manager, Northeastern and Upstate CA Connect Regional Broadband Consortia, Enhancing communications & energy infrastructure to support water/energy nexus & management; aligning CPUC, state & federal programs, CPUC, *Communications-Water/Energy Nexus Workshop*, *supra* note 105 (showing map correlating California's High Wildfire Danger areas and broadband unserved and underserved areas).

¹⁴² See Mastashake57, *supra* note 58; Stevenf, *supra* note 54.

¹⁴³ Luckie, Dhamdhere, Huffaker, Hyun, Claffy, Clark, *supra* note 63, at 4.

¹⁴⁴ See Mastashake57, *supra* note 58; Stevenf, *supra* note 54.

database providers, hospitals, health care providers, government agencies, the media, and the public need to access data transmitted through the Internet and be able to make and receive calls to protect public safety and ensure universal service.

The FCC's proposal is also inconsistent with the inter-carrier compensation (ICC) system the FCC crafted in 2011. Subject to *certiori* petitions for review by the Supreme Court, the FCC established a transition to a "bill and keep" methodology for call termination.¹⁴⁵ Under the FCC's ICC methodology including bill and keep, the carrier bills its own customer to carry and complete calls, rather than receiving reciprocal compensation from the caller's carrier to terminate calls. The 10th Circuit found "bill-and-keep to be "just and reasonable" under [47 U.S.C.] § 201(b)" which requires common carrier rates to be "just and reasonable."

The FCC's Open Internet proposal allows ISPs to negotiate terms and prices for Internet access above a "minimum speed," and does not exclude common carrier traffic from this closed negotiation process which specifically allows discriminatory terms. Through this mechanism ISPs may exact compensation that an entity which provides reciprocal calling services to terminate calls would not be allowed to impose under bill and keep or any other compensation mechanism. FCC-established "minimum speed" may not be sufficient for all users to access common carrier and interconnected VoIP traffic, along with a range of other applications. ISPs that slow Internet traffic speeds during negotiations with third party content providers or their hosts could affect a subscriber's access to common carrier traffic and hinder call completion.

ISPs must not be allowed to use their role as gateways to subscribers or their affiliation with interconnected VoIP providers to thwart call completion for common carriers or interconnected VoIP services, increase common carrier costs beyond just and reasonable rates, or gain a competitive edge due to their role in terminating or

¹⁴⁵ In re: FCC 11-161, 753 F.3d 1015, 1121, 1124-1125, (10th Cir. 2014).

originating calls. Past FCC decisions have focused on the role of other common carriers or interconnected VoIP providers and their intermediaries in carrying and completing calls. The FCC's Open Internet proposals do not consider the ability of *ISPs* to use their network position to limit common carrier or interconnected VoIP access and call completion, or raise common carrier costs.

The FCC's Open Internet proposal allows ISPs to negotiate "differentiated" deals with content providers (edge providers), specifically authorizing *discrimination against common carriers*. Such discrimination by ISPs undermines the ability of common carriers to fulfill their statutory duties to carry and complete calls at just and reasonable rates under 47 U.S.C. 201 and 202, and the call completion duties the FCC has imposed on interconnected VoIP traffic. The FCC may not permit such discrimination *against common carriers*, and has taken steps in other contexts such as the call completion decisions to prevent harmful actions to common carriers, their customers, and those who want to reach them.¹⁴⁶

As the FCC recognized in the Call Completion Order, only Title II can prevent practices that thwart common carrier and interconnected VoIP safety and reliability, and protect universal service. Similarly, only Title II, applied with forbearance and a light regulatory touch, can prevent ISPs from using the last-mile access they provide to a subscriber, and their Internet access gateway role, to stall, hinder, or increase costs and decrease reliability for common carriers and interconnected VoIP providers and their customers. Title II will also protect the ability of ISP subscribers, including those funded through the FCC's Rural Broadband Experiments, to communicate with common carrier and interconnected VoIP customers.

¹⁴⁶ FCC, *Call Completion Order 2013*, *supra* note 41.

C. Federal and State Lifeline Funds and Programs

Federal and state Lifeline programs provide a communications safety net to eligible, low-income Americans to help them afford telecommunications access. Federal Lifeline provides a monthly discount of \$9.25 on telephone bills, and was started under President Ronald Reagan.¹⁴⁷ Lifeline support is limited to one eligible person per household. The FCC and the states have undertaken substantial efforts to create eligibility verification systems, and assessed penalties to deter Lifeline program fraud.

Congress in 47 U.S.C. 214(e)(1) limited universal service support including Lifeline to common carriers certified as an ETCs. States such as California certify ETCs and impose obligations on ETCs to obey state law as holders of a state Certificate of Public Convenience and Necessity, and federal law.¹⁴⁸ Lifeline providers have a duty to carry and complete calls, as do other carriers interconnected to the public switched telephone network. Many calls are carried and completed in whole or in part through IP-enabled services, travel along the Internet backbone, and to or from a subscriber who uses one network to make and receive calls and access the Internet. The broadband networks the FCC is funding through the Rural Broadband Experiments must provide Lifeline, and comply with common carrier obligations and universal service mandates.

¹⁴⁷ FCC, Lifeline, Affordable Telephone Service for Low-Income Subscribers, <http://www.fcc.gov/guides/lifeline-and-link-affordable-telephone-service-income-eligible-consumers>.

¹⁴⁸ See e.g., Application of Cox California Telcom, LLC (U5684C) for Designation as an Eligible Telecommunications Carrier, Decision 13-10-002; Application 12-09-014 (2013), 2013 Cal. PUC LEXIS 529; Patrick Rosvall, Mark Schrieber, Lisa Tse, California Public Utilities Commission Meeting, March 27, 2014, Cooper, White & Cooper, (April 8, 2014) ("This Decision approves Time Warner Cable Information Services (California), LLC's ("Time Warner California") application for ETC designation in the areas served by AT&T, Verizon, and Frontier... The Decision also explains that "[a]lthough Time Warner California provides telecommunication service with VOIP [sic] technology, Time Warner California agrees that it is a common carrier by virtue of its CPCN and by offering services on a nondiscriminatory basis . . . Time Warner California is subject to the jurisdiction of [the] Commission, and [the] Commission may grant the ETC status." In addition, the Decision also notes that Time Warner California acknowledges that it is subject to regulation as a telecommunications carrier."), <http://www.cwclaw.com/publications/alertDetail.aspx?id=719>.

The CPUC in January 2014, through Decision 14-01-036, modernized and expanded the California LifeLine Program to include support for mobile phone and data services that can be used to access the Internet.¹⁴⁹ California’s “LifeLine” program provides more support than federal Lifeline, up to \$12.65 a month for wireline or wireless carriers for each eligible LifeLine subscriber.¹⁵⁰ This California subsidy, funded by a surcharge of California telecommunications carrier customers including VoIP customers, can be added to the federal Lifeline subsidy of \$9.25 per month, and the enhanced federal Lifeline support of \$25 per month on tribal lands.

Federal and state Lifeline programs help address a range of issues a low-income client faces through Internet-enabled phones or wireline phones made affordable by Lifeline. The CPUC in August 2014 ordered electric and gas utilities to work with LifeLine providers to create Apps to inform LifeLine clients about programs for low-income energy users. Water utilities are also coordinating with LifeLine providers to save water and inform low-income customers about water bill assistance programs. LifeLine could be a platform to pay utility bills including phone and Internet charges, enroll in utility programs, and save energy and water. Through Internet-enabled, LifeLine-supported phones and devices, low-income Californians can learn about communications programs, rail safety, water and energy saving measures, educational and job opportunities, and countless other topics. LifeLine, enables civic engagement and participation, education, and economic empowerment.

Enrollment in California’s LifeLine program has grown tremendously since the CPUC authorized LifeLine to be extended to wireless platforms and Internet services provided by ETCs approved as common carriers under federal law and as Telephone

¹⁴⁹ CPUC, Order Instituting Rulemaking Into the Revision of the Universal LifeLine Telephone Service (ULTS), Program, R. 11-03-013, (Jan. 16, 2014), <http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M086/K541/86541587.PDF>.

¹⁵⁰ *Id.*

Corporations under California state law.¹⁵¹ California's LifeLine program added over 30,000 new subscribers per month since mid-March 2014, each and every subscriber individually screened for eligibility by the CPUC's Third-Party Administrator (TPA).

Electronic, Internet-enabled platforms allow the TPA to process LifeLine applications quickly and efficiently, saving time and money, and protecting the program's integrity. ETCs use web-based platforms to securely transmit to the TPA customer applications, and upload images of documents that evidence subscriber Lifeline eligibility by income or program participation. Images of client eligibility documents, along with the applications, create large files that require substantial Internet resources to process, particularly at a daily volume of over 30,000 applications. The TPA reviews the applications, documents, and Internet-enabled database to determine that no one in the applicant's households is already enrolled in Lifeline, and confirms eligibility.

Some carriers use tablets and mobile phones to take applications at street fairs or in other locations where people gather, and load their applications and accompanying documents to the TPA through secure wireless or wireline networks. While some still apply for LifeLine over the phone or through the mail, the electronic application has become the method of choice for tens of thousands of LifeLine-eligible Californians and the ETC common carriers who serve them. The FCC's Open Internet proposals thwart

¹⁵¹ 47 U.S.C. 214(e)(1) ("A common carrier designated as an eligible telecommunications carrier under paragraph (2), (3), or (6) shall be eligible to receive universal service support in accordance with section 254 of this title and shall, throughout the service area for which the designation is received."); 47 U.S.C. 214(e)(2) ("A State commission shall upon its own motion or upon request designate a common carrier that meets the requirements of paragraph (1) as an eligible telecommunications carrier for a service area designated by the State commission. Upon request and consistent with the public interest, convenience, and necessity, the State commission may, in the case of an area served by a rural telephone company, and shall, in the case of all other areas, designate more than one common carrier as an eligible telecommunications carrier for a service area designated by the State commission, so long as each additional requesting carrier meets the requirements of paragraph (1).").

investment in Lifeline databases and verification efforts, putting the program at risk and reducing the value of those investments of time and money.

The individual screening and processing of more than 30,000 LifeLine applications a month was enabled by process reforms the CPUC adopted in 2013 that switched LifeLine eligibility determination from a 100% mail-based verification process to a primarily electronic-based, Internet-enabled process. Through these improvements, the CPUC reduced the average time for eligible applicants to qualify for LifeLine from approximately three months in 2012, to less than three days in mid-2014. Some applications are now processed and approved by the TPA in less than two days under the CPUC guidelines. California's electronic database of LifeLine users, implemented years before the FCC's Lifeline database, was a model for the FCC's electronic verification efforts.

Internet access is crucial to the effective administration of the Lifeline program, the common carriers who offer it, Lifeline subscribers who use it, and to all who connect with Lifeline subscribers. Potential LifeLine customers can use the Internet to learn about federal and state Lifeline offerings, compare plans, and apply to participate. Lifeline also enables Internet access, often for the first time for low-income subscribers.

Requiring participants in the LifeLine ecosystem—LifeLine carriers, the CPUC, the CPUC's TPA, community-based organizations (CBOs), who assist low-income Californians, Lifeline-eligible customers, local governments, schools, and health-care providers who promote LifeLine—to individually negotiate Internet access above minimum speeds would increase the time to qualify for Lifeline and program costs. Channeling Lifeline content providers through the FCC's proposed ISP negotiation process erects a new barrier to Internet access that federal and California Lifeline enable. This violates the letter and spirit of Section 706 of the Communications Act, and

universal service obligations under 47 USC 214. The FCC's proposal adds cost, time, and hurdles to Lifeline program eligibility verification and participation.

ISPs affiliated with carriers of voice service would be in a unique position to raise rivals' costs by charging competitors higher prices for fast Internet access. ISPs could also use Internet access negotiations and delays to make the Lifeline program appear less successful or desirable, influence policy about federal and state Lifeline programs, competition, and consumer choice.

The proposed ISP gatekeeper role may be a facilitating practice for anti-competitive behavior and potential discrimination against common carriers that provide Lifeline. The FCC must not allow ISPs to thwart Lifeline by raising costs or increasing delays for fast Internet access. Neither should ISPs be allowed to slow Lifeline and voice traffic during disputes with content/edge providers or their host server, lest the universal service goals of federal and state Lifeline programs be foiled.

The FCC's Open Internet proposal does not mention Lifeline, or the substantial investment by the federal and state government, the private sector, Lifeline participants, and the community in Lifeline. Allowing ISPs to negotiate individualized, differentiated (discriminatory) deals in a non-transparent fashion with those in the LifeLine service chain would undermine the LifeLine program, and substantial investment in LifeLine, LifeLine-enabled phones, and the Internet platforms that enable program eligibility verification. It would reduce the usefulness of LifeLine to Americans authorized to choose plans that provide Internet service along with voice service. This proposal would waste billions in federal, state, and private investment, a result contraindicated by substantial evidence, and federal and state laws and policy to promote universal service through Lifeline access.

D. Federal and State Support for Deaf & Disabled Telecommunications Access Not be Undercut by ISPs and the FCC's Open Internet Order

The State of California's Deaf and Disabled Telecommunications Program DDTP supports adaptive equipment to facilitate communication by people with disabilities.¹⁵² The CPUC-run DDTP program provides financial support for eligible Californians to obtain a speech-generating device upon a doctor's written recommendation.¹⁵³ These devices are life-changing for clients who otherwise have a difficult time communicating and being understood. Through DDTP, eligible Californians can now use Internet-enabled devices to make their voices heard and understood, opening new avenues for communication, understanding, economic and civic engagement, and health.

This state program complements the FCC's long-standing Telecommunications Relay Service (TRS) program which assists communication by people with disabilities, consistent with the Americans with Disabilities Act.¹⁵⁴ As the FCC explained in authorizing Internet-Protocol based TRS, that service "TRS permits persons with a hearing or speech disability to use the telephone system via a text telephone (TTY) or other device. Now TRS users are only a mouse click away from a new TRS option. All they need is an Internet connection and they can use Internet Protocol (IP) Relay."¹⁵⁵

Section 225 of the Communications Act requires common carriers to provide relay services. Sections 201 and 202 of the Communications Act forbid discrimination in handling calls, and establish an obligation for common carriers, to carry and complete TRS calls, an obligation the FCC has extended to interconnected VoIP providers and their intermediaries. The FCC's Open Internet 2014 NPRM does not even mention TRS or TTY calls. The FCC's Open Internet NPRM's only reference to people

¹⁵² CPUC, Deaf and Disabled Telecommunications Program, <http://www.ddtp.org/homepage.aspx>.

¹⁵³ *Id.*

¹⁵⁴ FCC, Telecommunications Relay Service, (Section 225 to the Communications Act of 1934, as amended, 47 U.S.C. §225), <http://www.fcc.gov/encyclopedia/telecommunications-relay-services-trs>.

¹⁵⁵ FCC, IP Relay Service, <http://www.fcc.gov/guides/Internet-protocol-ip-relay-service>.

with disabilities is the ability to obtain a copy of the proposal via email, phone, or TTY call.¹⁵⁶ This omission overlooks the role of IP networks and Internet-based systems to facilitate, carry, and terminate TRS and TTY calls, and open new avenues of communication for people with disabilities and those who communicate with them.

Neither does the FCC contemplate the implications of the Open Internet order for the deaf, speech-impaired, or disabled. It does not discuss the hardship, transaction costs, or access issues that may be raised by ISP demands that health care providers, telecommunications carriers and services, social services organizations, governments, businesses, schools, teachers, and even families and care-givers engage in closed, non-transparent negotiations to obtain differentiated access to fast Internet service above minimum speeds.

Today, people with disabilities are less likely than other adults to use the Internet, a statistic the FCC, states, community-based organizations, health care providers, and advocates have worked hard to change. “The 27% of adults living with a disability in the U.S. today are significantly less likely than adults without a disability to go online (54% vs. 81%). Furthermore, 2% of adults have a disability or illness that makes it more difficult or impossible for them to use the Internet at all.”¹⁵⁷ The California Emerging Technology Fund (CETF), an organization found by the CPUC to improve broadband access and adoption, has made improving Internet access for people with disabilities a priority.

CETF’s “Board of Directors has identified people with disabilities as one of three priority consumer communities for initial focus. The power of technology to transform people's lives is most dramatic in this group because it makes everything else possible --

¹⁵⁶ *Open Internet 2014 NRPM*, supra note 2, at ¶ 180.

¹⁵⁷ Kathryn Zickuhr and Aaron Smith, *Digital Differences*, PEW RESEARCH INTERNET PROJECT (April 13, 2012), <http://www.pewInternet.org/2012/04/13/digital-differences/>.

education, employment, civic and market participation.”¹⁵⁸ CETF identified as priority consumer communities people in: rural regions, urban disadvantaged areas, and people with disabilities. “CETF recognizes that people with disabilities are a significant part of every community. While the incidence of disability (visible or invisible) in the general population is 20%, it is higher in the other CETF priority communities: Rural and Remote Areas; and Urban Disadvantaged Neighborhoods.”¹⁵⁹

The FCC’s proposal to allow ISPs to require negotiations for fast Internet access on non-transparent terms frustrates efforts to promote Internet access under Section 706 of the Communications Act. These proposals may violate Title IV of the Americans with Disabilities Act, 47 USC 225, by their failure to take account of the needs of Americans with disabilities and ensure completion of common carrier TTY and TRS calls, and communications newly enabled by the Internet through speech generating devices. The FCC’s proposal is also inconsistent with universal service obligations under 47 USC 254, common carrier and interconnected VoIP carrier and intermediary duties, and other federal and state laws.

E. Federal and State Investment in Schools, Libraries, Rural Health Care Centers, and Community-Based Organization Internet Access Must Not be Undermined by ISPs and the FCC’s Open Internet Order

The federal program to support Internet access for schools and libraries, E-rate, initiated by President Clinton with the leadership of Vice-President Al Gore and FCC Chairman Reed Hundt and authorized by Congress, has revolutionized American classrooms.¹⁶⁰ E-Rate “provides discounted telecommunications, Internet access, and

¹⁵⁸ CETF, Accessibility, <http://www.cetfund.org/resources/accessibility>.

¹⁵⁹ *Id.*

¹⁶⁰ FCC, Universal Service Programs for Schools and Libraries, <http://www.fcc.gov/guides/universal-service-program-schools-and-libraries>.

internal connections to eligible schools and libraries, funded by the Universal Service Fund (USF).”¹⁶¹

The FCC is conducting a proceeding to modernize E-rate in light of growing demand for bandwidth at schools and libraries. Many states, school districts, parents, communities, and businesses, have invested substantial funds, time, and equipment, and leadership in making schools Internet-enabled. California, along with other states that have adopted the Common Core Curriculum, conducts on-line testing that requires broadband access in the schools. On-line testing has required significant investment in networks connecting to schools, in school-site networks, in computers, teacher, student, and staff training, and in test development and assessment.

Promoting Internet access at home is a priority for many school districts. Several school Principals and Superintendents have told me that the district would be willing to buy tablet devices for all of their students, but the biggest barrier is lack of Internet access at home. Likewise, libraries across the country have invested federal, state, private, public, and philanthropic funds to become more digitally connected and provide Internet access to patrons.

Through the Internet, scholars and students are no longer limited to a library’s catalogue or collection to determine what resources are available them and generate new ideas and research questions. The Internet also allows speakers to easily and quickly publish their research questions and results. When I was a student at Oxford, that great university lacked an on-line catalogue. This forced students to look through giant tomes, worthy of Harry Potter’s review, to examine paper cards pasted onto hard-bound pages to glean information about books in the Oxford library collection. While Oxford’s hard-bound card catalogue was quaint, during my school breaks I was able to

¹⁶¹ *Id.*

conduct more research at California State University at Los Angeles through their green screen, FTP protocol search computers, than through Oxford's venerable book catalogues and closed-stack library.

The FCC's Open Internet 2014 NPRM requests "comment on the role that the Open Internet has for public institutions, such as public and school libraries, research libraries, and colleges and universities."¹⁶² Yet, the FCC did not specifically consider the impact of the forced-ISP negotiation proposals on E-Rate or other universal service recipients. Section 706(a) directs the FCC and the states to promote advanced services, especially in schools, and the FCC must consider the transaction costs, uncertainties, and cost implications of ISP-led, non-transparent negotiations for school, university, library, health care, and community-based organization Internet access.

The State of California supplements FCC E-Rate support through the California Teleconnect Fund (CTF) which provides funding for Internet service at schools, libraries, hospitals and health clinics, CBOs, and community colleges, and helps support the California Telehealth Network.¹⁶³ The FCC's Open Internet paid prioritization proposal would raise transaction and Internet access costs for these vital institutions, and converts transparent searches for fast Internet access into a closed-door, ISP controlled market. Doing so undermines substantial investments in training, equipment, curriculum, and program development to use Internet-enabled services, on site-based and home networks.

The Internet's openness fostered the emergence of "Smart Hospitals" where a hospital bed, is a diagnostic tool, not just a piece of furniture. "Smart beds" weigh patients, read a patient's heart rate and other vital signs, and provide information to

¹⁶² *Open Internet 2014 NRPM*, *supra* note 2, at ¶ 34.

¹⁶³ CPUC, California Teleconnect Fund, <http://www.cpuc.ca.gov/PUC/Telco/Public+Programs/CTF/Eligibility.htm>.

nurses and doctors about when patients are in or out of bed. The Internet enables hospitals to quickly and securely in near real-time, and share this aggregated data for emergency planning. This system allows disaster and mass casualty coordinators to know which hospitals have available beds, and in what type of ward those beds reside.

Innovation, the hospital bed as a diagnostic and disaster/mass casualty planning tool, rather than just something patients lie on, was made possible by the Internet's openness. The inventor didn't have to ask the ISP for permission to hook up the beds to the Internet.¹⁶⁴ Instead doctors, nurses, hospital administrators, emergency planners, and healthcare providers worked with those who developed this technology to use the Internet bandwidth the hospital bought to transform beds from bunks to valuable medical instruments.¹⁶⁵

VII. Transparency in the Internet Marketplace is Undermined by the FCC's Proposals

The FCC's proposed "commercially reasonable" standard is inconsistent with the transparency principle the FCC seeks to augment. The FCC reported hundreds of consumer complaints that the "speed of their [Internet] service falls short of the advertised speed," inspiring the FCC's 2014 proposals to increase broadband

¹⁶⁴ Mike Martin, *Smart Bed Could Give Patients a Lift When They Need It*, TECH NEWS WORLD (March 16, 2011) ("Smart" computerized hospital beds may become a standard of care if negotiations between John LaCourse -- professor and chair of the Department of Electrical and Computer Engineering at the University of New Hampshire -- and hospital bed manufacturers bear fruit. An algorithm LaCourse invented programs the smart bed to communicate with and respond to medical devices that monitor a patient's condition, permitting fast, automatic responses that could prove especially valuable in the wee morning hours, when fewer staff are on hand, or whenever they are busy with other patients."), <http://www.technewsworld.com/story/72039.html>.

¹⁶⁵ Rob Jennings, *Integrating Medical Devices into the EMR Data Repository*, EHR INTELLIGENCE (Feb. 1, 2013), (Medical device integration (MDI) enables the automatic transfer of data from medical devices into electronic records which translates to timely and reliable data. Some hospitals now have the ability to integrate with Smart Beds capable of providing data parameters such as patient weight, the degree angle of the bed position and the bed side rail status — all of which have broad impact on hospital operations as it pertains to overall patient safety. In the operating room (OR), large volumes of data from several different devices must be tracked continuously, making anesthesia carts and other OR technologies ideal MDI targets."), <http://ehrintelligence.com/2013/02/01/integrating-medical-devices-into-the-emr-data-repository/>.

transparency.¹⁶⁶ Sanctioning non-public, differentiated deals that explicitly allow for discrimination between similarly situated users would exacerbate the transparency problems the FCC seeks to address.

In its 2010 *Open Internet Order*, the FCC concluded that effective disclosure of broadband providers' network management practices, performance, and commercial terms of service would promote competition, innovation, investment, end-user choice, and broadband adoption.¹⁶⁷ To that end, the FCC adopted the following transparency rule:

“A person engaged in the provision of broadband Internet access service shall publicly disclose accurate information regarding the network management practices, performance, and commercial terms of its broadband Internet access services sufficient for consumers to make informed choices regarding the use of such services and for content, application, service, and device providers to develop, market, and maintain Internet offerings.”¹⁶⁸

The reply comments I filed in the proceeding that led to the FCC's 2010 Internet Order supported the transparency requirements the FCC adopted.¹⁶⁹ My comments analyzed wireless and cable ISP contracts, terms of use, and exclusions, and concluded that many representations in those documents were inconsistent with the unbridled, even “unlimited” Internet access many ISPs promised subscribers.¹⁷⁰

The FCC's 2014 proposals highlight consumer reports of “surprise at broadband providers' statements about slowed or terminated service based on consumers'

¹⁶⁶ *Open Internet 2014 NPRM*, *supra* note 2, at ¶ 71.

¹⁶⁷ *2010 Open Internet Order*, *supra* note 21, at ¶ 63.

¹⁶⁸ *Id.*

¹⁶⁹ Reply Comments Of Catherine J.K. Sandoval, Associate Professor Of Law, Santa Clara University, Associate Director, Broadband Institute Of California, In the Matter of Preserving the Open Internet, Broadband Industry Practices, GN Docket No. 09-191, WC Docket No. 07-52, 13 (April 2010).

¹⁷⁰ *Id.*

“excessive use.”¹⁷¹ Carrier inclusion of contract terms prohibiting “excessive use” without defining what constitutes “excessive use” is an issue explored in my 2009 Article, *Disclosure, Deception, and Deep Packet Inspection, The Role of the Federal Trade Commission Act in the Net Neutrality Debate*.¹⁷² Consumer complaints to the FCC underscore how some carriers use broad reservations in posted contract terms to limit Internet access advertised as wide-ranging or unlimited, or to terminate subscribers.

Closed negotiations that allow differentiated and discriminatory deals undermine transparency and increase the likelihood of practices that will result in consumers being charged more, terminated, or not getting the speeds ISPs promised. Since negotiations would be “individualized” and non-transparent, ISP offers of fast Internet service may not be advertised or made available to all.

The Federal Trade Commission Act’s (FTCA) deceptive conduct proscriptions compare a firm’s advertisements, offers, and inducements to enter into a contract, to what it provides, and prohibit promises that are inconsistent with practices.¹⁷³ The FTC’s *Dot Com Disclosure Guidelines* emphasize that “[d]isclosures must be effectively communicated to consumers *before* they make a purchase or incur a financial obligation.”¹⁷⁴ Closed, differentiated negotiations make it more difficult to monitor whether consumers receive what they are promised. The FCC’s 2014 Internet access proposals run counter to transparency principles, and undercut efforts to reduce transaction costs, promote competition, and protect consumers.

¹⁷¹ *Id.*

¹⁷² Catherine J.K. Sandoval, *Disclosure, Deception, and Deep-Packet Inspection, the Role of the Federal Trade Commission Act in the Net Neutrality Debate*, 78 *FORDHAM L. REV.* 101, n. 289, 359 and accompanying text, (2009) (arguing that contradictions between promised “unlimited” Internet service and “excessive use” or other limitations on data use violate the Federal Trade Commission Act’s deceptive conduct provisions which require clear and conspicuous disclosure, prominently placed in proximity to the advertising claim, and that any disclaimers cannot materially contradict advertising claims) [hereinafter *Sandoval, Disclosure, Deception, and Deep-Packet Inspection*].

¹⁷³ *Id.* at 21, 50 (“The FTC may examine statements that induced consumers to enter into a contract, whether or not that statement was included in the contract.”).

¹⁷⁴ *Id.*, at 45 (citing FTC, *DOT COM DISCLOSURES: INFORMATION ABOUT ONLINE ADVERTISING* (2000), <http://www.ftc.gov/bcp/edu/pubs/business/e-commerce/bus41.pdf>).

To foster transparency I recommend the following as reflected in the CPUC staff recommendations I voted in August 2014 to support:

RECOMMENDATION 1: A requirement that the ISPs specifically tailor disclosures to meet the need of the edge providers and consumers. The *Verizon* court upheld the FCC’s Transparency Rule, and here, the FCC seeks to enhance that rule, first by requiring ISPs to tailor their disclosures so as to meet the informational needs of the affected parties.¹⁷⁵ The FCC notes, for example, that edge providers may benefit from descriptions that are more technically detailed than descriptions provided to all consumers. As this testimony has emphasized, virtually every Internet user is an edge provider not just an *end-user*, so disclosures must be tailored to meet the needs of different types of users and content providers.

RECOMMENDATION 2: Support the Open Internet Advisory Committee’s (OIAC)¹⁷⁶ proposal that the FCC require the industry to use a standardized label for Internet service. OIAC suggests the label should include basic information such as performance speed (i.e., upload and download speed), price (i.e., monthly fee averaged over three years), and usage restrictions (i.e., any points at which the applicable terms of service change, including data usage caps and any charges, speed reductions, or other penalties for exceeding a cap) that consumers can use to comparison shop for service.¹⁷⁷

RECOMMENDATION 3: Support the FCC’s tentative conclusion “that broadband providers must disclose in a timely manner to consumers, edge providers, and the

¹⁷⁵ *Id.*, ¶ 68.

¹⁷⁶ *See, e.g., NPRM* at ¶ 72.

¹⁷⁷ *Id.*, ¶ 72.

public (and, of course, state Commissions and the FCC) when they make changes to their network practices as well as any instances of blocking, throttling, and pay-for-priority arrangements [if allowed], or the parameters of default or ‘best effort’ service as distinct from any priority service.”¹⁷⁸ This information should include detailed information on network congestion, and efforts to address it. As the FCC proposes, ISPs should be required “to disclose meaningful information regarding the source, location, timing, speed, packet loss, and duration of network congestion.”¹⁷⁹

RECOMMENDATION 4 The CPUC should report to the FCC about the CalSPEED application that California consumers, organization, and the CPUC use to measure broadband upload and download speeds. In addition the CPUC will share its experience with the App and how the CPUC has utilized the information for assessment of broadband availability in the State.

RECOMMENDATION 5 Additionally, I recommend that the FCC take steps to ensure that “excessive use” policies not contradict or undercut broad promises of Internet access. The FCC should track, compare, and report in its broadband reports required by Section 706(b) on ISP performance in delivering “up to” advertised speeds. Doing so would greatly enhance transparency, competition, and consumer choice. It would also help the FCC and the state fulfill their mission to track and report on broadband access and deployment under Section 706(b).

RECOMMENDATION 6: Adopt Title II, with forbearance and a light regulatory touch, to foster transparency, reduce transaction costs, increase Internet accessibility, foster accountability, and competition, and protect consumers. The FCC’s proposals clash

¹⁷⁸ *Id.*, ¶ 78.

¹⁷⁹ *Id.*, ¶ 83.

headlong into the transparency rules by fostering closed, discriminatory negotiations that increase costs of Internet access and costs to determine whether consumers received what they were promised. As discussed below, “commercial reasonableness” is both the wrong standard and inadequate to foster competition, protect consumers, and promote Internet access and adoption.

VIII. The Unreasonableness of the Commercial Reasonableness Standard for Speakers Who are Not Commercial Internet Carriers or Providers

The FCC has noted that “[t]oday, there are no legally enforceable rules by which the Commission can stop broadband providers from limiting Internet openness”¹⁸⁰ and thus considered new standards to protect the Open Internet including “commercial reasonableness” as a touchstone for ISP transactions with Internet speakers. The legal avenue for the FCC to achieve its intended goal presents two options:

1. Separate “broadband access service” into two components: the “pipe” or transport component, which would be classified as a “telecommunications” (or common carrier) service, and the digital “information” services that ride on top of that telecommunications transport layer.
2. Continue to treat broadband access service as a bundled “information” service.

I agree that an effective No-Blocking rule is imperative to protect the Internet’s open character and the virtuous cycle of innovation it has spawned and supports.

The FCC proposes to use Section 706 of the Communications Act to adopt a No-Blocking rule that avoids common carrier characteristics by allowing for individualized negotiations and discriminatory terms, subject to a “minimum level of service” and “commercial reasonableness.” Such negotiations would be constrained under a “commercially reasonable” standard the FCC proposes:

¹⁸⁰ *Open Internet 2014 NRPM, supra* note 2.

No Commercially Unreasonable Practices: A person engaged in the provision of fixed broadband Internet access service, insofar as such person is so engaged, shall not engage in commercially unreasonable practices.

The FCC stated that “reasonable network management shall not constitute a commercially unreasonable practice.”¹⁸¹

Under this standard, ISPs could negotiate different prices, terms and conditions with subscribers and content providers, so long as the arrangements were “commercially reasonable,” judged *post facto*. The NPRM is silent about ISP negotiations with IP Transit providers such as Cogent, and it is unclear whether they fall within the proposed definition of Edge/content Providers.

This rule differs from the one the FCC adopted in 2010 which prohibited ISPs from “unreasonable discrimination,” including discrimination against content providers. The “unreasonable discrimination” rule derives directly from the common carrier standard developed in the common law, codified at 47 U.S.C. § 201-202, which holds regulated entities to a “just and reasonable” standard of conduct, because they are providing utility services to the public.

It is worth noting that common carriage allows some “discrimination” of terms and conditions, including pricing. The difference is that the discrimination under a common carriage standard would appear in tariffed and/or generally accessible rate tiers, applied to everyone, as opposed to the *ad hoc* “commercially reasonable” discrimination the FCC contemplates with its proposed rules.

The FCC’s proposed “commercially reasonable” standard is inconsistent with its contemplated transparency rule. A rule that achieved both of those goals likely could not simultaneously further the FCC’s vision of protecting and promoting an “Open

¹⁸¹ *Id.*, at Appendix A, § 8.7.

Internet.”¹⁸² The “commercially reasonable” standard and ISP-required negotiations increase transaction costs due to the need to negotiate multiple carriers to ensure access to all speakers. The FCC’s rule would permit ISPs to come back to entities multiple times to seek additional payments to reach the same Internet users. It allows ISPs to charge many different organizations and individuals to reach their subscribers, while subscribers also pay for Internet access at promised speeds. This raises costs to use the Internet and creates risk and uncertainty that serve as disincentives to invest in Internet platforms or programs that are Internet-enabled, reducing demand for Internet services.

The NPRM only provides *post facto* dispute resolution, adopting “a case-by-case approach, considering the totality of the circumstances, when analyzing whether conduct satisfies the proposed commercially reasonable legal standard, or another legal standard ultimately adopted.”¹⁸³ The FCC proposes “to create an ombudsperson whose duty will be to act as a watchdog to protect and promote the interests of edge providers, especially smaller entities.”¹⁸⁴ The FCC expressed a desire to create certainty, and offered its staff for informal consultations or formal complaints.¹⁸⁵ The prospect of Internet content providers, edge providers, facing individual, differentiated negotiations about Internet prices, terms, and favorable access from multiple ISPs reduces certainty and increases transaction costs.

The FCC’s *post facto* review of commercial reasonableness embroils the FCC in judging which differentiated, discriminatory transactions are reasonable and which are not, adding time, and uncertainty. This is government action that invokes first amendment scrutiny as the FCC both sets up the individualized ISP negotiation process, and will ultimately judge commercial reasonableness. The FCC “would

¹⁸² Reply Comments of the CPUC, at 9, GN Docket No. 09-191, WC 07-52 *In the Matter of Preserving the Open Internet Broadband Industry Practices* (filed April 26, 2010).

¹⁸³ *Id.*, at ¶ 136.

¹⁸⁴ *Id.*, at ¶ 171.

¹⁸⁵ *Id.*, at ¶ 166.

prohibit as commercially unreasonable those broadband providers' practices that, based on the totality of the circumstances, threaten to harm Internet openness and all that it protects.”¹⁸⁶ The “totality of the circumstances” test is fact-specific, emphasizing the need for the FCC to evaluate a variety of facts and factors to assess the content provider and ISP’s negotiation and deal. This will take time and create uncertainty, accomplishing the opposite of transparency. The FCC’s staff, even a dedicated Ombudsman augmented by the Enforcement Division, would be insufficient to ensure that the Internet remains open.

The 2014 Open Internet NPRM does not even raise the issue of the transaction costs its proposal will create, and the time multiple negotiations might take. Yet, those transaction costs and delays will likely be huge. Each content provider could be subjected to negotiations with multiple ISPs, raising the specter of millions of negotiations as ISPs seek payment from many content/edge providers to reach the same Internet user. The FCC has neither the personnel, nor the ability to ensure that all such negotiations would be conducted in a reasonable manner and result in a “commercially reasonable” outcome. Nor should the FCC or ISPs be the arbiter of all Internet access terms and conditions. Internet users should be able to choose the Internet access speeds and terms they want in an open, competitive, and transparent market.

The FCC borrowed the “commercially reasonable” standard from wireless carrier-to-wireless carrier negotiations over roaming agreements. The proposed application of this standard to ISP negotiations with all Internet users misses the fact that carriers and subscribers have vastly different levels of bargaining power and network control. It violates the “layers principle” that governs the Internet as embedded in the Internet’s protocols that rest power with the Internet’s end users, “the edges,” rather than with those who control the Internet’s physical layer, the computers,

¹⁸⁶ *Open Internet 2014 NPRM*, *supra* note 2, at ¶ 116.

wires, and conduits used to connect Internet users at the edges.¹⁸⁷ This is not only the end of the end-to-end nature of the Internet,¹⁸⁸ it would close the Internet's open character by putting ISPs in the power seat to decide who gets fast Internet access, at what price, and on what terms.

The "commercial reasonableness" standard is borrowed from the standard applied to negotiations for mobile carrier roaming agreements. The D.C. Circuit in *Verizon v. FCC* vacated the FCC's 2010 rule prohibiting "unreasonable discrimination," contrasting it to the "commercial reasonableness" standard upheld in *Cellco* that did not impose common carrier obligations.¹⁸⁹ T-Mobile subsequently filed a complaint with the FCC alleging that the commercial reasonableness standard is insufficient to obtain reasonable roaming agreements.¹⁹⁰ T-Mobile requests FCC guidance to evaluate the commercial reasonableness of terms offered in individual negotiations and to reach agreements.¹⁹¹ T-Mobile's petition filed shortly after the FCC issued its 2014 Open Internet NPRM, emphasizes that even for commercial *carriers* the parameters of commercial reasonableness are unclear, leading to concerns about bargaining power between large and small carriers.

The FCC does not explain why this standard, designed for commercial transactions between wireless carriers, would be appropriate for negotiations between

¹⁸⁷ Jason Oxman, *The FCC and the Unregulation of the Internet*, 31 FCC OFFICE OF PLANS & POLICY, WORKING PAPER 3, 16 (1999), available at http://www.fcc.gov/Bureaus/OPP/working_papers/oppwp31.pdf (noting that permission was not required from those who controlled the Internet's physical layer or from any other party to post an Internet application and create a better virtual mousetrap).

¹⁸⁸ Sandoval, *Disclosure, Deception, and Deep-Packet Inspection*, *supra* note 172, at 13 (2009) (citing See J.H. SALTZER, D.P. REED & D.D. CLARK, END-TO-END ARGUMENTS IN SYSTEM DESIGN (1981), available at <http://web.mit.edu/Saltzer/www/publications/endtoend/endtoend.pdf>. ("In imaging the Internet's design, J.H. Saltzer, D.P. Reed, and D.D. Clark argued that the Internet's "intelligence" should be placed at its ends where users put applications and information into the network and choose what to draw from the network, articulating what became known as the Internet's "end-to-end" principle.")); Mark Lemley & Lawrence Lessig, *The End of End-to-End: Preserving the Architecture of the Internet in the Broadband Era*, 48 UCLA L. REV. 925, 933 (2001).

¹⁸⁹ *Open Internet 2014 NPRM*, *supra* note 2, at ¶ 110 (citing *Verizon v. FCC*, 740 F.3d 623, 655; *Cellco Partnership v. FCC*, 700 F.3d 534, 548 (D.C. Cir., 2012)).

¹⁹⁰ T-Mobile USA, Inc., Petition for Expedited Declaratory Ruling Regarding Reexamination of Roaming Obligations of Commercial Mobile Radio Service Providers and Other Providers of Mobile Data Services, WT Docket No. 05-265 (filed May 27, 2014).

¹⁹¹ *Id.*

ISPs who control subscriber access, and all content/edge providers including non-commercial speakers. By allowing ISPs to request payment from ALL edge/content providers to access fast Internet lanes, the FCC's Open Internet proposal mixes carriers with customers. It imposes a commercial standard on ISP negotiations with all content providers, whether individuals, government organizations, tribes, small, medium, or large businesses.

The FCC does not consider whether "commercial reasonableness" is an appropriate standard for ISPs to deal with common carriers and interconnected VoIP providers who have call completion and other duties. Nor does it fully consider the imbalance of power between ISPs and subscribers, and the range of content/edge providers.

The FCC does acknowledge that some content/edge providers may want Internet access without individual negotiations. It asks how the commercially reasonable standard would affect, for example, "a start-up VoIP service, a politically oriented website with an audience of fewer than 100 unique visitors per day, a social networking application narrowly focused on a particular demographic, or peer-to-peer communications among individuals. Not all of those actors may seek to enter into a contract with a broadband provider; they may simply wish to reach its subscribers."¹⁹² The FCC envisions that politically oriented websites that draw more than 100 unique visitors a day, popular social networking applications, and business use of peer-to-peer communications would be subject to individual negotiations for Internet access. Yet, the FCC does not consider the costs of such negotiations or the appropriateness of a commercial reasonableness standard for speech about political participation or communications that shapes ideas and opinions, speech fundamental to democracy.

The commercial reasonableness standard is unreasonable as applied to ISP

¹⁹² *Id.*, at ¶ 120.

relationships with ALL content/edge providers. The FCC's rules extend beyond carrier-to-carrier, infrastructure to infrastructure provider, licensee to licensee relationships. This proposal is not permissible under Section 706 as it erects, rather than removes barriers to Internet use and openness, and impedes infrastructure investment in innovations provided by end-users and in common carrier networks that connect to the Internet. In light of these risks, and the constitutional concerns articulated below, the FCC should adopt light-touch Title II regulation for broadband transport and access services, with appropriate forbearance.

XI. The FCC's Proposal is Constitutionally Infirm as a Speech Regulation under Content-Neutral and Content-Based Standards and Commercial Speech Doctrines

The FCC's 2014 Open Internet NRRM seeks comment on the constitutional and First Amendment implications of its proposal, although it does not anticipate "constitutional, statutory, or legal barriers to adopting the rules we [the FCC] propose today."¹⁹³ The FCC proposes to make a speaker's status as an "edge provider," defined as "any individual or entity that provides any content, application, or service over the Internet, and any individual or entity that provides a device used for accessing any content, application, or service over the Internet," the trigger for whether that speaker may be subjected to ISP-controlled, non-transparent negotiations for speedy Internet access, mediated by the FCC's subsequent assessment of the commercial reasonableness of the deal and perhaps the negotiation process. An edge provider's use of the Internet to provide CONTENT or a device or service used to access content, brings that speaker within the ambit of the FCC's rule. *This is content regulation of speech, requiring constitutional scrutiny.*

¹⁹³ *Open Internet 2014 NPRM*, *supra* note 2, at ¶ 159.

The FCC creates a system controlled by government action, bringing it within the restrictions of the First Amendment. The FCC has proposed and would construct and oversee a system that determines who may be subject to ISP-controlled individualized, differentiated, non-transparent negotiations to get Internet access above a minimum speed set by the FCC, based on terms, prices and a process the FCC has left to ISPs' determination, subject to FCC examination to decide whether any deals or the negotiation process are consistent with the FCC's "commercial reasonableness" standard. This is government action that restricts access to channels of communication, and is subject to constitutional scrutiny as a regulation of speech.

The Supreme Court in *Reno v. ACLU* held that the Internet and Internet speakers are entitled to the full panoply of constitutional protections for speech.¹⁹⁴ The Court distinguished the Internet from broadcasting in light of the lack of scarcity on Internet platforms, the lack of a history of FCC content and access regulation, and characterized the Internet in 1997 as less pervasive than broadcasting, undercutting any justification for a reduced standard of constitutional review.¹⁹⁵ The Court determined that the broadcast regulation cases "provide no basis for qualifying the level of First Amendment scrutiny that should be applied to the Internet."¹⁹⁶

The 2010 Open Internet Order determined that "[u]nlike cable television operators, broadband providers typically are best described not as "speakers," but rather as conduits for speech."¹⁹⁷ The FCC characterized the broadband Internet access service at issue in its 2010 rulemaking as not involving "an exercise of editorial discretion that is comparable to cable companies' choice of which stations or programs

¹⁹⁴ 521 U.S. 844, 845 (1997).

¹⁹⁵ *Id.*

¹⁹⁶ *Id.*

¹⁹⁷ 2010 *Open Internet Order*, *supra* note 11, at ¶ 141.

to include in their service.”¹⁹⁸ The FCC found no evidence that broadband providers marketed “their services as benefiting from an editorial presence,” and distinguished “network management” from acting as a content editor.¹⁹⁹

The FCC emphasized that Internet user expectations contraindicate an ISP role as editors since, “Internet end users expect that they can obtain access to all or substantially all content that is available on the Internet, without the editorial intervention of their broadband provider.”²⁰⁰ The FCC also observed that if ISPs acted as editors, they would lose their immunities under Section 230(b) of the Communications Act for material posted through an ISP that may violate other laws including those regulating copyright violations or offense materials.²⁰¹

The FCC’s 2014 Open Internet Order NPRM makes the *provision of content the trigger* for whether a speaker is an “edge provider” subject to ISP demands and FCC *post facto* commercial reasonableness assessment. In the FCC’s 2010 Open Internet Order the FCC distinguished non-content-based regulation of the ISP conduit for Internet access from speech regulation in responding to AT&T’s and NCTA’s argument that “Open Internet rules interfere with the speech rights of content and application providers to the extent they are prevented from paying broadband providers for higher quality service.”²⁰² The FCC differentiated the avenues to speedy Internet access the 2010 Order promoted from speech, “[p]urchasing a higher quality of termination

¹⁹⁸ *Id.*

¹⁹⁹ *Id.* at ¶¶ 141, 143.

²⁰⁰ *Id.* at ¶ 141.

²⁰¹ *Id.*, at ¶ 142 (citing 17 U.S.C. § 512(a) (a “service provider shall not be liable . . . for infringement of copyright by reason of the provider’s transmitting, routing, or providing connections for” material distributed by others on its network); 47 U.S.C. § 230(c)(1) (“[N]o provider or user of an interactive computer service shall be treated as the publisher or speaker of any information provided by another information content provider”).

²⁰² *Id.*, at 144.

service for one's own Internet traffic, though, is not speech--just as providing the underlying transmission service is not. Telephone common carriers, for instance, transmit users' speech for hire, but no court has ever suggested that regulation of common carriage arrangements triggers First Amendment scrutiny."²⁰³ Common carriers, however, make carriage on their system available through tariffs, designed to promote transparency and competition, protect consumers, and reduce transaction costs, in contrast to the closed negotiations subject to ISP discretion the 2014 Open Internet NPRM envisions.

In 1997 the Supreme Court in *Reno v. ACLU* characterized the Internet as unmediated in that "[n]o single organization controls any membership in the Web, nor is there any single centralized point from which individual web sites or services can be blocked from the Web."²⁰⁴ In contrast, the FCC's 2014 Open Internet NPRM give ISPs editorial discretion to determine who get speedy Internet access above an FCC-set minimum, including the price, terms, and the negotiating path to any higher tiers. While there would not be a single point of Internet or web access under the 2014 plan, the FCC noted that "17 broadband access providers account for about 93% of U.S. retail subscribers in 2013."²⁰⁵

The FCC proposes to allow ISPs to decide WHO gets access to faster or the fastest Internet speeds, transforming ISPs from a transmission conduit into a content judge and jury, with the FCC as the back-stop mediator of commercial reasonableness. The FCC's proposal gives ISPs the ability to favor some speakers and speech over others. It does not restrain ISPs from deciding who gets faster access on the basis of the speech's content or the speaker's identity or affiliation. Neither does it limit ISPs to

²⁰³ *Id.*

²⁰⁴ 521 U.S. 844, 853 (1977).

²⁰⁵ *Open Internet 2014 NPRM*, *supra* note 2, at ¶ 170.

choosing who gets the fastest Internet access and the best terms based on the highest bid. It allows broad ISP discretion as long as the FCC later determined that under the totality of circumstances, the deal was “commercially reasonable.”

One question is whether such ISP discretion is “speech” that conveys a substantive message. Stuart Minor Benjamin notes that “under the Supreme Court's jurisprudence First Amendment coverage seems to require a speaker who seeks to transmit some substantive message or messages to a listener who can recognize that message.”²⁰⁶ Benjamin concludes that “if Internet access providers (or FedEx, or any other transmitter of speech) are willing to engage in substantive editing, then I think First Amendment scrutiny will apply to regulation of those activities. If an Internet access provider is willing to say, “We give you an edited Internet--the Internet we think you want,” I think they are engaged in speech under the prevailing jurisprudence.”²⁰⁷ Benjamin concludes that under the Supreme Court's jurisprudence it has to be editing that sends a *substantive* message.²⁰⁸

Susan Crawford contends that if “Verizon, AT&T, Comcast, and Time Warner Cable have the ability to pick and choose among Internet applications they allow to reach subscribers, and the market power to force these applications (or the networks they use) to pay tribute before being allowed to cross over their wires or connect to their networks, they may in time come to be much more “just like” the cable pay TV distributor protected by the First Amendment in *Turner I*. They will be, in fact, exercising editorial discretion.”²⁰⁹ Crawford argues that in contrast, “common carriage carriage-like treatment of high-speed Internet access providers, as a general matter, is not regulating their speech. As in FAIR [*Rumsfeld v. Forum for Academic and*

²⁰⁶ Stuart Minor Benjamin, *Common Sense and Key Questions*, 127 HARV. L. REV. F. 346, 347 (2014).

²⁰⁷ *Id.*, at 347-48.

²⁰⁸ *Id.*

²⁰⁹ Susan Crawford, *First Amendment Common Sense*, 127 HARV. L. REV. 2343, 2391 (2014).

Institutional Rights, Inc.], the providers' obligation would be merely to transmit the speech of others on an equal basis."²¹⁰

Benjamin recognizes that the analogy to faster delivery from a document service such as Fed Ex "would be different if a company devoted its transportation of documents to messages with which it agreed. If, for example, a document transport company decided to deliver only documents to and from Democratic-affiliated groups, delivery would likely entail a communication. Every delivery would communicate to the recipient that a group that shared its political orientation was sending it a document."²¹¹ "But for a transport company like FedEx that does not so limit itself, there is no similar message. FedEx's delivery of a document communicates no information about the content of that document."²¹²

The FCC's proposal converts ISPs from a conduit for speech into an arbiter who gets to decide who has the fastest, cheapest, best path to reach Internet audiences. The FCC's proposal does not limit ISPs to choosing who gets the best speeds and terms by who pays the highest price. It empowers ISPs to consider the messenger, message, method of delivering that message (peer-to-peer protocol, ftp protocol or other program or method), competitive effects on the ISP, and any other factor, as long as the FCC subsequently determined it was "commercially reasonable."

Fed Ex is NOT a speaker because its prices for fast message service are posted, transparent, and open to all. Even if Fed Ex makes special services available based on negotiations for something different than advertised services, there is no evidence that

²¹⁰ *Id.* at 2345 (citing *Rumsfeld v. Forum for Academic and Institutional Rights, Inc.*, 547 U.S. 47 (2006) (requiring law schools to provide access to military recruiters to interview law students on the basis that what was required was conduct (access), not speech by law schools, so the first amendment was not implicated by Congress' Solomon Amendment, Amendment, 10 U.S.C. §983 (2012), that mandated such access as a condition of federal funding)).

²¹¹ Benjamin, *supra* note 202, at 348.

²¹² *Id.*

Fed Ex or similar delivery services chooses who gets such access based on the sender's identity or message. Under the FCC's proposal ISPs would become the world's most powerful editors, able to speed or slow Internet access for newspapers, magazines, Internet-based newsletters, broadcasters and satellite companies who use the Internet, Internet-based video distribution channels, and all other Internet speakers including individuals, small, medium, and large firms, governments, political parties, and organizations.

Moreover, the FCC's proposal is speech regulation because it makes those who use the Internet to communicate content, edge providers who send substantive message, subject to ISP-led negotiations, and FCC commercial reasonableness review. In this manner, the 2014 Open Internet NPRM raises constitutional issues the 2010 Open Internet Order did not. The issue is not solely whether ISPs would be speakers or editors under the FCC's proposal, but whether those rules temper speech rights of all other Internet speakers in a manner that is constitutionally suspect.

The FCC's proposed ISP negotiation and commercial reasonableness standard appears to be content-neutral as it brings *all* Internet speakers who provide content or the means to access content into the ISP-negotiation and FCC mediation system due to their status as speakers. This proposal does not regulate by a speaker's viewpoint or the subject matter of their content. Content-neutral regulation must survive constitutional scrutiny under Supreme Court standards governing speech regulation.

Reasonable time, place, and manner regulations of speech imposed by the government are tested by whether the restriction is "justified without reference to content of regulated speech," are "narrowly tailored to some significant government interest, and that they leave ample alternative channels for communication of

information.”²¹³ The design of the FCC’s proposal is distinctly different from a reasonable time, place, and manner regulation in that it lacks specifics that create certainty about when, how, and under what terms speedy Internet access could be obtained from ISPs. As a speech-channeling regulation, the FCC’s proposal may be content neutral but must still show a tight nexus between the means and a legitimate governmental interest, and leave open ample alternative means of communication.²¹⁴

An incidental restriction of speech, may be upheld if it is not “greater than necessary to further a substantial governmental interest.”²¹⁵ While the government doesn’t have to choose the least restrictive means, “the requirement of narrow tailoring is satisfied ‘so long as the ... regulation promotes a substantial governmental interest that would be achieved less effectively absent the regulation.”²¹⁶ To justify an incidental restriction of speech, the government “must demonstrate that the recited harms are real, not merely conjectural, and that the regulation will in fact alleviate these harms in a direct and material way.”²¹⁷

The FCC’s goal in proposing ISP-negotiated Internet access for speeds above the minimum is to promote Internet deployment in accordance with Section 706 of the Communications Act. As discussed above, this system’s uncertainties, costs, and the power shift from end users to ISPs undercuts that goal by creating disincentives to rely on Internet-based platforms newly controlled by ISPs. Reduced edge and end-user demand discourages deployment of Internet networks, end-user applications, and programs and uses that depend on the Internet. Lack of evidence of wide-spread

²¹³ *Ward v. Rock Against Racism*, 491 U.S. 781, 792 (1982).

²¹⁴ See *Hill v. Colorado*, 530 U.S. 703, 726 (2000).

²¹⁵ *United States v. O’Brien*, 391 U.S. 367, 382 (1968).

²¹⁶ *Ward v. Rock Against Racism*, 491 U.S. 781, 798-791.

²¹⁷ Kathleen Anne Ruanne, *Freedom of Speech and Press, Exceptions to the First Amendment*, Congressional Research Service (Sept. 8, 2014) (citing *Turner Broad. v. FCC*, 512 U.S. 622, 664).

Internet congestion,²¹⁸ and lack of a requirement that any funds derived by ISPs from payments by content providers in the FCC-sanctioned two-sided market be used to alleviate congestion or deploy broadband networks indicate the absence of recited or real harms to justify the burdens on content provider speech the FCC proposes. This proposal contravenes the Supreme Court's requirements in *Turner Broadcasting* of narrow tailoring between the asserted harms and the speech .

Demand reductions, and potential Internet-speed slowdowns during negotiations with subscribers or third parties, highlight the conflict between the proposed policy and the statutory goal the FCC's proposal seeks to further. If speakers deterred by the FCC's proposal instead communicated through alternative channels, doing so diverts demand that supports Internet deployment and investment. While a political candidate, an electric or natural gas provider, or other speaker could mail its messages or make calls instead of communicating through the Internet, these are vastly different media and enable different types of communication.

The Internet enables one-to-one communication, one-to-many communication, and most distinctly, many-to-many communication. It vastly reduces transaction costs and enables Internet users to communicate with individuals or with millions at speeds and low cost previously unimaginable. The Internet has become a key tool for both quick and important messages, and for day-to-day information and reference materials such as a campaign platform or explanations about energy savings programs. The Internet is not just a conduit to receive speech, like watching the television, reading a newspaper, or picking a book off a library bookshelf. The Internet is the printing press, the newspaper route, and the means to broadcast content. It is a two-way library where any reader can be a publisher, and any viewer can be a producer or a star.

²¹⁸ See Clark, *supra* notes 66-67, and accompanying text.

In 2003 in *American Library Assn. v. US*, the Supreme Court recalled Congress' vision of the Internet in 1999 as "simply another method for making information available in a school or library."²¹⁹ The Court characterized the Internet in 2003 as "no more than a technological extension of the book stack."²²⁰ In less than 11 years this outdated characterization of the Internet as a receptacle for passive audiences who merely consume and do not create and disseminate information has been turned on its head. Applications and services now enable easy publishing and distribution of text, video, image, GIS, file, and other content. The Internet is a lively two-way, multi-party platform for communication, allowing speech to flourish and ideas to proliferate. The lack of Internet gatekeepers makes it an open platform to diverse voices and viewpoints, in contrast to closed studio and cable systems. The Internet's platform for speakers and multi-sided communication makes it an unrivaled mechanism for democratic engagement.

The FCC's proposal puts that progress at risk and creates incentives to not be a content provider, or at least be a quiet and relatively unpopular one, so as not to attract ISP attention and negotiating demands to receive sufficient bandwidth or fast speed to communicate at the next level. The alternatives to Internet-based communication are not equal, nor would resort to them sustain Internet demand and innovation that undergirds the virtuous cycle of innovation the Internet enables.

The FCC's proposal to allow ISPs to discriminate among "edge providers" allows ISPs to charge unknown amounts to all Internet content providers for fast access including emergency services, public safety agencies, health services, and Critical Infrastructure operators. Lengthy negotiations with multiple ISPs over uncertain terms to access the Internet create enormous risks to safe, reliable, efficient, and timely

²¹⁹ 539 U.S. 194, 206-207.

²²⁰ *Id.*

emergency, health, public safety, and utility services. Negotiations and unfavorable terms may delay the ability to communicate information to the public, even in a crisis. The ability to share information in real-time and enable multi-party communication may also be diminished. This result is not supported by substantial evidence or reasoned decision-making since the ends contradict the statutory objectives of promoting Internet access and universal service.²²¹

Some have argued that the importance of public safety messages or the life-saving work of the health sector supports prioritizing certain Internet content over other types of content. Such observations downplay that what the FCC proposes is that all speakers PAY for priority, to be dispensed at the ISP's discretion, including public safety, the health sector, and Critical Infrastructure sectors. Any proposal to exempt sectors or speakers from this pay for priority system and leave only certain speakers or content matter subject to the FCC's proposal would create content-based classifications that invoke strict constitutional scrutiny.

Neither would the FCC's proposal survive constitutional scrutiny under the Commercial Speech Doctrines. Commercial Speech is "expression related solely to the economic interest of the speaker and its audience."²²² Commercial speech is speech "proposing a commercial transaction."²²³ Advertising speech is often classified as commercial speech.

For content subject to the Commercial Speech doctrine, under *Central Hudson* government regulations on commercial speech must serve a "substantial" state interest,

²²¹ Sorenson Communications, Inc., Petitioner V. Federal Communications Commission And United States Of America, __ F.3d __, 2014 WL 4347547, 12 (F.C.C.) (D.C. Cir., Sept. 2014) (citing *Permian Basin*, 390 U.S. at 792).

²²² *Central Hudson Gas & Elec. Corp. v. Public Service Commission of New York* 447 U.S. 557, 564 (1980).

²²³ *Bolger v. Youngs Drug Products Corp.*, 463 U.S. 60, 64 (1983).

and “the regulatory technique must be in proportion to that interest.”²²⁴ The restrictions on commercial speech must be “narrowly drawn.”²²⁵ “[T]he regulation may not be sustained if it provides only ineffective or remote support for the government’s purpose. Second, if the governmental interest could be served as well by a more limited restriction on commercial speech, the excessive restrictions cannot survive.”²²⁶ This requires review of whether the regulation “is not more extensive than is necessary to serve that interest.”²²⁷

While the Internet features a great deal of promotional, economically self-interested speech such as advertising, it also features non-commercial speech by businesses and millions of others. A business such as an electric, gas, water, rail, or communications utility may use the Internet to communicate safety messages such as advisories about the imperative of stopping before rail crossings, or to request people and things to reduce their power use to manage power resources, prevent blackouts, and limit the need to build fossil-fueled power plants. Such speech would not be tested under the Commercial Speech doctrines as it is not solely related to the speaker’s economic self-interest, but is communication critical to a utility’s legal duty to provide safe, reliable service, at just and reasonable rates.

Requirements that all content providers be subject to ISP demands for closed, differentiated negotiation for fast Internet access impose costs to speech and speakers that are “more extensive than is necessary to serve that interest” of promoting Internet access.²²⁸ The disincentives the FCC’s proposals creates to rely on Internet-enabled services due to the high costs and barriers it erects indicate that the FCC’s proposal

²²⁴ *Id.*

²²⁵ *Id.*, at 565.

²²⁶ *Id.*, at 564.

²²⁷ *Id.*, at 566.

²²⁸ *Id.*

undercuts, rather than serves the government's interest and Congress' mandate to increase Internet deployment and adoption.

Content-based regulations are “presumptively invalid under the First Amendment.”²²⁹ “[T]he First Amendment means that government has no power to restrict expression because of its message, its ideas, its subject matter, or its content.”²³⁰ Regulations that discriminate among media, or among different speakers within a single medium, often present serious First Amendment concerns. *Minneapolis Star*, for example, considered a use tax imposed on the paper and ink used in the production of newspapers. The Court explained “[w]e subjected the tax to strict scrutiny for two reasons: first, because it applied only to the press; and, second, because in practical application it fell upon only a small number of newspapers.”²³¹ “The sales tax at issue in *Arkansas Writers’ Project*, which applied to general interest magazines but exempted religious, professional, trade, and sports magazines, along with all newspapers, suffered the second of these infirmities. In operation, the tax was levied upon a limited number of publishers and also discriminated on the basis of subject matter.”²³² The taxes invalidated in *Minneapolis Star* and *Arkansas Writers’ Project*, for example, targeted a small number of speakers, and thus threatened to “distort the market for ideas.”²³³

The Supreme Court in *Turner Broadcasting v. FCC* noted that “heightened scrutiny is unwarranted when the differential treatment is “justified by some special

²²⁹ *R.A.V. v. City of St. Paul, Minn.*, 505 US 377, 382 (1992).

²³⁰ *Consolidated Edison Co. of New York v. New York Public Service Commission*, 447 U.S. 530, 538 (1980) (citing *Police Department of Chicago v. Mosley*, 408 U.S. 92, 95 (1972)).

²³¹ *Turner Broad. v. FCC*, 512 U.S. 622 (1994), 659-660 (citing *Minneapolis Star Tribune v. Minnesota Comm’r. of Revenue*, 460 U.S. 575, 585, 591-592; *Grosjean v. American Press* 297 US 233 (invalidating Louisiana tax on publications with weekly circulations above 20,000, which fell on 13 of the approximately 135 newspapers distributed in the State)).

²³² *Turner Broad. v. FCC*, 512 U.S. 622, 659-660 (citing *Arkansas Writers’ Project*, 481 U.S. 221, 229-230 (“Relying in part on *Minneapolis Star*, we held that this selective taxation of the press warranted strict scrutiny. 481 U.S., at 231.”)).

²³³ *Turner Broad. v. FCC*, 512 U.S. 622, 660 (citing *Leathers v. Medlock*, 499 U.S. 439, 448 (1991)).

characteristic of” the particular medium being regulated.”²³⁴ In *Turner Broadcasting*, the Court concluded that “[t]he must-carry provisions, [the obligation of cable channels to carry over-the-air broadcasts]... are justified by special characteristics of the cable medium: the bottleneck monopoly power exercised by cable operators and the dangers this power poses to the viability of broadcast television.”²³⁵ In light of that control, the Court concluded “[i]t should come as no surprise, then, that Congress decided to impose the must-carry obligations upon cable operators only.”²³⁶

The FCC’s proposal seems to cement ISP bottleneck control over which Internet content reaches subscribers at fast speeds, increasing rather than restraining exercise of that control in contrast to the goal of must carry upheld in *Turner Broadcasting*. Instead, the FCC’s proposal allows ISPs to treat the Internet gateway like a cable channel where the ISP decides who gets the fast, best access at the lowest price, and thus makes decisions consistent with a cable operator’s role as an editor.

The 2014 Open Internet proposals restrict rather than enhance speech, and increase rather than restrain bottlenecks. Any proposal that attempts to narrow those subject to the net of ISP negotiation, to exempt some sectors or speakers from the process the FCC proposes, consigns a small number of speakers to higher costs, lengthy and costly transactions, and ISP and FCC judgment, based on their content. This is content-based regulation like *Minneapolis Star* and *Arkansas Writers’ Project*, not justified by special circumstances. A content-based regulation regulation may survive strict constitutional scrutiny only if it is necessary to achieve a compelling governmental

²³⁴ *Turner Broad. v. FCC*, 512 U.S. 622, 660.

²³⁵ *Id.*, at 661.

²³⁶ *Id.*

interest, and is narrowly drawn to achieve that purpose.²³⁷ The regulation must also be the “least restrictive means” to further the articulated interest.²³⁸

I agree that promoting broadband deployment, access, innovation, and investment is an important, even a compelling government interest. The FCC’s proposal is not, however, the least restrictive means to do so. The FCC’s proposal turns the Internet inside out by shifting control from the users, “the edges,” to ISPs. Those ISPs would become editors who determine Internet access by controlling the price, terms, and negotiation path to access in a non-transparent manner, subject to their discretion, bounded only by the FCC’s commercial reasonableness review. This proposal imposes new restrictions on speech and erects barriers to Internet use and deployment. This is not the least restrictive alternative. Neither is it consistent with Section 706’s directive to encourage Internet deployment, or with the universal service objectives of the Communications Act including 47 USC 254.

The constitutional issues raised by the FCC’s proposal indicate it regulates speech by subjecting speakers to the FCC-designed and ISP-led process for Internet access, based on whether the speaker provides or facilitates content on the Internet. Under either a content-neutral standard or a content-based standard if the class of Internet speakers subject to this rule is narrowed, the FCC’s proposal is constitutionally infirm. The FCC’s proposal also raises serious concerns about the proposal’s effect on free speech. It limits the Internet as a forum for the exchange of ideas, including entertainment programming which shapes images, policy, politics, and the polity.

To protect the Open Internet the FCC should adopt a no-blocking rule similar to the 2010 rule, but without the ISP individualized, differentiated, minimum speed only guaranteed, commercially reasonable boundary judged by the FCC. The FCC must do

²³⁷ *R.A.V. v. City of St. Paul*, 505 U.S. 377, 403 (1992).

²³⁸ *Sable Communications of California v. FCC*, 492 U.S. 115, 126 (1989).

so on grounds that recognize the role of ISPs as conduits for speech, not as editors, and does not unduly infringe on content provider speech. As discussed below, Title II with appropriate forbearance and a light touch, is the appropriate regulatory framework to accomplish these objectives, protect the speech interests of content/edge providers and all Internet users, and First Amendment freedoms and democracy.

X. The Appropriate Regulatory Framework for Broadband and Conclusion

In this proceeding the FCC does not have to choose *between* reliance only on § 706 of the Communications Act, or on Title II of the same statute. These provisions are consistent and the FCC must follow the requirements of each of these statutes, as well as Title III, to protect common carriers, interconnected VoIP providers, broadcasters, spectrum operators, and all others who use the Internet.

The FCC can and should rely on its authority pursuant to § 706 of the Communications Act, as that provision expressly directs the FCC to promote deployment of and competition in the provision of broadband services. Section 706 is a Congressional directive to both the FCC and the states to exercise their authority to promote competition in the provision of broadband.

The Commission and *each State commission* with regulatory jurisdiction over telecommunications services *shall encourage* the deployment on a reasonable and timely basis of advanced telecommunications capability to all Americans (including, in particular, elementary and secondary schools and classrooms) by utilizing, in a manner consistent with the public interest, convenience, and necessity, price cap regulation, regulatory forbearance, measures that promote competition in the local telecommunications market, or other regulating methods that remove barriers to infrastructure investment.²³⁹

²³⁹ Codified as 47 U.S.C. § 1302, both the D.C. Circuit and the FCC refer to this statutory provision as “section 706.” (Emphasis added).

The FCC's reliance *solely* on § 706, 47 U.S. Code 1302, and the current classification of broadband access service as an information service, is highly problematic in light of the D.C. Circuit's *Verizon* decision. The issue for the D.C. Circuit, as noted above, was not that the FCC lacked authority under the Communications Act to regulate broadband service, but rather that the FCC had curtailed its options by classifying the services as an "information service." *To put it simply, because the FCC has classified broadband service as an information service, it has limited the tools in its toolkit. To get full use of those tools, the FCC must reclassify the transport component of Internet service as a telecommunications, or common carrier, service.*

The D.C. Circuit stated "so long as an agency adequately explains the reasons for a reversal of policy,' its new interpretation of a statute cannot be rejected simply because it is new."²⁴⁰ Were the FCC to treat the broadband pipe as a common carrier service, and assuming the determination survived anticipated court challenges, the FCC could then impose the type of rules it proposed in 2010, which the CPUC fully supported.

The FCC acknowledges that, if it were to reclassify broadband access service as a telecommunications service, "such a service would then be subject to all of the requirements of the Act and Commission rules that would flow from the classification of a service as a telecommunications service or common carrier service."²⁴¹ The FCC recognizes that full common carrier regulation would not necessarily be appropriate regulatory treatment for broadband service.²⁴² In previous comments, the CPUC has stated that if the FCC uses its Title II authority to regulate broadband Internet access service, it should forbear from rate regulation and other aspects of that historical regulatory regime.²⁴³ The CPUC stated that "this approach is legally supportable and

²⁴¹ *Open Internet 2014 NPRM*, ¶ 153.

²⁴² *Id.*

²⁴³ Section 10(a) of the 1934 Communications Act provides that the FCC shall forbear from applying any regulation or provision of federal law to a telecommunications carrier or service, in any or some

that it represents a sound policy choice.”²⁴⁴

As discussed in this testimony, only Title II classification can prevent ISPs from compromising common carrier or interconnected VoIP traffic. The FCC stemmed interstate call completion problems by extending common carrier regulations to interconnected VoIP providers and their intermediaries. ISPs may be independent of or affiliates of VoIP providers, rather than their intermediaries, so those rules would not restrain ISP conduct. “Minimum speeds” and belated commercial reasonableness assessments are insufficient to avoid slowdown or failure of common carrier and interconnected VoIP traffic, or to prevent transactional hang ups during negotiations. Only common carrier regulation, applied with a light touch and forbearance, can prevent call completion problems from blossoming as the Internet expands.

Federal, state, private, and public sector investment in universal service programs, open only to common carriers under 47 U.S.C. 254, require common carriage to prevent ISPs from thwarting those investments and blocking program effectiveness. More broadband providers will become common carriers through the FCC’s Rural Broadband Experiments that support both data and voice services. For services that help the deaf and disabled, low-income Lifeline subscribers, people in high-cost and

geographic markets, if enforcement of such regulation or provision is not necessary to ensure that the charges, practices, classifications, or regulations by, for, or in connection with that telecommunications carrier or telecommunications service are just and reasonable and are not unjustly or unreasonably discriminatory; if enforcement is not necessary for the protection of consumers; and if forbearance is consistent with the public interest. A forbearance proceeding may encompass a wide range of services and provisions of Title II at once. It also may be sufficient to urge the FCC to forbear from “economic regulations” and not forbear from consumer protection and safety provisions of Title II. In its orders, the FCC has manifested its understanding that ‘economic’ or ‘common carrier’ regulation includes a readily identifiable list of certification, tariffing, interconnection, service quality, and other related requirements that are distinct from social policy and consumer protection rules. See, e.g., *In re: Vonage Holdings Corporation Petition for a Declaratory Ruling Concerning an Order of the Minnesota Public Utilities Commission*, 19 F.C.C.R. 22,404 (2004), *IP-Enabled Services*, 19 F.C.C.R. 4863 (proposed 2004), and *Inquiry Concerning High-Speed Access to the Internet Over Cable and Other Facilities*, 17 F.C.C.R. 4798. ²⁴⁴ Comments of the CPUC, at 6-7, GN Docket No. 10-127 *In the Matter of Framework for Broadband Internet Service* (filed July 15, 2010); see also, Reply Comments of the CPUC, at 13, GN Docket No. 09-191, WC 07-52 *In the Matter of Preserving the Open Internet Broadband Industry Practices* (filed April 26, 2010).

rural areas, schools, libraries, hospitals, health care providers, and community-based organizations supported by the E-Rate and state funding, only common carriage, appropriately applied, can insure that those investments accomplish their intended purpose. Title II, with forbearance, is also necessary to prevent broadband service providers from compromising public health and safety functions or day-to-day business during interconnection or contract disputes with subscribers or third parties.

In 2012, the California Legislature enacted § 710 of the California Public Utilities Code. The statute's policy language states its intent to:

- 1) Preserve the future of the Internet by encouraging continued investment and technological advances and supporting continued consumer choice and access to innovative services that benefit California;

- 2) Ensure a vibrant and competitive Open Internet that allows California's technology businesses to continue to flourish and contribute to economic development throughout the state.

The FCC's rulemaking similarly proposes to promote rapid broadband deployment and competition, and to reduce barriers to infrastructure investment.

The Internet is a vital component of the U.S. economy and society, and key to our nation's global economic competitiveness. To ensure a vibrant, competitive, open Internet, and that common carriers and interconnected VoIP providers and the customers they serve do not suffer undue discrimination, I support the FCC's reliance on § 706 *and* on Title II to reclassify the transport component of broadband access service as a telecommunications service with appropriate regulatory forbearance.

Again, I appreciate the opportunity to speak at this hearing convened by Congresswoman Matsui, in conjunction with FCC Commissioners Clyburn and Rosenworcel. Thank you for your consideration and for weighing the evidence and issues I have presented to preserve the vitality of the Open Internet.