

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

In the Matter of)	
)	
Preserving the Open Internet)	GN Docket No. 09-191
)	
Broadband Industry Practices)	WC Docket No. 07-52
)	

REPLY COMMENTS OF GOOGLE INC.

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April 26, 2010

EXECUTIVE SUMMARY

Openness has made the Internet a powerful engine of economic growth, and a preeminent generator of ideas and creativity. As President Obama stated earlier this year on YouTube, “We've got to keep the Internet open. . . we don't want to create a bunch of gateways that prevent somebody who doesn't have a lot of money but has a good idea from being able to start their next YouTube or their next Google on the Internet.”

Broadband is far too important as an essential infrastructure input to our national economy, and to our government, social, and personal well-being, to leave it solely to a failed market, with no government oversight or fundamental “rules of the road.” In particular, the FCC should not allow a handful of broadband network operators to utilize their unique market and network control over consumer access to the Internet in ways that harm users, impede competition, or undermine the growth of Internet-based activities.

The initial comments filed in this proceeding make clear that without appropriate oversight, last-mile broadband providers can and will use their market and network control to steer or limit consumer choice. Google supports the Commission’s proposed rules because incumbent broadband providers have both a duopoly position in a largely non-contestable market and have the technical control over the end user’s entire Internet experience. This includes making some applications or content more or less attractive than others, promoting or degrading certain Internet traffic, and effectively placing a thumb on the scale by choosing the ultimate winners and losers in the Internet applications and content marketplace. Unlike other Internet stakeholders, only last-mile broadband providers have the ability to carry, to intercept, to inspect, to manipulate, and to allocate capacity for other entities’ Internet traffic over their broadband access networks. Last-mile broadband providers are **still the only gateway users have to access everything else online**; as a result of this unique place in the network, last-mile broadband providers can manipulate and interfere with users’ Internet experience, including by determining whether consumers have access to certain content and applications at all. Today, the evidence shows that the increasing vertical integration between content and conduit only heightens broadband providers’ financial incentives to use that unique network control to operate only in their private interests.

To ensure that broadband providers do not use their market incentives and unique network control to promote only their own pecuniary interests over the far broader interests of Internet users, the FCC needs to utilize affirmative oversight authority regarding the consumer broadband sector. Such authority is similar to the role played by the U.S. Federal Trade Commission with its more general jurisdiction to oversee domestic providers of Internet applications and content.

The initial comments also show why it is vital that broadband openness rules cover wireless as well as wired broadband networks, even if network management is

defined as allowing more flexibility for wireless. Consumers increasingly use the Internet across all types of networks, and wireless providers today voluntarily offer Internet access to their customers. A consistent pattern of questionable practices make it clear that, without any FCC oversight and clear standards, true openness on wireless broadband networks will not occur. The recent controversy over AT&T's steadfast unilateral refusal to allow the Sling mobile app on its 3G network only highlights the need for a neutral third party arbiter in the mobile space to conclusively distinguish between reasonable network management and an unacceptable anticompetitive practice.

The loud objections to codifying today's open Internet principles by the small number of broadband providers that control users' broadband Internet access only demonstrate the importance of FCC action. History teaches that FCC inaction will be viewed as a "green light" for much more aggressive blocking, degradation, discrimination and other practices that harm users. The time to adopt these rules is now, as broadband providers are beginning to formulate and implement their prioritization-based business models and deploy their networks. We cannot afford to wait until it is effectively too late and broadband providers will claim they already have invested in closed systems.

A wide range of parties from virtually every sector confirms that the proposed rules would best promote the next generation of enormous "spillovers" and other material and non-material benefits that the Internet produces. The comments also make clear that a broadband "nondiscrimination" rule is neither new nor radical; in particular, allowing broadband providers unilaterally and **for the first time** to charge priority access fees would harm the evolution of broadband networks and services. Broadband providers should not be permitted to leverage their control over broadband networks to extract such "prioritization" fees from third party applications and content providers. These types of fees will create numerous harms, ranging from creating incentives to monetize scarcity rather than build capacity, to generating an "arms race that benefits only the arms merchants" (where broadband providers increase their income but not overall speeds), to fashioning an Internet where only those who can "pay to play" will fare well and others will be relegated to a slow lane.

We continue to believe that the FCC has ample legal authority to adopt broadband openness rules. In our initial comments, we explained that we agreed with the FCC that Title I of the Act appears to provide such a legal foundation for its proposed rules, and indeed for the FCC's just-launched National Broadband Plan. Indeed, our comments relied exclusively on legal and policy arguments premised on Title I authority. Nonetheless, in the wake of the D.C. Circuit's recent *Comcast v. FCC* decision, the FCC has no feasible choice but to reexamine carefully all of its options. Any such responsible review must seriously consider utilizing the agency's longstanding direct authority under the Communications Act.

To be clear, Google is not wedded at this time to any particular legal theory to justify the Commission's oversight authority over broadband networks – whether under Title I, Title II, Title VI, or other pertinent statutory provisions. In short, we support whatever is most sustainable legally. Yet, while Google may be largely indifferent as to the ultimate source of the FCC's authority, there is no issue as to its fundamental necessity. Consumers deserve clear and enforceable “rules of the road” to protect them from broadband providers' harmful practices. Further, nothing about the proposed broadband openness rules is contrary to the First Amendment because the rules address conduct, not speech. Rather, the rules promote core First Amendment values, allowing anyone and everyone to speak over their broadband connections without interference.

Further, the comments make clear that it would be inappropriate to extend the broadband openness rules to content and applications providers. While a few broadband providers urge the FCC to extend its regulatory authority into the Internet itself, these pleas appear to be driven solely by a cynical and self-interested attempt to prevent any government oversight at all. As Google and Verizon agreed in their January joint filing, there is no sound reason to impose communications laws or regulations on the robust marketplace of Internet content and applications. Parties that urge expanding the FCC's rules in this way provide no sound legal, technical or policy reason to do so. Not only does the FCC lack authority over Internet content and applications, there is no market failure in the content and applications marketplace, such providers have no ability to monitor and control all Internet traffic, and there is no history of legacy government subsidies and benefits, as with last-mile broadband networks.

Finally, while a strong and enforceable transparency regime at the FCC would be a useful tool to highlight broadband providers' practices, this approach by itself is not sufficient to protect consumers. The Commission must commit to adopting and implementing a streamlined case-by-case adjudication process that allows any Internet user to present a complaint to the FCC alleging harm to users, to competition, or to the openness of the Internet itself.

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Google Inc. submits these Reply Comments in response to the FCC’s Notice of Proposed Rulemaking¹ seeking public comment on proposed rules to preserve broadband openness. As the extensive record highlights, tailored and flexible broadband network “rules of the road” are needed to enable the broadband-driven Internet to reach its full potential as the dial tone of the 21st Century, promoting economic opportunity and creating novel avenues for human expression.

INTRODUCTION AND SUMMARY

In its initial Comments, Google explained why the FCC’s proposed rules are a targeted, flexible measure to ensure that the Internet remains an open platform for all users. In these Reply Comments, we show how and why the extensive record already developed in this proceeding, with well over 10,000 unique submissions from myriad stakeholders, confirms that government oversight of broadband provider practices is warranted. Further, the FCC’s proposed rules of the road would preserve and promote open and robust access to the Internet.

In Section I, we explain why FCC action is needed now. The record demonstrates that last-mile broadband providers supply essential connectivity and possess unique network control

¹ *In the Matter of Preserving the Open Internet, Notice of Proposed Rulemaking*, 24 FCC Rcd. 13064 (2009) (“NPRM”).

points. Further, the growing vertical integration between broadband networks and the content and applications they deliver also compels action at this time, as broadband networks are being deployed, in order to head off detrimental practices such as more aggressive blocking, degradation, and discrimination. Broadband-based access to the Internet is too important to our nation to allow broadband providers to act solely in their private interests without any government oversight.

Section II explains that the FCC should assert its legal authority under the Communications Act to adopt the proposed broadband openness rules. To be clear, Google seeks only a viable and sustainable means of providing government oversight and clear “rules of the road” for broadband networks. In our initial comments, we explained that Title I of the Act appears to provide such a legal foundation for the proposed broadband openness rules, and indeed for the FCC’s just-launched National Broadband Plan. Nonetheless, in the wake of the D.C. Circuit’s recent *Comcast v. FCC* decision, the FCC has no feasible choice but to reexamine carefully all of its options. This necessarily includes revisiting its determinations in the *Cable Modem Order*, *Wireline Broadband Order*, and *Wireless Broadband Order* to decline to require last-mile broadband transmission to be offered under Title II of the Communications Act. In Section II, we also demonstrate that broadband providers’ constitutional objections raised under the First and Fifth Amendments to the U.S. Constitution are unavailing and would not invalidate the proposed rules.

In Section III, we highlight the broad support in the record for the proposed broadband openness rules, including the general consensus that broadband provider transparency and greater competition would benefit the public. Contrary to broadband providers’ assertions, a “nondiscrimination” rule is neither new nor radical. Further, the record shows that allowing

broadband providers for the first time to charge fees to third party content and applications providers for priority access would harm the positive evolution of broadband networks and services. As the record also illustrates, the need for reasonable network management can be addressed within the context of the proposed rules, including by expert technical bodies subject to FCC review and enforcement.

Section IV describes why the open broadband rules should cover all last-mile broadband networks, even if wireless broadband providers are given more flexibility to engage in network management practices. At the same time, the record shows no basis for the FCC to extend the rules to Internet content and applications providers; the Commission plainly lacks legal authority, and there is no market failure in the content or applications marketplace. Further, such providers lack the ability to control where users go or what they do on the Internet, and they have received none of the legacy government benefits accorded to last-mile broadband network providers. Rather, extension of the broadband openness rules beyond last-mile broadband networks would cause serious harm to the Internet's continuing development.

Finally, Section V confirms widespread agreement in the record that swift, clear FCC enforcement is needed to provide meaningful redress for violations of the rules.

DISCUSSION

I. THE RECORD DEMONSTRATES THE NEED FOR THE FCC TO ADOPT RULES NOW.

A. THE COMMENTS REINFORCE THAT THERE IS A MARKET FAILURE FOR LAST-MILE BROADBAND ACCESS.

The substantial record in this proceeding reinforces that the proposed rules are justified and should be adopted now. The last-mile broadband access marketplace is characterized by a lack of competition, high entry barriers and end user switching costs, and a largely non-

contestable and persistent duopoly. As many parties explain, this last-mile market failure affords broadband providers the enhanced ability to act in discriminatory and anticompetitive ways that harm consumers, competition, and the Internet itself.²

Numerous commenters describe the deficient state of competition in today's broadband access market. Data produced by the FCC and others consistently show that broadband transmission is overwhelmingly offered and provided only by either the incumbent wireline telephone carrier or the incumbent cable company, presenting at best a classic economic case of duopoly, with market control by just two dominant providers.³ As the Department of Commerce's NTIA recently explained, "where residential consumers make their purchasing decisions, they frequently have limited, and often no, choice among broadband Internet access service providers."⁴ Earlier this year, the Department of Justice found that consumers seeking to use the most bandwidth-intensive applications might have only a single viable choice of broadband access provider.⁵ As the FCC described in its *National Broadband Plan*, the current broadband duopoly is declining to a monopoly market, as approximately 75% of U.S. consumers "will likely have only one service provider (cable companies with DOCSIS 3.0-enabled

² See, e.g., Comments of Public Knowledge, *et al.* ("Public Knowledge") at 23, GN Dkt. 09-191 (filed Jan. 14, 2010); Free Press at 30; Ad Hoc Telecommunications Users Committee ("Ad Hoc Users Committee") at 6-7; Sony Electronics Inc. ("Sony") at 5; Akamai Technologies, Inc. ("Akamai") at 9; Independent Film & Television Alliance ("IFTA") at 5; National Association of State Utility Consumer Advocates ("NASUCA") at 4; National Association of Telecommunications Officers and The Benton Foundation ("NATOA") at 4; American Library Association ("ALA") at 2.

³ See, e.g., Comments of BT Americas Inc. at 1; Vonage Holdings Corp. ("Vonage") at 7-9; Free Press at 14.

⁴ Letter from Lawrence Strickling, Assistant Secretary for Communications and Information, Dept. of Commerce, National Telecommunications and Information Administration, to Julius Genachowski, Chairman, FCC, at 3, GN Dkt. 09-51 (filed Jan. 4, 2010) ("*NTIA NBP Letter*"); *id.* at 6 (broadband is at best a duopoly in many areas of the country).

⁵ See *Ex Parte* Submission of the Department of Justice at 14, GN Dkt. 09-51 (filed Jan. 4, 2010).

infrastructure) that can offer very high peak download speeds.”⁶ The *National Broadband Plan* also confirmed this market is substantially non-contestable: “Building broadband networks—especially wireline—requires large fixed and sunk investments. Consequently, the industry will probably always have a relatively small number of facilities based competitors, at least for wireline service.”⁷

The FCC’s most recent data confirm that, while approximately two-thirds of residential high-speed connections are at 3 Mbps or higher, only the cable and incumbent telephone companies offer such services, with little evidence that mobile data offerings offer a competitive alternative at this time.⁸ Further, as Professor Economides points out:

The FCC’s National Broadband Plan explains: ‘Given that approximately 96% of the population has at most two wireline providers, there are reasons to be concerned about wireline broadband competition in the United States.’ Recent FCC data on broadband deployment at the census tract level confirm this. For services with download speeds from 3 mbps up to 6 mbps, DSL and cable modem services have 93.6% share. For speeds from 6 mbps up to 10 mbps, DSL and cable modem services have 99.7% share. Faulhaber and Farber (2010), filing for AT&T, also recognize the duopoly nature of the market: ‘We would be remiss in not mentioning that in most markets, there are only two wireline broadband ISPs.’ Schwartz (2010), filing for AT&T, refers to the residential broadband market’s ‘duopoly structure in many local areas.’ Moreover, due to the speed limitations of at least one of these options, many areas effectively have only a single choice. As FCC (2009) states, ‘50 – 80% of homes may get speeds they need from one provider,’ and ‘in areas that include 75% of the population, consumers will likely

⁶ Federal Communications Commission, *Connecting America: The National Broadband Plan* at 42, GN Dkt. 09-51 (rel. Mar. 16, 2010) (“*National Broadband Plan*”). The FCC also notes the “fragile” state of such competition where it presently exists. *Id.*

⁷ *Id.* at 36.

⁸ FCC Report, *High-Speed Services for Internet Access: Status as of December 31, 2008*, Chart 11, 13 and Table 6 (rel. Feb. 2010). Moreover, Table 13 also shows that incumbents only enter markets where they hold a monopoly or duopoly position. Nonetheless, some have pointed out the inadequate nature of this latest FCC report. See Letter from Aparna Sridhar, *et al.*, Free Press, to Marlene H. Dortch, Secretary, FCC, at 3-9, GN Dkt. 09-137 (filed Feb. 22, 2010).

have only one service provider (cable companies with DOCSIS 3.0-enabled infrastructure) that can offer very high peak download speeds.’⁹

Both theoretical and empirical studies show that a duopoly market leads to higher prices and lower consumer welfare than a competitive market would produce.¹⁰ As Professor Economides observes:

Further, fewer firms in an industry not only generally leads to higher prices, but also facilitates explicit and implicit collusion. . . . On the Internet, market power by broadband networks, in the absence of open broadband rules, can lead to the imposition of fees on content and applications providers that will reduce content provision as well as consumers’ welfare. Most importantly, such fees will reduce the network effects on the Internet that create the virtuous cycle that has sustained the Internet’s growth and tremendous positive impact on the U.S. economy.¹¹

This highly concentrated market – combined with a lack of contestability and no future competition on the horizon – presents a textbook case of market failure. For consumers, this has meant that even as broadband providers’ deployment costs continue to fall,¹² consumer prices have increased,¹³ with the greatest increases in markets where only one broadband provider offers service.¹⁴ As Commissioner Clyburn recently remarked:

⁹ Prof. Nicholas Economides, *Broadband Openness Rules Are Fully Justified by Economic Research*, attached hereto as Appendix B, at 2 (citations omitted) (“Economides”).

¹⁰ *Id.* at 3-4.

¹¹ *Id.* at 4.

¹² See *Costs of Providing Broadband Dropping*, Broadband DSL Reports (May 4, 2009), available at <http://www.dslreports.com/shownews/Cost-Of-Providing-Broadband-Dropping-102253> (noting, for example, 18% drop in Time Warner Cable’s costs of providing service from 2008 to 2009).

¹³ See Saul Hansell, *As Costs Fall, Companies Push to Raise Internet Price*, NYTimes.com (Apr. 19, 2009), available at http://www.nytimes.com/2009/04/20/business/20isp.html?_r=1 (while it costs Comcast an average of \$6.85 per home to double Internet capacity within a neighborhood, its upgraded higher speed services are priced at over three times existing 8 Mbps services). See also Economides at 5-9; *National Broadband Plan* at 30 (“The [ISP] price index compiled by [the Bureau of Labor Statistics] shows a slight increase in Internet service prices between 2007 and 2009.”).

¹⁴ See John B. Horrigan, *Home Broadband Adoption 2009*, Pew Research Center Publications (Jun. 17, 2009), available at <http://pewresearch.org/pubs/1254/home-broadband-adoption-2009>. For premium

The same day we announced these important recommendations designed to usher more Americans into the digital age, however, I learned that another major broadband provider is raising its rates for its lowest tiers of broadband service. This news came on the heels of plans unveiled by other major providers throughout the country to increase prices as well. So, just as we are in the process of proposing steps to ensure that more people are comfortable signing up for broadband service, providers of that very service are raising prices.¹⁵

Wireless broadband providers' pricing practices likewise reflect a market failure. For example, the lock-step price changes by some providers for their wireless broadband services underscore the absence of a competitive market that would otherwise discipline broadband providers' abilities to manage prices.¹⁶

Over the past fifteen years, "robust competition" has failed to emerge in the market for last-mile broadband access. As the Center for Democracy & Technology explains, most Americans have limited choices, and broadband providers' level of market power provides ample opportunities to act in ways, both subtly and over time, that can diminish the open character of the Internet.¹⁷ Put another way, "the notion that there are 'competitive marketplace forces' sufficient to force monopoly or duopoly incumbents to operate in a non-discriminatory and competitively neutral manner is not borne out by marketplace realities."¹⁸

service, the average monthly bill increased from \$38.10 to \$44.60. For basic service, the average monthly bill increased from \$32.80 to \$37.10.

¹⁵ *Statement of Commissioner Mignon Clyburn Regarding Broadband Affordability and Competition*, FCC News Release (Mar. 10, 2010). See also Cecilia Kang, *FCC Commissioner Blasts ISPs for Raising Broadband Prices*, Washington Post Tech Blog, Mar. 10, 2010, available at http://voices.washingtonpost.com/posttech/2010/03/fcc_commissioner_clyburn_blast.html (noting that Comcast raised its monthly basic broadband price by \$2.00).

¹⁶ See David Goldman, *Your Cell Phone Company's Dirty Little Secret*, CNNMoney.com (Feb. 10, 2010), available at http://money.cnn.com/2010/02/10/technology/cell_phone_bill/ (data costs are moving higher for some despite recent lock-step price cuts).

¹⁷ See Comments of Center for Democracy & Technology ("CDT") at 9; RNK Communications ("RNK") at 5-6.

¹⁸ Comments of Ad Hoc Telecommunications Users at 7-8.

In fact, despite incumbent broadband providers' claims that the FCC has found that the market for last-mile broadband Internet access is vigorously competitive,¹⁹ the FCC never concluded so in either the *Cable Modem Order*²⁰ or the *Wireline Broadband Order*.²¹ In fact, the FCC declined to conduct a market analysis, determining that the environment was "too dynamic" at that time to reach any conclusions.²² Instead, the FCC's decision to eliminate wireline broadband service regulation flowed from the prediction – now shown to be erroneous – that alternative broadband access technologies such as broadband over power lines would gain robust market share, lead to more choices, and provide better terms of service.²³

B. THE COMMENTS CONFIRM THAT BROADBAND PROVIDERS SUPPLY ESSENTIAL CONNECTIVITY AND POSSESS UNIQUE NETWORK CONTROL POINTS THAT REQUIRE SOME FORM OF GOVERNMENT OVERSIGHT.

The record additionally confirms that broadband access is an essential input to reach the Internet,²⁴ with unique control points that demand government oversight. As explained by Akamai and others, broadband providers' control over the physical last-mile infrastructure necessary to access the Internet allows them to "effectively determine whether end users reach the Internet at all."²⁵ Users and society as a whole must use the last-mile broadband access input to reap the vast benefits that flow from unfettered access to the Internet.

¹⁹ See, e.g., Comments of AT&T, Inc. ("AT&T") at 2; Comcast Corp. ("Comcast") at 7-10.

²⁰ *Inquiry Concerning High-Speed Access to the Internet Over Cable and Other Facilities, Declaratory Ruling and Notice of Proposed Rulemaking*, 17 FCC Rcd. 4798, ¶ 6 (2002) ("*Cable Modem Order*").

²¹ *Appropriate Framework for Broadband Access to the Internet over Wireline Facilities, Report and Order and Notice of Proposed Rulemaking*, 20 FCC Rcd. 14853, ¶ 3 (2005) ("*Wireline Broadband Order*").

²² *Wireline Broadband Order* at ¶¶ 48-52. See also *Cable Modem Order* at ¶ 30.

²³ *Wireline Broadband Order* at ¶¶ 57-62.

²⁴ See Comments of the Open Internet Coalition at 19.

²⁵ Comments of Akamai at 11; NASUCA at 12-13.

Last-mile broadband access is indispensable to unleashing broadband networks' potential. As the initial comments describe²⁶ and the FCC confirms in its *National Broadband Plan*, "broadband is a foundation for economic growth, job creation, global competitiveness and a better way of life. It is enabling entire new industries and unlocking vast new possibilities for existing ones. It is changing how we educate children, deliver health care, manage energy, ensure public safety, engage government, and access, organize and disseminate knowledge."²⁷ Chairman Genachowski has emphasized that broadband access has "immense power to improve the quality of lives of our citizens"²⁸ and is "essential to job creation in a digital economy, to ongoing investment in vital 21st century infrastructure, and to our ability to lead the world in innovation."²⁹

Last-mile broadband providers' control of this essential access can be conceptualized as both horizontal and vertical control over end user traffic. The vertical control stems from broadband providers' single pipe to the home, in contrast to the millions of Internet destinations available to consumers. This is the more traditional way to analyze broadband providers' unique place in the market: the monopoly/duopoly character of broadband-based access to and from the

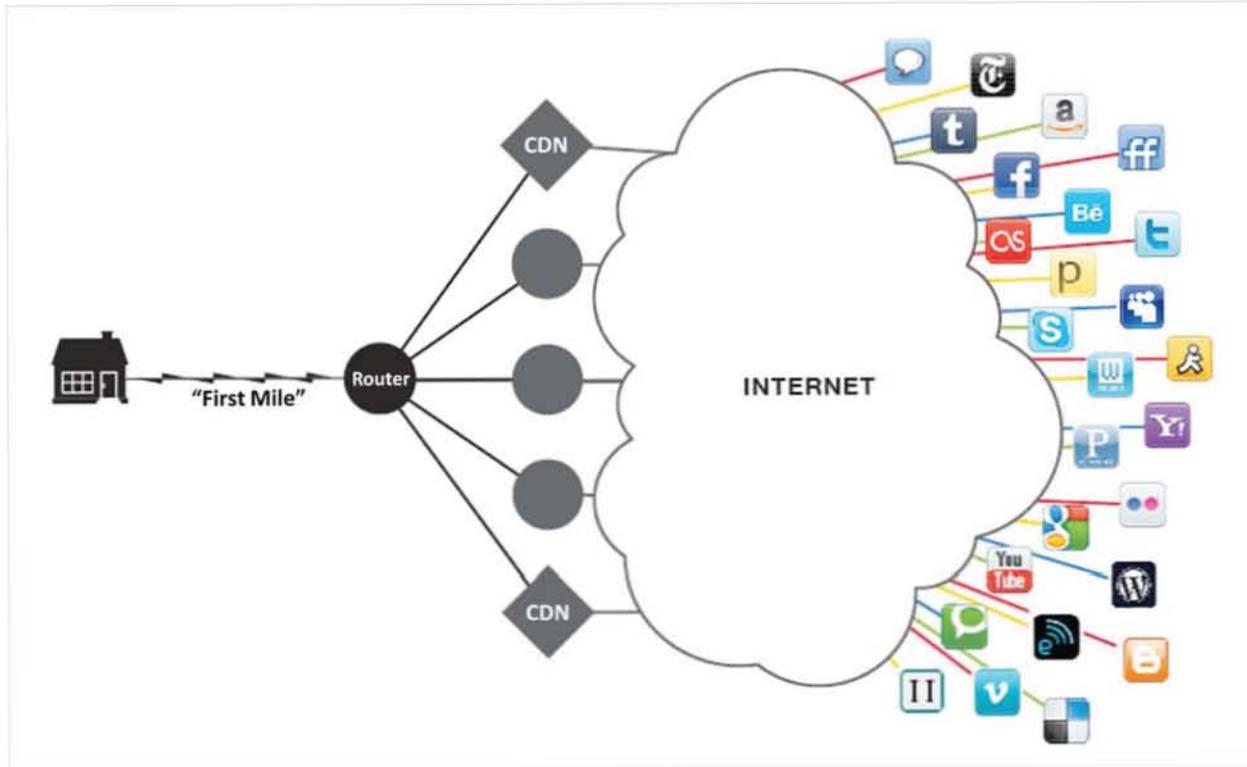
²⁶ See, e.g., Comments of Verizon and Verizon Wireless ("Verizon") at 1 ("The Internet is one of the most remarkable success stories in American history. In less than two decades it has become a ubiquitous presence in our daily lives and a key driver of the United States economy."); United States Telecom Association ("USTelecom") at 1 ("The Internet in the United States is a tremendous success story. It has developed with speed and scope unparalleled by any prior network technology, and, with an estimated half trillion dollars in investment predominantly from the private sector, has created jobs, spurred innovation, and revolutionized the way Americans learn, work, communicate and shop.").

²⁷ *National Broadband Plan* at xi.

²⁸ See Julius Genachowski, Chairman, FCC, Prepared Remarks at The Clinton Presidential Library on Connecting the Nation: A National Broadband Plan, at 2 (Nov. 24, 2009).

²⁹ See Julius Genachowski, Chairman, FCC, Prepared Remarks at the Open Agenda Meeting on A National Broadband Plan for Our Future, at 2 (Mar. 16, 2010). See also *National Broadband Plan*, Statement of Commissioner Copps at 1 (stressing that "broadband is the Great Enabler of our time.").

Internet, based in large part on legacy government benefits and the costliness of deploying physical infrastructure.³⁰

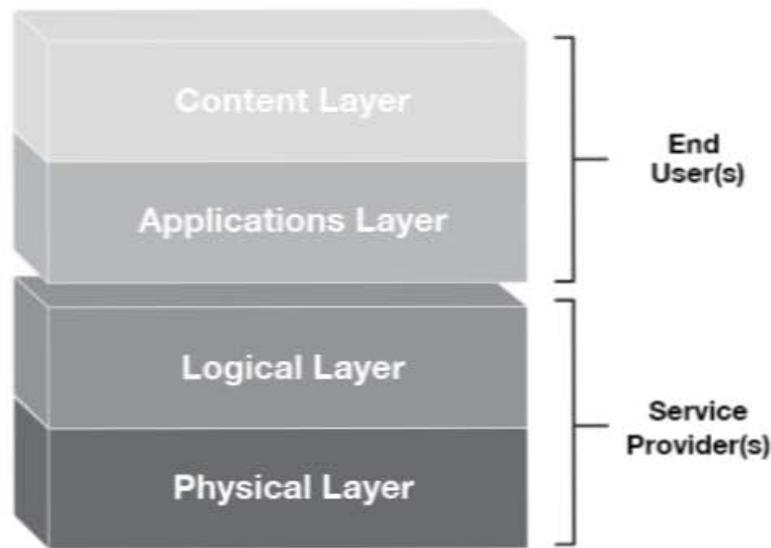


Broadband Providers' "Vertical" Control over End User Traffic

The technical nature of routing traffic from the physical layer presents another type of control, which can be conceptualized as horizontal in nature. This horizontal control stems from at least four unique characteristics of routing traffic as a broadband provider: (1) the ability to transport all Internet traffic to and from the consumer; (2) the ability to intercept and inspect the contents of other people's Internet traffic, via deep packet inspection ("DPI") and other new technologies; (3) the ability to manipulate other people's Internet traffic through the router, including blocking, degrading, and/or prioritizing selected traffic; and (4) the ability to dictate

³⁰ See Comments of Google at 18-24.

which traffic gets what amount of broadband capacity. Collectively, this amounts to the unique power to carry, to inspect, to manipulate, and to ration bandwidth for all traffic flowing over the broadband pipe, including the vast bulk of third party traffic not “owned” in any way by the broadband provider. Crucially, no other entity in the various layers of the Internet can come close to possessing these kinds of abilities concerning what can be thought of as “Other People’s Packets.”³¹



Broadband Providers’ “Horizontal” Control over End User Traffic

Cox Communications’ packet shaping trial in its Kansas/Arkansas system illustrates the extent of network-based control that broadband providers possess.³² In the trial, Cox identified and classified all online traffic riding over its local networks, and was able to engage in a variety of traffic management and shaping practices to study mitigation of network congestion. Cox described the trial as a “success,” and explained that its customers’ relative silence should be

³¹ Declaration of Vijay Gill, attached hereto as Appendix A, at ¶¶ 15-20 (“Gill Decl.”).

³² See Comments of Cox Communications, Inc. (“Cox”) at 20-30.

interpreted as agreeing with the unilateral employment of “reasonable” practices.³³ Nonetheless, the degree of control utilized in the trial makes it apparent that a last-mile broadband provider like Cox has the unchecked ability to carry, intercept, inspect, and manipulate online traffic that flows over last-mile broadband connections – in particular, traffic that is not their own. Simply put, no other entity has this same level and extent of control within the network. Thus, regardless of whether Cox conducted the trial consistent with “good” engineering practices, its activities only underscore the degree to which broadband providers uniquely hold the unilateral power to dictate end users’ Internet experience.

This unique and pervasive “horizontal” control at the last-mile physical network layer is an additional fundamental basis for FCC oversight. Such control is inherently different from the function of applications and content facilities, including content delivery networks (“CDNs”).³⁴ AT&T asserts that CDNs are “non-neutral” and represent an “unprecedented shift of power within the Internet ecosystem.”³⁵ This argument is incorrect. The function of a CDN is to enhance users’ overall Internet experience by hosting and serving content from a location more proximate to end users, thus avoiding points of possible congestion and reducing latency. By definition, they do not and cannot involve or interfere with other traffic flows to end users. Only last-mile broadband access providers like AT&T have such control.

³³ *Id.*

³⁴ Applications and content facilities also include hosting and serving facilities and cloud service providers. These facilities and services are used by commercial applications and content providers of all sizes, as well as by educational, research, medical and government entities. See Bill St. Arnaud, *A Personal Perspective on the Evolving Internet and Research and Education Networks*, Feb. 15, 2010, available at <http://docs.google.com/Doc?docid=0ARgRwniJ-qh6ZGdiZ2pyY3RfMjc3NmdmbWd4OWZr&hl=en> (“*Evolving Internet*”).

³⁵ Comments of AT&T at 31.

Last-mile broadband providers are uniquely positioned to:

- Carry all online traffic to and from the end user.
- Inspect all online traffic to and from the end user.
- Manipulate all online traffic to and from the end user.
- Allocate capacity for all online traffic to and from the end user, including Internet access.

Controlling “Other People’s Packets”

Furthermore, unlike the routers in the last-mile broadband access network, where prioritizing is usually zero-sum (so that speeding some packets inherently means slowing others), there is no limit to the number of users that can enjoy the enhanced quality and speed that flow from CDNs and other content serving facilities. Indeed, content and applications providers ranging from start-ups and small businesses to large, established players take advantage of these types of facilities.³⁶ Simply put, routers and servers are two entirely different things, and routing someone else’s packets is not the same as storing your own packets. Content aggregation and delivery facilities used by applications and content providers do not and cannot control the flow of Internet traffic to end users. This is why last-mile broadband Internet access services are properly at the heart of the issues in this proceeding.³⁷

³⁶ See, e.g., Mylene Mangalindan, *Small Firms Tap Amazon's Juice*, Wall St. J. (Jan. 15, 2008), available at http://online.wsj.com/article/SB120035205794189723.html?mod=googlenews_wsj (discussing small businesses and start-ups using Amazon’s distributed content storage services to build their business).

³⁷ See, e.g., Comments of Akamai at 12 (noting that Akamai neither operates its own transmission facilities nor controls last-mile broadband access).

Precisely because traffic routers and switches in last-mile access networks present unique opportunities for control, the FCC has a long tradition of regulating last-mile communications inputs.³⁸ Contrary to some parties' claims that the proposed rules are politically motivated,³⁹ there has been a consistent and overarching recognition that some government role is vital to promote the public interest. Thus, following the elimination of all FCC oversight of last-mile broadband in 2002 and 2005, both Republican and Democratic Commissioners foresaw that enactment of rules could be necessary.⁴⁰ In fact, the Republican-endorsed "Nascent Services Doctrine" that advocated starting from a deregulatory premise explicitly recognized that there should not be "complete freedom from regulation."⁴¹ With broadband access no longer "nascent," but still lacking competition, the FCC should exercise its important oversight responsibility now.

³⁸ See, e.g., Comments of Google at 29; NASUCA at 16; Free Press at 129-133; Public Knowledge at 7-9.

³⁹ See Comments of Competitive Enterprise Institute at 2-3.

⁴⁰ Democratic Commissioners Copps and Adelstein supported government oversight, as did former Chairman Powell and Commissioner Abernathy, both Republicans. See, e.g., *Wireline Broadband Order*, Statement of Commissioner Copps; *Formal Complaint of Free Press and Public Knowledge Against Comcast Corporation for Secretly Degrading Peer-to-Peer Applications*, Memorandum Opinion and Order, 23 FCC Rcd. 13028 (2008) ("*Comcast-BitTorrent Order*"), Statement of Commissioner Adelstein; Kathleen Q. Abernathy, Commissioner, FCC, Prepared Remarks at Catholic University Columbus School of Law Symposium on The Telecommunications Act of 1996: A Case of Regulatory Obsolescence? (Mar. 17, 2005); *IP-Enabled Services*, Notice of Proposed Rulemaking, 19 FCC Rcd. 4863 (2004), Statement of Chairman Michael Powell.

⁴¹ Kathleen Abernathy, Commissioner, FCC, Prepared Remarks at Disruptive Technologies and Opportunities for Service Providers Panel, Telecoms Transition World Summit, Lisbon, Portugal (Jun. 27, 2005) ("When I developed the Nascent Services Doctrine, I also made clear that I was not advocating complete freedom from regulation. Indeed, there are certain core social policy goals that are not market-driven and probably cannot be achieved without governmental urging, and perhaps mandates.").

Finally, we note that Google’s “Fiber for Communities” project,⁴² which would provide one Gig fiber connectivity to one or more communities with a total population of 50,000 to 500,000, is a good example of what we believe all last-mile broadband networks should be: big, fast, and open. We also believe such networks should be subject to some form of government oversight. For its part, Google will agree to abide by whatever federal, state, and local government regulations are applicable to consumer-facing broadband networks. Further, while we voluntarily have chosen to pursue an openness policy to govern the networks, we think there is an overarching government interest in ensuring that Internet access provided over last-mile broadband access networks is open and robust.

Thus, there are enduring structural reasons why last-mile broadband networks require some form of government oversight. Broadband is an essential input to economic, social, and personal activities, a scarce infrastructure resource, and a beneficiary of government benefits and subsidies. Further, the combination of “vertical” control (relatively few physical means of getting to and from the Internet) and “horizontal” control (the unique ability to carry, intercept, inspect, and manipulate, and dictate bandwidth for all online traffic) further buttresses the need for a government role. As the record also shows, and as we discuss next, recent troubling market and technology developments make that oversight role all the more imperative.

⁴² See Minnie Ingersoll and James Kelly, *Think Big with a Gig: Our Experimental Fiber Network*, Official Google Blog, Feb. 10, 2010, available at <http://googleblog.blogspot.com/2010/02/think-big-with-gig-our-experimental.html/>.

**C. THE RECORD ESTABLISHES THAT INCREASING VERTICAL INTEGRATION
CREATES STRONG INCENTIVES THAT DEMAND SUPERVISION.**

Broadband network operators' growing vertical integration with the content and applications that ride over their networks⁴³ increases their incentives and opportunities to engage in conduct antithetical to the public interest, ranging from blocking and blatant discrimination to less obvious actions that result in reduction of competitive offerings.⁴⁴ The Independent Film & Television Alliance, representing members worldwide that produce the vast majority of U.S. feature films and other popular content, explains in detail how and why this growing integration has created a tipping point, underscoring the need for the proposed rules "to ensure independent producers and distributors an environment to compete fairly, create diverse programming and secure commercial distribution to the public on the increasingly important digital platforms of the Internet."⁴⁵ Sony likewise explained:

The single most important obstacle to video convergence today is the threat of discrimination by network operators that provide both an MVPD service and an Internet access service to consumers. . . . Network operators that provide, and therefore exert control over, both services have an overwhelming incentive to undermine Internet-delivered video and diminish its competitive threat.⁴⁶

Other commenters echo this well-founded concern that control of access to last-mile conduit can be easily manipulated to squelch or interfere with competitive content, applications

⁴³ See, e.g., *Application for Consent to the Transfer of Licenses, General Electric Company, Transferor, to Comcast Corporation, Transferee, Application and Public Interest Statement*, MB Dkt. 10-56 (filed Jan. 28, 2010); *Commission Seeks Comments of Applications of Comcast Corporation, General Electric Company, and NBC Universal, Inc. to Assign and Transfer Control of FCC Licenses, Public Notice*, DA 10-457, MB Dkt. 10-56 (rel. Mar. 18, 2010).

⁴⁴ See, e.g., Comments of Netflix, Inc. ("Netflix") at 5-7.

⁴⁵ Comments of IFTA at 3, 8 (stressing that consolidation is "devastating for a nation that prides itself on offering its citizens open access to diverse programming and competing ideas."). See also *id.* at Appendix H (describing broadband providers and affiliated services).

⁴⁶ See Comments of Sony, NBP Public Notice #27 at 5, GN Dkt. 09-51 (filed Dec. 21, 2009).

and services.⁴⁷ DISH Network explained that the nation’s four largest broadband providers all also offer video services that compete with unaffiliated video offerings.⁴⁸ As the FCC noted in the NPRM, this vertical integration creates obvious economic incentives for broadband providers to use their control over the distribution “pipes” to favor their own services and content.⁴⁹ In these circumstances, where incentives skew broadband providers’ decisions so that they diverge from the larger public interest, sound policy dictates an appropriate FCC role.

D. CURRENT AND EMERGING BROADBAND PROVIDER PRACTICES UNDERSCORE THAT A GOVERNMENT ROLE IS NEEDED TO PRESERVE AN OPEN INTERNET.

Even though opponents of the proposed rules generally claim just two instances of blocking or degrading adjudicated by the FCC,⁵⁰ the record shows that these practices are far more numerous and pervasive. Moreover, even in these two instances, the *Internet Policy Statement* (“IPS”) was not adequate to deliver effective oversight and redress.⁵¹

Some broadband providers already have adopted practices that at least arguably are antithetical to openness. The record also confirms that, going forward, others are likely to engage in blocking, throttling, discrimination, degradation, preferential traffic differentiation practices, and imposition of restrictive user terms and conditions that interfere with consumer

⁴⁷ See, e.g., Comments of Sony at 2; Skype Communications S.A.R.L. (“Skype”) at 15. See also Letter from David Tannenbaum, Special Counsel, FCC, to Marlene H. Dortch, Secretary, FCC, at 1, GN Dkt. 09-191 (filed Jan. 15, 2010) (describing Union Square Ventures Jan. 13, 2010, *ex parte* meeting with FCC staff).

⁴⁸ Comments of DISH Network L.L.C. (“DISH Network”) at 3-6.

⁴⁹ NPRM at ¶¶ 72-73.

⁵⁰ See, e.g., Comments of AT&T at 94-95; Comcast at 17-18; National Cable and Telecommunications Association (“NCTA”) at 22; Time Warner Cable Inc. (“Time Warner Cable”) at 19; Verizon at 31.

⁵¹ Not only was the blocking in *Madison River* adjudicated under the prior longstanding Title II regime, *Madison River Communications, LLC, Order*, 20 FCC Rcd. 4295, ¶ 1 (2005), in the BitTorrent situation, Comcast maintained successfully that the FCC lacked jurisdiction to enforce the *IPS*. See *Comcast-BitTorrent Order* at ¶ 14; Brief of Respondent Comcast at 20-27 (filed Jul. 27, 2009) in *Comcast Corp. v. Fed. Comm’n Comm*, Case No. 08-1291 (D.C. Cir.).

freedom and the free flow of information.⁵² The point is not that every such practice is problematic and should be barred. Rather, the market is ill-served where there is a fundamental lack of transparency about these practices, no clear rules of the road, and no neutral, third-party arbiter to oversee, assess and prohibit those practices that have a detrimental impact on consumers and the marketplace.

AT&T's initial denial and much-delayed approval of the SlingBox application only illustrates the type of conduct that could become standard practice if broadband providers are permitted to have free reign over which content, applications, and services can flow over last-mile networks.⁵³ While AT&T ultimately allowed the SlingBox application, the episode shows how a broadband provider can block an application or content in order to gain time to develop and bring an affiliated, competing product to market. Indeed, some have alleged that AT&T's actions may have been motivated by a desire to stymie a competitor to an AT&T application currently in production.⁵⁴ Of course, although the facts are damning on their face, it is possible that AT&T simply was engaging in reasonable network management. The salient point is that AT&T today can and does make such decisions unilaterally, without accountability to anyone but itself.

⁵² These practices also include broadband provider lack of transparency; practices that are complex and confusing; practices that interfere with user web activity; and the imposition of terms of service that may have anticompetitive and detrimental impacts upon users.

⁵³ See Matthew Shaer, *Slingbox App Approved by AT&T, Just in Time for iPad Launch*, Christian Science Monitor (Feb. 4, 2010), available at <http://www.csmonitor.com/Innovation/Horizons/2010/0204/Slingbox-app-approved-by-AT-T-just-in-time-for-iPad-launch>.

⁵⁴ See Jason Chen, *Network Use Not the Only Reason for AT&T to Hate 3G iPhone Slingplayer*, Gizmodo (May 13, 2009), available at <http://gizmodo.com/5253135/network-use-not-the-only-reason-for-att-to-hate-3g-iphone-slingplayer>.

Comcast's new online backup and data storage services provide another example worth considering.⁵⁵ Comcast's service, Secure Backup & Share, allows users to upload and backup their personal data. Yet, the 200GB plan comes quite close to the Comcast 250GB monthly cap; because the uploading process almost certainly will require users to connect for more than 15 minutes, the connection may end up being throttled.⁵⁶ If Comcast waives these requirements for customers using its own backup and storage services, it begs the question of whether it will do so as well for customers of competing, unaffiliated backup and storage services.⁵⁷ Again, while waiver of Comcast's bandwidth cap for its own service may not be problematic if all similar services are treated the same, without a government role and acknowledged network management standards, there is simply no way for anyone to know whether Comcast has adopted such a practice, and no place subsequently for anyone to take a legitimate complaint.

Further, what broadband providers may view as "creative and innovative" arrangements and business models (including preferential access, revenue or cost sharing, and other forms of prioritization, degradation and discrimination) can be harmful to the public generally, stifling innovation, restricting choice, and constricting competitive options.⁵⁸ For example, while preferential access for some content or applications in exchange for a share of revenue ("pay to

⁵⁵ See Kelly Hodgkins, *Comcast Forgets About its Bandwidth Cap, Launches Online File Backup Service*, Boy Genius Report (Feb. 19, 2010), available at <http://www.boygeniusreport.com/2010/02/19/comcast-forgets-about-its-bandwidth-cap-launches-online-file-backup-service/>.

⁵⁶ See Letter from Kathryn Zachem, Vice President Regulation and State Legislative Affairs, Comcast, to Marlene H. Dortch, Secretary, FCC, WC Dkt. 07-52 (filed Jan. 05, 2009) (notifying the FCC that Comcast has instituted the congestion management practices described in the Comcast letter filed Sept. 19, 2008, in the same proceeding).

⁵⁷ Further, if Comcast does allow users to exceed usage limits when they use affiliated services, it raises an important question of whether the limits restrict the robustness of Internet access services for reasons unrelated to technological constraints.

⁵⁸ See, e.g., Comments of Verizon at 3, 7, 68; Time Warner Cable at 30-32; Comcast at 39; AT&T at 10, 105-106; NCTA at 19-20.

play”) may be considered pioneering among broadband providers, it can have the effect of creating an unacceptable “slow lane”⁵⁹ for other content and applications, impeding user access and success in the marketplace even if these applications are more innovative or have greater user benefits. For consumers, broadband providers’ practices – such as the decision by Embarq and other broadband providers to allow NebuAd to use deep packet inspection technology to monitor subscribers’ web activity and serve targeted ads based on the data collected without the user’s consent – can be unwelcome.⁶⁰ As the broadband-driven Internet becomes even more vital to our society, the FCC, not broadband providers in their sole discretion, must be able to establish appropriate standards of acceptable practices.

The largest last-mile broadband providers’ objections to codification of any broadband openness rules highlight that these providers do not believe they are constrained today by the *Internet Policy Statement* principles and see no legal obligation to follow them.⁶¹ Moreover, broadband providers’ statements about their intended (and current) practices demonstrate why oversight is vital.⁶² This situation makes immediate FCC action imperative to prevent broadband access practices, terms, conditions, and arrangements that are antithetical to the evolution of the open Internet from taking root and spreading. Experience teaches that lack of action by the FCC

⁵⁹ Comments of ALA at 2, 4.

⁶⁰ See Wendy Davis, *Customers Sue ISP For Installing NebuAd 'Spyware,' Offering Defective Opt-Outs*, Online Media Daily (Jan. 28, 2010), available at http://www.mediapost.com/publications/?fa=Articles.showArticle&art_aid=121522.

⁶¹ See, e.g., Comments of AT&T at 1-2; Time Warner Cable at 4; USTelecom at 39, 41.

⁶² See, e.g., Comments of AT&T at 56; Verizon at 47; Time Warner Cable at 52; Cox at 20-30.

will be considered a “green light” for broadband providers to become much more aggressive in restricting usage of broadband networks and services to maximize profits.⁶³

Immediate action will avoid disruption later when it may be too late. Broadband networks are being deployed and investments being made now, underscoring the importance of ensuring that broadband network practices evolve consistent with (and not antithetical to) openness. In virtually every analogous instance, including where the Commission sought to implement cable “a la carte” channel services, the FCC has been faced with numerous claims that it could not step in because incumbents had relied on the FCC’s existing regulatory framework in designing their business models. Incumbents argued that any change would unlawfully undermine their legitimate expectations.⁶⁴ Adopting clear rules of the road today will help to ensure that the next generation of broadband networks will be open.

II. THE FCC MUST ASSERT ITS LEGAL AUTHORITY TO ADOPT BROADBAND OPENNESS RULES.

In our initial Comments, we explained that we agreed with the FCC’s own assessment that the agency could satisfy the two-prong test for Title I “ancillary” authority to adopt the proposed broadband openness rules.⁶⁵ Indeed, our own legal analysis there relied exclusively on the FCC’s Title I jurisdiction. The D.C. Circuit’s recent *Comcast v. FCC* decision,⁶⁶ however, has dealt a serious blow to this proposed jurisdictional approach. Notably, some broadband

⁶³ See, e.g., Comments of IFTA at 10-12.

⁶⁴ See, e.g., *A La Carte Q&A*, NCTA, available at <http://www.ncta.com/IssueBriefs/ALaCarte.aspx?view=3> (“breaking up existing model would result in higher costs per channel, and many networks serving important and diverse audiences would be forced out of business.”). See also Reply Comments of NCTA – NBP Public Notice #27 and #30 at 31-34, GN Dkt. 09-51 (filed Jan. 27, 2010) (warning the FCC not to adopt video gateway proposals that would threaten the “basic economic underpinnings” of the cable television industry).

⁶⁵ Comments of Google at 44-49.

⁶⁶ *Comcast Corp. v. Fed. Comm’n Comm’n*, No. 08-1291(D.C. Cir. Apr. 6, 2010) (“*Comcast v. FCC*”).

providers already had been vigorously asserting that the Commission lacks authority to adopt the proposed rules, including arguing that the rules would violate broadband providers' First or Fifth Amendment constitutional rights.⁶⁷ Undoubtedly, some of those same companies now will assert that the D.C. Circuit's recent *Comcast v. FCC* decision completely forecloses the Commission's Title I jurisdiction to adopt the rules.

To be clear, Google seeks only a means of providing government oversight and necessary "rules of the road" for broadband networks. We are not wedded at this time to a specific legal theory to justify the Commission's authority over broadband networks. Nonetheless, the fundamental necessity for such authority remains paramount to fully protect consumers, competition, and the open Internet.

In the wake of the *Comcast v. FCC* decision, then, the Commission has no responsible alternative but to consider all of its options, including relying on its direct authority under the statute. In particular, reliance directly upon one or more sources of authority granted in the statute may well offer a more straightforward and defensible jurisdictional basis than solely (or primarily) utilizing Title I for the Commission's oversight of last-mile broadband transmission. Importantly, this is the case not only for consumer safeguards like broadband openness rules, but also to ensure that the Federal Universal Service Fund and other benefits and obligations can be extended on a lawful and expeditious basis to consumer broadband services. Thus, to provide much needed certainty and vital direction, the FCC might prudently revisit the seminal judgments of the *Cable Modem Order*, *Wireline Broadband Order*, and *Wireless Broadband*

⁶⁷ See, e.g., Comments of Verizon at 111-113; AT&T at 235-248; Time Warner Cable at 44-50. See also Tom Tauke, Executive Vice President, Verizon, Prepared Remarks at New Democrat Network, at 3 (Mar. 24, 2010) (highlighting the danger of applying "statutory provisions intended for the telephone industry of the 1900s to the communications and Internet world of the 21st century.").

Order, where the agency declined to require last-mile broadband transmission to be offered under Title II of the Communications Act.

A. THE FCC HAS STATUTORY AUTHORITY OVER LAST-MILE BROADBAND PROVIDERS.

Given the considerable legal uncertainty as a result of the D.C. Circuit's *Comcast v. FCC* decision, it would be unwise for the Commission simply to continue relying solely or primarily on its Title I authority to adopt the proposed broadband openness rules. Instead, the FCC should consider a number of options, including pursuing a decision grounded in whole or in part on its unquestioned authority under existing statutory titles, including Title II. Carefully considering this approach is especially important given the tone of many broadband providers' comments threatening to engage the Commission and other Internet and broadband stakeholders in protracted litigation over the extent of the Commission's Title I jurisdiction.⁶⁸

Commenters are mistaken that the FCC cannot reverse course on its prior orders. As long as the agency does so in a considered and reasonable manner, it is free to adapt its regulations as circumstances dictate.⁶⁹ The FCC's express statements in the *Wireline Broadband Order* confirm that "[t]he Commission is free to modify its own rules at any time to take into account changed circumstances. . . ."⁷⁰ Indeed, the FCC has a legal duty to revisit its predictions and adjust its regulation according to the facts as they develop.⁷¹ In light of the *Comcast* decision,

⁶⁸ See, e.g., Comments of AT&T at 207.

⁶⁹ Compare Comments of Verizon at 95 ("Nor could the Commission reverse course and find that broadband Internet access is a telecommunications service."), with *Fed. Comm'n Comm'n v. Fox Television Stations, Inc.*, 129 S. Ct. 1800, 1813 (2009) ("The fact that an agency had a prior stance does not alone prevent it from changing its view or create a higher hurdle for doing so.")

⁷⁰ *Wireline Broadband Order* at ¶ 81.

⁷¹ See *Fed. Comm'n Comm'n v. WNCN Listeners Guild*, 450 U.S. 582, 603 (1981).

the agency should take the opportunity now to do so for all broadband services, wireless and wired.

Certainly, the state of the market, technology, and service offerings all have evolved tremendously in the ten years since the FCC first undertook to examine broadband Internet services. Such enormous changes might well lead the FCC to review thoroughly the record evidence that it cited in support of its prior regulatory classification decisions under the Administrative Procedure Act.⁷² The most salient such evidence includes the ongoing and persistent residential broadband market duopoly, and the effects it has on retail prices and access to competing information. Further, while the *Wireline Broadband Order* rested on the “predictive judgment” that a robust and innovative broadband wholesale market would develop to better serve the retail market,⁷³ this judgment has proven to be considerably off base. Moreover, from the consumer’s perspective, the last-mile providers’ broadband access services being “held out” and “offered” are *transmission* functionality, *i.e.*, speedy access between the home and the Internet using the broadband providers’ transmission networks.⁷⁴ Thus, in light of

⁷² Several of the FCC’s forbearance actions turned on “predictive judgments” of market developments that have gone awry, and so it may be appropriate for the Commission to review its broadband forbearance decisions as well. *See WNCN Listeners Guild*, 450 U.S. at 603 (when a rulemaking decision is based on predictive judgment, “[t]he Commission should be alert to the consequences of its policies and should stand ready to alter its rule if necessary to serve the public interest more fully”); *Am. Civil Liberties Union v. Fed. Comm’n Comm’n*, 823 F.2d 1554, 1565 (D.C. Cir. 1987) (same).

⁷³ *Wireline Broadband Order* at ¶ 64 (“we expect that facilities-based wireline carriers will have business reasons to continue making broadband Internet access transmission services available to ISPs without regard to the *Computer Inquiry* requirements. . . . We believe that the convergence of these two factors – increasing competition among facilities-based broadband providers and the potential for competition in wholesale network access – will sustain and increase competitive choice among broadband providers and Internet access products.”).

⁷⁴ Major last-mile providers often focus solely on speed and price, key attributes of transmission, when advertising their broadband access services. *See, e.g., AT&T–Shop–Internet*, available at <http://www.att.com/gen/general?pid=6431>; *Comcast–Shop–Internet*, available at <https://www.comcast.com/shop/buyflow2/products.csp?SourcePage=Internet&profileid=85485456->

the failed competition in the last-mile broadband access marketplace, the flawed predictive judgments made in the prior orders, and the nature of broadband services actually offered in today's marketplace, the Commission is well-positioned at least to re-examine those very same factors and predictions, as well as develop a comprehensive record that includes other salient factors.

It is also vital that the FCC affirm that its oversight of broadband networks should apply equally to all facilities-based last-mile broadband providers regardless of facilities. For example, just like wireline telephone companies, when cable operators use their facilities to offer two-way transmission of data, they too are offering a transport service that can be equally subject to the Commission's authority. The Communications Act confirms that cable operators must be treated in this same manner, and enjoy no special exemption simply because they also offer cable services under Title VI of the Act.⁷⁵ Notably, the FCC already has addressed this issue; the *Cable Modem Order* held that cable modem broadband service includes a "telecommunications" transmission component, and that cable modem service did not qualify as a "cable service" under the Act.⁷⁶

Alternatively, or additionally, the FCC might conclude that it is still legally feasible to utilize an "information services" regulatory classification for broadband services offered by facilities-based last-mile providers. Such a course would appear to continue relying on the

6CF6-48AE-AFE5-2AAC7939C070&lpos=Nav&lid=2ShopHSI&; Verizon-Internet, *available at* <http://www22.verizon.com/Residential/Internet/> (all last visited Mar. 18, 2010).

⁷⁵ 47 U.S.C. §153(46) ("telecommunications service" definition applies "regardless of the facilities used"). *See also Federal-State Joint Board on Universal Service, Report to Congress*, 13 FCC Rcd 11501, ¶ 59 (1998) (noting "Congress's direction that the classification of a provider should not depend on the type of facilities used . . . [but] rather on the nature of the service being offered to consumers.").

⁷⁶ *Cable Modem Order* at ¶ 39 (cable modem service includes a "telecommunications" component), ¶¶ 60-69 (cable modem service is not a "cable service" under the Communications Act).

agency's Title I ancillary authority to enact the proposed rules despite the holding in *Comcast v. FCC*. Arguably, the two-prong test for use of the FCC's ancillary authority could be met here.⁷⁷ As AT&T makes clear, it is unquestioned that with respect to the first prong, "[b]roadband Internet access service self-evidently constitutes 'communications by wire or radio' and thus falls within the Commission's jurisdictional grant."⁷⁸ The record also shows that the proposed rules are needed for the FCC "to perform with appropriate effectiveness certain of its other responsibilities" set forth in Titles I, II, III and VI of the Communications Act.⁷⁹ Nevertheless, the *Comcast* decision, and broadband providers' continuing criticisms of any Title I-based approach, now has cast considerable doubt on use of ancillary authority regarding broadband networks.

Finally, it is noteworthy that AT&T asserts that the FCC would be out of step with European regulators if it adopts the proposed rules.⁸⁰ AT&T's assertions do not appear to comport with actual ongoing policy responses to Internet access issues in Europe; indeed, one expert demonstrates in this record that the FCC's proposed response is far less prescriptive than that of European regulators.⁸¹ Notably, unlike the continuing deregulatory stance being

⁷⁷ *Comcast v. FCC* slip. op. at 7; *Am. Library Ass'n v. Fed. Commc'n Comm'n*, 406 F.3d 689, 691-93 (D.C. Cir. 2005); Comments of Google at 44-49.

⁷⁸ Letter from Gary L. Phillips, General Attorney and Associate General Counsel, AT&T, to Marlene H. Dortch, Secretary, FCC, Attachment at 6, GN Dkt. 09-51 (filed Jan. 29, 2010), quoting 47 U.S.C. § 152(a).

⁷⁹ *United States v. Sw. Cable Co.*, 392 U.S. 157, 173 (1968). See also Comments of Vonage at 11-15; XO Communications, LLC ("XO") at 20; Public Knowledge at 7.

⁸⁰ Comments of AT&T at 91-92.

⁸¹ See Kip Meek and Robert Kenny, *Network Neutrality Rules in Comparative Perspective: A Relatively Limited Intervention in the Market* at 3, Ingenious Consulting Network, attached as Attachment A to Comments of Computer & Communications Industry Association ("CCIA") (FCC's proposal is "a highly limited intervention. The rest of the developed world generally has imposed much more significant interventions to regulate telecoms bottlenecks, and many consider these regulations as providing

implemented in the U.S., European regulators have adopted a range of in-depth regulatory approaches to broadband – including unbundling, separation, bitstream access, detailed price regulation, and other more prescriptive measures – to ensure that network providers do not leverage their network control unacceptably. In such environments, broadband openness requirements may not be as vital to protect user interests. By contrast, such rules are necessary in the United States precisely because the market offers consumers few to no competitive options. Presumably, AT&T would not prefer the full “European approach.”

Thus, amidst the growing uncertainty generated over the scope of its Title I authority, the FCC has little realistic option but to fully consider all statutory underpinnings of its authority to protect consumers. This necessarily includes considering the comparatively more certain and predictable jurisdictional “hook” of its existing statutory titles to preserve and promote a robust and open Internet.⁸²

B. THE FIRST AMENDMENT DOES NOT BAR THE FCC FROM ADOPTING THE PROPOSED RULES .

As some commenters point out, the proposed rules only would regulate certain aspects of broadband providers’ *conduct* (*i.e.*, transmission practices) in handling packets they transport

important checks on discriminatory behavior by access providers”). *See also* Kevin J. O’Brien, *Skype in a Struggle to Be Heard on Mobile Phones*, NYTimes.com (Feb. 17, 2010), available at <http://www.nytimes.com/2010/02/18/technology/18voip.html> (“In Europe, the new commissioner for Digital issues, Neelie Kroes, has indicated that she might put pressure on wireless operators to allow VoIP service on their networks. In a hearing on Jan. 14 before a European Parliament committee, Ms. Kroes said blocking VoIP violated network neutrality. ‘It is imperative that VoIP can be done,’ Ms. Kroes said before the Industry, Research and Energy panel.”).

⁸² Nonetheless, should it proceed down this path, the Commission need not and should not resurrect the panoply of Title II statutory requirements . Instead, the FCC could exercise its Section 10 forbearance authority to relieve broadband providers of many Title II statutory and regulatory obligations and benefits that would be either unnecessary or inappropriate for broadband services.

across their networks, and so do not merit heightened First Amendment scrutiny.⁸³ As proposed, regulation of this transmission conduct does not implicate last-mile providers' speech rights.⁸⁴ The act of routing data packets does not convey a particularized message. These actions may be taken to clear network congestion or to favor a service provider's own content, but no cognizable message can be gleaned from them. For example, a user who must wait longer to download an online movie because her broadband provider is prioritizing data packets of affiliated content does not understand this waiting period to be a particularized message from the broadband provider.

While broadband providers analogize their conduct at issue here to that of newspapers and publishers deserving of First Amendment protection,⁸⁵ the analogy is inapt. Incumbent broadband providers in this proceeding have not suggested a plan to engage in editorial functions with Internet access, or to place general limits on the Internet access services offered to the public today. To the contrary, major broadband providers have expressed a specific intent not to editorialize or limit their subscribers' access to lawful Internet content.⁸⁶ The analogy to companies that engage in editorial conduct, therefore, rings hollow.

⁸³ Comments of CDT at 31; Free Press at 137; RNK at 9-10. *See also Comcast-BitTorrent Order*, n.203 (prohibition against interfering with consumers' use of peer-to-peer networking did not raise First Amendment issues because it "does not prevent Comcast from communicating with its customers or others").

⁸⁴ To determine whether conduct is communicative and warrants First Amendment protection, the broadband provider must show "[1] an intent to convey a particularized message was present, [2] and in the surrounding circumstances the likelihood was great that the message would be understood by those who viewed it." *Spence v. Washington*, 418 U.S. 405, 410-11 (1974).

⁸⁵ *See* Comments of Verizon at 111.

⁸⁶ *See, e.g.*, Comments of Verizon at 81 ("Network providers have every incentive to continue to ensure that consumers have the tools and access they want. Consumers have made it clear that they value traditional, public Internet access services in which they can choose the content and applications that they access."); AT&T at 150 (even without regulation, "consumers already enjoy the ability to connect any

Further, broadband providers do not engage in editorial functions akin to those performed by cable operators when they make channel line-up decisions for their multichannel video offerings. Unlike cable television systems in *Turner*,⁸⁷ the rules at issue here do not limit the information the broadband provider makes available via Internet access to its subscribers.⁸⁸ Instead, both before and after the proposed rules are adopted, broadband providers would be in the same position of offering a service functioning as an on-ramp to the Internet's unlimited content and applications.

Arguments that the proposed rules for last-mile broadband providers also must apply to the vast array of Internet content or applications providers are unavailing.⁸⁹ In *Leathers v. Medlock*, the Court explained that a law singling out a certain medium, or even the press as a whole, is “insufficient by itself to raise First Amendment concerns.”⁹⁰ Like the law at issue in *Leathers* that applied to cable operators, the content-neutral rules proposed here would apply to all broadband providers and would not single out or impermissibly burden a few providers over other providers of the same services.

network compatible handsets to the wireless broadband Internet—and to access the lawful content of their choice”).

⁸⁷ *Turner Broad. Sys., Inc. v. Fed. Commc'n Comm'n*, 512 U.S. 622, 661-62 (1994) (finding that an intermediate level of scrutiny must be employed for must-carry provisions of the Communications Act).

⁸⁸ See, e.g., *Time Warner Entm't, Inc. v. Fed Commc'n Comm'n*, 93 F.3d 957, 971 (D.C. Cir. 1996) (where leased access provisions do not result in the actual third-party use of channel capacity that limits cable operators' editorial discretion, “the provisions will have no effect on the speech of the cable operators” and would prevent “operators from suffering any infringement of their First Amendment rights”).

⁸⁹ Comments of AT&T at 196-206; Verizon at 36-39.

⁹⁰ 499 U.S. 439, 452 (1991) (finding the imposition of a generally applicable sales tax to cable television services alone, while not extending the taxes to the print media, did not violate the First Amendment because the taxes were of general applicability, not targeted to interfere with First Amendment activities, and content neutral).

Finally, even if the proposed rules were somehow construed as infringing upon broadband providers' editorial discretion, which they do not, the content neutral rules would easily pass intermediate scrutiny. The rules are designed to address an important and concrete governmental interest: the economic, political, and social interests of access to the widest array of Internet-based information sources and content, without interference from last-mile broadband providers who possess both the incentives and abilities to impair such access.⁹¹ Further, the rules are narrowly-tailored to address the problem, as they regulate only certain conduct of last-mile broadband providers and fully permit such providers to engage in reasonable network management.⁹²

C. THE RULES WOULD NOT CONSTITUTE A "TAKING" UNDER THE FIFTH AMENDMENT.

Contrary to some commenters' allegations in this proceeding,⁹³ the proposed rules would not violate the Fifth Amendment because they would not constitute either a physical taking or a regulatory taking under established law. Arguments that the proposed rules would constitute a physical taking of broadband provider property -- equating them to a form of permanent easement on their networks -- are erroneous. The proposed rules are not analogous to the

⁹¹ "Likewise, assuring that the public has access to a multiplicity of information sources is a governmental purpose of the highest order, for it promotes values central to the First Amendment." *Turner*, 512 U.S. at 663.

⁹² Indeed, the proposed rules are far less onerous than the leased and public-educational-government ("PEG") access rules that require cable system operators to dedicate several channels of cable systems to this content, which passed intermediate scrutiny. *See, e.g., Time Warner*, 93 F.3d at 973 (requirement for a single PEG channel on cable system "to permit access to everyone on a nondiscriminatory, first-come, first-serve basis. . . . would be content-neutral, would serve an 'important purpose unrelated to the suppression of free expression,' . . . and would be narrowly tailored to its goal").

⁹³ *See, e.g.,* Comments of AT&T at 244-46; Verizon at 119-20; Qwest Communications International Inc ("Qwest") at 60.

regulations struck down in *Loretto*,⁹⁴ which concerned a permanent *physical* occupation of real property, because the proposed rules contemplate no invasion or physical occupation of real property.⁹⁵ Indeed, the *Loretto* Court emphasized that a physical occupation of property “is qualitatively more severe than a regulation of the *use* of the property, even a regulation that imposes affirmative duties on the owner.”⁹⁶

The facts and holding of *Qwest v. United States* also are instructive. In that case, Qwest claimed that unbundled local loops had been physically taken over by a competitive provider with FCC approval, but without just compensation.⁹⁷ The *Qwest* court rejected the physical occupation argument.⁹⁸ The court also rejected Qwest’s “electron theory” takings claim that its property was “‘invaded’ by electrons that traverse the loops every time” a call is made.⁹⁹

The regulatory taking claim under *Penn Central* fares no better. The *Penn Central* decision identified the following factors to determine whether a regulation is so severe as to be a “taking” of private property: the regulation’s economic impact; its interference with reasonable investment-backed expectations; and the character of the government action.¹⁰⁰ None of these

⁹⁴ *Loretto v. Teleprompter Manhattan CATV Corp.*, 458 U.S. 419, 421 (1982).

⁹⁵ *Id.* at 441.

⁹⁶ *Id.* at 436. Similarly, the *Loretto* Court recognized the government’s “broad power to impose appropriate restrictions upon an owner’s *use* of his property.” *Id.* at 441 (emphasis in original).

⁹⁷ 48 Fed. Cl. 672, 691 (Fed. Cl. 2001).

⁹⁸ *Id.* at 691. See also *Cablevision Sys. Corp. v. FCC*, 570 F.3d 83, 98 (2d Cir. 2009) (upholding “the conclusion that the transmission of WRNN’s [TV broadcasting] signal does not involve a physical occupation of Cablevision’s equipment or property”).

⁹⁹ *Qwest Corp.*, 48 Fed. Cl. at 693.

¹⁰⁰ *Penn Cent. Transp. Co. v. New York City*, 438 U.S. 104, 124 (1978). In *Penn Central*, owners of the historic Grand Central Terminal were restricted from certain commercial usage of the real estate by New York’s landmark laws. The Court held that the owners could not establish a Fifth Amendment “taking” simply by showing that they had been denied the ability to exploit a property interest that they believed

factors support broadband providers' claims with regard to the proposed rules. First, while commenters speculate that the rules will inflict a harsh economic impact, the proposed rules permit these companies to continue to offer and profit from Internet access. Rather, the record indicates the rules likely will enhance consumers' valuation of Internet access offerings.¹⁰¹ Further, the rules do not impact broadband providers' other revenue sources – video, voice, or private services – offered via broadband network infrastructure, which will continue to produce substantial profits.¹⁰² Notably, broadband providers have failed to submit any specific facts into the record to support claims of a harsh economic impact.¹⁰³ In a regulated market such as last-mile communications, providers cannot reasonably hold distinct investment-backed expectations of a regulatory vacuum or *status quo*.¹⁰⁴ Moreover, it is ironic that the same incumbents raising the erroneous takings claims are the annual recipients of massive government subsidies (e.g.,

was available for development. In the same way, the regulatory restrictions upon the broadband provider's ability to use its property for discriminatory packet routing that would not be a "taking."

¹⁰¹ See Comments of Access Humboldt, *et al.* at 3-6; Public Knowledge at 24-30.

¹⁰² Internet video is not having a significant revenue impact on pay television services. See, e.g., Todd Spangler, *Less Than 8% of Viewers Would Cancel Pay TV: Survey*, Multichannel News (Feb. 4, 2010), available at http://www.multichannel.com/article/44702-Less_Than_8_Of_Consumers_Would_Cancel_Pay_TV_Survey.php ("About 5.5 million U.S. households, or less than 8% of broadband consumers, would consider dropping cable or satellite TV service in favor of online video, DVDs and over-the-air broadcasts. . .").

¹⁰³ See *Economides* at 16 ("The revenues from residential broadband Internet access represent only a small portion of total revenues from the overall usage of last mile infrastructure."). The broadband providers have failed to meet the heavy burden that courts impose on Fifth Amendment claimants that a regulation would cause severe economic harm. See *Keystone Bituminous Coal Ass'n v. DeBenedictis*, 480 U.S. 470, 493 (1987). Speculative assertions of loss of future profits under the proposed rules are inadequate as a matter of law. See *Andrus v. Allard*, 444 U.S. 51, 66 (1979).

¹⁰⁴ See *Fed. Hous. Admin. v. Darlington, Inc.*, 358 U.S. 84, 91 (1958) ("Those who do business in the regulated field cannot object if the legislative scheme is buttressed by subsequent amendments to achieve the legislative end."). In fact, AT&T and Verizon list FCC regulatory change as an expected risk in their Annual Reports. See, e.g., AT&T 2008 Annual Report at 46-47, available at http://www.att.com/Common/about_us/annual_report/pdfs/2008ATT_FullReport.pdf, Verizon 2008 Annual Report at 31-33, available at http://investor.verizon.com/financial/quarterly/pdf/08_annual_report.pdf.

federal and state USF dollars) to support legacy networks that also are used to provide broadband services.

III. THERE IS BROAD SUPPORT IN THE COMMENTS FOR CODIFYING THE PROPOSED RULES.

A. A RANGE OF INTERESTED PARTIES SUPPORT CODIFYING THE CURRENT *IPS* PRINCIPLES.

The breadth and diversity of interested parties supporting the FCC's proposal to codify the *IPS* principles for last-mile broadband Internet access service providers belie assertions that enforceable rules are unnecessary¹⁰⁵ or will thwart investment and innovation.¹⁰⁶ Supporters include operators of various last-mile broadband Internet access network technologies, including incumbent¹⁰⁷ and competitive wireline service providers,¹⁰⁸ mobile¹⁰⁹ and fixed¹¹⁰ wireless service providers, and satellite providers.¹¹¹ A broad spectrum of software developers; music, video, and applications and content creators and distributors;¹¹² and end-users¹¹³ also support

¹⁰⁵ See, e.g., Comments of AT&T at 80-83; Cox at 6.

¹⁰⁶ See, e.g., Comments of Verizon at 51-52; Comcast at 11-12.

¹⁰⁷ See Comments of Nebraska Rural Independent Companies at 4; Texas Statewide Telephone Cooperative at 1-3; see also Comments of Qwest at 9-11, 29 (supporting codification of the four *IPS* principles, and adoption of a new flexible end-user disclosure rule, but supporting a reasonable discrimination standard rather than the proposed nondiscrimination rule).

¹⁰⁸ See Comments of Covad Communications Company ("Covad") at 1-2; PAETEC Holding Corp. ("PAETEC") at 7; RNK at 3; Vonage at 16; XO at 1.

¹⁰⁹ See Comments of Clearwire Corporation ("Clearwire") at 3; Leap Wireless International, Inc. and Cricket Communications, Inc. ("Leap/Cricket") at 2; Rural Cellular Association at 2.

¹¹⁰ See Comments of Wireless Internet Service Providers Association ("WISPA") at 1.

¹¹¹ See Comments of DISH Network at 2.

¹¹² See Comments of Software & Information Industry Association ("SIIA") at 5-8; Recording Industry Association of America at 2-3; R.E.M. at 1; Motion Picture Association of America, Inc. at 2; IFTA at 21; Independent Creator Organizations at 3; Netflix at 4; Sling Media Inc. at 1.

¹¹³ See Comments of Ad Hoc Telecommunications Users at 1; ALA at 2-3; Association of Research Libraries, *et al.* ("ARL") at 6; National Association of Realtors at 1.

codification of the rules, as do state and local regulators,¹¹⁴ equipment manufacturers,¹¹⁵ and other interested stakeholders.¹¹⁶ The record also reflects widespread consensus that the rules should be narrowly tailored to encompass only entities that clearly are subject to the FCC's authority over last-mile broadband providers.¹¹⁷

B. A SIMPLE NONDISCRIMINATION RULE WILL OPTIMIZE BROADBAND SERVICE EVOLUTION WHILE PREVENTING HARMFUL PRACTICES.

The record also supports adoption of the proposed nondiscrimination rule and application of the rule to last-mile broadband Internet access providers.

1. *A General Nondiscrimination Standard Is Well-Established*

The comments support Google's view that proposed rule section 8.13 – requiring service providers to treat lawful content, applications, and services in a nondiscriminatory manner, subject to reasonable network management – fairly balances the interests of last-mile broadband providers and users and should be adopted.¹¹⁸ Although opponents of the proposed rule seek to portray “nondiscrimination” as a new or radical legal standard,¹¹⁹ it is neither. In fact,

¹¹⁴ See Comments of City of Philadelphia at 2; NASUCA at 1-2; NATOA at 2; New Jersey Division of Rate Counsel (“NJ Rate Counsel”) at 4.

¹¹⁵ See Comments of Akamai at 1; CCIA at 10; Information Technology Industry Council (“ITIC”) at 2; Sony at 1.

¹¹⁶ See, e.g., Comments of Open Internet Coalition at 47; Communications Workers of America at 13-14; Digital Education Coalition at 4; Open Media and Information Companies Initiative, *et al.* (“OMICI”) at 4; CDT at 1-2; Free Press at 11; National Hispanic Media Coalition at 5; Public Knowledge at 31; Distributed Computing Industry Association at 4; Intrado at 1; Red Hat at 2; Skype at 1.

¹¹⁷ See, e.g., Comments of Entertainment Software Association at 2; Open Internet Coalition at 82-83; Skype at 20-21; VON Coalition at 4; Akamai at 3.

¹¹⁸ See, e.g., Comments of Netflix at 5 (“The fact that network operators control the delivery pipes and generate significant revenue from content that travels over those pipes provides both the means and motive for discriminating against new ventures that might threaten revenue sources of the network operators.”).

¹¹⁹ See, e.g., Comments of Verizon at 66; AT&T at 105-09.

nondiscrimination is a well-settled and workable standard commonly utilized to address network providers' abilities and incentives to engage in anticompetitive practices¹²⁰ – which, as the record shows, is a fundamental, valid and far-reaching concern.¹²¹ In contrast, a “reasonable discrimination” standard, in combination with a reasonable network management exception, would leave the Commission, competitors, and consumers with no effective response to last-mile Internet access providers' discriminatory practices.¹²²

Indeed, it is notable that some broadband providers suggest that the “unjust and unreasonable” discrimination standard would provide them with leeway to implement discriminatory paid prioritization arrangements.¹²³ This should set off alarms that, under the more complex and relaxed standard, these providers plan to engage in discriminatory conduct and then, if necessary, “beg forgiveness” after the fact. For these reasons, the FCC should make clear that most forms of prioritizing Internet traffic for a fee from third parties – as well as blocking, impairing, or degrading other entities' packets – should be deemed illegal under any discrimination standard.

¹²⁰ See, e.g., 47 U.S.C. §§ 251(c)(2)(D), 252(d)(1)(A)(ii), 271(c)(2)(B), 222(c)(3), 224(f)(1), 275(b)(1), 260(a)(2).

¹²¹ See Comments of NASUCA at 17 (“It is safe to say that neither the Commission nor even the most knowledgeable consumer is aware of the full extent of discriminatory network conduct.”); Ad Hoc Telecommunications Users at 7-13; IFTA at 3, 13; ALA at 2; Open Internet Coalition at 28-29; Skype at 9-11; Sling Media at 4-10; Public Knowledge at 2; Akamai at 15-16; Sony at 5-6; NJ Rate Counsel at 7-8.

¹²² See Comments of Free Press at 79-82; Open Internet Coalition at 16-17.

¹²³ Comments of AT&T at 105 (“In today’s common-carrier world governed by Title II of the Communications Act, such discrimination is generally permissible because it is ‘reasonable’”); Comments of Verizon at 66 (nondiscrimination rule would prevent all “charges to application or content providers” whereas “unjust and unreasonable” discrimination rule would not).

2. *Third Party Paid Prioritization Is Discriminatory and Detrimental to the Positive Evolution of Broadband Networks and Services*

The record amply demonstrates that allowing blanket and unfettered third party paid prioritization will do much harm, and no demonstrable good, in the applications and content marketplace, ultimately redounding to the detriment of all stakeholders. As Red Hat points out, without open broadband rules, the current last-mile cable/telco duopoly has the “unfettered ability to charge similar content providers different prices for access.”¹²⁴ Further, as Skype shows, quality of service (“QoS”) and prioritization services should be driven by consumer requests for service with optional consumer-based charging, and not network-centric charges on content and applications:

Network-centric QoS models reflect the re-creation of implicit support mechanisms designed to create additional payments to terminating carriers. It is worth noting that the very parties that proffer pro-consumer justifications for these models on the Internet are precisely the same parties that argue for their elimination on the PSTN.¹²⁵

Even AT&T acknowledges that “to impose unilateral ‘termination charges’ for access to their end users” would violate the Commission’s *IPS* principle against “blocking” access to Internet content, a principle AT&T claims to fully support.¹²⁶ And yet, advances in broadband router

¹²⁴ Comments of Red Hat at 2.

¹²⁵ Comments of Skype at 18-19 and n.29.

¹²⁶ Comments of AT&T at 123-24. Globally, however, incumbents such as Telefonica have directly stated an intention unilaterally to charge content providers for terminating access. *See, e.g., Spain’s Telefonica Considers Charging Google*, ABCNews/Money (Feb. 8, 2010), available at <http://abcnews.go.com/Business/wireStory?id=9778220>. Of course, as Google previously has explained, assertions that Google somehow is not paying telecommunications carriers for network access are grossly mistaken. *See* Richard Whitt, *Response to Phone Companies’ “Google Bandwidth” Report*, Google Public Policy Blog, Dec. 8, 2008, available at <http://googlepublicpolicy.blogspot.com/2008/12/response-to-phone-companies-google.html>.

technology will make it even easier for AT&T and other last-mile providers to engage in a number of prioritization techniques.¹²⁷

Nor does the record contain any evidence to support the claim that last-mile providers' revenues generated as a result of unregulated access charges on content providers would be used to increase investment in last-mile broadband networks, or to lower consumer Internet access rates.¹²⁸ Significantly, broadband providers themselves have made no such commitments.¹²⁹ Similarly, Verizon speculates that its paid prioritization may help smaller content providers compete more effectively against larger ones that use CDNs.¹³⁰ The evidence, however, shows this is a "red herring," as CDNs already help thousands of small content providers in a vibrant market.¹³¹

In Google's initial comments, we set forth eleven reasons why third-party paid prioritization is problematic.¹³² Fundamentally, if last-mile broadband providers are permitted

¹²⁷ For example, Cisco recently announced CRS-3 routers with "[a]pplication awareness [that] permits service prioritization of any content from or to any device applied on a per-service basis, allowing the network to elevate the priority of voice over IP (VoIP) or video services that cannot sustain latency or elevate priority on a per-subscriber basis for fee-paid service enhanced performance." See "Cisco Video 2.0: The Experience Paradigm Shifts Again Changing the Face of Video," available at http://www.cisco.com/en/US/prod/collateral/routers/ps6342/prod_brochure0900aecd805801a7.pdf.

¹²⁸ At most, the incumbents merely speculate that the revenues generated might be used for network upgrades. See, e.g., Comments of AT&T, Exh. 3 at 13 ("limitations on charging for prioritization and enhancements *could* skew investments away from 'smart' functionalities. . .") (emphasis added).

¹²⁹ While AT&T claims some end users will end up subsidizing others unless it can charge terminating access fees to content providers, Comments of AT&T at 137-39, AT&T fails to explain why it simply cannot roll-out optional QoS services for end-users who want them or offer tiered pricing, with appropriate cost-causer pricing on the end user.

¹³⁰ Comments of Verizon at 37, 55.

¹³¹ In fact, the deployment of content and applications facilities has been a competition success story; in contrast to last-mile connections, content and applications providers of all sizes have many choices among competitive companies to deliver their products and services to end users. See generally *Evolving Internet*.

¹³² Comments of Google at 34-37, 64.

unilaterally to extract all of the economic and social value of a new software-based offering via discriminatory charges, it will discourage innovation at the edge, which drives the greatest economic and other benefits, because innovators will not be able to obtain appropriate value from their inventions. Commenters agree that, in particular, the terminating access monopoly problem is real, and increases broadband providers' abilities to impose excessive and discriminatory fees that harm the growth of the content and applications marketplace.¹³³

As Professor Economides notes, the terminating access monopoly problem that the Commission has encountered in telephone local exchange markets is present again in broadband access markets: "Similarly, in a world without open broadband rules, broadband Internet access providers can use their 'captive customers' to extract fees from distant network participants, such as content and applications providers."¹³⁴ The result this monopoly presents is significantly distortive:

The degree of competition for last mile broadband access is limited. . . . Broadband Internet access providers' significant market power gives them the ability to use captive customers to extract fees from content providers. This is exactly what broadband Internet access providers have proposed and why they oppose the proposed non-discrimination rule. Like LECs towards IXCs, last mile broadband providers would like to exercise their monopoly power not only towards their direct broadband customers but additionally towards other, third-party providers of Internet services, applications and content. Broadband Internet access providers have proposed to bypass existing markets for Internet transit and impose fees on content and applications providers that have no contractual relationship with them. This would create a significant market distortion and societal welfare loss.¹³⁵

¹³³ See, e.g., Comments of CCIA at 7-8.

¹³⁴ Economides at 10.

¹³⁵ *Id.* at 10. See also *id.* at 5 (describing consumers' broadband switching costs and relatively low broadband churn rates).

The record provides additional reasons why these practices should be prohibited under a simple nondiscrimination standard. Sony, for example, notes that discriminatory access charges would lead to several “negative consequences on end-users and content, application and service providers,” including:

[i] increasing the cost to deliver content, applications or services via the Internet may increase the cost of these services to end users, and may therefore limit demand not just for these services but for Internet access in general; [ii] [o]n networks that face capacity constraints, allowing access providers to favor certain traffic would necessarily limit the bandwidth available to non-favored content, applications and services; [iii] [a]llowing discriminatory pricing would also reduce incentives to maximize the efficient use of available bandwidth, and would discourage the development of technologies, like variable bit-rate encoding, that seek to enable the best possible end-user experience for the lowest possible cost to the network.¹³⁶

Likewise, the record demonstrates that non-profit content and application sources would suffer under these pricing schemes because these critical sources of Internet content have no means of paying for such costs or recouping them from users. As the American Library Association points out, “[i]f the Internet degrades into a ‘pay to play’ environment, these institutions [*i.e.*, libraries, museums and historical societies] will be seriously disadvantaged because they will almost certainly lack the ability to pay whatever the providers will charge.”¹³⁷ Moreover, “[i]f access providers prioritize traffic containing their own content or content from affiliated or fee-paying providers, unaffiliated providers will have their content relegated to an Internet slow lane. Distance learning, telemedicine applications, and other research activities could be compromised, along with untold numbers of future applications.”¹³⁸

¹³⁶ Comments of Sony at 5-6.

¹³⁷ Comments of ALA at 2.

¹³⁸ Comments of ARA at 3. *See also* Michelle Combs, Christian Coalition of America, Statement at the FCC Workshop on Speech and Diversity at 4 (Dec. 15, 2009) (Stating that organizations “should be able

It is also true that an arms race usually only benefits the arms merchants. If broadband providers are free to offer paid prioritization, one of two scenarios is likely: *either* (i) it will create the proverbial “dirt road” for those that cannot or do not pay the prioritization fees; *or* (ii) most or all content and applications providers will feel compelled to pay, resulting in no relative increase in speed and little or no improvement in network congestion or service quality for consumers. In either case, the only clear “winners” would be broadband providers. Even content and applications providers on the “fast lane” would be left with fewer economic resources and greater investment uncertainty, and consumers also would face unimproved service quality and diminished access to diverse content and applications.

Further, the very content providers that the incumbents claim would benefit most from “creative” paid prioritization arrangements – companies such as Netflix, Skype, Sony, Google, Sling Media, and the members of SIIA – in fact *oppose* legalizing such arrangements and support the proposed nondiscrimination rule.¹³⁹ These very successful content companies perceive their own best interests, and clearly understand that third-party paid prioritization would not improve the growth of or access to their services by consumers, but rather would result only in an additional terminating access revenue stream for broadband providers.

It is also notable that the incumbents have failed to address in this record the relevant regulatory status of the paid QoS and prioritization access services they seek to offer to content and applications providers. Such services essentially would offer transport and a higher level of

to continue to use the Internet to communicate with our members and with a worldwide audience without a phone or cable company snooping in on our communications and deciding whether to allow a particular communication to proceed, slow it down, block it, or offer to speed it up if the author pays extra to be on the ‘fast lane.’”).

¹³⁹ See Comments of Netflix at 4; Skype at 7; Google at 57; Sling Media at 1; Sony at 4-6; SIIA at 6-7.

transmission functionality. As such, they would be most readily classified as “telecommunications”¹⁴⁰ that is offered “for a fee.”¹⁴¹ If these services also were offered to all content and applications providers, then such services would meet the definition of a “telecommunications service,”¹⁴² and be regulated under the FCC’s existing rules as an access service offered by dominant carriers.¹⁴³ Of course, if these services were not offered to all content providers, then they raise the issue of invidious discrimination in the content marketplace. Indeed, for that reason, the FCC likely would have to require these broadband transmission services to be offered on a straightforward nondiscriminatory basis, especially because such services apparently would be provided to affiliated and favored content providers. The regulatory difficulties and disputes that the FCC would be forced to resolve, including the assessment of cost-based rates and other heavy governmental oversight, further auger in favor of the simple nondiscrimination rule that would prohibit such terminating fee schemes from taking root.

C. THERE IS GENERAL CONSENSUS THAT TRANSPARENCY IS IN THE PUBLIC INTEREST.

The record reflects agreement that consumers need a certain level of disclosure in order to make informed decisions about the broadband services they purchase. The critical objective of the transparency rule is for all users to know what they are paying for and what they are getting. Notably, AT&T’s consultants (Faulhaber and Farber) agree that consumers need

¹⁴⁰ 47 U.S.C. §153(43).

¹⁴¹ *Id.* at § 153(46).

¹⁴² *Id.*

¹⁴³ 47 C.F.R. Part 61, Subpart E – General Rules for Dominant Carriers.

information to make appropriate purchasing decisions,¹⁴⁴ while USTelecom acknowledges that clear consumer disclosure improves competition and enables consumers to make informed decisions and acquire services that best fit their needs.¹⁴⁵ This narrow focus on consumers, however, as urged by some broadband providers,¹⁴⁶ further demonstrates that a more fulsome broadband transparency rule is necessary.

Importantly, the audience for any transparency requirement must be all broadband *users*, and not just residential consumer end users. Numerous parties urge the FCC to ensure that the transparency rule makes relevant information available for a broad range of users, including businesses,¹⁴⁷ schools,¹⁴⁸ libraries,¹⁴⁹ and, critically, content, applications, and software providers.¹⁵⁰ While consumers have every right to know the features and limitations of the broadband services they purchase, the record shows that applications and content providers also must understand the limits of broadband provider services that will affect innovation and service functionality.¹⁵¹ By contrast, failure to provide information to content and application providers

¹⁴⁴ Comments of AT&T, Exh. 1 at 40 (“Let’s ensure that customers are fully informed so that they may make intelligent broadband market choices.”).

¹⁴⁵ Comments of USTelecom at 52. *See also, e.g.*, Comments of Verizon at 49 (“Transparent and meaningful disclosures to consumers enable them to make educated choices and thereby facilitate competition.”); Comcast at 44 (“[c]lear communication with our customers is an important part of a successful relationship”).

¹⁴⁶ *See, e.g.*, Comments of AT&T at 188; Qwest at 11; Verizon at 49-50; Comcast at 46.

¹⁴⁷ *See, e.g.*, Comments of SIIA at 8.

¹⁴⁸ *See, e.g.*, Comments of Digital Education Coalition at 13.

¹⁴⁹ *See, e.g.*, Comments of ALA at 3.

¹⁵⁰ *See* Comments of CCIA at 6; Sling Media at 2; DISH Network at 6; OMICI at 6. *See also* Comments of CDT at 31; Data Foundry at 10; Free Press at 112, 117.

¹⁵¹ *See* Comments of Google at 66-67; *NTIA NBP Letter* at 7 (“Developers of devices, services and applications need basic information about the way that broadband networks operate so that developers can ensure that their products will work effectively and efficiently on those networks. As importantly, developers need information about how broadband networks change to ensure compatibility over time.”).

would inhibit investment and lead to a decline in applications and services available on the Internet.¹⁵²

Withholding network information also will preclude applications from being designed to work properly on broadband infrastructure, causing consumer confusion and frustration. Disclosure must be sufficient to allow content and application providers to better understand the limits of last-mile services and to better inform all existing and potential content and application users of what to expect from the service.¹⁵³ Further, transparency of network service performance commitments, including the service's actual transmission and capacity rates, should be required.¹⁵⁴

Moreover, broadband providers should not have unfettered discretion to decide whether the type and amount of disclosure is sufficiently transparent.¹⁵⁵ Instead, the creation of industry best practices and standards, informed by the Federal Trade Commission's experience and by other interested parties, and adopted and enforced by the FCC, can greatly enhance

¹⁵² See Comments of Data Foundry at 10; CDT at 31.

¹⁵³ Examples of the type of transparency needed for content and application providers include information on a broadband Internet access service provider's switch from Internet Protocol version 4 (IPv4) to next-generation IPv6, which is the core of standards-based internetworking methods, and when a DOCSIS switch occurs, which enables high-speed data transfers on cable systems.

¹⁵⁴ See, e.g., Comments of CCIA at 33 (consumers should be able to identify "the advertised download/upload speeds from each provider" and "the amount of time the average user experiences speeds slower than the advertised download/upload speeds"); Netflix at 8 ("Network operators should be required to disclose relevant information regarding their broadband access service offerings, in particular the actual speeds and/or ranges of speeds that consumers can expect as well as network management practices that may slow the delivery of certain traffic, including any time-of-day restrictions."). See also Comments of DISH Network at 6-7, 9.

¹⁵⁵ See, e.g., Shane Greenstein, Kellogg School of Management, Northwestern University, Prepared Statement at FCC Hearing on Innovation, Investment, and the Open Internet, *Transaction Cost, Transparency, and Innovation for the Internet* (Jan. 13, 2009) ("Many participants in standards processes participate because they believe transparency has great importance in interdependent value chains. Other firms will not make long-term investments if they cannot understand at a fine level of detail how their software must interact with another firm's software or hardware.").

transparency.¹⁵⁶ In this context, self-regulation alone invites problems down the road, especially where, as here, broadband providers have had every opportunity to self-regulate for the past fifteen years and yet have failed to do so effectively.

Despite some parties' concerns,¹⁵⁷ disclosure under the proposed rule would not require detailed network architecture information that would open networks to threats from "hackers and terrorists." The focus, instead, should be on network outputs (*i.e.*, the impact on network traffic), not on network inputs (*i.e.*, the "black box"). While network security is a real concern, years of telecommunications network disclosures demonstrate that security concerns are not a legitimate basis to prevent disclosure of pertinent information regarding network operations, practices and characteristics.¹⁵⁸ Other than generalized claims,¹⁵⁹ the record fails to provide concrete evidence that disclosures would raise legitimate security concerns.

D. THE RULES PROPERLY ALLOW FOR REASONABLE NETWORK MANAGEMENT.

AT&T and other broadband providers plead for total flexibility in managing their networks in order to address congestion, threats to network security, and other engineering matters.¹⁶⁰ These providers are extravagant in expressing their concerns about how the proposed

¹⁵⁶ See, e.g., Comments of Level 3 at 13; NATOA at 7-8. Cf. Comments of Verizon at 49 (suggesting only development of best practices, industry self-regulatory principles); Comcast at 46 (same).

¹⁵⁷ See, e.g., Comments of Comcast at 47; Cox at 11; CTIA at 48.

¹⁵⁸ See, e.g., *Regulatory and Policy Problems Presented by the Interdependence of Computer and Communications Services and Facilities*, Report and Order, 104 F.C.C. 2d 958, ¶ 246 (1986) (subsequent history omitted) (requiring carriers to "disclose information about their networks to their enhanced services competitors").

¹⁵⁹ See, e.g., Comments of AT&T at 193-94; Sprint at 15-16.

¹⁶⁰ See, e.g., Comments of AT&T at 186; Qwest at 48-49; Cox at 19.

rules could limit their ability to deal with both routine and non-routine network issues.¹⁶¹ At the same time, however, they ignore the fact that the proposed reasonable network management exception generally provides the very flexibility they seek, and is far preferable to attempting to define in advance every practice that might be deemed reasonable.¹⁶²

It is, of course, indisputable that network management can be complicated, congestion always will be a fundamental management issue, and technology continuously evolves.¹⁶³ But, these circumstances can be addressed within the boundaries of the inherently flexible reasonable network management exception the Commission has proposed.¹⁶⁴ Notably, network providers that support the proposed exception demonstrate that networks can be designed to preserve Internet openness without harming broadband deployment goals,¹⁶⁵ and while maintaining the flexibility necessary for nondiscriminatory network management.¹⁶⁶

While flexibility is important, the exception also must be clear and narrowly tailored to address legitimate network congestion.¹⁶⁷ Otherwise, broadband providers will have an unfettered ability to engage in practices serving their own narrow interests – just as they have

¹⁶¹ See, e.g., Comments of Verizon at 9 (“Adopting any rules with respect to network management, even a rule that generally permits reasonable network management, would undermine the ability of providers to engage in practices needed to serve and protect consumers.”).

¹⁶² See Comments of Fiber-to-the-Home Council (“FTTH Council”) at 24-25.

¹⁶³ See, e.g., Comments of AT&T at 183-84.

¹⁶⁴ *Gill Decl.* at ¶ 43.

¹⁶⁵ See, e.g., Comments of COMPTTEL at 2; Covad at 6-7; WISPA at 3; Telecom Italia at 7.

¹⁶⁶ See, e.g., Comments of RNK at 4; XO at 16-17.

¹⁶⁷ At the same time, congestion may not be as severe as some claim. For example, Cablevision notes that it has “plenty of bandwidth available on its network.” *Cablevision to Phase Out In-Home DVRs for Remote Storage*, Comm. Daily, Feb. 26, 2010 (quoting COO Thomas Rutledge).

stated they will do.¹⁶⁸ The result will be widespread implementation of practices, in the name of “network management,” that give priority to preferred content, applications, and services, including those of network providers’ affiliates. A range of commenters in the record express this well-founded concern.¹⁶⁹

Given their control over last-mile access facilities, broadband providers must not be permitted to define what constitutes a reasonable network management practice. Instead, groups of industry experts, comprised of a broad range of Internet stakeholders (such as the Technical Advisory Groups (“TAGs”) proposed by Google and Verizon),¹⁷⁰ and/or expert engineering bodies, with FCC oversight and enforcement, should advise on permissible practices, which may evolve over time as changes occur in technology and the broadband marketplace.

¹⁶⁸ See, e.g., Comments of AT&T at 13 (asserting that any rules should allow broadband providers to act in any manner that would “otherwise further a legitimate interest of the network operator”).

¹⁶⁹ See Comments of National Association of Realtors at 1-2 (noting that the Internet has become an integral venue for home buying, and it is important that service providers be restricted from prioritizing content and engaging in anti-competitive behavior); WISPA at 7 (“Providers with market power. . . should not be permitted to use over-inclusive network management techniques to hinder competition. . . . WISPA members are concerned that unless management techniques are required to be narrowly tailored, the FCC would be facilitating anticompetitive abuses in the name of ‘reasonable network management’”); ARL at 2-4 (teaching, research, experiments, and innovation are driven by research libraries and higher education, and the open Internet is necessary to continue this long history of innovation); NASUCA at 11-12, 14-15 (broadband providers have an economic incentive to distort, block or delay transmissions; the largest problem is vertically-integrated ILECs that have incentives to degrade transmissions from competing services); IFTA at 5, 10, 13 (consolidation and exclusive partnerships among broadband providers and major studio content providers limits video programming competition; a nondiscrimination rule is needed to prevent broadband providers from using network management practices to relegate certain independent content or applications to “slow lanes” in favor of self-owned or affiliated content and applications); Free Press at 17-23 (discussing discriminatory “Pay-for-Play,” “Pay-for-Priority,” and “Vertical Prioritization” business models of last-mile broadband providers); NJ Rate Counsel at 7-8 (incumbent duopoly has significant market power and strong incentives toward anticompetitive conduct).

¹⁷⁰ See Comments of Google at 91; Google and Verizon Joint Submission on the Open Internet at 5, GN Dkt. 09-191 (filed Jan. 14, 2010) (“Google and Verizon Joint Submission”). Comcast similarly proposes guidance by outside experts. See Comments of Comcast at 50-58. Any such outside groups should be broadly inclusive and subject to FCC review, and not amount merely to blessing practices adopted by industry associations.

E. FURTHER INQUIRY INTO MANAGED SERVICES IS NEEDED.

The record reflects both some consensus that “managed services” should not be subject to the proposed broadband openness safeguards at this time,¹⁷¹ and that the Commission must develop a fuller record about the nature and impact of such services before deciding whether and how to apply the rules to them.¹⁷²

Given the lack of clarity in the record and the many questions raised surrounding the definition and scope of “managed services,” it would be premature for the Commission to adopt a separate regulatory category for such services at this time. Instead, the Commission should issue a *Notice of Inquiry* or *Further Notice of Proposed Rulemaking* to study the current state of the marketplace, address the potential need for a separate category of managed services, and determine what, if any, types of services would fall into such a category.¹⁷³ In the interim, however, such services should not receive a “free pass” around the Communications Act. Designating any particular offering as a “managed” or “specialized” service cannot cause it automatically to fall outside of the Commission’s oversight and authority.¹⁷⁴ The Commission therefore should state explicitly that IP-based “managed service” offerings are not exempt from

¹⁷¹ See, e.g., Comments of USTelecom at 54; Verizon at 77; American Cable Association (“ACA”) at 13; Comcast at 60-62; MetroPCS Communications, Inc. (“MetroPCS”) at 69; Sprint Nextel Corporation (“Sprint Nextel”) at 37; COMPTTEL at 6; Covad at 8; FTTH Council at 25; PAETEC at 30; SureWest Communications at 45; Cisco at 16; Ericsson Inc. (“Ericsson”) at 27; National Association of Manufacturers at 4; ALA at 4.

¹⁷² See, e.g., Comments of Akamai at 18; Ad Hoc Telecommunications Users at 28-30.

¹⁷³ See, e.g., Comments of Open Internet Coalition at 92; Ad Hoc Telecommunications Users at 29-30; Free Press at 111; Akamai at 18.

¹⁷⁴ Cf., Comments of AT&T, Exh. 1 at 27 (“The argument for regulation of any kind for managed services is also non-existent, and the NPRM makes no attempt to justify this regulation.”); Qwest at 24 (“Managed/specialized services are, by definition, unregulated and should remain so.”).

applicable Title II, III, and VI statutory obligations, pending resolution of a further proceeding addressing such services.

IV. THE RULES MUST EXTEND TO ALL LAST-MILE BROADBAND PROVIDERS BUT NOT FURTHER.

A. WIRELESS NETWORKS MUST BE OPEN, EVEN IF RULES ARE APPLIED MORE FLEXIBLY.

The national wireless network operators oppose application of the proposed rules to their broadband offerings.¹⁷⁵ These carriers generally cite the competitive nature of the mobile wireless marketplace¹⁷⁶ as well as various technical constraints that differentiate their network management practices from those of wireline broadband network operators.¹⁷⁷ These parties, however, fail to acknowledge some relevant facts. For example, while the number of mobile wireless subscribers is increasing, the number of service providers actually is contracting.¹⁷⁸ AT&T and Verizon collectively control an approximately 62 percent (and growing) share of the

¹⁷⁵ Comments of Verizon at 58-65; AT&T at 140-83 and Exh. 2 at 2; T-Mobile at 4-6. *See also* Comments of Sprint Nextel at 1, 15 (if the FCC determines rules are necessary, it could support certain rules).

¹⁷⁶ *See, e.g.*, Comments of AT&T, Exh. 1 at 28-29; Verizon at 12; MetroPCS at 20-24.

¹⁷⁷ *See, e.g.*, Comments of T-Mobile at 15-24.

¹⁷⁸ For example, in 2009 alone, Verizon Wireless acquired nearly 13 million wireless subscribers from Alltel Corporation, while AT&T acquired approximately 900,000 subscribers from Centennial Communications. *See Applications of Cellco Partnership d/b/a Verizon Wireless and Atlantis Holdings LLC, Memorandum Opinion and Order and Declaratory Ruling*, 23 FCC Rcd. 17444 (2008); *Applications of AT&T Inc. and Centennial Communications Corp., Memorandum Opinion and Order*, 24 FCC Rcd. 13915 (2009). When AT&T's and Verizon's acquisitions require divestiture of existing wireless properties, they frequently divest to one another. *See AT&T to Gobble Up Verizon/Alltel Divested Markets*, dslreports.com (May 8, 2009), available at <http://www.dslreports.com/shownews/ATT-To-Gobble-Up-VerizonAlltel-Divested-Markets-102350>. Smaller carriers will continue to merge or be absorbed by larger carriers. As Sprint's CEO recently noted, "consolidation in general would be healthy for the wireless industry." *See Sprint Slows Subscriber Losses, Plans to Step up Prepaid*, Comm. Daily (Feb. 11, 2010). There is speculation that Sprint may acquire MetroPCS, *see* Wireless Section, Comm. Daily, (Feb. 10, 2010), or that MetroPCS and Leap Wireless will combine, *see MetroPCS Interested in Combining with Leap, CFO Says*, Comm. Daily (Mar. 11, 2010).

national market,¹⁷⁹ while enjoying tremendous profits from their wireless operations.¹⁸⁰ Further, these two providers' wireless, video, voice, and data offerings are substantially vertically integrated with – and their motivations to discriminate are tied to – their affiliates' wireline networks.

More importantly, wireless broadband access providers do not acknowledge the wireless industry's record of dubious practices – a list that continues to grow.¹⁸¹ For example, the cable industry notes that “providers of wireless Internet access unabashedly engage in outright blocking.”¹⁸² Deep packet inspection “has been deployed far and wide” by various wireless last-mile network operators.¹⁸³ Further, the contractual terms imposed by major wireless carriers purport to prohibit the use of peer-to-peer applications, Web broadcasts, server or host applications, tethering, and the use of wireless as a substitute for wired broadband.¹⁸⁴ Nonetheless, wireless network operators' practices are not transparent, the government to date

¹⁷⁹ See *Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993; Annual Report and Analysis of Competitive Market Conditions With Respect to Commercial Mobile Services, Thirteenth Report*, 24 FCC Rcd. 6185, Table A-4 (2009). Verizon also controls approximately 55 percent of the CDMA market in the U.S., and AT&T controls approximately 70 percent of the GSM market in the U.S. Reply Comments of MetroPCS at 3, RM-11947 (Feb. 20, 2009).

¹⁸⁰ Verizon's wireless operating margin is 45 percent, see Press Release, Verizon, *Verizon Reports Strong Wireless Customer And Data Growth In 4Q; Delivers Higher Operating Cash Flows* (Jan. 26, 2010), available at <http://news.vzw.com/news/2010/01/pr2010-01-26.html>, and AT&T's is 24.7 percent, see Press Release, AT&T, *AT&T Reports Fourth-Quarter Earnings Growth with a 2.7 Million Net Gain in Wireless Subscribers, Continued Strong Growth in IP-Based Revenues, Record Full-Year Cash Flow* (Jan. 28, 2010), available at <http://www.att.com/gen/press-room?pid=4800&cdvn=news&newsarticleid=30429>. AT&T has stated that it “would expand wireless margins [in 2010] to the low 40 percent range from below 39 percent in the fourth quarter, and it set a long-term goal of margins around 45 percent. Verizon already produces margins in this range.” P. Thomasch & S. Carew, *AT&T Profit Rises 26 Percent, Plans More Spending*, Reuters (Jan. 28, 2010), available at <http://www.reuters.com/article/idUSN2810348120100128?type=marketsNews>.

¹⁸¹ See, e.g., Sling Media at 5-11 (citing, *inter alia*, rejection of SlingPlayer Mobile application).

¹⁸² Comments of NCTA at 46.

¹⁸³ Comments of Free Press at 145, 148-149.

¹⁸⁴ Comments of the New America Foundation, *et al.* (“New America”) at 2.

has declined to exercise its rightful oversight authority, and effective enforcement mechanisms to address abuses do not exist.

Wireless providers in particular fail to respond to the critical role that rules of the road, including the proposed nondiscrimination rule, would fulfill by acting as a check on their abilities and incentives to discriminate. Notwithstanding any technical differences between wireline and wireless networks that may justify different application of the reasonable network management exception on a case-by-case basis, the record is clear that all last-mile broadband network providers have common incentives to discriminate in the absence of an effective and enforceable rule protecting consumers and competitors.¹⁸⁵

Ultimately, the record contains no compelling rationale for excluding wireless broadband providers from the scope of the proposed rules. Instead, the record supports applying openness and transparency rules to all broadband networks, even if the reasonable network management exception is applied differently for wireless networks.¹⁸⁶ To the extent that wireless broadband service simply complements the service provided by its wireline affiliate, and offers no real

¹⁸⁵ *See, e.g.*, Comments of DISH Network at 3-6 (vertically integrated operators can harm the video distribution marketplace by prioritizing their own VOD services over those provided by DBS companies and degrade competitors' services); CDT at 7 (selling priority treatment to online content providers could result in broadband provider effectively steering its subscribers towards particular content, applications, or services by making them faster or more reliable. Broadband Internet access providers have a termination monopoly with respect to their subscribers, and an innovator seeking to offer new content, applications, or service to a consumer has no choice but to reach that consumer through its broadband provider); CCIA at 16 (noting increased risks due to fact that the two largest wireless carriers are affiliated with the largest ISPs); Sony at 5-6 (with multiple ways to discriminate, providers should not be allowed to dictate through network management practices the technologies employed to deliver the services).

¹⁸⁶ *See, e.g.*, Comments of NJ Rate Counsel at 16; Open Internet Coalition at 36; Clearwire at 3; CenturyLink at 22-23; Leap/Cricket at 6; Ad Hoc Telecommunications Users at 8-9; Free Press at 125-126; New America at 4. Google agrees that the Commission should not attempt to codify the differences between broadband networks; case-by-case application of the rules will take these differences into account. *See* Comments of Open Internet Coalition at 36-37.

intermodal competition,¹⁸⁷ the case for oversight of wireline providers is substantially buttressed. On the other hand, to the extent wireless service may function as a substitute for wireline service, the rules should be technology-neutral and the principle of regulatory parity should apply, just as wireless carriers themselves repeatedly have argued, and consistent with the FCC's traditional regulatory approach.¹⁸⁸ As NCTA correctly observes, beyond possible operational network management issues, "there is no basis for differentiating among specific broadband Internet access technologies – current or future – with respect to the applicability of any rules ultimately adopted."¹⁸⁹

B. THERE IS NO LAWFUL BASIS TO EXTEND THE RULES TO PROVIDERS OF CONTENT AND APPLICATIONS.

AT&T and a few others allege that there is a "blurring" between the various sectors in the Internet "ecosystem" such that any rules should extend beyond last-mile broadband providers.¹⁹⁰ Even if one plays along with this popular and increasingly-abused metaphor, it is beyond question that there are substantial differences within all ecosystems – and this one is no exception. Just as the natural ecosystem contains both flora and fauna, daisies and dinosaurs, in the "Internet ecosystem" content simply is not the same as conduit. These fundamental physical

¹⁸⁷ See, e.g., Comments of Free Press at 51-52 (citing data indicating that mobile wireless at this time remains a complement rather than a substitute). See also *National Broadband Plan* at 41 ("Wireless broadband may not be an effective substitute in the foreseeable future for consumers seeking high-speed connections at prices competitive with wireline offers.").

¹⁸⁸ See *Wireline Broadband Order* at ¶ 4. See also Comments of NCTA at 46 (it would be arbitrary and capricious to subject only wireline ISPs to such rules while exempting wireless access providers that have similar potential to affect accessibility of content and applications).

¹⁸⁹ Comments of NCTA at 46-47.

¹⁹⁰ See e.g., Comments of AT&T at 20; Verizon at 129; Time Warner Cable at 4, 74; Comcast at 30-33. Thus, for example, while AT&T describes "Access/Aggregation Networks" as one component of the Internet "ecosystem," it is clearly erroneous as a factual, technical and legal matter to equate EarthLink's ability to aggregate and deliver its customers' traffic with AT&T's fundamental position of control at the physical layer. See Comments of AT&T at 20.

and virtual distinctions, and the markets they have spawned, warrant decidedly different regulatory treatment. Further, the notion that the Internet somehow is naturally and inherently self-regulating, and thus needs no government oversight, also is misplaced. As Assistant Secretary of Commerce Strickling noted, “Going back to the ‘ecosystem’ metaphor, the Internet is not a natural park or wilderness area that should be left to nature.”¹⁹¹

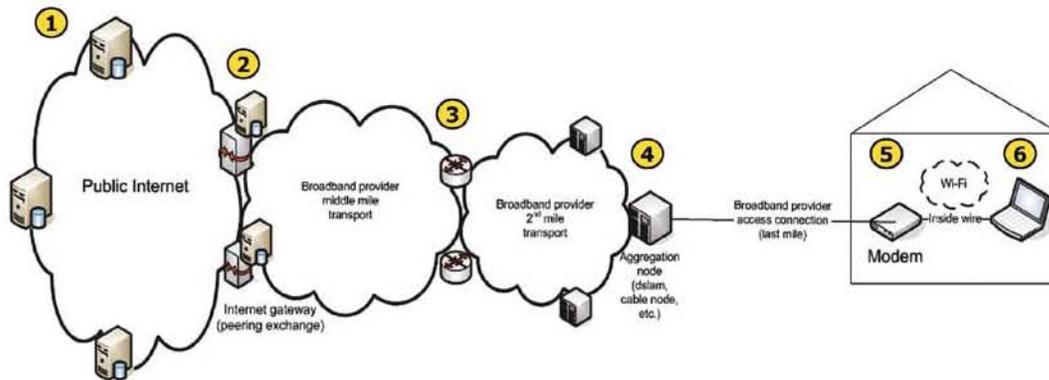
Here, the proposed rules are a logical outgrowth of key characteristics of the consumer broadband market: broadband as an essential infrastructure input, pronounced market failure, the broadband providers’ unique ability to carry, inspect, control, and apportion the capacity for all third party traffic riding over their networks, and the legacy government-derived massive subsidies and benefits broadband providers have enjoyed. Notably, all of these elements exist solely at the last-mile, and not with Internet content and applications providers. As noted in the joint submission of Google and Verizon, there is no sound reason to impose communications laws or regulations on the robust marketplace of Internet content, applications, and services.¹⁹²

Further, content, applications and other Internet companies are driving jobs creation and billions of dollars in investment, including in infrastructure, that in turn triggers further

¹⁹¹ See Lawrence E. Strickling, Prepared Remarks at The Media Institute on The Internet: Evolving Responsibility for Preserving a First Amendment Miracle (Feb. 24, 2010), *available at*, http://www.ntia.doc.gov/presentations/2010/MediaInstitute_02242010.html. See also Kim Hart, *Google Reminds Verizon of Net Neutrality Differences*, Hillicon Valley (The Hill’s Technology Blog), Feb. 25, 2010, *available at* <http://thehill.com/blogs/hillicon-valley/technology/83513-google-reminds-verizon-of-net-neutrality-differences> (quoting Richard Whitt, Google, Opening Remarks at Information Technology & Innovation Foundation Round-Table on Preserving the Open Internet: Is a Consensus Emerging? (Feb. 23, 2010)) (“[T]reating some parts of an ecosystem different from other parts is not a ‘recipe for disaster;’ it is just plain common sense.”).

¹⁹² Google and Verizon Joint Submission at 3.

innovation and investment.¹⁹³ This investment expands opportunity, enhances network efficiency, lowers costs and entry barriers, and increases competition.



DEFINITIONS

- 1 **Public Internet content:** public Internet content that is hosted by multiple service providers, content providers and other entities in a geographically diverse (worldwide) manner
- 2 **Internet gateway:** closest peering point between broadband provider and public Internet for a given consumer connection
- 3 **Link between 2nd mile and middle mile:** broadband provider managed interconnection between middle and last mile
- 4 **Aggregation node:** First aggregation point for broadband provider (e.g. DSLAM, cable node, satellite, etc.)
- 5 **Modem:** Customer premise equipment (CPE) typically managed by a broadband provider as the last connection point to the managed network (e.g. DSL modem, cable modem, satellite modem, optical networking terminal (ONT), etc.)
- 6 **Consumer device:** consumer device connected to modem through internal wire or Wi-Fi (home networking), including hardware and software used to access the Internet and process content (customer-managed)

Simplified View of Internet Network and Connections, *National Broadband Plan*, Exh. 4-I

Last-mile broadband providers' connections are still the *only* gateway users have to access everything else online; as a result of this unique place in the network, last-mile broadband providers can manipulate and interfere with users' Internet experience, including by determining whether consumers have access to certain content and applications at all. As Akamai and others note, beyond the last-mile, there is no "ability to block, degrade or impair content transmission over the Internet."¹⁹⁴ The deployment of infrastructure and services beyond the last-mile cannot negatively impact the user experience. Rather, evidence shows that competition and investment

¹⁹³ See Comments of the Open Internet Coalition at 2; Skype at 4.

¹⁹⁴ Comments of Akamai at 13. See also Comments of Open Internet Coalition at 86.

in these areas have improved service delivery and reliability.¹⁹⁵ Far from affording a “privilege,” these “edge” players enhance the efficiency, utility, and quality of the Internet for everyone, including last-mile broadband providers.

Some broadband providers also mistakenly (or deliberately) conflate caching one’s content with last-mile prioritization of all Internet traffic.¹⁹⁶ Yet, as discussed above, CDNs allow content and application providers to have their services provided from a location that is more proximate to the end-user. However, neither CDNs, nor content and applications providers themselves, have the ability to interfere with the routing of other entities’ traffic – they have no ability to make some packets go faster (which necessarily slows other packets) at the last-mile router, the critical area of control. In terms of ability to control end-user Internet traffic, there are sharp distinctions between last-mile broadband provider access and router control over all traffic on the one hand, and servers, CDNs, and aggregation facilities limited to one’s own traffic on the other. As Free Press notes, “unlike the CDN market where there is no upper limit on the amount of content that can be locally cached, as discussed above, the zero-sum game nature of packet switching does mean that there is an upper limit to the amount of content that can be given priority routing status.”¹⁹⁷ Likewise, servers, data centers and private fiber backbone networks do not possess the unique advantages or ability to control “Other People’s Packets” that last-mile broadband providers have.

¹⁹⁵ Comments of Akamai at 6.

¹⁹⁶ See, e.g., Comments of Verizon at 67.

¹⁹⁷ See Comments of Free Press at 20; see also *id.* at 19-22.

Critically, despite the heavy-handed posturing of AT&T and others,¹⁹⁸ the FCC does not have jurisdiction over Internet content and applications.¹⁹⁹ Where online activity by these providers becomes problematic, oversight authority can be found with the Federal Trade Commission or the Department of Justice. In *Computer II*, the Commission expressly rejected the position that all information services fell within its jurisdiction, noting that not “any service or activity in which communications is a component is within the subject matter jurisdiction of Section 2(a) of the Communications Act.”²⁰⁰ As one example, the FCC is not free to regulate stored data or the content of the stored information.²⁰¹ Moreover, not all information services are the same, making it inappropriate to equate, for example, last-mile broadband Internet access with search engines or an app store. This means that even if the FCC were to decide (wrongly) that it should attempt to regulate the range of Internet content, applications and information services, such regulation would need to be varied, creating a highly complex and ultimately unworkable regime.

Further, while some parties urge the FCC to require “search neutrality” and advocate FCC regulation beyond last-mile broadband networks,²⁰² these calls ignore the fundamental

¹⁹⁸ See Comments of AT&T at 196; Verizon at 36; Time Warner at 38; Comcast at 30; ACA at 7-8; Reply Comments of Foundem at 1, GN Dkt. 09-191 (filed Feb. 23, 2010).

¹⁹⁹ See Google and Verizon Joint Submission at 3; Comments of VON Coalition at 4. See also Comments of Entertainment Software Association at 3; Open Internet Coalition at 83; Skype at 20 (explaining that rules should not extend to Internet content and applications).

²⁰⁰ *Second Computer Inquiry*, 77 F.C.C. 2d 384, ¶¶ 121, 122 (1980) (*Computer II*), *aff'd*, *Computer and Communications Industry Ass’n v. FCC*, 693 F.2d 198 (D.C. Cir. 1982).

²⁰¹ See *GTE Serv. Corp. v. FCC*, 474 F.2d 724, 730-32 (2d Cir. 1973) (statutory silence does not preclude regulation of the interaction between common carriers and data processors, but does preclude regulation of data processors themselves).

²⁰² See, e.g., Comments of Comcast at 34-36; Reply Comments of Foundem at 1-9, GN Dkt. 09-191 (filed Feb. 23, 2010).

nature of Web search in a hugely-contestable market. In fact, it is hard to imagine what “neutral search” would even look like; “one man’s vulgarity is another’s lyric.”²⁰³ Google, for instance, uses complex mathematical algorithms that incorporate users’ queries to generate its search results.²⁰⁴ Other search engines choose to produce search results using a measure of human judgment.²⁰⁵ This is why a search of “President Obama” using different search engines produces different results. Which one is more “neutral” – a Wikipedia entry, the official White House site, a pro- or anti-Obama blog, or a news site? These practical and unsolvable complexities highlight the absurdity (and unconstitutionality) of government rules in this area, especially by the agency responsible for overseeing communications networks and services. In short, the FCC should not, and could not lawfully, decide the answer. Instead, thousands of different search engines should be free, as they are today, to choose different approaches, so that consumers with a click of their mouse ultimately may decide which search engine they prefer.

V. THE RECORD SHOWS THAT SWIFT, CLEAR ENFORCEMENT BEST SERVES THE PUBLIC INTEREST.

The proposed rules are silent on the precise means of enforcing the broadband openness rules. Nonetheless, there is broad consensus that the FCC should adjudicate claims of alleged violations of the rules on a case-by-case basis,²⁰⁶ and adopt specific procedures for adjudicating

²⁰³ *Cohen v. California*, 403 U.S. 15, 25 (1971).

²⁰⁴ See Amit Singal, *This Stuff Is Tough*, Google Public Policy Blog, Feb. 25, 2010, available at <http://googlepublicpolicy.blogspot.com/>.

²⁰⁵ See, e.g., <http://www.seekfind.org/> (a Christian-oriented web search engine “to provide God-honoring, biblically-based, and theologically-sound Christian search engine results in a highly accurate and well-organized format.”).

²⁰⁶ See Comments of TDS Telecommunications Corp. at 7; National Grange at 3; Ericsson at 24; ITIC at 5; Telecommunications Industry Association at 44; Art + Labs at 1; Netflix at 11; Skype at 1; SIIA at 9. Google and Verizon agree that there should be some mechanism for federal authorities to address bad actors on a case-by-case basis. Google and Verizon Joint Submission at 4.

complaints.²⁰⁷ As stated in our initial Comments, Google urges the Commission to adopt a streamlined complaint process for enforcing the rules that is subject to fixed deadlines. The record supports Google’s proposal that once a complainant demonstrates a *prima facie* showing of a rule violation, the burden of proof should shift to the broadband provider to provide its defenses.²⁰⁸

Proposals to require complainants to make a showing that a broadband provider’s practice is unreasonable should be rejected,²⁰⁹ as should suggestions that otherwise place the ultimate burden of proof on complainants.²¹⁰ Instead, the complainant should be required first to make a *prima facie* case that a rule has been violated, which then would shift the burden to the broadband provider to demonstrate why its practice is in fact lawful. Broadband providers possess and control the bulk of the evidence regarding their own network practices. Placing the ultimate burden of proof on complainants would make it nearly impossible for aggrieved parties successfully to adjudicate their claims against broadband providers. As a result, the FCC complaint procedures effectively would be eliminated as a mechanism to provide redress for consumers and small businesses, which lack the “inside” information on the practices at issue, and the financial resources necessary to mount a full-scale investigation of broadband network provider practices. As the Ad Hoc Telecommunications Users Committee states, “[t]he Commission should minimize the burdens associated with bringing complaints to ensure that

²⁰⁷ Comments of WISPA at 14; Ad Hoc Telecommunications Users at 27; Public Knowledge at 71.

²⁰⁸ See Comments of Google at 90; Ad Hoc Telecommunications Users at 27; Public Knowledge at 71 and Appendix B; Open Internet Coalition at 68-69; WISPA at 14.

²⁰⁹ Comments of NTCA at 4-5.

²¹⁰ See Comments of Charter Communications (“Charter”) at 19; Free State Foundation at 13.

individuals and small businesses that rely on their Internet access have a prompt hearing and resolution.”²¹¹

Further, while the Commission should clarify that aggrieved parties are permitted to pursue both informal and formal complaint mechanisms, it also should acknowledge that these enforcement mechanisms alone are not sufficiently tailored to properly redress complainants.²¹²

As Public Knowledge *et al.* state,

A goal of the enforcement mechanism must be to allow the average consumer to file complaints alleging violations of the open Internet rules. However, by contrast with the too-loose pleading standards of the informal complaint system, the formal complaint system described in Sections 1.720 through 1.736 is far too burdensome for the average consumer.²¹³

Netflix further notes that delays in adjudicating claims through the formal complaint process “could be the difference between an entrepreneur’s success and failure,”²¹⁴ and explains that the informal complaint process “provide[s] relatively little guidance as to the format and substance of such complaints, [and] the timeline for addressing them.”²¹⁵

Finally, the FCC should reject proposals that would prohibit the recovery of monetary damages by complainants²¹⁶ as well as proposals asking the FCC to impose costs, including legal fees, on complainants.²¹⁷ These suggestions are excessively punitive, inconsistent with American standards of civil litigation, and would discourage consumers and small businesses

²¹¹ See Comments of Ad Hoc Telecommunications Users at 26.

²¹² Cf. Comments of ACA at 19-20; Rural Cellular Association at 25-26.

²¹³ Comments of Public Knowledge at 70-72.

²¹⁴ Comments of Netflix at 10.

²¹⁵ *Id.* at 11.

²¹⁶ See Comments of WISPA at 15 (“The Commission should not assess damages, fines or forfeitures for violations of the network neutrality rules.”).

²¹⁷ See Comments of Charter at 19.

from presenting legitimate grievances to the FCC. The requirement that a complainant must establish a *prima facie* showing of a rule violation will ensure that the complaint system is not saddled with frivolous complaints.²¹⁸

CONCLUSION

All parties to this proceeding publicly recognize the enormous benefits the Internet has brought to the economic and social fabric of our society. The record underscores that Internet openness and freedom are not guaranteed. Without government oversight and some rules of the road, it cannot be taken as given that the next generation of the Internet's evolution will provide robust Internet-based services and "spillovers" and other benefits to all segments of our nation. Accordingly, the FCC should take immediate action to adopt the proposed broadband openness rules.

Respectfully submitted,



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April 26, 2010

²¹⁸ See Comments of Free Press at 70.