

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

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

COMMENTS OF THE OPEN INTERNET COALITION
January 14, 2010

The Open Internet Coalition (“OIC”) submits the following comments in response to the Federal Communications Commission’s (“Commission” or “FCC”) October 22, 2009 Notice of Proposed Rulemaking (“NPRM” or “Notice”), FCC No. 09-93, in the above-captioned proceedings.

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EXECUTIVE SUMMARY

The Internet supercharges and combines the power of free speech and free markets, producing the greatest engine of democratic deliberation and economic growth since the introduction of the moveable-type press. Yet the architectural characteristics behind the open Internet's design are being threatened, and the Internet's continued success is not inevitable. The Open Internet Coalition supports common-sense, baseline rules to ensure that the Internet remains a key engine of economic growth, innovation, and deliberation.

For most of the Internet's history, the Commission has protected users' right to choose the content and services they want over their Internet connections. Entrepreneurs, technologists, and venture capitalists have been able to develop new online products and services with the guarantee of neutral, nondiscriminatory delivery to users, which has fueled an unprecedented era of creativity, investment, and growth. Existing businesses have been able to leverage the power of the Internet to develop innovative product lines, reach new consumers across the globe, and create business models. And small businesses, a key creator of jobs and growth in the US economy sector, have used the Internet as a low-cost way to reach new markets and establish relationships with new customers, expanding their businesses in ways unattainable in the pre-Internet era.

The Internet also has been an incredibly important tool in promoting democracy and political discourse. It has empowered individuals of modest means to compete in the marketplace of ideas with the most well-funded institutions. One person with a video recorder and Internet connection can upload events in real-time that change the course of political and social events.

To preserve and protect the attributes of the Internet that create immense value for our economy and our society, the Open Internet Coalition supports the enactment of common sense, baseline rules that would ensure that the broadband Internet access providers that provide the on-ramps and off-ramps to the Internet do not discriminate against users' ability to send and receive lawful content, applications, and services.

The adoption of a simple, strong, nondiscrimination rule, subject to reasonable network management, strikes an appropriate balanced framework that will benefit all stakeholders in the Internet ecosystem.

We also affirm that such rules should apply only to lawful content, applications, devices, and services. Yet, the Coalition cautions the FCC to amend its proposed rule to ensure that the Commission does not put itself in the position of regulating content. Broadband Internet access providers will have the flexibility under the proposed non-discrimination rule to block unlawful content without a complicated and unnecessary content-regulation regime, as currently proposed in the definition of "Reasonable Network Management".

The adoption of rules is timely and urgent. New technologies which provide broadband Internet access providers with the ability to inspect the content of Internet communications and prioritize or degrade those communications depending on how much the content provider is willing to pay are reaching the marketplace. This presents the Commission with an important reason to act now, before retrograde changes become permanently set into the infrastructure of the Internet.

A system that allows for broadband Internet access providers to charge content providers for prioritized service would fundamentally damage the way the Internet has worked. It also would introduce tremendous economic and social costs to our nation, while likely decreasing the incentives for broadband Internet access providers to invest in their infrastructure.

Finally, the enforcement of the proposed rules should be accomplished through a new, simple *ex-poste* complaint process, rather than a more burdensome *ex-ante* regulatory structure. This process is premised on the Commission requiring greater transparency from the broadband Internet access providers.

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I. THE OPEN INTERNET COALITION

The Open Internet Coalition (“OIC”)¹ represents consumers, grassroots organizations, and technology and Internet companies working in pursuit of a shared goal: keeping the Internet fast, open and accessible to all Americans. We support a process that results in common sense baseline rules to ensure that the Internet remains a key engine of economic growth, innovation, speech, and global competitiveness. The Coalition spans the political spectrum, standing together to protect an open Internet.^{2 3}

¹ www.openinternetcoalition.com

² Our members include entities such as Amazon.com, American Civil Liberties Society, American Library Association, Association of Research Libraries, Computer & Communications Industry Association, Consumers Union, Data Foundry, DISH Network, Earthlink, eBay, EDUCAUSE, Entertainment Consumers Association, Evite, Free Press, Google, IAC, Internet2, Media Access Project, Mozilla, Netflix, New America Foundation, PayPal, Public Knowledge, Skype, Sony Electronics, Inc., Ticketmaster, TiVo, Twitter, US PIRG, and YouTube, among others. For a full list, see

II. AN OPEN INTERNET IS CRITICAL TO THE CONTINUED SUCCESS OF THE INTERNET IN DRIVING ECONOMIC GROWTH, EMPOWERING USERS, AND ADVANCING FIRST AMENDMENT VALUES

As the Commission has long recognized, the historically open architecture of the Internet, and its platform as a general purpose technology, uniquely and without precedent allow it to serve as an engine for economic growth. It facilitates electronic commerce, new technologies, and creates jobs. President Obama has emphasized that the Internet adds as much as \$2 trillion to our nation's Gross Domestic Product,⁴ and, according to IDC, global information technology employment will grow by almost 42 million jobs by the end of 2013 (from approximately 36 million today).⁵ Additionally, 88% of American adults

<http://www.openinternetcoalition.com/index.cfm?objectid=0016502C-F1F6-6035-B1264DD29499E9D0>,

³ This is a consensus document and DISH Network does not necessarily endorse the document in its entirety.

⁴ See Executive Office of the President, National Economic Council Office of Science and Technology Policy, *A Strategy for American Innovation: Driving Towards Sustainable Growth and Quality Jobs* at 9, September 2009, available at http://www.ostp.gov/galleries/press_release_files/SEPT%2020%20%20Innovation%20Whitepaper_FINAL.PDF

⁵ See *The Economic Impact of IT, Software, and the Microsoft Ecosystem* at 2, IDC White Paper, October 2007, available at www.idc.com

turned to the Internet to cope with the current economic recession, such as looking for jobs, housing options, government benefits, and bargain-hunting.⁶

An integral part of the Internet's seamless design is that it does not distinguish between Web sites of super-capitalized corporations and those of mom-and-pop small businesses. In only 15 years the commercial Internet has transformed the U.S. economy. A company that starts in a garage with little more than a computer and a basic Internet connection can be transformed into a worldwide economic phenomenon in only a few short years.⁷

⁶ See Exec. Ofc. of the President, Nat'l Econ. Council/OSTP, *A Strategy for American Innovation: Driving Towards Sustainable Growth and Quality Jobs*, Sept. 2009, at 5, available at <http://www.whitehouse.gov/administration/eop/nec/StrategyforAmericanInnovation>

⁷ This statement is almost a truism at this point, but *see also*, Julius Genachowski, "Preserving a Free and Open Internet: A Platform for Innovation, Opportunity, and Prosperity," Speech for the Brookings Institution, September 21, 2009.

It is easy to look at today's Internet giants – and the tremendous benefits they have supplied to our economy and our culture – and forget that many were small businesses just a few years ago, founded on little more than a good idea and a no-frills connection to the Internet. Marc Andreessen was a graduate student when he created Mosaic, which led to Netscape, the first commercially successful Web browser. Mark Zuckerberg was a college student in 2004 when he started Facebook, which just announced that it added its 300 millionth member. Pierre Omidyar originally launched eBay on his own personal website. Today more than 600,000 Americans earn part of their living by operating small businesses on eBay's auction platform, bringing jobs and opportunities to Danvers, Massachusetts, Durham, North Carolina and Lincoln, Nebraska, and many other communities in both the rural and urban America. This is the power of the Internet: distributed innovation and ubiquitous entrepreneurship, the potential for jobs and opportunity everywhere there is broadband.

The key reason for this is because the Internet's open architecture precludes entrenched incumbents from paying broadband Internet access providers to preserve market dominance over would-be competitors. Instead, the Internet's open architecture allows worldwide users to make decisions about what businesses and which voices succeed and fail in the Internet ecosystem.

A. The Internet Supports Small Businesses.

The Internet's innovate-without-permission architecture is vital because small businesses are the keys to the success of the U.S. economy. According to the U.S. Small Business Administration, small firms employ just over half of all private sector employees and pay 44 percent of total U.S. private payroll. Over the past 15 years, small businesses have generated roughly 65 percent of net new jobs.⁸

These small businesses increasingly rely on the open Internet to grow and to increase their sales. In 2002, the Small Business Administration noted that 57 percent of small businesses were using the Internet, with 61 percent of them having a website. Of those small businesses operating a website, 67 percent said

In observing that small businesses create 65% of new jobs, President Obama noted that "once in a while a small business becomes a big business - and changes the world," at 4. *See* Remarks by President Obama on Job Creation and Economic Growth at the Brookings Institute, December 8, 2009, available at <http://www.whitehouse.gov/the-press/-office/remarks-president-job-creation-and-economic-growth>

⁸ U.S. Small Business Administration, Office of Advocacy, Updated September 2009, available at <http://www.sba.gov/advo/stats/sbfaq.pdf>

they gained new customers, 56 percent increased total sales, and 56 percent attracted new types of customers.⁹

Comment [ME1]: Can we follow these 2002 stats with more recent stats to show a reliance trend on the Internet?

There are millions of examples of small businesses that have succeeded because of and due to the open platform of the Internet. The following are just a few examples.

1. Quick Ship Electronics.

Quick Ship Electronics, from Woodinville, Washington, was started three years ago as a part-time business by Jordan Insley, a 27 year-old entrepreneur.¹⁰ Within two years, Quick Ship Electronics, which sells on eBay, became Insley's full-time business, and he was successfully selling electronics from a three car garage.¹¹

Today, Insley has moved his business into a 3,000 square foot warehouse. Last year, he sold approximately 233,000 iPods and hired three full-time employees. He averages selling and shipping 200 packages of electronics goods a day, though he has sold as many as 2,512 goods in one day.¹² Insley represents only one of the hundreds of thousands of individuals and small businesses that

⁹ John Deighton and John Quelch, "Economic Value of the Advertising-Supported Internet Ecosystem," June 10, 2009, pg. 60, available at <http://www.iab.net/economicvalue>

¹⁰ See <http://stores.ebay.com/Quick-Ship-Electronics>

¹¹ See <http://www.youtube.com/watch?v=bjA9eTIC1qc>

¹² See John Donahoe, President & CEO, eBay, interview of Jordan Insley, <http://ebayinkblog.com/2009/09/09/video-john-donahoe-meets-with-quick-ship-electronics/>.

use the eBay marketplace to reach consumers across America and to export products around the world.

2. Twiddy & Company Realtors.

The Twiddy Family, of Twiddy & Company Realtors¹³ (“Twiddy”) in the Outer Banks of North Carolina, is a family-owned realty company that specializes in vacation rentals and real estate sales in Duck and Corolla in the Outer Banks of North Carolina. Initially, Twiddy relied solely on traditional marketing collateral, such as brochures and print ads to promote its business. Recently, the company has discovered a more cost-effective and successful way to bring an age-old industry into modern times. With Google AdWords, Twiddy immediately can change its advertisements and listings to reflect changes made to homes throughout the season, create more ads depending on available inventory, and remove ads promoting a specific property once it is booked.

This flexible system helps Twiddy to react to the ever-changing market and customize its site and advertising strategy to fit potential needs of its customers.

In addition, Twiddy implemented Google Analytics and used the data to revamp its Web site. Internet traffic reports are run regularly to determine how

¹³ See www.twiddy.com

to best update and tailor the site to meet customer demands. As a result, in the past year, the percentage of bookings made online jumped 50 percent and clicks on Twiddy's advertisements increased by 26 percent.

The Twiddy family provided the following quotation for this OIC submission:

For the majority of our 31-year history, our small family owned business had a hard time convincing new guests it was a good idea to vacation on the ocean. If anyone had heard of the Outer Banks of North Carolina, it was either windy enough to help the Wright Brothers fly the first plane or isolated enough to be a favorite haunt of Blackbeard the pirate. Since the introduction of the Internet, Twiddy & Company's supply of vacation homes has increased by 41 percent and the number of rented vacation weeks has grown by 69 percent. The number of employees at the company has grown 33 percent.

In a stunningly small amount of time, the Internet became the essential channel guests use to help plan and determine their vacations. It's also become the main focus of our company's marketing and advertising strategies. The backbone of this unprecedented growth is connectivity. *Now, more than ever, the Internet influences guests' behavior and spending decisions. It is the catalyst; without it, the market develops bottlenecks.*

(emphasis added)

3. Carolina Rustica.

Carolina Rustica, is a bricks-and-mortar and on-line retailer of hand-forged furniture, owned by Richard Sexton and based in Concord, North Carolina. In 2002, four years after the company began a Web site, Sexton opened a Google AdWords account, which resulted in increasing sales by 50 percent – a

growth trend that continues to this day. Approximately 30 percent of Sexton's traffic is driven by AdWords.

Sexton also uses Google Analytics to continually refine his marketing approaches, and he uses Google Checkout and eBay's PayPal to provide fast, safe convenient checkout options.

Mr. Sexton provided the following language for this submission:

My small company would probably not exist without the opportunities that exist on the Internet. We are a small, family-owned furniture and lighting company that represents high-end brand names, most of whom still manufacture here in the U.S. The relative exclusivity of our brands means that we have a limited local market with plenty of competition to go around. Through our various Web-based marketing efforts, however, we are able to sell our products to customers in every state of the country as well as Canada and overseas. Our business has achieved annualized growth of 25 percent per year since its founding in 2000. We have over 30,000 products online from 70 manufacturers. We are still a small business with eight (8) employees and a parrot for a mascot, but we have a truly global reach thanks to advertising platforms provided by Google and others.

4. The Relatively New Contribution from Social Networking and Social Media Sites.

We still only are seeing the beginning of how the open Internet is strengthening and transforming businesses. The relatively new phenomenon of social networking and social media platforms are providing even newer ways for users to discover small businesses that have a good idea or good product to sell.

a. Bonobos, Inc.

Bonobos, Inc.¹⁴ is a men's clothing company created in 2007 by two roommates while at Stanford Business School. Through innovative Facebook advertising that allows companies to specifically interact with their audience, Bonobos sold over 30,000 pairs of pants and garnered \$2 million in sales in less than a year after launching the company. Today, Bonobos has 2, 837 fans on its Facebook page.¹⁵ And last year, Bonobos was named one of America's Hottest Brands by Advertising Age.¹⁶

b. Playdom.

Playdom is the largest company for social gaming applications.¹⁷ It is the largest social game developer on MySpace and one of the largest developers on Facebook, with over 20 million users accessing Playdom through MySpace and Facebook each month. Its success allowed it to purchase game-developer Green Patch and iPhone developer Trippert Labs, which raised over \$43 million in

¹⁴ See www.bonobos.com

¹⁵ See <http://www.facebook.com/bonobos?ref=search&sid=589864494.1570396644..1> (last visited January 10, 2009)

¹⁶ Matt Kinsey, "Bonobos: an America's Hottest Brands Case Study," Advertising Age. Nov. 16, 2009.

¹⁷ See www.playdom.com

funding from venture capitalists and will allow the company to bring aboard an additional 15 full-time employees and hire 65 contractors.

c. fbFund.

The success of innovation on Facebook’s platform led Facebook to establish an annual fbFund¹⁸ – a \$10 million seed fund that gives users a voice in determining the top five application submissions, where each winner receives a \$250,000 prize.

B. The Open Internet’s Advancement of First Amendment Values.

Maintaining an open Internet is crucial to all users in safeguarding and further advancing First Amendment values. As the Supreme Court has noted, “it is no exaggeration to conclude that the content on the Internet is as diverse as human thought.”¹⁹ These values are at risk because of potentially discriminatory policies implemented by a handful of companies that provide access to and from the Internet. The Commission has an obligation to promote and protect such First Amendment values by adopting rules to preserve access to the Internet.²⁰

Even though broadband Internet access providers are now classified as “information service providers,” they in fact produce little information

¹⁸ See <http://fbFund.com>

¹⁹ *Reno v. ACLU*, 521 U.S. 844, 852 (1997) (quoting *ACLU v Reno*, 929 F. Supp. 824, 842 (E.D. Pa. 1996).

²⁰ In addition, as stated later in the OIC’s comments, the Commission needs to delete the content-specific provisions to the Reasonable Network Management rule to also protect First Amendment principles.

themselves save what they create on their own Web sites. Rather, the myriad users of the Internet provide information that is broadly and widely disseminated on the Internet. As such, the Internet is not only becoming the dominant source for big media companies to disseminate news, but the collaborative and open network architecture of the Internet allows hundreds of millions of users to share ideas and worldwide events instantaneously and in real time.

When opposition protests broke out in Iran following the presidential election, the Iranian government attempted to block cell phones and text messaging and deny access to many social networking sites to prevent the spread of speech and discontent.

Quickly, however, Twitter became the medium of choice with protesters tweeting minute-by-minute updates, allowing the world to know what was happening in Tehran and giving the protesters a voice when their government did not want them to be heard. Tweets became so vital to the coverage in Iran that Twitter delayed scheduled site maintenance in order for the political organizing in Iran to continue with minimal disruption. Iranians used all forms of new media to organize themselves and their message: Facebook was used to organize rallies, YouTube was used to distribute to videos of protests, and Google Maps was used to track where government tanks were located.²¹

²¹ See Brad Stone and Noam Cohen, "Social Networks Spread Iranian Defiance Online," *The New York Times*, June 16, 2009, pg. 11.

Indeed, when one surveys the brutal crackdown of civil liberties in Iran, it becomes clear how vital an open Internet is to maintaining the hallmarks of our democracy. Americans experience unparalleled freedoms and liberties, and the Internet is becoming the preferred method to exercise these guaranteed rights. Only on a neutral platform can consumers gain equal access to both the New York Times and the Wall Street Journal; can Tea Party or Greenpeace activists organize their members and rallies; or can users download the King James Bible or the Qur'an.

Consequently, the Commission's rules should protect and promote access to and from a content-neutral, viewpoint-neutral platform to help fulfill the mandate of the First Amendment. In this way, the government will protect and promote the public's right to access diverse and varied social, political, and artistic expression.

III. IT IS IMPORTANT TO ESTBALISH RULES TO PRESERVE AND PROTECT THE OPEN INTERNET NOW.

The Coalition notes that this proceeding builds upon an already robust docket, covering several years. Each of the Commission's actions regarding consideration of protecting the open Internet has created a surge of support from a wide array of stakeholders, including corporations, millions of users, civil rights groups, consumer advocates, and other stakeholders – leaving no doubt that it is time to set rules that protect the Internet from being controlled and

balkanized by the companies that provide the on-ramps necessary for users to access the world-wide network.

Since first requesting public input on Internet openness, the Commission has received more than 100,000 pages comprising around 40,000 filings from public and private parties.²² On the issue of applying openness rules to wireless networks alone, the Commission received nearly 5,000 filings comprising more than 27,000 pages.²³ With the addition of materials generated by the current Rulemaking, and with the addition of the docket generated by the Skype Petition (see below), the Coalition believes that this is the optimal time to adopt rules to preserve and protect the open Internet.

A. Request to Incorporate the Skype Petition in the Present Rulemaking.

Preserving openness beyond the principles that the Commission now proposes, Skype Communications (“Skype”) filed a petition in 2007 to request that the Commission apply the same openness principles that *Carterfone* set out for traditional wireline networks to wireless networks (“Skype Petition”).²⁴

²² In the Matter of Preserving the Open Internet, GN Docket No. 09-191; Broadband Industry Practices, WC Docket No. 07-52, Paragraph 2.

²³ In the Matter of Preserving the Open Internet, GN Docket No. 09-191; Broadband Industry Practices, WC Docket No. 07-52, Paragraph 39.

²⁴ See Petition of Skype Communications S.A.R.L. to Confirm a Consumer's Right to Use Internet Communications Software and Attach Devices to Wireless Networks, RM-11361 (filed Feb. 20, 2007).

The Open Internet Coalition formally requests that the Commission incorporate the Skype Petition docket into this rulemaking to further inform the Commission's consideration of wireless issues.

B. Deep Packet Inspection Technology Is Further Reason to Adopt Rules Now.

In his September 2009 speech at the Brookings Institution, Commission Chairman Julius Genachowski laid out several reasons why a "wait and see" approach to openness rules will no longer work. First, limits on competition between access providers are only intensifying as more consumers adopt broadband, narrowing those consumers' choices. Second, those Internet access providers currently rely on revenues from video and voice products, creating a dynamic that may reward blocking or slowing competing services. And third, Internet traffic is growing faster than current network management technologies may soon be able to handle, increasing the risk that openness will suffer as access providers struggle to keep up.²⁵

As discussed in detail later in these comments, the advancement and marketing of Deep Packet Inspection ("DPI"), makes blocking, delaying, or otherwise mistreating certain types of Internet traffic faster, cheaper, and easier for broadband access providers. Comcast's use of this technology as found in the

²⁵ Julius Genachowski, "Preserving a Free and Open Internet: A Platform for Innovation, Opportunity, and Prosperity," Speech for the Brookings Institution, September 21, 2009.

Commission's Comcast Order reveals that it is not science fiction but an imminent threat to Internet's openness.

C. The Recent Emergence of High Quality Online Video and Multi-Media IP-Enabled Services Raises the Stakes to Act.

The relatively recent emergence of high quality and high definition Internet video that potentially competes with offerings from broadband Internet Access providers certainly adds further reason for the Commission to act now, before these offerings are singled out for discrimination. Online video providers such as Amazon.com, Netflix, Blockbuster.com and others provide high quality video content that competes with traditional video offerings from the network operators.

In addition, at the recently-held Consumer Electronics Show, two television manufacturers announced that they will embed Skype technology in televisions with Internet connections, allowing users with Web cameras and microphones to have consumer video conferences. These and other IP-enabled technologies, such as Internet widgets available through television sets, will increasingly pose a threat to broadband Internet access providers. As this market emerges, the time to enact rules could not be more appropriate.

IV. CODIFYING A PRINCIPLE OF NON-DISCRIMINATION

The Open Internet Coalition supports a strict non-discrimination rule, subject to reasonable network management. The Coalition supports the

proposed nondiscrimination rule in Section 8.13 of the Draft Rules for Proposed Input.²⁶

We agree with the interpretation of the definition in Paragraph 104, which states —

[W]e propose a general rule prohibiting a broadband Internet access service provider from discrimination against, or in favor of, any content, application, or service, subject to reasonable network management.²⁷

In Paragraph 106, the Coalition views the language that states that the term “nondiscriminatory” means that “a broadband Internet access service provider may not charge a content, application, or service provider for enhanced or prioritized access to the subscribers of the broadband Internet access service provider” to be just one example of the application of the proposed nondiscrimination rule, rather than the an exclusive interpretation of the rule. The Coalition agrees with the proposed scope of the application of the nondiscrimination rule as described in Paragraph 107. The Open Internet Coalition strongly opposes the weaker “unjust or unreasonable discrimination” standard as a substitute for the one proposed. The Internet grew up under a *de*

²⁶ *In the Matter of Preserving the Open Internet*, GN Docket No. 09-191 (Notice); *Broadband Industry Practices*, WC Docket No. 07-52, Appendix A.

²⁷ *NPRM* at Paragraph 104.

facto nondiscrimination standard. That standard worked well for 40 years and is the reason the Internet has flourished.²⁸

The Internet grew outside of carrier control. Indeed, it was initially conceived and built as a government creation, giving credence to policymakers' concerns that technological evolutions at the physical layer could alter the manner of packet delivery. The stricter nondiscrimination standard should apply to preserve the unique characteristics of the Internet described by our Coalition and numerous parties in this and various other dockets over the years.

That said, the Coalition does not want to tie broadband Internet access providers' hands from managing their traffic in certain, legitimate situations— which is why we support a flexible reasonable network management standard as described later in this submission.²⁹

V. COSTS AND BENEFITS OF A NON-DISCRIMINATION RULE.

A. Benefits of an Open Internet.

²⁸ Of course, the Commission has in the past enforced a “nondiscrimination” rather than “unjust or unreasonable discrimination” standard. The 1996 Act, for example, required the Commission to apply a strict “nondiscrimination” standard. *See, e.g.*, 47 U.S.C. § 251(c) (applying a nondiscrimination standard to RBOCs for their unbundled network elements); 47 U.S.C. § 252 (d) (nondiscriminatory pricing); 47 U.S.C. § 272 (safeguards for affiliated and unaffiliated entities).

²⁹ *See* Section VIII, *infra*.

The benefits of an open Internet are self-evident.³⁰ The commercial Internet literally has transformed how users and businesses interact with each

³⁰ In discussing the costs and benefits of a non-discrimination rule, the Coalition does not spend much time discussing whether the Internet is a two-sided market or a multi-sided market. Our arguments apply whether one believes the Internet is either. Note, however, that Professor Economides makes a compelling argument that the Internet is not a two-sided market, but rather a multi-sided market – in fact it is a “billion-sided” network because the Internet consists of over a billion devices (nodes) connected through links and routers. However, even if the Internet were a two-sided market, Economides argues, there is no easy distinction between the producers and consumers. Many nodes are both consumers and producers, which stands in sharp contrast with other two-sided networks, where the roles are strictly-defined. Also, even if the Internet is viewed as a two-sided market, Economides argues that there is no immediate implication that a broadband provider should charge both sides. He says:

For example, in payment systems, American Express has no-fee cards that give 2% back to users on purchases while American Express collects a 3% fee from merchants. Even though it is able to charge both sides of the market, American Express chooses to charge one side and subsidize the other. Thus, the private incentives in some two-sided market networks do not necessarily imply positive charges on both sides of the market.

See Nicholas Economides, *Why Imposing New Tolls on Third-Party Content and Application Threatens Innovation and Will Not Improve Broadband Providers' Investment* at 12, January 2010 (“Economides”).

Also, note Wu and Lee’s argument that a *de facto* ban on termination fees may be interpreted as a policy that provides a subsidy to content creation and provision and that this subsidy is one of the forces generating enormous innovation in services, information, and technology. They further cite Lessig and McChesney’s statistic that “more than 60 percent of Web content is created by regular people, not corporations” and over 100 million blogs have so far been documented. They note that providing subsidies for the production of creative works and innovation is a typical goal of many government regulatory and policy initiatives, including the copyright and patent laws and institutions such as the National Institutes of Health or National Endowment of the Arts. Wu and Lee, *Subsidizing Creativity through Network Design: Zero-Pricing and Net Neutrality*.

other and has facilitated an explosion in innovation and speech. There is ample evidence in the relevant dockets before the Commission on these points.³¹ We further note, however, that the benefits of an open and neutral last-mile are supported by economic analyses, some of which we will summarize in the section.

Historically, the open Internet operates where broadband Internet access providers provide their users with access to and from the Internet, and they route such traffic today in a non-discriminatory manner. The broadband Internet access providers do not “reach across” the myriad of interconnections in the Internet to charge the originating user (*i.e.*, content or application provider) to terminate the traffic to the broadband Internet access provider’s end-user.

Below we will examine whether there is an economic justification to establish rules that would preclude the broadband Internet access provider from charging the originating user to deliver or prioritize content to the broadband Internet access provider’s end user.

³¹ See, e.g., Letter from 28 Internet and technology leaders to Chairman Genachowski, October 19, 2009, Appendix A; Letter from 30 leading venture capitalists to Chairman Genachowski, October 21, 2009, Appendix B; Testimony of Barbara van Schewick at the Federal Communications Commission’s Second Public En Bank Hearing on Broadband Network Management Practices at Stanford University, Stanford, CA (April 17, 2008); Testimony of Vinton G. Cerf Before the Senate Committee on Commerce, Science, and Transportation (February 7, 2006). In fact, the record before the FCC on the open architecture has had a positive effect on innovation, technology, and economic growth is so voluminous that it cannot be summarized here.

1. A Non-Discrimination Rule Preserves Important Spillover Effects.

In arguing that regulatory intervention is necessary, Professor Christiaan Hogendorn argues that private decisions of broadband Internet access providers regarding the costs and benefits of potential charges do not take into account the *spillover* benefits that do not accrue to the broadband Internet access providers – and consequently such decisions are not optimal from society’s point of view.³²

Hogendorn argues, among other things, that the broadband Internet access provider might choose to charge content or application providers for preferred services, but the broadband Internet access provider would make such decisions based on what it can privately appropriate from a content provider’s current (static) revenue. But such a framework from an economic standpoint only can be justified if the private valuations of the broadband Internet access provider are consistent with dynamic, public values – *i.e.*, that the valuation takes into account future (dynamic) revenue and would have to include any public value beyond the pure private revenue of the content provider.³³

Hogendorn provides three reasons why there is a divergence. Here we summarize each of Hogendorn’s three reasons for the divergence between the

³² Christian Hogendorn, *Spillovers and Network Neutrality*, January 2010. (“Hogendorn”).

³³ *Id.* at 1-2.

broadband Internet access providers' private valuates and the dynamic, public valuation.

a. The Internet Generates Tremendous Spillovers.

Because the Internet is used in a huge number of different ways through the economy, its range of uses is so wide that it is difficult to capture all of the benefits. In this regard, the Internet spillovers are much different than those from special purpose facilities like a swimming pool. In the case of a swimming pool, users directly appropriate almost all of the benefits by personally enjoying swimming. The owner of the pool is able to capture such benefit by directly charging swimmers for their use. So for example, Hogendorn cites as an example a new, efficient voice communication application, which someone decides to use for long distance learning. The business that created the tool may receive a benefit in the form of monetary compensation, and the consumers receive a benefit from using the technology. In addition, however, there is a benefit to society as a whole from a more edified population. These infrastructure effects "do not necessarily increase users' willingness to pay for access to the infrastructure and cannot be appropriated by the network owner through its pricing...."³⁴

The broadband Internet access provider, even though it charges its user a subscription fee to access the Internet, cannot capture the full value of

³⁴ *Id.* at 8, quoting *Network Neutrality and the Economics of an Information Superhighway: A Reply to Professor Yoo* (Frischmann and van Schewick 2007).

consumers' use of this communication tool – neither the full value of consumers' use of the tool, nor the spillovers that come from consumers putting their Internet access to productive uses and communicating or transacting with someone else.³⁵ Since a broadband Internet access provider cannot appropriate all of the Internet's spillover benefits, so it may decide to prioritize a certain application for a financial benefit without regard to the larger surplus lost as a result of decreased network effects.

b. The Internet Exhibits “Network Effects.”

The Internet's value as a whole increases as the number of users increases. This is also true of the applications on the Internet.

i. Direct Network Effects.

Consumers get value directly from communicating with each other. The telephone is an early example of this. Today, a myriad of applications like Facebook, Twitter, Digg, Skype, and countless others allow users to share directly comments, news stories, profiles, and pictures with each other. The larger the network, the bigger the effects. And when a new user joins the network, all of the other users benefit.

The reverse of a network effect can be called a nonuser negative network effect, so when a user either leaves, does not join, or cannot join a network, there

³⁵ *Id.* at 6 (Hogendorn also quotes Frischmann and Lemley on this point: “If there is consumer surplus in the second transaction – and there always is – that consumer surplus is external to the original transaction because neither the original buyer nor the original seller can capture it.” *Spillovers* (Frischmann and Lemley 2006).

is a loss to a greater community, which if the user had remained, would otherwise have been a positive network effect.

So, if a broadband Internet access provider charges users to pay extra for a voice application like Skype (through direct charges to the users or indirectly by charging Skype to reach the access provider's users), some users will feel that the benefits of joining are insufficient to justify the increased fee. This does not result in only a loss for that user alone. All of the other Skype users will receive less value. This is also true if a network management regime degrades an application in such a way that users within a broadband Internet access provider's network abandon the application, not only will those users suffer but so too will all other users on other access providers' networks.

ii. Indirect Network Effects.

Indirect network effects also value the system more as the total number of users rises, but through a different means. Many of the applications on the Internet are platforms themselves with their own user and content provider communities. For example, the more users of Facebook, the more incentive for developers to create new Facebook applications.

Each user creates a spillover effect beyond his or her own benefit from joining the system and using various products. If a user is prevented or dissuaded from being part of the system due to discrimination against an

application “the effect spills over into less new product development, hurting both the business of the developers and the value of other users.”³⁶

iii. Applicability of Network Effects to Network Neutrality

Hogendorn argues that if broadband Internet access providers were to prioritize service for certain applications, there could be a reduction in both direct and indirect network effects. The question is whether the broadband Internet access provider has an incentive that does not align with social incentives. Hogendorn argues two reasons why this might happen.

First, a broadband Internet access provider cannot appropriate all of the GPTs’ benefits, so it may decide to prioritize a certain application for a financial benefit without regard to the larger surplus lost as a result of decreased network effects.

Second, Hogendorn points to a wide array of literature suggesting that competing platforms will not privately choose to be compatible with one another as much as socially optimal. And, so there is no reason to think that prioritization that leads to the balkanization of the Internet through different treatment of applications and content among different broadband Internet access will be a concern to such access providers.³⁷

³⁶ *Id.* at 11.

³⁷ *Id.* at 9.

iv. Estimates of Network Effects.

There is no known literature estimating the total value of network effects from the Internet. But it is clear that the Internet's network effects are huge.

Hogendorn points out, however, that consumers value network effects considerably. He cites papers that generally show that consumers value a 10 percent increase in the installed base of compatible users of a network and equate such increase to a 5 percent decrease in the price of a network good. He extrapolates, then, that if a change such as broadband Internet access provider discrimination reduced the compatible installed base by say 30 percent, the consumer would be harmed the same as if the networked good (*e.g.*, a social networking site) had raised its price by 15 percent.³⁸

c. Innovation.

Perhaps, the most important source of spillovers from the Internet is innovation. The Internet is used throughout our economy to increase efficiency and productivity in almost every conceivable industry. The penetration of the Internet into all sectors of the economy has taken some time. Electricity also took time to fully integrate into the economy, but once it did it changed things from factor floor layouts to the hours of shopping and working.³⁹

³⁸ *Id.* at 9.

³⁹ *Id.* at 10.

The Internet serves as a platform for innovations, many of which are innovations that build upon other innovations. Indeed, Marc Andreessen's first browser was an innovation on the Internet that helped launch countless Web sites, applications, and programs. Today, people use Google Maps to create "mash-ups" that combine various data. Developers have created applications that rely on platforms like Facebook and Twitter.

Hogendorn also identifies a second form of innovation that is related to the first but has more to do with users and businesses that make decisions about whether to incorporate Internet applications into their lives or businesses. When a business decides to adopt an Internet application to help its efficiency (e.g., an online travel expense voucher system), it faces several risks. There are risks relating to the expense of the product, the benefits of the product, and also the ongoing value of the product in relation to other products. Discrimination by broadband Internet access providers would make it less likely that businesses will adopt an application because of uncertainty as to whether the application will work for all users or whether it might be degraded by a broadband Internet access provider in the future.⁴⁰

An example of this might include an application provider. Take for example an application is called Great Movies Now, which distributes high quality, licensed video programming. This application provider might seek licenses from motion picture companies to distribute their movies using Great

⁴⁰ *Id.* at 11.

Movies Now. Such a deal might involve a shared revenue system, some engineering resources, and potential commercial impact depending on whether consumers believe that Great Movies Now is a good service. The movie companies face these costs as they consider whether to adopt the technology as a means of distributing their movies. The threat of a discriminatory Internet that degrades or prevents Great Movies Now from working efficiently on a broadband Internet access provider's network makes it less likely that the movie companies will adopt the new technology.

B. Costs of a Non-Neutral Last Mile.

1. A Neutral Last Mile Properly Takes Into Account the Design and Workings of the Internet Ecosystem.

Professor Economides points out that although some broadband Internet access providers have called content and application providers "free riders," that is incorrect and misguided. In the Internet ecosystem, each user (no matter if the user is a college student or a large content provider like YouTube) pays a broadband Internet access provider to provide and receive content from the Internet. So, a residential end-user will pay a broadband Internet access provider to access the Internet to reach a content provider, and that content provider will pay for its own connectivity in order to have its services delivered across the Internet.

But in addition, and importantly, the broadband Internet access providers at each end will pay an Internet Backbone Provider to transit Internet traffic

across the Internet. The Internet Backbone Providers may pay or “peer” with other Internet Backbone Providers to transit such traffic. So, while residential end-users and content providers each pay a broadband Internet access provider for connectivity, neither need to pay other broadband Internet access providers or Internet Backbone Providers in order to reach each other. This is a relatively efficient system, and the benefit is that each relationship at the interconnection points of transit is bilateral and subject to their own economic dynamics.

Professor Economides states:

[It] is truly ironic that some broadband providers claim to be promoters of markets. In fact new tolls would allow broadband providers to bypass a well-functioning market and impose arbitrary contracts. These sorts of fees would circumvent the existing Internet transport market and negate the efficiency all agree it provides.⁴¹

2. Prioritization Distorts the Marketplace and Raises Barriers for New Entrants.

If a broadband Internet access provider can charge to prioritize a content or application provider’s traffic, the broadband Internet access provider can effectively select the “winner” in the marketplace by choosing (i) either a firm that can afford to pay for prioritization or (ii) picking a provider that poses less of a competitive threat to the broadband Internet access provider. Because of network effects, any “winner” can achieve a “lock-in” that enables it to preserve dominance for a long time. This has the obvious potential of creating a

⁴¹ Economides at 4.

disincentive for innovators to challenge such “winner” based on the development of new and better technologies.⁴²

3. Termination Fees and Third-Party Prioritization Create a “Prisoner’s Dilemma” Where Consumers and Application Providers Are Worse Off.

Professor Economides posits a hypothetical where a broadband Internet access provider offers prioritization guaranteeing content from a video provider arrives a few seconds faster in the priority lane than video content in the standard lane. This would be done by slowing down the standard lane by a few seconds. Given the prospect of losing almost all of their customers if they are on the slow lane, every video content company with the economic means will pay to be on the fast lane.

The result would be a “prisoner’s dilemma” where every firm that can pay would arrive at the same speed as before and competition will remain the same among those video content providers – only their costs will increase. Those that cannot afford to do so will go out of business. Consumers will lose because of less competition.⁴³

4. Prioritization Will Decrease Investment by Content and Application Providers.

Content creators often do not realize full compensation for the “free” value they create, placing the continued production of that content in jeopardy.

⁴² Economides at 5.

⁴³ Economides at 6.

In some cases, the content provider can make up some of the value from advertising, subscriptions, or through donations. Allowing a broadband Internet access provider to charge a termination fee to content providers (many of which already are under-compensated) to reach users will further depress content production and decrease the overall value of the Internet.

C. Network Neutrality Rules Will Not Have a Negative Impact on the Capital Expenditures of the Internet Broadband Internet Access Providers to Invest in their Networks.

Some broadband Internet access providers have argued that a non-discrimination rule will preclude potential profits that would be used to invest in their networks in order to add capacity to congested networks or to build out to underserved areas. There is no evidence to support such assumptions; indeed what evidence there is points the other way.

1. There Is No Guarantee That Increased Profits Would Result in Increased Capital Expenditures.

Broadband Internet access providers are profit-maximizing firms. Unless, the Commission seeks to regulate how such providers use their profits, there is no guarantee that any profits from prioritizing traffic on their networks would be used to finance capital expenditures. Such profits simply may be returned to shareholders.

In addition, because broadband Internet access providers enjoy significant market power, additional profits from prioritization will result from their market

power and will not be rewards for capital expenditures or differentiations because of added capacity.

2. Prioritization May in Fact Reduce Incentives to Invest in Infrastructure.

If broadband Internet access providers can charge for prioritization over their last mile network, they will actually have incentives to reduce investments in their networks. Network congestion could become a boon for broadband providers. By investing less in capacity increases, broadband Internet access providers could artificially drive up the value of their own prioritization services, allowing them to charge content providers higher prices.

3. Charging Content Producers for Prioritization as a Means of Creating Capital for Network Investment Is Inefficient.

If there is a need for additional investment because of demand for priority delivery by some users, economic theory states that in order to align market incentives properly, it is those end users who want prioritization that should pay; all others should not. Broadband Internet access providers easily can accomplish this by charging different prices to different end users based on their desired speed or service. Charging content producers is inefficient because such producers are at an informational disadvantage in knowing which customers desire a higher speed of service.

4. The Internet Ecosystem's Current Market Structure Provides a Means for a Broadband Internet Access Provider to Charge Additional Fees for Infrastructure Investment Purposes.

All Internet transit providers, including broadband Internet access providers, charge "transit" fees for access to their networks and pay "transit" fees to access the rest of the Internet. This provides a market where each transit provider can negotiate fees that will account for revenue needed for investment in its network.

5. Empirical Data Shows that Non-Discrimination Rules Have No Impact on Network Investment.

Recent history suggests that nondiscrimination requirements will have little or no effect on broadband provider's investment choices.⁴⁴ During the two years that AT&T was required to operate under non-discrimination rules as a condition of its BellSouth acquisition, AT&T increased its investment in new equipment well above its rate of depreciation.⁴⁵ The prediction that network neutrality rules depress investment rates does not bear out. Many factors affect the returns on investment that drive broadband Internet access providers to

⁴⁴ It should be noted that currently, United States broadband Internet access providers as a whole are allowing their network equipment to depreciate in value at a faster rate than they are investing in new equipment, S. Derek Turner, "Finding the Bottom Line: The Truth About Network Neutrality & Investment," October 2009, pg. 8. Available at http://www.freepress.net/files/Finding_the_Bottom_Line_The_Truth_About_NN_and_Investment_0.pdf These companies maintain lower relative investment level but higher profit margins than the other companies that make up the Dow Jones Industrial Average (Turner at 9).

⁴⁵ *Id.* at 9.

increase or decrease their investment in their networks, from demand expectations to interest rates: openness regulation is simply not one of those factors.⁴⁶ In addition, capital investment in telecommunications services was greatest during the regulatory period under the Telecommunications Act of 1996 and then fell after deregulation under the Act.⁴⁷ The connection between allowing price discrimination and network investment is too weak to justify harming the Internet's capacity to generate information and innovation.

6. Discrimination Diverts Money Away from Network Investment

Charging content providers for access to consumers creates a new cost for broadband Internet access providers, as they must monitor and account for the traffic over their network. This would divert resources away from investments in network upgrades and toward systems necessary to implement a price discrimination regime.⁴⁸

D. Internet Users, Including Content and Applications Providers, Design Products to Work on the Open, Best-Efforts Internet and Are Not in Need of a Broadband Internet Access Provider's Charging for Quality of Service.

The Open Internet Coalition knows of no Internet application, content, or service that is incapable of working on an open, best efforts Internet. Indeed, 28

⁴⁶ *Id.* at 4-5.

⁴⁷ *Id.* at 2.

⁴⁸ Jon Peha, "The Benefits and Risks of Mandating Network Neutrality, and the Quest for a Balanced Policy," *International Journal of Communication*, 2007.

CEOs, founders, presidents, and chairmen of leading Internet and technology companies wrote a letter to Chairman Genachowski stating their support for nondiscrimination rules.⁴⁹ These business and technology leaders would not support such rules if they believed that today's open Internet is discouraging investment and innovation in products and services at the edges of the network.

Similarly, 30 of the country's leading venture capitalists sent a letter to Chairman Genachowski supporting nondiscrimination rules.⁵⁰ Venture capitalists are on the front lines of the technology ecosystem. If they believed that certain technologies, either existing or in the future, would work better in a prioritized Internet ecosystem, the venture capitalists would not have sent such a letter.

Indeed, the open, neutral commercial Internet has resulted in an explosion of technologies and innovations. Such innovations best occur when there is an open platform that provides certainty to innovators that their applications will work across networks.

If prioritization is so essential to innovation and investment, it is odd that network operators — *and not application and content innovators* — are the ones who are championing it. In fact, the leading worldwide VoIP provider, Skype, is a member of the Open Internet Coalition and has built edge-based technologies

⁴⁹ See Appendix A.

⁵⁰ See Appendix B.

calculated to respond to deficiencies in today's broadband connections to deliver high-quality voice and video communications. The Commission should focus here on creating the right policy environment for higher-quality connections so that companies such as Skype can direct their resources toward other, pro-consumer innovations.

E. While the Standards for Evaluating Discrimination May Be Informed by the Commission's Precedent Under Sections 202 or 272 of the Act, the Proposed Nondiscrimination Standard Must Not Be Based On Existing Precedent and Must Adequately Reflect the Realities of the Broadband Marketplace.

The standards for evaluating discrimination under the proposed rules must reflect the realities of the broadband marketplace and should not be based on the Commission's precedent under either Section 202 or Section 272 of the Act. Though Section 272 included a "nondiscrimination" standard intended to limit the RBOCs' ability to exploit their local monopoly in the long-distance market, the Commission's implementation and enforcement was ineffective in accomplishing that outcome. Under its implementation of Section 272's nondiscrimination standard, the Commission allowed a variety of practices and pricing that had the effect of raising rivals' costs and creating a price squeeze that made it virtually impossible for stand-alone long distance providers to remain in business, leading to the eventual demise of such providers. The Commission's application of Section 272 precedents provide a cautionary tale of how inadequate oversight over an industry in which providers with significant market power in the last mile also compete in downstream markets, as is the case

with the cable/telco wireline broadband access provider duopoly. Section 202 has also been ambiguous and susceptible to complex interpretations that make it less useful in this context.

The broadband services here under consideration can be distinguished from the local telephone and carrier markets in which most of the Commission's Section 202 and Section 272 precedents arose. Here, the FCC is faced with the vertical integration of content and conduit and a rapid convergence of services on the Internet. Online video providers like Netflix, Amazon.com, and Vuze compete not only with cable and telco-provided MVPD service, but also with online offerings from those same companies. For this reason, the standard the FCC has proposed here, which couples nondiscrimination with specific exceptions for reasonable and legitimate network management is clear, simple and better suited to the broadband-based Internet.

VI. APPLICABILITY OF RULES TO WIRELESS NETWORKS.

OIC welcomes the Commission's affirmation that the proposed open Internet rules "would apply to all platforms for broadband Internet access."⁵¹ As wireless broadband connections become more popular consumers will increasingly move between different access connections, many times during the same Internet access session. These consumers expect similar policies to apply across all broadband connections. By applying the proposed rules across all broadband networks, the Commission would "establish a consistent regulatory

⁵¹ *Notice* at 54, ¶ 154.

framework across broadband platforms by regulating like services in a similar manner.”⁵²

As discussed above, wireless carriers face unique capacity constraints. The exception for “reasonable network management” is flexible enough to address different broadband platforms – what is not reasonable for a high-bandwidth, fiber-based broadband network may be reasonable in a shared, resource-constrained wireless network. In keeping with its proposed approach of adopting broadly-framed rules with case-by-case enforcement, the Commission need not adopt specific rules that codify the differences between different broadband platforms.⁵³ Instead, the Commission’s case-by-case application of the proposed rules should take into account the differences between wireless and wireline networks.⁵⁴ The Technical Advisory Process

⁵² *Appropriate Regulatory Treatment for Broadband Access to the Internet Over Wireless Networks*, Declaratory Ruling, WT Docket No. 07-53, FCC 07-30, at 2, ¶ 2 (rel. Mar. 23, 2007) (“Wireless Broadband Order”).

⁵³ The Commission could, of course, provide general guidelines in an eventual Order in this proceeding, outlining examples of practices that would and would not fall under the definition of “reasonable network management.” Such an approach would be similar to the approach followed by the Commission when it announced the openness provisions for the 700 MHz C Block license. *See In the Matter of Service Rules for the 698-746, 747-762 and 777-792 MHz Bands*, Second Report and Order, 22 FCC Rcd. 15289 (2007); 47 C.F.R. § 27.16(b) (imposing open platform requirements on 700 MHz C Block license winners).

⁵⁴ Though the technical realities of wireless broadband networks may necessitate more stringent network management, network management practices that block or throttle particular applications or protocols, without regard to the actual

discussed in the *Notice* and already underway will assist the Commission in understanding the differences between different broadband platforms and how such differences inform application of the “reasonable network management” standard in a given instance.⁵⁵

Because the definition of “reasonable network management” already accounts for differences among broadband platforms, there is no need for separate time frames or phases for applying the proposed “any device,” “any application,” and nondiscrimination rules to wireless broadband networks. Should the Commission adopt more specific requirements relating to the “any

amount of bandwidth being consumed, should be viewed categorically as unreasonable.

In the *Notice*, the Commission asks: “[A]re there are any circumstances in which it could be reasonable for a wireless network to block video applications because they consume too much capacity? What about third-party VoIP applications or peer-to-peer applications?” *Notice* at 60, ¶ 173. As discussed above, the answer to these questions is that it should never be reasonable for a wireless network to block, throttle or degrade particular applications without regard to the actual network capacity such applications are consuming. Not all video applications, or peer-to-peer or VoIP applications, consume the same amount of bandwidth or place the same demands on network capacity. Skype, for example, optimizes its software application to adapt to network congestion and consume very few network resources – between 6 kbps and 40 kbps for a voice call depending on the level of network congestion, which is less than traditional POTS or other popular voice protocols. Thus, simply blocking all VoIP applications in response to network congestion is an over inclusive practice and should be viewed as unreasonable. Furthermore, any network management practice that blocks or throttles only third-party applications and not those affiliated with the network operator should be deemed unreasonable as they strike at the core of the concern behind the proposed nondiscrimination rule.

⁵⁵ *Notice* at 61, ¶ 177.

device” and “any application” rules, such as a carrier certification process similar to that adopted with respect to the openness rules for the 700 MHz C Block,⁵⁶ a phase-in period of a few months may be appropriate. However, the nondiscrimination rule should apply as soon as the rules are effective, understanding, of course, that an analysis of “reasonable network management” by wireless broadband service providers will take into consideration the current state of technology.

A. The Proposed Openness Rules Should Apply to All Broadband Networks Regardless of the Level of Competition in a Market

Opponents of openness rules for wireless networks argue that such rules are not necessary because the wireless industry is sufficiently competitive to ensure that consumers have access to products and services that they desire. One of the OIC members, Skype, has previously argued that the wireless broadband market is not as competitive as the wireless industry often claims.⁵⁷ Moreover, as the Commission recognized in the *Notice*, openness rules are needed to protect innovation regardless of the specific level of competition in the network — *i.e.*, more competition in the wireless market, while no doubt desirable, may not be

⁵⁶ See *In the Matter of Service Rules for the 698-746, 747-762 and 777-792 MHz Bands*, Second Report and Order, 22 FCC Rcd. 15289 (2007); 47 C.F.R. § 27.16(b) (imposing open platform requirements on 700 MHz C Block license winners).

⁵⁷ Reply Comments of Skype Communications, S.A.R.L., WT Docket 09-66, at 6-14 (filed Oct. 22, 2009).

enough to prevent network operators from blocking or discriminating against certain innovative applications.⁵⁸

Finally, even if consumers were well-informed wireless networks lack of openness, consumers still may face high service switching costs for others reasons, such as early termination fees, handset bundling, and service contracts. Given the cost, time and effort involved, a consumer may decide that the switching costs exceed the loss in utility of the non-open network. Nevertheless, the loss in utility remains – to say nothing of the crippling effect such individual actions have on the market for innovative third-party applications, services, and devices. Thus, regardless of the specific level of competition in the wireless market, openness rules are needed to protect innovation at the application layer. Openness rules provide basic “rules of the road” that provide certainty to all – network operators, applications developers, device manufacturers, and, most importantly, users.

B. Cross-Platform Indirect Network Effects.

In addition to the economic justifications discussed for non-discrimination rules discussed above, there is a particularly relevant economic argument that the rules should apply cross-platforms, known as “cross-platform indirect network effects.”

⁵⁸ *Notice* at 29, ¶¶ 67-69.

A cross-platform indirect network effect is a type of indirect network effect that occurs through the compatibility of different platforms. Imagine a Web-based sports information service application, which becomes popular. If the same non-discrimination rules that apply in the broadband Internet wireline access space apply to the broadband Internet wireless access space, then the application provider has the incentive to improve its product offerings, including the functionality available to wireless users. The new product creates new value for the wireless network, as well as to users of the wireless network. Thus, there is an indirect network effect that creates a positive spillover for wireless network users even though the application was originally created for wireline broadband networks.⁵⁹

VII. DEFINING THE SCOPE OF “REASONABLE NETWORK MANAGEMENT”

In assessing what is “Reasonable Network Management,” the Open Internet Coalition urges the Commission to develop a two-step framework that answers two basic questions;

- First, does the network management practice further a legitimate purpose?
- Second, is the means narrowly tailored to address that purpose?

The OIC agrees with the FCC that there is a strong interest in reducing or mitigating the adverse affects of network congestion that supports reasonable

⁵⁹ See Hogendorn at 8.

network management practices. Generally, there are two categories of network management practices—(a) technical traffic management practices and (b) economic traffic management practices.⁶⁰

A. Increasing Capacity Has Been the Best Approach to Addressing Issues Relating to Congestion

Before discussing whether specific techniques to address congestion are reasonable, it is important to note that the best solution for congestion problems— which have been consistently effective as the Internet has grown—is investing in faster, better networks. Leading technologists have recognized this fact.⁶¹ In October 2009, the Canadian Radio-television and Telecommunications Commission made such a finding in its “Review of the Internet traffic

⁶⁰ Technical traffic management practices include slowing down a user’s traffic, prioritizing traffic, and limiting the bandwidth of large bandwidth users. Economic traffic management practices include monthly bandwidth capacity limits, where users who exceed a predefined threshold must pay additional money for bandwidth consumed and time-of-day pricing for bandwidth consumed. *See* Telecom Regulatory Policy CRTC 2009-657, Paragraph 20.

⁶¹ The non-profit networking consortium Internet2 found increasing capacity to be the most economically and technologically efficient solution for congestion. Internet2 is a not-for-profit advanced networking consortium comprising more than 200 U.S. universities in cooperation with 70 leading corporations, 45 government agencies, laboratories, and other institutions of higher learning as well as over 50 international partner organizations. *See* <http://www.internet2.edu/about>; *See also* Steven Corbato and Ben Teitelbaum, “Internet2 and Quality of Service: Research, Experience, and Conclusions,” pg. 4, May 2006.

management practices of Internet service providers.”⁶² In May 2008, leading Japanese telecommunications, cable, and Internet providers groups reached the same conclusion.⁶³ Next generation broadband networks not only solve problems of congestion, but they promote innovation by encouraging the development of more robust applications and content from which both consumers and the economy benefit.

The most technologically and economically efficient means of managing Internet traffic is by increasing capacity. The advanced networking consortium Internet2 confirmed this proposition when it contrasted the introduction of Quality of Service (“QoS”) electronics with increasing capacity as a means of addressing congestion.⁶⁴ QoS electronics are the hardware that make the manipulation of Internet traffic possible.

⁶² “Network investment is a fundamental tool for dealing with network congestion and should continue to be the primary solution ISPs use,” Telecom Regulatory Policy CRTC 2009-657, October 21, 2009, P.1.

⁶³ “In the first place, ISPs, etc. should tackle the increase in traffic by enhancing its network capacity,” Guideline for Packet Shaping, Japan Internet Providers Association, Telecommunications Carriers Association, Telecom Services Association, Japan Cable and Telecommunications Association, May 2008.

⁶⁴ Beginning in 1998 through 2001, technical leaders from Internet2 worked to develop and deploy an advanced Internet Protocol serviced based on Quality of Service (QoS) technology. This project launched when a large portion of the Internet2 technical community initially believed that implementing QoS would be essential to addressing network congestion due to increasing demand for limited bandwidth, especially applications such as streaming video or videoconferencing, which applications do not tolerate packet loss or jitter.

Internet2 found that increasing bandwidth is far superior to adding QoS electronics:

[Increased bandwidth] avoided practical deployment obstacles to implementing any effective QoS across a multiple network environment such as the Internet. Specific obstacles include: coordinating upgrades to QoS technology across every network; changing dramatically network operations, peering arrangements, and business models; and developing suitable means to verify QoS service delivery by users, providers, or both.⁶⁵

Internet2 found that the “over provisioning” of bandwidth approach to ensure network performance has been made possible by new technology that provided geometric increases in networking capacity at rates that matched or exceeded Moore’s Law.⁶⁶

Internet2’s experience led it to conclude that increasing capacity is the most economically and technologically efficient means of addressing congestion:

Instead of implementing QoS, simply increasing network speed leverages the decreasing cost-per-bit trend of new networking technologies and avoids the pitfalls of QoS implementation. The elegant simplicity of the best-effort service model provided by IP is one of the essential reasons for the success of the Internet. Together

⁶⁵ Corbato and Teitelbaum, “Internet2 and Quality of Service: Research, Experience, and Conclusions,” May 2006, p.2. See also, Bhagat, Smriti “QoS: Solution Waiting for a Problem”. Professor Bhatat’s paper concludes that over provisioning of bandwidth is preferable to QoS technology in addressing network congestion. Available at: <http://www.cs.rutgers.edu/~rmartin/teaching/spring06/cs553/papers/004.pdf>.

⁶⁶ Moore’s Law refers to the observation in 1965 by Gordon E. Moore, co-founder of Intel that the complexity of integrated circuits doubles every 24 months with improvements in manufacturing methods.

with the inherent strengths of connectionless networking and the IP's end-to-end design principle, the best-effort service model has enabled a fast, dumb, cheap, and wildly scalable Internet which has, in turn, provided a foundation for manifold innovative uses, unconstrained by a centralized view of how the network can or should be used.⁶⁷

Indeed, though broadband Internet access providers do not currently make transparent data relating to growth of traffic on their networks, recently Cisco predicted that between 2007-2012, Internet traffic will increase 46 percent a year, nearly doubling every two years.⁶⁸ This prediction is consistent with data provided by TELUS, a Canadian ISP, which showed that Internet traffic essentially doubled from January 2006 to January 2008.⁶⁹ Applying Moore's Law, Internet2's study demonstrates that broadband Internet access providers should be able to handle growth in Internet traffic without the introduction of QoS electronics as bandwidth capacities will be able to at least correspondingly double over the same period of time.

Adding capacity is an important public policy goal though the OIC is not suggesting that the Commission regulate broadband Internet access providers to

⁶⁷ Corbato and Teitelbaum, p. 4.

⁶⁸ "Cisco Visual Networking Index Projects Global IP Traffic to Reach Over Half a Zettabyte(1) in Next Four Years," Press Release, June 16, 2008, available at http://newsroom.cisco.com/dlls/2008/prod_061608b.html.

⁶⁹ TELUS (CRTC) 4Dec08-1. The TELUS data indicates that the total amount of Internet traffic into and out of the TELUS core backbone network essentially doubled from January 2006 to January 2008. The total megabits per second increased during this time period from 32,390 to 70,651.

require increased network capacity. Rather, the Commission should adopt rules in this proceeding that encourage additional private investment in increased capacity.

Allowing discrimination would have the exact opposite impact. It would create a perverse incentive for broadband Internet access providers to maintain scarcity, rather than expand capacity. If, for example, broadband providers can make money by charging content and application providers for prioritization in a special “fast lane,” they will have a new incentive to keep the “slow lane” slow. Such a perverse incentive would be at odds with the goals of the Communications Act.⁷⁰

One way to eliminate such an incentive is to remove from a broadband Internet access provider the inappropriate crutch of network management practices that are not narrowly tailored. A narrowly tailored network management practice is one that is designed to address a defined, temporal need and nothing more.⁷¹

⁷⁰ See 47 U.S.C. § 254(b)(2) (“Access to advanced telecommunications and information services should be provided in all regions of the Nation.”); Telecommunications Act of 1996, Pub. L. No. 104-104, § 706, 110 Stat. 56, 153 (1996), *codified as amended at* 47 U.S.C. § 1302; 47 U.S.C. § 230; *see also* 47 U.S.C. § 1305(k)(2) (“The national broadband plan required by this section shall seek to ensure that all people of the United States have access to broadband capability....”).

⁷¹ See Telecom Regulatory Policy CRTC 2009-657, October 21, 2009.

B. No Need for a Strict Scrutiny Standard.

The Coalition is not proposing a strict scrutiny standard by which the FCC must determine that there is only "one way" for a broadband Internet access provider to manage its network to address a legitimate purpose.⁷²

The Coalition also does not endorse a framework where broadband Internet access providers must first seek permission from the Commission to engage in reasonable network management.

OIC supports a flexible framework that can survive advances in technology and changes in Internet usage. Accordingly, OIC does not support detailed, prophylactic network management rules. Instead, OIC urges the Commission to adopt the proposed "Six Principle" framework, which can be enforced on a case-by-case basis as the Commission has done in other contexts.⁷³

⁷² In other words, we can support the Commission's proposal not to adopt the standard articulated in the Comcast Network Management Practices Order. This support is premised on the Commission adopting a general nondiscrimination standard. As discussed elsewhere in this filing, the Coalition believes that the broadband Internet access providers should not discriminate against content, applications, or users. The preservation of a best effort, open Internet through the adoption of a general nondiscrimination principle is critical. We recognize, however, that broadband Internet access providers should have flexibility to manage their network in order to address legitimate network management issues such as addressing congestion or protecting the security of their networks.

⁷³ For example, with respect to the 700 MHz C Block, the Commission's rules simply state that the C Block licensee "shall not deny, limit, or restrict the ability of their customers to use the devices and applications of their choice", subject to reasonable network management, but provides no more detail regarding what

Importantly, it is in the best interests of all Internet stakeholders to respond appropriately to a network that is showing signs of stress, since nothing works well across a congested network. This is why the Coalition recommends the Commission adopt a flexible, nuanced approach that allows broadband Internet access providers to have flexibility to manage congestion and protect their networks.

C. Suggested Framework for Evaluating Reasonable Network Management.

The Open Internet Coalition proposes the following framework to evaluate network management practices.

First, an Internet user would have the burden to bring forward a complaint and make a *prima facie* case that a network management practice

qualifies as limitations or restrictions that would run afoul the rule. Instead, as with the open Internet rules proposed herein, the 700 MHz C Block rules provide an enforcement mechanism that allows the Commission to establish guidelines in an evolving marketplace. *See* 47 C.F.R. § 27.16.

Other examples in which the Commission has established rules with broadly-worded standards that have been fleshed out through subsequent enforcement and adjudication include the Commissions rules on obscenity and indecency and the requirements that broadcast licensees provide “reasonable access” to Federal candidates and “equal opportunity” to all political candidates. *See* 47 C.F.R. § 73.3999 (obscenity and indecency), 73.1944 (reasonable access), 73.1941 (equal opportunity).

discriminates against or favors a particular bit of content, an application, or a user, or otherwise violates the rules.⁷⁴

Second, if the complainant makes a *prima facie* case, then the burden would shift to the broadband Internet access provider to demonstrate that the network management practice is meant to address a legitimate purpose.⁷⁵

Third, if the purpose is legitimate, the broadband Internet access provider must demonstrate that the network management practice is narrowly tailored to address such purpose. In determining whether such practice is narrowly tailored, the broadband Internet access provider must –

- demonstrate that the network management practice is designed to address the legitimate purpose and nothing else;

- establish that the network management practice results in as little discrimination or preference as reasonably possible;

- demonstrate that any harm to an end user – including an application or content provider – or to the Internet itself is as little as reasonably possible; and,

⁷⁴ As stated in our discussion about transparency, imposing the burden on a user to make a *prima facie* case is premised on a rule that requires the broadband Internet access provider to disclose its network management practices.

⁷⁵ The Coalition agrees that addressing congestion, blocking spam, blocking malware and similar steps to maintain the proper functioning of a network are legitimate purposes. See *In the Matter of Preserving the Open Internet*, GN Docket No. 09-191; *Broadband Industry Practices*, WC Docket No. 07-52, Paragraphs 138, 140.

· in the case of a technical network management practice, state why network investment or economic network management practices alone would not reasonably further the legitimate purpose.⁷⁶

D. Industry Standards Already Exist for Addressing Congestion.

Today's protocols on the Internet already exhibit congestion-control behaviors. If they did not, the Internet would be regularly collapsing as demand and traffic levels increase exponentially year after year while network upgrades occur on a far less regular basis. If a network product were to be released that always sent at top speed regardless of congestion-control signals, that product would fail to work well because no application works well on a congested path. The traditional and most-used congestion-control algorithm is known as "Additive Increase, Multiplicative Decrease" ("AIMD") behavior. It is designed to expeditiously reduce the rate of sending traffic across a network path that is dropping or delaying packets. Once a rate is found that does not result in signs of congestion, a sender slowly can increase speed to probe for faster send rates that do not create additional congestion.

The Internet Engineering Task Force (IETF) already has deployed a number of solutions available to users and broadband Internet access providers

⁷⁶ A similar test was proposed by the Coalition and adopted by the Canadian Radio-television and Telecommunications Commission. *See* Telecom Regulatory Policy CRTC 2009-657, Paragraph 43. *See also* The Guideline for Packet Shaping, May 2008, P. 7 ("[I]f packet shaping is implemented in such a manner to the extent necessary based on objective data, there is a high possibility that it will generally be regarded as an act performed in the pursuit of a lawful business.

to mitigate and avoid congestion. One example is DiffServ (RFC 2474 et al), where users' applications can help identify traffic that is speed-sensitive. Using DiffServ, broadband Internet access providers can respond, limit by quota, or ignore such instructions. For example, a residential ISP might offer a quota of 180 MB worth of packets marked "EF" (for "Expedited Forwarding") and the user may use them as they see fit. After the quota is exhausted, packets marked EF will be handled using the standard "Best-Effort" handling (the normal neutral Internet behavior toward packets). This leaves users in charge of deciding traffic priority for themselves. While this method has been available for a long time, broadband Internet access providers have yet to offer this well-proven technique to residential end-users. Once they do, applications are likely to be designed to use the markings appropriately. Another example is the numerous congestion control standards and methods already published by the IETF as standards or best current practices.

Following the controversy surrounding Comcast's degradation of the Bit Torrent protocol, the IETF began investigating additional techniques, some for broadband Internet access providers, some for end-users and their applications, and some for both, that might result in additional elasticity in links that are awaiting upgrades.

Under the auspices of the Techniques for Advanced Network Applications working group, the IETF is considering proposals that use broadband Internet access provider-supplied information concerning the least-

costly, least-congested route available from or to particular points on its network. This group also will investigate how to use existing technologies such as data caching to reduce the number of far-reaching connections.

While standards bodies such as the IETF can be very helpful in developing consensus-based protocols for handling traffic on the Internet, such bodies are not a substitute for the Commission implementing network neutrality rules.

VIII. THE OPEN INTERNET COALITION STRONGLY OPPOSES THE INCLUSION OF CONTENT FILTERING IN THE SCOPE OF THE DEFINITION OF REASONABLE NETWORK MANAGEMENT

The Open Internet Coalition opposes the Commission's inclusion in the definition of "reasonable network management":

prevent[ing] the transfer of unlawful content or
prevent[ing] the unlawful transfer of content.⁷⁷

The proposed rules would apply only to lawful content.⁷⁸ Of course, this means that the non-discrimination rule applies only to lawful content. The Reasonable Network Management provision works as an exception to the non-discrimination rule, which allows a broadband Internet access provider to discriminate against lawful content in certain situations.

⁷⁷ §8.3(a)(iii) and (iv) of the Draft Proposed Rules for Public Input, Appendix A.

⁷⁸ See, e.g., §8.5, 8.7, 8.9 and 8.13 of the Draft Proposed Rules for Public Input, Appendix A.; *In the Matter of Preserving the Open Internet*, GN Docket No. 09-191; *Broadband Industry Practices*, WC Docket No. 07-52, Paragraph 139.

If the broadband Internet access provider is discriminating against *unlawful* content, the non-discrimination rule does not apply and therefore neither the broadband Internet access provider nor the Commission need worry that blocking the transfer of unlawful content would create jeopardy for the access provider under the rules.

In other words, if a broadband Internet access provider discriminates against unlawful content, there is no need to apply the Reasonable Network Management test because the non-discrimination rule does not apply in the first place.

That leaves the Commission with the possibility that the Reasonable Network Management test could be used to justify discriminating against some *lawful* content in order to prevent the transfer of *unlawful* content. The Open Internet Coalition strongly objects to this possible outcome for several reasons, including –

(A) It likely would put the rules at odds with specific content-related statutory provisions and frameworks regarding the handling of both lawful and unlawful content;

(B) It raises the likelihood of a challenge of the rules on Constitutional grounds and the re-application of a strict scrutiny standard the Commission is seeking to abandon; and,

(C) It possibly violates the federal Wiretap Act;

(D) It raises substantial privacy concerns;

(E) It violates basic principles of network management by allowing broadband Internet access providers to make sophisticated legal judgments about the nature of content over their networks.

Each of these reasons is explained in greater detail below.

A. It Likely Would Put the Rules at Odds with Specific Content-Related Statutory Provisions and Frameworks Regarding the Handling of both Lawful and Unlawful Content.

Over the years, Congress has passed various statutes that relate to the distribution of unlawful content, and in some cases, specifically relate to the distribution of unlawful content on the Internet. With regard to copyright law, which pertains to the unlawful distribution of lawful content (*i.e.*, the content is legal; the *act is not*), the statutory framework created by Congress is rooted in the First Amendment and the Copyright Clause to the Constitution.⁷⁹

An FCC regime that creates a competing framework to these statutes – and the case law that interprets them – is unnecessary and would invite legal challenges regarding the FCC’s authority to do so. It also would create confusion among stakeholders because of the likelihood of competing and contradictory results relating to the treatment of the same content.

The Commission cites two specific examples of unlawful content or unlawfully transferred content – child pornography and illegally distributed copyrighted works – in its justification for the proposed Reasonable Network Management rule.

⁷⁹U.S. Const. art. 1, § 8, cl. 8.

In each example, Congress and the courts have created a framework for the treatment of such content.

1. Illegally distributed copyrighted works.

The statutory regime concerning distribution of copyrighted works generally resides in the copyright laws found in Title 17 of the United States Code.⁸⁰ There also are criminal copyright provisions found in Title 18 of the United States Code.⁸¹

Section 106 of the Copyright Act provides certain exclusive rights to the owner of a copyrighted work relating to the reproduction and distribution of a copyrighted work.

The Internet is, among other things, a series of copying machines as it transmits bits of data throughout its networks. It also allows users to receive and share content more quickly and to a wider audience than ever before. Importantly, the exclusive right in Section 106 is subject to at least two key limitations.

First, Section 107 provides a key limitation on a copyright owner's exclusive right by codifying the privilege of *fair use* of a copyrighted work. Fair use provides important limitations by allowing users in certain situations to distribute protected copyrighted works without authorization from the copyright

⁸⁰ See 17 U.S.C. §§ 501 and 1201

⁸¹ See 18 U.S.C. §§ 2318-2319B.

owner.⁸² As an embodiment of First Amendment rights, the fair use provision in Section 107 allows for unauthorized use of copyrighted works for things such as – but not limited to – criticism, comment, news reporting, teaching, scholarship, or research. In addition, in determining whether other uses of a work are fair use, Section 107 sets forth a flexible four-part test.⁸³

⁸² The Copyright Act’s codification of fair use to allow a user to distribute and use copyrighted work without the owner’s *authorization* is important. We note that in some rightsholders’ statements before the Commission on this subject, the rightsholders claim a right to control distribution, meaning that a work would not be permitted to be distributed without the authorization of the copyright owner. (See, e.g., “In order for legal, licensed platforms for distribution of copyrighted content to be sustainable online, content creators and their distribution partners must curtail the distribution of that same content through unlawful and *unauthorized* web sites, peer-to-peer services, cyberlockers and other online distribution mechanisms.” (emphasis added). Comments of the Motion Picture Association of America, Inc., National Broadband Plan for our Future, Notice of Inquiry, GN 09-51, available at <http://fjallfoss.fcc.gov/ecfs/document/view?id=7020244174>.

⁸³ The factors in determining whether the use a particular copyrighted work is fair use are –

- (1) the purpose and character of the use, including whether such use is of a commercial nature or is for nonprofit educational purposes;
- (2) the nature of the copyrighted work;
- (3) the amount and substantiality of the portion used in relation to the copyrighted work as a whole; and
- (4) the effect of the use upon the potential market for or value of the copyrighted work.

17 U.S.C. § 107.

This 4-part test has generated a substantial amount of case law interpreting the scope of and interaction between Sections 106 and 107. Thus, the law surrounding these statutes is continually evolving and adapting as they are applied to facts relating to new technologies and uses.⁸⁴ As cases demonstrate, given technological advances, the application of the fair use privilege is routinely tested in the judiciary. The courts – not the Commission – are the arbiters of the four-part test.

Indeed, the U.S. copyright laws delicate balancing of rights and exceptions, as tested and developed by our courts, provides a framework that has enabled entities in the United States to lead the world in the advancement of

⁸⁴For example, recently the implementation of remote digital video recorder (“R-DVR”) technology offered by Cablevision was challenged by the major motion picture studios (“Studios”). Cablevision offered a technology where the hard drive storing recording programming was not housed at the customer’s premises but rather at Cablevision’s premises. The Studios argued that such Cablevision’s technology constituted a direct infringement of their exclusive rights where Cablevision created unauthorized copies and distributions of Studios’ works, violating § 106 (1), (3). The Studios also claimed that the transmission of the recorded work to the user’s home constituted an unauthorized public performance under § 106(4). Judge Chin of the United States District Court for the Southern District of New York ruled in Studios’ favor. The United States Court of Appeals for the Second Circuit reversed and held in Cablevision’s favor. See *Cartoon Network v. Cablevision*, 536 F.3d 121 (2008), *cert. denied* 129 S. Ct. 2890. This case is a good example of how a new technology raises complex questions of interpretation of Copyright law, which means that Copyright law is continually evolving through occasional Congressional updates to the statute and regularly occurring decisions by our courts. In the Internet and technology space, in almost every instance of a new user technology involving the copying or distribution of content, the Studios challenge such technology under the Copyright laws. See <http://arstechnica.com/tech-policy/news/2009/10/100-years-of-big-content-fearing-technologyin-its-own-words.ars>. Last viewed January 14, 2010.

Internet tools, applications, and content. These laws enable the U.S. to lead the world in the Internet ecosystem.

The other important exceptions to a copyright owner's rights are the limitations on liability under the Digital Millennium Copyright Act ("DMCA"), relating to material distributed online.⁸⁵

The DMCA states that an Internet service provider shall not be liable for damages and other relief for infringement insofar as the service provider is engaging in routine activities relating to transmission of third-party content, caching of third-party content, hosting of third-party content, or linking to third-party content.

The exceptions under the DMCA are subject to a delicately balanced statutory regime that requires service providers to comply with such things as a notice-and-take down request from copyright owners and adoption of policies for the termination of repeat infringers.⁸⁶

The framework established under our nation's copyright laws speaks strongly against the FCC establishing a competing framework that permits (and perhaps requires) broadband Internet access providers to prevent the unlawful transfer of content under the Reasonable Network Management section of the proposed rule.

⁸⁵ 17 U.S.C. § 512.

⁸⁶ DMCA, 17 U.S.C. §§ 512(g)(2) and (i)(1)(a).

Congress has clearly occupied the field, and indeed the Constitution vests Congress with the exclusive rights to such occupation.⁸⁷ An FCC framework where the Commission determines what is or is not fair use, who or what is copying or distributing a protected work, or how much lawful content may be blocked in order to prevent either the distribution of unlawful content or the infringing distribution of lawful content falls outside of the FCC's jurisdiction and expertise. Congress has not authorized the FCC to make such decisions, and there is no basis in the Communications Act to argue that the Commission has ancillary authority to allow it to do so.^{88 89}

The Commission does not attempt to make the case that such a framework for the handling of copyrighted works falls under its ancillary authority to a provision in the Communications Act. We believe that is because there is no

⁸⁷ U.S. Const. art. 1, § 8, cl. 8.

⁸⁸ As stated above, even if the Commission had the authority, the proposal raises the likelihood of a competing framework to the copyright laws relating to the handling of the same or similar content.

⁸⁹ The Commission's ancillary jurisdiction is limited to circumstances where: (1) the Commission's general jurisdictional grant under Title I covers the subject of the regulations and (2) the regulations are reasonably ancillary to the Commission's effective performance of its statutorily mandated responsibilities. See *Nat'l Cable & Telecomm. Ass'n v. Brand X Internet Servs.*, 545 U.S. 967, 976 and *Am. Library Ass'n v. FCC*, 406 F.3d 689, 692.

such case to be made. Consequently, in this situation, there is not even a mousehole in which a *mouse* could be hidden.⁹⁰

But because the proposed rules only apply to lawful content, and those rules do not preclude the application of and compliance with content-specific laws, there is no need for the Commission to attempt to conflate copyright and reasonable network management.

Despite the Coalition's skeptical views about whether the FCC should play a role to address these issues through the Reasonable Network Management provision, the Coalition certainly supports the protection of Copyrighted works. The DMCA provides a workable framework for handling unlawfully disseminated copyrighted works.

In addition, there are increasingly promising technical measures and business deals that are allowing edge-based technology companies and content providers to handle the dissemination of copyrighted works.⁹¹ These increasingly innovative solutions at the edges of the network enable creators to

⁹⁰ In the *ALA* case, the D.C. Circuit quoted the Supreme Court in its admonition that Congress "does not . . . hide elephants in mouseholes." See *Am. Library Ass'n*, 406 F.3d at 704, citing *Whitman v. Am. Trucking Ass'n*, 531 U.S. 457, 468 (2001).

⁹¹ For example, even while YouTube is being sued by Viacom for secondary infringement of Copyright, YouTube has developed technologies and partnerships with content providers to handle the posting of protected works that show up on YouTube. Ann Broache and Greg Sandoval, "Viacom sues Google over YouTube Clips," *CNET News*, March 13, 2007. See also YouTube's Content Management Policy available at http://www.youtube.com/t/content_management

monetize content on Web sites and in applications. Increasingly, these technologies will connect users and creators in real time to enable innovative real-time licensing arrangements. Restricting or stopping the flow of bits at the network level would preclude these new, emerging monetization opportunities for artists and creators. The FCC need not enter this arena.

2. Child Pornography Laws.

The Open Internet Coalition looks forward to the day when child pornography is eliminated from the Internet. Many of our members actively work with the National Center for Missing and Exploited Children (“NCMEC”) and law enforcement to identify and eliminate instances of child pornography on the Internet.

Unlike copyrighted works, there are never lawful uses for child pornography. Actual child pornography is not protected speech. However, making the legal determination of what constitutes child pornography is not always easy. Consequently, Congress has created a framework for service providers for handling of electronic dissemination of child pornography, which does not require such providers to make such legal determinations for which the service providers are not qualified.

Under the United States Criminal Code, a service provider providing electronic communication in interstate commerce is required upon learning of an *apparent* violation of criminal statutes relating to the dissemination of child pornography or child exploitation to provide a report to NCMEC. The service

provider also is required to retain relevant information relating to that report for at least 90 days. Upon receiving the report, NCMEC makes a determination whether such report constitutes an apparent violation of the child pornography or child exploitation laws, and forwards such report to the appropriate law enforcement agency.

Next, the law enforcement agency, in its discretion, will normally contact the service provider in order to assemble a case to arrest and prosecute the creator of the illegal content.⁹²

Again, Congress has created a detailed framework for handling of child pornography. The Commission does not have the jurisdiction to create a competing framework, and even if it did, it should not do so.

As in the copyright space, NCMEC and Internet service providers have been working closely on creating technological solutions that would allow such providers to block access to images that have been determined to be child pornography.⁹³ These kinds of technological solutions do not involve the blocking of lawful images. Consequently, a broadband Internet access provider is free to implement this sort of technology without fear of violating any non-

⁹² See 18 U.S.C. § 2258A.

⁹³ See, e.g., http://missingkids.com/missingkids/servlet/NewsEventServlet?LanguageCountry=en_US&PageID=3644.

discrimination provision. Thus any need to address this through the reasonable network management exception is misplaced.

B. It Raises the Likelihood of a Challenge of the Rules on Constitutional Grounds.

Even if the Commission could find the ancillary authority to regulate the dissemination of copyrighted works, such a framework raises the likelihood of a challenge on Constitutional grounds. As noted above, the only need for the Reasonable Network Management rules relating to unlawful content would be in order to create a framework that would allow broadband Internet access providers to block some lawful content. The FCC's authorization of blocking of a protected copyrighted work that falls under the fair use exception to Section 107 of the Copyright Act, for example, would likely violate the First Amendment of the U.S. Constitution.

As the Supreme Court has noted, the monopoly afforded authors over their works through copyright protection is Constitutional because of the twin escape valves of fair use and the fact that copyright does not protect ideas or facts contained in a copyrighted works.⁹⁴ These twin escape valves are rooted in the First Amendment to the Constitution, prohibiting Congress from adopting laws that infringe upon freedom of speech.⁹⁵ In addition, any filtering mechanism employed at the network level undoubtedly will capture non-infringing material besides material protected by fair use or facts, including

⁹⁴ *Eldred v. Ashcroft*, 537 U.S. 186, 219-220 (2003).

lawfully distributed licensed materials, public domain material, and material created by users and filtered erroneously.

A framework that authorizes blocking of such lawful distribution of works essentially would constitute a prior restraint on users' rights under the First Amendment.

In addition, the scrutiny a court would apply to such content regulation would be the traditional strict scrutiny standard that the First Amendment requires, putting the Commission right back in the position of having a Reasonable Network Management regime that would be a strict scrutiny regime.

Instead, the Commission can remove itself from having a regulatory structure that determines what lawful content is permissible to block by removing the two prongs of the Reasonable Network Management test that would authorize the blocking of lawful content.

C. Inspection of Content for Legality May Violate the Federal Wiretap Act.

The federal Wiretap Act, as amended by the Electronic Communications Privacy Act, protects a user's electronic communications.⁹⁶ Specifically, the relevant provision states –

[A] person or entity providing an electronic communication service to the public shall not intentionally divulge the contents of any

⁹⁵U.S. Const. amend. I.

⁹⁶18 U.S.C. §§ 2510-2522.

communications...while in transmission on that service to any person other than an addressee or intended recipient....”

18 U.S.C. § 2511(3)(a).

The Act also prohibits the “interception” of electronic communications, which are defined as the “acquisition of the contents of any ... electronic ... communications through the use of any electronic, mechanical, or other device.”⁹⁷

There are exceptions to these prohibitions. The most relevant exceptions for the purpose of this discussion are an exception for cooperating with law enforcement requests and an exception when the user provides consent to the interception or divulgence of the user’s communication.

The law enforcement exception is at issue here, because the Reasonable Network Management provision has a separate section relating to appropriate requests by law enforcement. While there is not a lot of case law about what exactly would constitute appropriate consent, current case law suggests that consent must be actual (as opposed to constructive) and that the user knows exactly what he or she is consenting to in each instance of interception or divulgence.⁹⁸ Given broadband Internet access providers’ compliance with the Wiretap Act, which the proposed rules contemplate, there is no need to address

⁹⁷ *Id.* at 2519(4).

⁹⁸ See, e.g., *Griggs-Ryan v. Smith*, 904 f.2d 112 (1st Cir. 1990), *In re Pharmatrak v. Privacy*, 329 F.3d 9 (1st Cir. 2003), *Berry v. Funk*, 146 F. 3d 1003 (D.C. Cir. 1998).

content-related inspection through the Reasonable Network Management provisions.

D. Privacy Concerns.

Inspection of content by the broadband Internet access provider to determine the legality of the content raises strong privacy concerns. As discussed elsewhere in this submission,⁹⁹ the inspection of the content of an Internet communication by a broadband Internet access provider likely would be achieved through the use of Deep Packet Inspection technology.

Because the broadband Internet access provider serves as the initial or last “deliverer” of a user’s content, the broadband Internet access provider is in a position to carry all of a user’s communications, including email, instant messages, VoIP, text messages, video communications, Web browsing activities, data transfers – indeed, all communications sent and received by a user.

Users do not expect that the content of their messages will be opened and inspected by their broadband Internet access providers. Yet, that is exactly what DPI technology does.¹⁰⁰ The Commission should not endorse use of such technology as a means of inspecting content for unlawful material given the

⁹⁹ See Section XIII, *infra*.

¹⁰⁰ For a more detailed analysis of the possible privacy implications of the use of Deep Packet Inspection technology, see Data Foundry *Ex Parte* filing in CC Docket 07-52, *In the Matter of Broadband Industry Practices, “Tiered Internet Service Threatens the Privileged and Confidential Nature of Online Communications,”* October 15, 2007, available at <http://fjallfoss.fcc.gov/ecfs/document/view?id=6519741393>.

tremendous privacy concerns such technology presents, and given the alternative means of handling unlawful content through existing laws and through law enforcement requests.

Should the broadband Internet access providers resort to DPI in an effort to filter unlawful content or unlawfully distributed content, the effects on user privacy will be widespread and destructive. Any attempt to inspect unlawful content or unlawfully distributed content would require the inspection of *all* content. Users would be subject to a comprehensive monitoring regime that surveilles every aspect of their online activities and the content of all of their communications.

By authorizing or deputizing the broadband Internet access providers to engage in indiscriminate content-monitoring and making determinations over the legality of content or the legality of distributed content, the Commission will come dangerously close to violating the Non-delegation Doctrine and the Fourth Amendment. This type of law enforcement function is not the responsibility of private businesses.

E. Allowing Broadband Internet Access Providers to Make Sophisticated Legal Judgments About the Nature of Content Over Their Networks Violates Basic Principles of Network Management.

Network management deals with the technical measures necessary in keeping an Internet service provider's network up and running smoothly. It does not include inspection of content traveling over its systems to make sophisticated legal determinations about the legality of such content.

IX. ENFORCEMENT

The Open Internet Coalition supports the creation of a new, formal complaint process relating to these rules, as well as an informal complaint process. The Coalition does not believe that the Commission's existing rules, such as the rules governing formal complaints under Section 208 of the Act or the rules governing complaints related to cable service, provide a complete, suitable model for new procedural rules for open broadband network complaints.

Because we support a framework to allow for *ex post* enforcement of the rules, rather than a more regulatory *ex ante* framework, the Commission should create a new complaint process that incorporates the following.

1. The complaint process should take into account that the complainant may be an individual user or small business. The Commission should consider establishing an advocate within the FCC's Consumer and Governmental Affairs Bureau in instances in which a complainant does not have the resources to pursue a complaint. In addition, the Consumer and Governmental Affairs Bureau should be chartered to educate consumers regarding their rights to pursue whatever process is adopted by the Commission.
2. Any Internet user, application provider, content provider, or service provider, including a non-profit organization that has as one of its purposes to promote the openness of the Internet, should have standing to file a complaint alleging a violation of the Commission's rules.
3. The complainant bears the initial burden of establishing a *prima facie* case showing a violation of the Commission's rules.¹⁰¹

¹⁰¹ Of course, the OIC's proposed requirements for disclosure under the Transparency rule are necessary so that Internet stakeholders can review the network management practices of broadband Internet access providers and file a

4. If a *prima facie* case has been established, the burden would shift to the broadband Internet access provider to justify why its behavior does not violate one of the rules. The FCC should clarify that it has the right to discovery of any documentation from the broadband Internet access provider needed to ascertain whether a rule has been violated, including, if appropriate, contracts between the broadband Internet access provider and other entities that bear upon a complaint.
5. The Commission shall rule on the complaint within ninety (90) days from the filing.
6. Within ten (10) days of the complaint being filed, the Commission may issue a preliminary injunction against the broadband Internet service provider from starting or continuing to engage in the activity that is the subject of the complaint if the Commission finds that there is (a) a high likelihood of success upon the merits of complaint and (b) a likelihood of irreparable harm in the absence of a preliminary injunction.

In its order resolving the complaint, the FCC may issue permanent injunctive relief,¹⁰² penalties and damages to an injured party. However,

complaint if those practices will violate an FCC rule and harm the complainant. The ability to file a complaint is directly related to the amount of transparency the Commission requires of broadband Internet access providers. Thus, if a lack of transparency is alleged, the Complainant should be afforded flexibility in the *prima facie* review to continue with the complaint. In addition, the complainant only would need to establish a *prima facie* case that a violation of the non-discrimination rule occurred. Once a *prima facie* case has been made, the broadband Internet access provider would bear the burden of demonstrating that it did not violate the non-discrimination rule or that such discrimination is permitted under the Reasonable Network Management framework.

¹⁰² We anticipate that an order for permanent injunctive relief would be based on the 4-step test affirmed by the Supreme Court in *eBay v. Merc-Exchange*, 547 U.S.

penalties and damages would not be available in cases of first impression to the Commission.

We also urge the Commission to designate the Market Disputes and Resolution Division of the Enforcement Bureau to work collaboratively with other Bureaus and Offices to leverage the FCC's existing streamlined complaint procedures in a manner that delivers swift resolution to claims of discriminatory conduct.

X. THE APPLICATION OF NETWORK NEUTRALITY RULES DOES NOT DEPEND ON THE LEVEL OF COMPETITION.

Fundamentally, this rulemaking is about protecting Internet users' and consumers' abilities to access the Internet. At its core, this rulemaking is about protecting Internet consumers and consumers. Setting aside the exact level of competition in the access market, broadband Internet access providers should be subject to basic rules that preserve users' ability to receive and send information to and from the Internet without interference from the companies that provide the on-ramps and off-ramps to the Internet.

388 (2006), 401 F.3d 1323 (2005). That 4-step test requires the fact-finder to determine: (i) that the complainant suffered an irreparable injury; (2) that remedies available at law, such as monetary damages, are inadequate to compensate for that injury; (3) that, considering the balance of hardships between complainant and defendant, a remedy in equity is warranted; and (4) that the public interest would not be disserved by a permanent injunction.

That said, it is well known that the broadband Internet access provider market is highly concentrated, and the FCC has recognized a market failure in this space.

Cable and DSL broadband Internet access providers still comprise an effective duopoly in the market for residential broadband service, together accounting for more than 96 percent of the residential high-speed lines according to the most recent FCC statistics.¹⁰³ Thus, cable modem and DSL operators have both the technical capacity and the commercial incentive to control “the Internet to the detriment of consumers.”¹⁰⁴ And, we have seen “significant situations where broadband providers have degraded the data streams of popular lawful services and blocked consumer access to lawful applications....”¹⁰⁵

Another reason to doubt the effectiveness of competition from wireless broadband services is that the two largest wireless broadband providers – Verizon Wireless and AT&T – are affiliated with two of the largest LEC DSL providers. Consequently, these providers are unlikely to deploy wireless

¹⁰³ FCC Wireline Competition Bureau, Industry Analysis and Technology Division, High-Speed Services for Internet Access: Status as of June 30, 2006, at Table 3, Chart 6 (Jan. 2007) (“Broadband Statistics”).

¹⁰⁴ FCC, Broadband Industry Practices, Notice of Inquiry, 22 F.C.C.R. 7894 (Separate Statement of Comm. Michael J. Copps).

¹⁰⁵ *In the Matter of Preserving the Open Internet*, GN Docket No. 09-191; *Broadband Industry Practices*, WC Docket No. 07-52 (Separate Statement of Chairman Julius Genachowski).

broadband services that compete and potentially cannibalize their affiliated wireline services.

Most importantly, even if competition among initial broadband Internet access providers existed for users, the Commission more properly should focus on the limitations and unique nature of broadband networks that create an effective “terminating access” market failure and particular incentives that demand government oversight. The terminating access ecosystem is a market failure that the Commission has acknowledged on several occasions.¹⁰⁶

Once an end-user consumer decides on a broadband access provider, other users, content providers, and application providers are forced to transit to the user’s choice of access provider in order to communicate with that user. In effect, the access provider “owns” the user once the user commits to a service.

In the wireless ecosystem, the commercial mobile radio service (“CMRS”) provider has a similar terminating access relationship with its wireless subscriber as a wireline broadband Internet access provider has with its user. Like the

¹⁰⁶ See, e.g., Access Charge Reform, CC Docket No. 96-262; Price Cap Performance Review for Local Exchange Carriers, CC Docket No. 94-1; Transport Rate Structure and Pricing, CC Docket No. 91-213; Usage of the Public Switched Network by Information Service and Internet Access Providers, CC Docket No. 96-263, Notice of Proposed Rulemaking, Third Report and Order and Notice of Inquiry, FCC 96-488, Adopted: December 23, 1996; Released: December 24, 1996, paras. 271 and 278.

Access Charge Reform; Reform of Access Charges Imposed by Competitive Local Exchange Carriers, CC Docket No. 96-262, Seventh Report And Order And Further Notice Of Proposed Rulemaking, 16 FCC Rcd 9923, (2001), (“CLEC Access Charge Order”), paras. 10 and 31.

wireline broadband Internet access provider, the CMRS provider potentially controls the gateway to the Internet for the user and controls the gateway from the Internet to that end-user.

This fact compounds the incentive and ability of a broadband provider to distort the adjacent market for wireless devices in unusual and suspect ways. In this regard, there are potentially two market failures in the wireless space, whereas there is only one market failure in the wireline space unlike the wireline network where device attachments are generally permitted. Substantial consumer switching costs between access providers in both the wireline and wireless spaces exacerbate this problem.¹⁰⁷

At bottom, even if there were more competition among access providers, it is sufficient to check on broadband Internet access providers' power to limit users' choices in accessing and or sending content and applications on the Internet.¹⁰⁸

¹⁰⁷ See e.g. Patrick Xavier and Dimitri Ypsilanti, *Switching costs and consumer behavior: implications for telecommunications regulation*, 10 info 13.

¹⁰⁸ The Coalition notes that the U.S. Department of Justice has stated that it is not particularly useful to debate the extent to which the broadband access marketplace is not competitive or oligopolistic –

We do not find it especially helpful to define some abstract notion of whether or not broadband markets are “competitive.” Such a dichotomy makes little sense in the presence of large economies of scale, which preclude having many small suppliers and thus often lead to oligopolistic market structures. The operative question in competition policy is whether there are

Dr. Barbara van Schewick of Stanford Law School points out that network operators have common incentives to discriminate against third parties that are not necessarily addressed by increased competition. In an article assessing the need for network neutrality rules to protect application-level innovation, Professor van Schewick concluded that “a network provider may have the ability and incentive to exclude rival content, applications, or portals from its network” and that such incentives exist even if the network provider faces competition from at least one other network provider.¹⁰⁹

Professor van Schewick is not alone in explaining that competition alone may not address the concern that network operators will discriminate against unaffiliated applications and content. Economist Joseph Farrell of the University of California at Berkeley also has noted that limited competition may not

policy levers that can be used to produce superior outcomes, not whether the market resembles the textbook model of perfect competition. In highly concentrated markets, the policy levers often include: (a) merger control policies; (b) limits on business practices that thwart innovation (e.g., by blocking interconnection); and (c) public policies that affirmatively lower entry barriers facing new entrants and new technologies.

GN Docket No. 09-51, *Ex Parte* Submission of the United States Department of Justice at 11 (Jan. 4, 2010) (emphasis added).

¹⁰⁹ Towards an Economic Framework for Network Neutrality Regulation, 5 J. on Telecomm. & High Tech. L. 329, 370. Quoted in Comments from Open Internet Coalition to FCC, Broadband Industry Practices, Notice of Inquiry, 9.

necessarily remove the incentives of network operators to discriminate against unaffiliated applications and content.¹¹⁰

To summarize, the number of facilities-based broadband network operators is inherently limited and, as such, these operators share a common incentive to discriminate against independent and unaffiliated applications and content. In such circumstances, competition – whether intermodal or intramodal – may not be sufficient to prevent harmful discrimination that limits consumer choice.

As stated earlier, Internet access providers provide the on-ramps to the Internet. As such, users expect them to provide access to and from the Internet without interference or monitoring. Users have an expectation that they will be able to engage in speech on the Internet without broadband Internet access providers infringing on their abilities to do so. The freedom of speech users have enjoyed is one of the hallmarks of what has made the Internet so successful.

Ensuring that this right goes beyond an analysis of competition in the broadband Internet access provider space, even assuming competition existed and market forces would motivate carriers to treat content neutrally. Any rule that allows broadband Internet access providers to routinely inspect content will

¹¹⁰ Joseph Farrell, *Open Access Arguments: Why Confidence is Misplaced, in Net Neutrality or Net Neutering: Should Broadband Internet Services Be Regulated* 195 (Thomas M. Lenard & Randolph J. May eds., 2006).

effectively destroy expectations of privacy and may affect the legal privileges around such communications.

Finally, even assuming at some point that more competition existed among broadband Internet access providers, the Commission has a duty to prevent fragmentation and balkanization of the Internet by ensuring simple, uniform non-discrimination rules, which will maximize investment and the utility of the Internet.

XI. THE PROPOSED RULES' RELATIONSHIP WITH ANTITRUST LAW

The Telecommunication Act's mandate to protect users goes beyond merely protecting consumers from anticompetitive conduct in the broadband Internet access service market.¹¹¹ Consequently, the Commission has different standards and mandates that are simply not contemplated under antitrust law.

In particular, the importance of protecting "innovation without permission" by start-ups and non-profit entities does not fit neatly within the rubric of competition law, nor does the social, political, and cultural value of the incredible outpouring of free expression and creativity online.

Consequently, the Coalition sees antitrust law as complementary to the Commission's broader responsibilities to protect Internet users and to its specific responsibilities under the Communications Act.

¹¹¹ For example, the Act mandates and imposes a duty to protect the privacy of their own and interconnecting customers. 47 U.S.C. § 222 (2005).

Even if antitrust laws could be applied to address unlawful conduct in the broadband Internet access service market, such litigation is very expensive and very slow. Most users will not have the resources to engage in such litigation. A start-up firm may be out of business before such litigation enters into a discovery schedule.

An Internet or technology start-up firm typically has between 12-18 months to capture a consumer base and succeed in the marketplace. The timetable of antitrust litigation simply is not a practical solution for such firms.¹¹²

Finally, antitrust law requires a plaintiff to prove actual harm. Under the Communications Act, it is sufficient to find the likelihood of harm.¹¹³ This standard gives the Commission more flexibility to anticipate harm in the marketplace or among users in a way that the antitrust laws cannot.

XII. DEEP PACKET INSPECTION AND OTHER NETWORK MANAGEMENT TECHNOLOGY

The proposed rules identify two general reasons why the enactment of rules may be timely. First, the Commission notes that “some conduct is occurring in the marketplace that warrants closer attention... including instances

¹¹² The number of antitrust cases left pending for three years or longer increased from 377 in 2007 to 520 in 2008. James C. Duff, *2008 Annual Report of the Director, Judicial Business of the United States Courts*.

¹¹³ See *Van Dyke Research Corp. v. Xerox Corp.*, 631 F.2d 251, 255 (holding that plaintiff must demonstrate that actual injury arose from antitrust violation in order to recover); *Universal City Studios v. Sony Corp. of Am.*, 659 F.2d 963, 973-74 (holding that proof of actual damages is too great a burden for a copyright claim).

in which Internet access service providers have been blocking or degrading Internet traffic.”¹¹⁴

Second, the Commission noted that it also believed “it is important to provide greater clarity and certainty to Internet users; content, application and service providers; and broadband Internet access service providers regarding the Commission’s approach to safeguarding the open Internet.”¹¹⁵

The Open Internet Coalition submits that there is another reason why the enactment of these rules at this time is warranted, and that has to do with the advancement and marketing of DPI technologies.

When then-AT&T chairman Ed Whitacre made his infamous statement about charging Internet content providers a fee for users to access content providers’ sites,¹¹⁶ the technology to accomplish Mr. Whitacre’s vision was only in its infancy.

¹¹⁴ *In the Matter of Preserving the Open Internet*, GN Docket No. 09-191; *Broadband Industry Practices*, WC Docket No. 07-52, Paragraph 50.

¹¹⁵ *Id.*

¹¹⁶ In an interview on the future of his company, Whitacre stated, “Now what [online companies such as Google] would like to do is use my pipes free, but I ain't going to let them do that because we have spent this capital and we have to have a return on it. So there's going to have to be some mechanism for these people who use these pipes to pay for the portion they're using. Why should they be allowed to use my pipes?” “At SBC, It’s All About ‘Scale and Scope,’” *BusinessWeek*, November 7, 2005. This quote is widely acknowledged as igniting a grassroots movement to protect the open Internet from the vision Mr. Whitacre articulated.

Today, DPI technology is widely available and is being actively marketed to broadband Internet access providers as a tool that will allow the providers to view the content of Internet communications and monetize the treatment of such content.

DPI technology involves looking at the content of a communication beyond the header information.¹¹⁷ DPI devices allow a broadband Internet access provider to inspect the entire content of a communication. This technology also allows the access provider to create, modify, or delete packets making up a user's communication—and do so at wire speeds—in order to delay, redirect, copy, or block a communication.

DPI technology was used by Comcast, when the cable company inserted or “forged” reset packets into their customers' communications, which resulted in the finding that Comcast's particular use of DPI measures was not “reasonable network management.”¹¹⁸

¹¹⁷ Deep Packet Inspection devices have the ability of looking at Layer 2 through Layer 7 of the OSI Seven Layer Model.

¹¹⁸ *In the Matters of Formal Complaint of Free Press and Public Knowledge Against Comcast Corporation for Secretly Degrading Peer-to-Peer Applications Broadband Industry Practices and Petition of Free Press et al, for Declaration Ruling that Degrading an Internet Application Violates the FCC's Internet Policy Statement and Does Not Meet an Exception for “Reasonable Network Management.”* File No. EB-08-1H-1518 and WC Docket No. 07-52, FCC 08-183. 23 FCC Rec 13028 41, 46, note 217 (rel. August 20, 2008) (“Comcast Order”).

The invasive nature of DPI technology has been well-chronicled by others, and we will not repeat those descriptions here.¹¹⁹

What has changed is how aggressive DPI vendors have been in marketing and selling such technology to broadband Internet access providers, as consumer demand has increased and networks struggle to keep pace. As these DPI electronics begin to populate the providers' networks, it is even more critical that the Commission finalize its rule that prevents the use of such technology to inspect content without express, voluntary "opt-in" consent by users after notice that such consent operates as a waiver of all expectations of privacy, or to discriminate against or in favor of particular content or applications.¹²⁰

¹¹⁹ See, e.g., What Your Broadband Provider Knows About Your Web Use: Deep Packet Inspection and Communications Laws and Policies: Hearing Before the H. Comm. on Energy and Commerce, Subcomm. on Telecommunications and the Internet, (2008) (statement of Alissa Cooper, Chief Computer Scientist, Center for Democracy & Technology); M. Chris Riley and Ben Scott, Free Press, Deep Packet Inspection: The End of the Internet As We Know It? (March 2009).

¹²⁰ The Commission notes a couple of these DPI vendors, including Procera Networks, which advertises its DPI technology as giving network operators the ability to "monetize your network" by monitoring user traffic on a real-time basis and using "optimization that distinguishes between interactive and downloading traffic." Procera Networks Inc., White Paper, *If You Can See It, You Can Monetize It* at 2-3 (2008), http://www.preoceranetworks.com/images/documents/procera_brochure_web_0620.pdf. Riley and Scott, *supra*, note that Allot, another DPI company, advertises its ability to "reduce the performance of applications with negative influence on revenues (e.g. competitive VoIP services)." Allot Communications. Pushing the DPI Envelope (June 2007), available at <http://www.sysob.com/download/AllotServiceGateway.pdf>

Notwithstanding the above, the Coalition notes that unless universally deployed, DPI will not be effective in ensuring priority treatment across the Internet. Broadband Internet access providers only can control the DPI electronics within their network. Once a user's packet leaves its access provider's network, it will travel on a best efforts basis unless all of the other transit providers and terminating access providers include the same DPI electronics with the same protocols.

What is more likely, if the Commission does not take action, is that the widespread deployment of such electronics would create a hodgepodge of different providers looking at users' content and making different decisions about how to treat such content. In essence, this would lead to a totally inefficient Internet system, totally contrary to the way the Internet was designed to work and what has made the Internet so successful. At best, such deployment would create balkanized portions of the Internet that treats traffic differently depending on the kind of DPI technology employed and the protocols such technology employs.

In addition, integration of DPI electronics either in access or long-haul network elements necessarily will introduce another point of failure into a system that was originally designed to route around failed interconnection points.

Certainly, DPI is simply a technology, and as such it is a neutral tool. DPI technology can be useful for such things as stopping denial of service attacks or

alleviating other network security issues. Consequently, the OIC is not advocating that the DPI technology be banned or that the network should not continue to incorporate advancements in technology. But once deployed, DPI can be used in harmful ways and therefore requires careful scrutiny and appropriate government oversight. This is especially important given that DPI vendors largely market their products not for network security issues but for providing monetization opportunities by discriminating against or for certain traffic. That is one critical reason why the enactment of non-discrimination rules is timely and important. Deployment of DPI threatens to jeopardize the foundational precept of the Internet, upon which prior governmental policy decisions rested – that all bits are treated equally in a best effort to reach their destination.

XIII. DEFINITION AND APPLICATION OF RULES TO BROADBAND INTERNET ACCESS PROVIDERS

The Open Internet Coalition believes the proposed rules should apply to facilities-based, last-mile, broadband Internet access providers. The Coalition supports the proposed definition of broadband Internet access service, but respectfully suggests the deletion “communication” from the definition. This change will help eliminate any ambiguity over whether the rules apply to both Internet access providers that may be classified as information service providers and the basic transmission services provided by telecommunications service providers.

The Coalition urges the Commission to clarify, however, that those networks that do *not* serve the general public, should continue to operate according to the needs of the owners of those networks. Colleges and universities, research institutions, and private corporations often operate private intra-net networks to support proprietary, non-public content, services, and applications.

In addition, it is understandable that the Commission's proposal would exclude "establishments that acquire broadband Internet access service from a facilities-based provider to enable their patrons or customers to access the Internet from their respective establishments."¹²¹ End users such as coffee shops and public libraries should be free to decide how they use their broadband services. This is consistent with the "end-to-end" principle on which the Internet was founded; control over the traffic should rest with the end user, not the public network operator.

XIV. THE RULES SHOULD APPLY TO BROADBAND INTERNET ACCESS PROVIDERS AND SHOULD NOT APPLY TO INTERNET USERS, INCLUDING CONTENT AND APPLICATION PROVIDERS.

The Commission has a robust docket on issues relating to network neutrality and openness on the Internet.¹²² And it has been widely understood

¹²¹ See *In the Matter of Preserving the Open Internet*, GN Docket No. 09-191; *Broadband Industry Practices*, WC Docket No. 07-52, Paragraph 55.

¹²² The Commission has compiled dockets in regards to a unanimous policy statement, a notice of inquiry on broadband industry practices, several petitions for rulemaking, conditions for major communications industry mergers,

that the issue of network neutrality relates to broadband Internet access providers' networks, not to Internet users, application providers, and content providers that rely on Internet access providers to engage the Internet. Indeed, it is telling that only one commenter suggested that the *Internet Policy Statement* be read as embodying obligations binding on content, applications, and service providers in addition to broadband Internet access providers.¹²³

Indeed it is ironic that our Coalition often is accused by AT&T and others of seeking to regulate the Internet.¹²⁴ Nothing can be further from the truth. Since the outset of the engagement at the Commission, in Congress, and elsewhere, the Open Internet Coalition has urged policymakers to establish rules that would not apply to the Internet, but rather to the entities that provide users with access to the Internet. This position underscores the policy of protecting the very tenet of what has made the Internet such a strong foundation for economic growth, commerce, and speech.

spectrum auction rules, and enforcement against Comcast and other service providers.

¹²³ See Letter from Robert W. Quinn, Jr., Senior Vice President Federal Regulatory, AT&T Services, inc., to Sharon Gillett, Chief, Wireline Competition Bureau, WC Docket Nos. 07-135, 07-52, at 2-3 (filed September 25, 2009).

¹²⁴ AT&T and other broadband providers funneled millions of dollars through lobbying organizations such as "Hands Off the Internet" to spread the message that network neutrality constitutes dangerous government intervention of the Internet. See e.g. Ellen Sheng, *Companies Weigh In With Net Neutrality* "Consumer Groups," Dow Jones Newswire Service, August 23, 2006.

The Commission and the vast majority of stakeholders always have understood that the *Internet Policy Statement* applies to broadband Internet access providers. In this proceeding, the Commission notes that the *Internet Policy Statement* was originally drafted “to ensure that broadband networks are widely deployed, open, affordable, and accessible to all consumers.”¹²⁵ The Coalition believes it would be unlawful for the Commission to apply these rules to Internet content and application providers.¹²⁶

The same day that the *Internet Policy Statement* was approved, then-Chairman Kevin Martin and Commissioner Copps noted the *Internet Policy Statement’s* applicability to broadband Internet access providers.¹²⁷

Perhaps most telling, as the Commission noted in this proceeding, the *Internet Policy Statement* was placed in five already-opened dockets dealing with issues relating to Internet access providers, but it was not placed in the

¹²⁵ *In the Matter of Preserving the Open Internet*, GN Docket No. 09-191; *Broadband Industry Practices*, WC Docket No. 07-52, Footnote 223, citing 20 FCC Rcd at 14988, para.4.

¹²⁶ At this time, the OIC will not go into a detailed legal analysis of the FCC’s lack of authority to regulate Internet application and content providers. For further discussion on this, however, see Frieden, *Why the FCC’s Proposed Openness Principles Cannot and Should Not Apply to Internet Application and Content Providers*.

¹²⁷ *In the Matter of Preserving the Open Internet*, GN Docket No. 09-191; *Broadband Industry Practices*, WC Docket No. 07-52, Footnote 223, citing 20 FCC Rcd at 14988, para.4.

docket most likely to address content, applications, and services – the *IP-Enabled Services* docket.¹²⁸

The Commission also noted in the proposed rules that in the *Comcast Network Management Practices Order*, the *Internet Policy Statement* was “part-and-parcel” of the decision to deregulate broadband Internet access service.¹²⁹

Finally, we note that a broadband Internet access provider’s control of the physical layer gives such provider a unique ability to control higher layers, such as content and applications, which are not replicable by the content and application providers traveling over the physical layers.

XV. TRANSPARENCY AND DISCLOSURE

A. Robust Disclosure Is Important to the Internet Ecosystem.

Network operators currently do not provide adequate disclosure to consumers or application providers to allow them to make informed decisions about where to allocate their resources and how to design their applications.

¹²⁸ *Id.*, citing *Internet Policy Statement* 20 FCC rcd at 14986 (identify six proceedings in five dockets: *Appropriate Framework for Broadband Access to the Internet over Wireline Facilities*, CC Docket No. 02-33; *Review of Regulatory Requirements for Incumbent LEC Broadband Telecommunications Services*, CC Docket No. 01-337, *Computer III Further Remand Proceedings: Bell Operating Company Provision of Enhanced Services*; *1998 Biennial Regulatory Review – Review of Computer III and ONA Safeguards and Requirements*, CC Docket Nos. 95-20, 98-10; *Inquiry Concerning High-Speed Access to the Internet Over Cable and Other Facilities*, GN Docket No. 00-185; *InternetOver Cable Declaratory Ruling, Appropriate Regulatory Treatment for Broadband Access to the Internet Over Cable Facilities*, CS Docket No. 02-52.)

¹²⁹ *Id.*, citing 23 FCC Rcd at 13047, para. 34.

That there is very little transparency concerning network management issues is illustrated by broadband Internet access providers' broad terms of service, which generally allow the providers change their terms without prior notice to customers or to the public. Even when broadband Internet access providers disclose information to the public, it is far less granular and complete than necessary to achieve the minimum level of transparency needed by users and applications providers.

The Internet is a cooperative of hundreds of private and public networks agreeing to interoperate in a compatible manner. Therefore, robust disclosure only goes so far in solving problems; applications developers and network operators simply cannot catalog the hundreds of potential variances from agreed-upon Internet standards that network operators might create.

Further, application providers lack adequate tools to design applications that can efficiently interoperate with every type of bandwidth constraint or possible bit-manipulation techniques that may be used by broadband Internet access providers.

Consequently, as discussed above, a strict non-discrimination rule is vital to ensure that the Internet continues to be an optimal, open platform for innovation and speech. Preservation of this openness also is the reason that any network management practice must be narrowly tailored to address a legitimate purpose.

The Commission should require broadband Internet service providers to

disclose—

- any service that inspects content of Internet traffic, including, but not limited to, DPI technology and any service at Layer 3 that does more than read and process basic addressing information;
- that such inspection of user content may operate as a waiver of the user's reasonable expectation of privacy;
- any and all limits imposed on or direct changes made to a customer's upstream or downstream traffic, including but not limited to, blocking traffic, delaying traffic, deprioritizing or prioritizing traffic, reordering traffic, redirecting traffic, discriminating for or against certain traffic, or inserting traffic into the stream;
- technical details of the methods used;
- exact details of all thresholds, including but not limited to, time-of-day or exact levels of congestion or bandwidth consumption, that triggers any network interference, as well as effects on the networks as a result of the chosen thresholds, such as percentage of users affected and the duration of time that those users are affected;
- exact details of thresholds that trigger a cessation of network interference;
- whether and to what extent users' activities and communications are monitored, and how that information is used and stored, and with whom it is shared;
- the type and nature of data collected, including but not limited to, dates, times, durations, Web or other Internet addresses, TCP packet content or IP headers;

- prior notice to users of any meaningful changes in terms of service that relate to one of the above-referenced matters;
- differences on how pipes are being allocated, especially if bandwidth is allocated dynamically;
- amount of capacity dedicated to Internet traffic, and if capacity is shared, how it is shared.

The above information should be collected by the Commission on a periodic and ongoing basis. The Commission should make public as much of the data as possible.¹³⁰

B. Disclosure Should Be Made Available to the Entire Internet Ecosystem.

As stated earlier, disclosure is important. There is no meaningful distinction, however, between different kinds of end-users (*i.e.*, consumers, content providers, or applications providers). For instance, today's graduate school student end-user may be working on an application for a school project that may become tomorrow's must-have application.

Currently, broadband Internet service providers do not make any network information available outside their terms of service. The proposed disclosure requirements would give consumers, as well as edge content and application

¹³⁰ The Open Internet Coalition supports the *ex parte* filing of Free Press on this subject. Ben Scott and Chris Riley, Notice of *Ex Parte* Filing; WC Docket No. 07-52 (October 24, 2008).

providers, information regarding the network and network management practices. Such disclosure is not a novel approach – it would be analogous to the comparably efficient interconnection (“CEI”) and open network architecture (“ONA”) rules. As the Commission understood when it adopted those rules, disclosure rules not only provide information to participants in the Internet marketplace, allowing them to make informed decision, but also help ensure that broadband access providers comply with the underlying open Internet principles.¹³¹

C. Traffic Management Practices Should Be Made Available 30 Days Before Implementation.

Broadband Internet access providers’ traffic management techniques should be made available to the public 30 days prior to being implemented. In addition, any meaningful change to an Internet access providers’ traffic management technique should be made available 30 days prior to implementation. In cases where it is not feasible to post such information 30 days prior to implementation (for example, because of exigent circumstances), the broadband Internet access provider should disclose practices as soon as reasonably possible and explain why it was not able to provide 30 days notice. The disclosures should be made online, in clear and conspicuous language to all

¹³¹ See 47 C.F.R. §§ 51.325-51.335. See also 47 U.S.C. § 251(c)(5) (requiring incumbent local exchange carriers to provide public notice of changes “in the information necessary for the transmission and routing of services using that local exchange carrier’s facilities or networks, as well as any of the other changes that would affect the interoperability of those facilities and networks.”).

marketing materials, customer contracts, and terms of service. Because changes in traffic management techniques would function as a unilateral attempt to amend the contract, if a user objects to the change, then the user should have the right to cancel the contract within a reasonable period without penalty or termination charges.

D. Disclosure Will Not Harm Network Operators.

There is no evidence that disclosure of network management information would slow innovation or slow or deter research in efficient network design. In fact, such disclosure likely would increase the speed of innovation, especially in the wireless space as application developers could create applications more quickly that account for different network management practices.

Disclosure will not undermine broadband providers' legitimate interest in protecting network security. The core requirement here is for broadband providers to clearly explain to Internet users the impact of a network management practice on the user experience and the performance of applications, content, and services. Thus, it will not impose overly burdensome requirements that would reveal critical internal details of their network management system.

There always is a slight risk of gamesmanship that some end users may use transparency to circumvent legitimate network management tools, but that is true even if transparency does not exist. For example, when Comcast was discovered to be discriminating against Torrent-based applications, many

application providers enacted counter-measures such as encryption to disguise their applications to avoid the Comcast discrimination. Non-transparent traffic management techniques such as the one Comcast employed encourages such gamesmanship, which is not healthy for the Internet ecosystem.

XVI. MANAGED SERVICES

The Open Internet Coalition does not believe that this rulemaking need establish a framework for so-called "managed services." The *Notice* does not provide much detail as to how such a category would be defined or why there is even a need for such a category. The proposed rules would apply to entities that provide broadband access to the public Internet. There has been no evidence that there is any application or content that cannot work over an open, best efforts Internet, subject to reasonable network management. Conversely, IP-based services such as U-verse fall under the Commission's Title VI jurisdiction and would not be subject to the rules proposed in this proceeding. The Coalition submits that given the lack of clarity and the questions raised in the *Notice*, it would be premature for the Commission to adopt a separate category for "managed services" without first establishing the need for such a category and the types of services that might be covered. Should the Commission adopt such a category, its policies should ensure that "managed services" do not prevent broadband access providers from providing robust, "best-efforts" broadband connections that are subject fully to the open Internet rules, and that any such

category is not used by network operators as a pretext for discriminating in favor of affiliated services.

XVII. CONCLUSION

For the foregoing reasons, the Open Internet Coalition respectfully requests the Commission to adopt the proposed rules, consistent with the recommendations made in this filing.

Respectfully Submitted,

OPEN INTERNET COALITION

/s/Markham C. Erickson

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APPENDIX A

October 19, 2009

The Honorable Julius Genachowski, Chairman
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

Dear Chairman Genachowski:

We write to express our support for your announcement that the Federal Communications Commission will begin a process to adopt rules that preserve an open Internet. We believe a process that results in common sense baseline rules is critical to ensuring that the Internet remains a key engine of economic growth, innovation, and global competitiveness.

For most of the Internet's history, FCC rules have ensured that consumers have been able to choose the content and services they want over their Internet connections. Entrepreneurs, technologists, and venture capitalists have previously been able to develop new online products and services with the guarantee of neutral, nondiscriminatory access by users, which has fueled an unprecedented era of economic growth and creativity. Existing businesses have been able to leverage the power of the Internet to develop innovative product lines, reach new consumers, and create new ways of doing business.

An open Internet fuels a competitive and efficient marketplace, where consumers make the ultimate choices about which products succeed and which fail. This allows businesses of all sizes, from the smallest startup to larger corporations, to compete, yielding maximum economic growth and opportunity.

America's leadership in the technology space has been due, in large part, to the open Internet. We applaud your leadership in initiating a process to develop rules to ensure that the qualities that have made the Internet so successful are protected.

Sincerely,

Jared Kopf
Chairman & President
AdRoll.com

Jeff Bezos
Founder & CEO
Amazon.com

Ashwin Navin
Co-Founder, *BitTorrent*
Founding Partner, *i/o Ventures*

James F. Geiger
Chairman & CEO
Cbeyond

Craig Newmark
Founder
Craigslist

Jay Adelson
CEO
Digg

Kevin Rose
Founder
Digg

John Donahoe
CEO
eBay, Inc.

Charles E. Ergen
Chairman & CEO
EchoStar Corporation

Erik Blachford
Former CEO
Expedia

Mark Zuckerberg
Founder & CEO
Facebook

Caterina Fake
Founder
Flickr

Eric Schmidt
CEO
Google Inc.

Barry Diller
Chairman & CEO
IAC

Reid Hoffman
Executive Chairman
LinkedIn

Scott Heiferman
CEO & Co-Founder
Meetup

John Lilly
CEO
Mozilla Corporation

Reed Hastings
Co-Founder & CEO
Netflix, Inc.

Howard Janzen
CEO
One Communications

David Ulevitch
Founder
OpenDNS

Josh Silverman
CEO
Skype

Stan Glasgow
President & COO
Sony Electronics

Thomas S. Rogers
President & CEO
TiVo Inc.

Evan Williams
Co-Founder & CEO
Twitter

Gilles BianRosa
CEO
Vuze, Inc.

Carl J. Grivner
CEO
XO Communications

Steven Chen
Founder
YouTube

Mark Pincus
CEO
Zynga

APPENDIX B

October 21, 2009

The Honorable Julius Genachowski, Chairman
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

Dear Chairman Genachowski:

We write to express our support for the Commission's ongoing efforts to adopt rules to safeguard the open Internet. As business investors in technology companies, we have first-hand experience with the importance of a guaranteeing an open market for new applications and services on the Internet. Clear rules to protect and promote innovation at the edges of the Internet will reinforce the core principles that led to its extraordinary social and economic benefits. Open markets for Internet content will drive investment, entrepreneurship and innovation. For these reasons, Net Neutrality policy is pro-investment, pro-competition, and pro-consumer.

Permitting network operators to close network platforms or control the applications market by favoring certain kinds of content would endanger innovation and investment in an investment sector which represents many billions of dollars in economic activity. The Commission is absolutely correct to propose clear rules that require competition. The promise of permanently securing an open Internet will deliver consumers and innovators a perfect free market that drives investment, job creation, and consumer welfare. These principles should apply across all Internet access networks, wired or wireless.

Investment and innovation at the edge of the network will create not just jobs but also new tools and opportunities for communication, education, health care, business, and every other human endeavor.

We look forward to working with you in developing clear rules to protect the open Internet, and in building together a framework to secure its future and promote its continued growth.

Sincerely,

Immad Akhund, Co Founder, Heyzap
Brian Ascher, Venrock
Aneel Bhusri, Partner, Greylock Partners (and Co-Founder and Co-CEO, Workday)
Matt Blumberg, Chairman & CEO, Return Path, Inc.
Brad Burnham, Union Square Ventures
Stewart Butterfield, Co-Founder, Flickr
Ron Conway, Founder, SV Angel LLC
John Doerr, Partner, Kleiner Perkins Caufield & Byers
Timothy Draper, Founder and Managing Director, Draper Fisher Jurvetson
Caterina Fake, Co-Founder, Flickr & Hunch

Brad Feld, Co-Founder, Foundry Group
Peter Fenton, Benchmark Partners
Eyal Goldwerger, CEO, TargetSpot
Jude Gomila, Co founder, Heyzap
Mark Gorenberg, Managing Director, Hummer Winblad
Jordan Greenhall, Founder of Divx
Bill Gurley, Benchmark Partners
Jed Katz, Managing Director, Javelin Venture Partners
Dany Levy, Founder, DailyCandy
Mario Morino, Morino Ventures, LLC
Jason Mendelson, Managing Director, Mobius Venture Capital
Michael Moritz, Sequoia Capital
Kim Polese, CEO of Spike Source, Inc.
Avner Ronen, CEO of Boxee
Pete Sheinbaum, Former CEO of Daily Candy
Ram Shriram, Founder, Sherpalo
David Sze, Partner, Greylock Partners
Albert Wenger, Union Square Ventures
Steve Westly, Managing Director, The Westly Group
Fred Wilson, Union Square Ventures