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EX PARTE

Ms. Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th Street, S.W.
Washington, D.C. 20554

Re: Ex Parte Submission in CS Docket No. 02-52

Dear Ms. Dortch:

In a series of comments and ex parte letters submitted over the last year in the above-captioned matter, various interested parties have addressed the desirability of a “network neutrality” regime for cable broadband. On November 18, 2002, the Coalition of Broadband Users and Innovators submitted a short letter arguing that “[g]overnment must ensure that transmission network operators do not encumber relationships between their customers and destinations on the network.” The National Cable & Telecommunications Association (“NCTA”), meanwhile, has submitted two letters dated December 10, 2002, and February 21, arguing that regulation is unnecessary and questioning the Commission’s authority. Other submissions on this matter include comments from the High Tech Broadband Coalition, ex parte letters from Amazon.com, Comcast Inc., Cox Cable Inc., and others, along with numerous oral ex parte presentations.

We write this letter not as stakeholders, but to address deeper questions of communications policy implicated by the Commission’s consideration of a neutrality regime. In short, we believe that the Commission has done much to successfully encourage investment and inter-platform competition in the market for broadband *infrastructure*. It has yet, however, to pay the same kind of attention to broadband *applications*. The arguments that support regulatory parity and a fair fight between cable, DSL, and other broadband platforms also favor promoting fair competition among

applications on a neutral network. But so far, the Commission has devoted little attention to ensuring either the security of investments in broadband applications, or fair conditions of competition. We believe that a neutrality regime is a first and salutary step in that direction.

This letter addresses three matters. First, it explains how a neutrality regime might relate to more general goals of the Commission's broadband policy. Second, it addresses two arguments made by the cable industry. It explains why a regulatory solution is preferable to self-regulation in this instance, and refutes the occasional arguments that the First Amendment would prohibit neutrality regulations. Finally, it introduces a sample neutrality regime designed to be simple while promoting the security of investments in broadband applications and fair competition in the market.

Statement of Interest

Both authors are professors of law whose subject of research and teaching include communications policy. Tim Wu is an associate professor at the University of Virginia School of Law. Previous to joining the Virginia faculty, he worked in the telecommunications industry in Silicon Valley. He teaches Internet law and intellectual property law, and is the author of numerous publications including *Network Neutrality, Broadband Discrimination*. Lawrence Lessig is a Professor of Law at Stanford Law School and founder of the school's Center for Internet and Society. Prior to joining the Stanford faculty, he was the Berkman Professor of Law at Harvard Law School. He is the author of the books *The Future of Ideas* and *Code and Other Laws of Cyberspace*, and numerous articles on the subject of communications policy. Neither author has been retained or paid by any of the parties to the captioned matter.

Why a Neutral Network?

The debate so far reflects paired accusations. Application developers accuse the cable industry of "discrimination" and "blocking content," and say it must be stopped.¹ The cable industry accuses developers of manipulating governmental regulation to gain a competitive advantage.² Less attention has been devoted to why the Commission might consider network neutrality an independently valuable objective, or to explain how a neutrality regime might reflect broader goals of the Commission's broadband policy.

Fundamentally, should the Commission care if the Internet remains a "neutral" network—more precisely, one that does not favor one application (e.g., the World Wide

¹ See, e.g., High Tech Broadband Coalition Ex Parte Letter, June 17, 2002; Coalition of Broadband Users and Innovators Ex Parte Letter, Nov. 18, 2002.

² See, e.g., National Cable & Telecommunications Association Ex Parte Letter, Feb. 21, 2003.

Web), over others (e.g., mass online gaming)? Is it of any concern to the public if the Internet is biased to favor some things over others?³

The answer is yes. There are two reasons the Commission should care about maintaining a neutral network, both reflecting the Commission's interest in "stimulat[ing] investment and innovation in broadband technology and services."⁴ First, guaranteeing a neutral network eliminates the risk of future discrimination, providing greater incentives to invest in broadband application development today. Second, a neutral network facilitates fair competition among applications, ensuring the survival of the fittest, rather than that favored by network bias. These arguments will be explained in the sections that follow.

Securing Investments in Innovation

A network that is as neutral as possible is predictable: all applications are treated alike. Since the Commission wants to maximize the incentives to invest in broadband applications, it should act now to eliminate the unpredictability created by potential future restrictions on network usage.

The value of network neutrality can be seen clearly in another context: the nation's electric system. Because it remains neutral, the electricity network has served as an important platform for innovation. The electronics industry designs new and better electronics, safe in the assumption that American electricity will be provided without preference for certain brands or products. When consumers buy a new toaster made by General Electric they need not worry that it won't work because the utility company makes a competing product.

At the heart of this success story lies the predictability of the network and a certain security of investment. The uniformity of the electric grid is a safeguard against the risk of restrictions and uneven standards. It provides designers and consumers alike with a baseline on which they can rely.

Unfortunately the nature of today's broadband networks makes investment in mass broadband applications a far riskier proposition. The nation's broadband network is in its infancy, just now reaching tens of millions of users, like the narrowband Internet in

³ Of course, it is inevitable that by its design the internet or any communications network will invariably create some favoritism for certain uses. Pure neutrality is more of an aspiration than a fully achievable design principle. The point of the argument is the minimization of bias, not the total elimination of all conceivable forms. Cf. *Lamb's Chapel v. Center Moriches Union Free Sch. Dist.*, 113 S. Ct. 2141, 2149-50 (1993) (Scalia, J., concurring) (on the meaning of neutrality in the context of church and state).

⁴ FCC Statement of Broadband Policy, available at <http://www.fcc.gov/broadband/>.

the mid-1990s.⁵ At this critical juncture, the broadband networks, particularly those operated by cable operators, have imposed a confusing patchwork of contractual and technical restrictions, enforced in an unpredictable manner. The reasons for these bans and restrictions are a mix: they range from legitimate security concerns all the way to interests in promoting competing products. Since every provider acts independently, neither developers nor consumers can predict whether a new, innovative application will be banned in certain parts of the country. It as if a new toaster were to work well in Connecticut and California, but not in Wisconsin or Wyoming.

The recent story of Virtual Private Networks (VPNs) illustrates the problem. VPNs, which allow employees to work more efficiently from home, are a good example of the kind of productivity-enhancing application that broadband makes possible. However, when cable operators became aware of the usage of VPNs, the results were messy.⁶ Some cable operators decided to ban their usage outright, or demand additional fees. Others banned them without any enforcement. Still others allowed VPNs without comment. The unpredictability and variance in these restrictions has been expensive. It has imposed unnecessary costs on the developers of VPN technology, the companies who might benefit from VPN technology, and, of course, on workers themselves.

Over the last year, many of the VPN bans have been relaxed, mainly as a result of the publicity stemming from the instant inquiry.⁷ But the VPN episode is generally indicative of a problematic tendency: the restriction of new and innovative applications that broadband operators see as either unimportant, a competitive threat, or a chance to make money. The result is that the effects of usage restrictions fall hardest on small and startup developers—the kind without the resources to file comments before the Commission. By definition, startup application developers push the envelope of what is possible using the Internet’s architecture.⁸ Their funding depends on the existence of a stable, addressable market for their products. Such developers would benefit the most from knowing that they can rely on a broadband network that is consistent throughout the homes and businesses of America.

A long standing goal of the Commission in broadband is to “stimulate investment and innovation in broadband technology and services.”⁹ The Commission has done much, successfully, to encourage the build-out of a broadband infrastructure. It should

⁵ See Tam Harbert, *Broadband Penetration in U.S. Continues*, ELECTRONIC BUSINESS, July 1, 2003, at 26 (citing American Electronics Association study placing number of broadband Internet users in U.S at 16.2 million as of June 2002).

⁶ See Tim Wu, *Network Neutrality, Broadband Discrimination*, 2 COLO. J. TELECOMM. & HIGH TECH. L. 11—12, 20—21 (forthcoming 2003).

⁷ See, e.g., Cox Communications Ex Parte Letter, April 7, 2003; Comcast Corporation Ex Parte Notice, May 15, 2003.

⁸ See generally, Clay Christiansen, *The Innovators Dilemma* (1997) (suggesting that large firms, focused on consumers’ present needs, will be unlikely to develop the products of the future).

⁹ FCC Statement of Broadband Policy, available at <http://www.fcc.gov/broadband/>.

now provide the necessary security for investments in new services and new applications, by making the environment for investment in broadband applications similarly consistent and secure. By instituting a well-reasoned neutrality regime, it may do just that.

Encouraging Competition Among Applications

In addition to increasing the predictability of investments in broadband, a neutrality regime also promotes policies of innovation through competition that the Commission has repeatedly endorsed. Most recently, in its broadband infrastructure inquiries, the Commission has favored “multiple platform competition,” promoting a fair fight between DSL, cable, and other broadband access infrastructures.¹⁰ The same underlying principles, namely, an evolutionary model of technological innovation, favor the promotion of a neutral network today.

In the academic literature, the Commission has endorsed the evolutionary, or competitive model of innovation.¹¹ It holds that the process of technological innovation proceeds most rapidly through a survival-of-the-fittest competition between new technologies, and it encourages policies to ensure a fair fight among competing innovations.

If this “Darwinian evolution” is the best path of innovation, it follows that the most promising path of development will be difficult to predict in advance. Hence despite the “waste” generated by a competitive process, the results will be superior to planned innovation directed by a single prospect holder, however well-intentioned.¹² That entity will suffer from cognitive biases (such as a predisposition to continue with current ways of doing business) that make it unlikely to come to the right decisions, even if it means well.¹³

There is a direct link between these evolutionary theories of innovation and the market for broadband Internet applications. The Internet has long functioned as a figurative “platform” for a fierce and highly innovative competition between applications. Popular applications like email, the World Wide Web, and chat programs are the survivors of an ongoing battle for the attention and interest of users. Over the last two

¹⁰ *Appropriate Framework for Broadband Access to the Internet over Wireline Facilities, Universal Service Obligations of Broadband Providers*, CC Docket No. 02-33, Notice of Proposed Rulemaking (“*Wireline Broadband NPRM*”) ¶ 4 (rel. Feb. 15, 2002).

¹¹ See, e.g., John Ziman, *Evolutionary Models for Technological Change*, in TECHNOLOGICAL INNOVATION AS AN EVOLUTIONARY PROCESS 3 (John Ziman ed., 2000); Richard Nelson, UNDERSTANDING TECHNICAL CHANGE AS AN EVOLUTIONARY PROCESS (1987).

¹² These ideas are also discussed in the legal literature. See, e.g., Richard Posner, THE ECONOMIC STRUCTURE OF INTELLECTUAL PROPERTY LAW 364 (forthcoming, on file with author). See also Edmund W. Kitch, *The Nature and Function of the Patent System*, 20 J.L. & ECON. 265 (1977).

¹³ See Clay Christiansen, *The Innovators Dilemma* (1997) (explaining that firms that pay too much attention to current customer needs often fail to reach the highest levels of innovation).

decades, applications like “gopher” and “archie” have been largely surpassed by newer and better applications. Every year, new and unforeseen uses of the Internet arise, like the mass network gaming applications that have recently taken the Internet by storm.¹⁴

This evolutionary process was directly facilitated by the early Internet’s design. As articulated in 1981 by Professors Jerome H. Saltzer, David P. Reed, and David D. Clark,¹⁵ the Internet’s “end-to-end” design assured innovators that the network itself would not interfere with new applications. Instead, by vesting intelligence at the edge, or “end” of the network, the Internet shifted the capacity to discriminate from the network to the user.¹⁶ The architecture thus removed the possibility that network owners, for competitive or strategic reasons, would interfere with new applications.

Today, the Commission is faced with the challenge of promoting broadband, and it has largely adopted an approach that favors fair competition among competing technologies. In the race for the “last-mile,” the Commission could have simply chosen to overtly favor the success of DSL, cable, or wireless broadband, based on its best guess. But instead, it has promoted “the development and deployment of *multiple* platforms,” and said that the Commission “should avoid policies that have the unintended consequence of embracing too quickly any one technology or service.”¹⁷ It embraces intermodal parity, seeking to develop a regulatory framework that is “consistent across multiple platforms.”¹⁸

These policies are nothing but a restatement of the central principles of evolutionary innovation. Through its commitment to intermodal parity, the Commission has endorsed a policy of leveling the playing field to let the best technology win. But the job is incomplete. The same promotion of competition among last-mile infrastructures is now needed for the broadband application market. Restrictions on usage, however well- or ill-intended, tend to favor certain applications over others. They are the functional equivalent of the Commission choosing a winner in broadband. They threaten to replace survival-of-the-fittest with survival-of-the-favored.

By requiring operators to justify deviations from neutrality, a neutrality regime would prevent both unthinking and ill-intentioned distortion of the market for new

¹⁴ See, e.g., *Console Wars: Video Games Grow Up*, *The Economist*, June 22, 2002.

¹⁵ See Jerome H. Saltzer et al., *End to End Arguments in System Design*, in *INNOVATIONS IN INTERNETWORKING* 195 (Craig Partridge ed., 1988) (available at <http://web.mit.edu/saltzer/www/publications/endtoend/endtoend.pdf>).

¹⁶ These arguments are described in greater depth in Written Ex Parte of Professor Mark A. Lemley and Professor Lawrence Lessig, In re Application for Consent to the Transfer of Control of Licenses MediaOne Group, Inc. to AT&T Corp. (FCC Dec. 15, 1999) (No. 99-251).

¹⁷ *Wireline Broadband NPRM*, *supra* note 9, ¶ 4.

¹⁸ *Inquiry Concerning High-Speed Access to the Internet over Cable and Other Facilities, Internet Over Cable Declaratory Ruling, Appropriate Regulatory Treatment for Broadband Access to the Internet over Cable Facilities*, CS Docket No. 02-52, Declaratory Notice and Notice of Proposed Rulemaking, ¶ 6 (rel. Mar. 15, 2002).

applications. Again, the Commission has a powerful example before it in what it has done to ensure intermodal competition among broadband infrastructures. It would be advised to take the same pro-competitive course for the application market.

Is Self-Regulation Sufficient?

In its filings with the Commission and other materials, the cable industry has suggested that it agrees with the basic premises of a neutral network. It says that “consumers should have access to all lawful Internet content unless they choose otherwise.” It wants to be trusted to maintain the network, asserting that it has no particular plans to block access to one or another applications. In speeches, cable executives have described neutrality rules as “a solution looking for a problem.”¹⁹

There are no reasons to doubt the good intentions of the cable industry or other broadband providers. A healthy broadband Internet is as good for the cable industry as everyone else, as they rightly point out. And while cable today delivers the fastest and therefore most attractive broadband connections, truly egregious restrictions on Internet usage would indeed eventually lead consumers to switch to cable’s technologically-inferior competitors, like DSL, or even prompt a retreat to narrowband access methods. So the industry is correct to note that there is *some* outer limit on what it might do to its users without losing business.

But the record over the last several years confirms that the alignment of the public and cable industry’s interests is inexact. Contrary to the assertions of the NCTA,²⁰ individual providers have a recent and continuing history of placing unacceptable contractual and technical limits on the use of their networks, sometimes for short-sighted reasons.

Consider, for example, the case of home networking (networks that interconnect several home computers to a single broadband connection, often using WiFi technology). Today, the restrictions on home networking are a patchwork. At one extreme, some DSL providers explicitly allow home networking.²¹ Many operators express no clear opinion. But others have banned home networking, and at least one major cable provider has threatened home networkers with criminal punishment. It defined the use of a home-

¹⁹ Robert Sachs, Remarks to NARUC/NECA Summit on Broadband Deployment II (Apr. 28, 2003) (available at http://www.ncta.com/pdf_files/RJS_NARUC_04-28-03.pdf).

²⁰ See, e.g., National Cable & Telecommunications Association Ex Parte Letter, Dec. 10, 2002. One particular oddity in this respect is the NCTA’s claim that the development of the Data Over Cable Service Interface Specifications (DOCSIS) standard in some way demonstrates that the cable networks are “open.” While it is true that DOCSIS is itself a neutral standard, the existence of DOCSIS itself does nothing to prevent cable operators from placing other forms of technical limitations on cable service, or enforcing contractual restrictions on usage of the network.

²¹ See Verizon Service Agreement ¶ 3.6(B), <http://www.verizon.net/policies/internetaa.asp>.

network as “Theft of Service,” and tells its users that sharing the connection within the home “is a violation of federal law” that “can result in both civil and criminal penalties.”²²

Bans like these sacrifice the potential of home-networking in the hope of drumming up marginal extra business. Ultimately such behavior is not a surprise, for basic economic logic suggests that restrictions on usage can be both good for the provider and bad for the country at the same time. Requiring that home networking equipment (like home WiFi) be purchased and installed by the cable operator generates additional revenue. This revenue may be greater than the revenue lost to users who do not subscribe to cable because of the restrictions, hence making it rational for the provider to enforce the ban. However, the policy exacts a range of costs that the provider does not absorb—what economists call an “externalized cost.”²³ It hurts the manufacturers of home networking equipment who face a smaller market for their products. It hurts developers of applications that assume the existence of a home network, because of the unpredictability of local restrictions. And it hurts consumers who decide to forgo home networking because of the restriction and the higher prices charged by the operator. These deadweight losses form the core of the economic case against self-regulation in this instance.

* * *

Cable providers have also argued that the problem is, in effect, not yet ripe. Despite the troubling and well-documented examples of discrimination against VPNs, home-networks, and online gaming, the cable industry has argued that the amount of discrimination in broadband Internet services is not significant. It suggests that “in the absence of market failure, there is no reason to [act.]”²⁴ The Commission, in its view, should wait to see if discrimination becomes a more serious problem.

But this argument misses an obvious point. The potential for discrimination has an obvious effect upon innovation today, whether or not there is any actual discrimination now. The question an innovator, or venture capitalist, asks when deciding whether to develop some new Internet application is not just whether discrimination is occurring today, but whether restrictions might be imposed when the innovation is deployed. If the innovation is likely to excite an incentive to discrimination, and such discrimination could

²² This language was in the December, 2002, AT&T Broadband Acceptable Internet Use Agreement, then available at

http://help.broadband.att.com/faq.jsp?content_id=1107&category_id=34. It has since been replaced by the present Comcast Acceptable Use policy and subscriber agreements, available at <http://www.comcast.net/terms>. As for home networking, the current subscriber agreement policy says that users may not use their cable service as “as an end-point on a non-Comcast local area network.” See <http://www.comcast.net/terms/subscriber.jsp>. Whether this is meant to allow home networking or not is unclear.

²³ See 2 The New Palgrave: A Dictionary of Economics 263, 263-65 (John Eatwell et al. eds., 1987).

²⁴ See, e.g., National Cable & Telecommunications Association Ex Parte Letter, Dec. 10, 2003.

occur, then the mere potential *imposes a burden on innovation today* whether or not there is discrimination now. The possibility of discrimination in the future dampens the incentives to invest today.

Would a Neutrality Regime Present a First Amendment Problem?

Some have suggested that however desirable a neutral network might be, the Commission's power to regulate broadband operators to prevent discrimination among applications is precluded by the First Amendment. This argument relies on an interpretation of the First Amendment unsupported by Supreme Court precedent.

As the Commission is well aware, there has long been a distinction between the First Amendment's treatment of publication or broadcasting on the one hand, and mere carriage on the other.²⁵ The distinction reflects the expressive qualities of the former as opposed to the latter, and contains a certain practical wisdom. If carrying data were expressive conduct, the traffic laws that affect postal trucks might suddenly be subject to first amendment scrutiny, as would the entire scheme of telephony regulation.

The Supreme Court has never endorsed the position that every aspect of operating a communications network is protected speech, and the consequences of such a view would be untenable. Instead it has been careful to distinguish what, if any, the expressive aspect of operating a network might be. For example, in the television context, the Supreme Court has suggested that the First Amendment protection of cable operators comes from their exercise of editorial discretion in the selection of channels and content. As the Court explained in *City of Los Angeles v. Preferred Communications, Inc.*, beyond original programming, an operator's expression consists of "exercising editorial discretion over which stations or programs to include in its repertoire."²⁶

When applied to the broadband network, it is difficult to find a similar exercise of editorial discretion in the transmission of content. Primarily, it is the ends—the user of the Internet or a remote speaker—who decide on the content of transmission, not the broadband operator. The only influence the operator has over the content of what it carries is through the act of restricting usage or blocking content. Hence it is the act of banning virtual private networking, or the attachment of home networking equipment which the broadband operator would need to rely upon to claim First Amendment protection.

As such it is quite unclear whether imposing network restrictions would qualify as protected "speech." As an exercise of "editorial discretion," it lacks what cable operators

²⁵ See, e.g., Angela J. Campbell, *Publish or Carriage: Approaches to Analyzing the First Amendment Rights of Telephone Companies*, 70 N.C. L. REV. 1071, 1097 (1992); Geoffrey Stone et al., CONSTITUTIONAL LAW 1004 (2001).

²⁶ 476 U.S. 488, 494 (1986). See also *FCC v. Midwest Video Corp.*, 440 U.S. 689, 707 (1979).

had in cases like *Preferred Communications*: a decided judgment to create a particular package of content or programming for known customers. It is true that the act of banning certain types of usage might instead be cast as some form of expressive conduct. Unfortunately, the conduct that the Court has recognized as expressive, like the burning of draft cards in *United States v. O'Brien*,²⁷ is that which clearly communicates a message (like opposition to the draft). In contrast, when a cable operator bans VPNs or stops people from hooking up home networks, it is unclear what message, if any, this is meant to communicate. Finally, it is also true that exclusion or bans sometimes relate to an interest in “expressive association,” like that claimed in *Boy Scouts of America v. Dale*,²⁸ where the Boy Scouts fired a gay scoutmaster. Yet it remains similarly unclear what the cable operator’s associational message might be. Cable operators, unlike the Boy Scouts, cannot plausibly claim that they need to exclude certain uses of the network to preserve some deeper aspect of a cable operators’ associational identity. The general point is that in the absence of any identifiable message or editorial policy informed by usage restrictions, it is hard to see how imposing network restrictions would be seen as protected speech under the First Amendment.

Whether restricting use of the network amounts to speech doesn’t ultimately matter, for the Commission’s authority is secure in either case. The bans on discrimination that at the center of any neutrality regime are a textbook case of a content-neutral regulation of conduct, supported by substantial government interests. Under the familiar authority of cases like *O'Brien*, and *Ward v. Rock Against Racism*,²⁹ neutrality regulation is not a hard case.

Stated otherwise, the Commission’s authority follows *a fortiori* from the *Turner* litigation.³⁰ A general ban against discriminating among network uses is content-neutral; if anything, more so than the “must-carry” rule in *Turner* that required carrying specific television channels.³¹ And the interests recognized by the Supreme Court in *Turner* as substantial government interests are the same: “promoting the widespread dissemination of information from a multiplicity of sources, and ... promoting fair competition in the market for television programming.”³²

²⁷ 391 U.S. 367 (1968).

²⁸ 530 U.S. 640 (2000)

²⁹ 491 U.S. 781 (1989); *see also* *United States Civil Serv. Comm’n v. National Ass’n of Letter Carriers*, 413 U.S. 548 (1973) (upholding content neutral restrictions on the speech of federal employees).

³⁰ *See Turner Broadcasting System, Inc. v. FCC (Turner I)*, 512 U.S. 622 (1994); *Turner Broadcasting System, Inc. v. F.C.C. (Turner II)*, 520 U.S. 180 (1997).

³¹ “[L]aws that confer benefits or impose burdens on speech without reference to the ideas or views expressed are in most instances content neutral.” *Turner I*, 512 U.S. at 643.

³² *Turner I*, 512 U.S. at 662; *see also Associated Press v. United States*, 326 U.S. 1, 20 (1945) (First Amendment “rests on the assumption that the widest possible dissemination of information from diverse and antagonistic sources is essential to the welfare of the public, that a free press is a condition of a free society.”).

The obvious result of forbidding bans on usage or content is to promote “widespread dissemination of information” from the widest number of sources possible. But it is perhaps easier to see a neutrality regime in First Amendment terms as simply a form of competition regulation, the second interest identified above. As the Supreme Court has stated, “Government’s interest in eliminating restraints on fair competition is always substantial, even when the individuals or entities subject to particular regulations are engaged in expressive activity protected by the First Amendment.”³³

It is also clear that a neutrality regime would leave open ample “alternative channels” of communication, as the *Ward* standard requires.³⁴ A cable operator who banned VPNs to express its belief that people ought not work at home is perfectly free to express such sentiments in other forums. Indeed, the operator could use the Internet itself to promulgate its views, to a broad and likely receptive audience.

We add it is of course possible to imagine a “bad faith” neutrality regime that would in fact run afoul of the First Amendment. For example, a regime that prohibited cable operators from making their *own* content available on their networks might create serious First Amendment problems. But the regime we propose here does not contain any such restriction.³⁵ A content-neutral ban on discrimination in the carriage of content, like that proposed in this letter, is extremely unlikely to run afoul of the First Amendment.

In short, some of the First Amendment arguments advanced in the network neutrality debate have relied more on the charisma of the claim than any analysis of Supreme Court precedent. Under mainstream First Amendment analysis as enumerated by the Court, there is little basis for doubting the Commission’s authority.

³³ *Id.* at 664. This philosophy did not originate with the *Turner* litigation – its origins are much deeper. As Justice Black stated in *Associated Press v. United States*, 326 U.S. 1, 20 (1945):

It would be strange indeed however if the grave concern for freedom of the press which prompted adoption of the First Amendment should be read as a command that the government was without power to protect that freedom. The First Amendment...provides powerful reasons to the contrary. That Amendment rests on the assumption that the widest possible dissemination of information from diverse and antagonistic sources is essential to the welfare of the public, that a free press is a condition of a free society. Surely a command that the government itself shall not impede the free flow of ideas does not afford non-governmental combinations a refuge if they impose restraints upon that constitutionally guaranteed freedom.

³⁴ 491 U.S. at 791 (content neutral restrictions must “leave open ample alternative channels for communication of the information.”).

³⁵ *See, e.g.*, Amazon.com Ex Parte Letter, Appendix B, Dec. 10, 2002.

A Proposed Network Neutrality Scheme

We close by offering an example of a network neutrality regime. What follows is designed to strike a balance: between forbidding broadband operators from restricting what users do with their Internet connection, and giving the operator general freedom to manage bandwidth consumption and other matters of local concern. The regime adopts the basic principle that broadband operators should have full freedom to “police what they own” (the local network) while other restrictions should be viewed with suspicion.

Background

The proposal applies familiar principles from foreign attachment regulation as applied to particular technical aspects of a Broadband network. For that reason, some introduction to those principles is necessary.

Today’s problem of Broadband usage restrictions are mirrored by the problem the Commission and courts faced in the telephony context in the 1950s. The question then was for what reasons AT&T might restrict “foreign attachments” to its network. In the well-known *Hush-A-Phone* decision, AT&T sought to ban the use of a simple plastic cup used to facilitate the privacy of telephone conversations as an “unauthorized foreign attachment. “The deeper question was the same as that presented today: when do a carrier’s restrictions on network usage create public injury?

The D.C. Circuit’s solution was a “harm” requirement. It interpreted the 1934 Communications Act to find that the subscriber has a “right reasonably to use his telephone in ways which are privately beneficial without being publicly detrimental.”³⁶ The Commission, in turn ordered the Bells to allow telephone customers to attach devices that “do[] not injure ... the public in its use of [Bell’s] services, or impair the operation of the telephone system.”³⁷

The same basic requirement remains with us today. The *Hush-a-Phone* decision led to the Commission’s broader *Carterfone* decision,³⁸ and finally Part 68. Part 68 is still focused on balancing the user’s freedom to use his telephone as he likes against the need to preventing harm to the network itself.³⁹ The proposal that follows adapts these principles to the particular context of Broadband communications, as the next section shows.

³⁶ *Hush-A-Phone v. United States*, 238 F.2d 266, 268 (D.C. Cir. 1956).

³⁷ *Hush-A-Phone Corp. v. AT&T*, 22 FCC 112, 114 (1957).

³⁸ 13 F.C.C.2d 420 (1968)

³⁹ See 47 CFR §68 *et seq.*

The Proposed Neutrality Regime

§___ Forbidding Broadband Discrimination

- (a) Broadband Users have the right reasonably to use their Internet connection in ways which are privately beneficial without being publicly detrimental. Accordingly, Broadband Operators shall impose no restrictions on the use of an Internet connection except as necessary to:
 - (1) Comply with any legal duty created by federal, state or local laws, or as necessary to comply with any executive order, warrant, legal injunction, subpoena, or other duly authorized governmental directive;
 - (2) Prevent physical harm to the local Broadband Network caused by any network attachment or network usage;
 - (3) Prevent Broadband users from interfering with other Broadband or Internet Users' use of their Internet connections, including but not limited to neutral limits on bandwidth usage, limits on mass transmission of unsolicited email, and limits on the distribution of computer viruses, worms, and limits on denial-of-service-or other attacks on others;
 - (4) Ensure the quality of the Broadband service, by eliminating delay, jitter or other technical aberrations;
 - (5) Prevent violations of the security of the Broadband network, including all efforts to gain unauthorized access to computers on the Broadband network or Internet;
 - (6) Serve any other purpose specifically authorized by the Federal Communications Commission, based on a weighing of the specific costs and benefit of the restriction.
- (b) As used in this section,
 - (1) "Broadband Operators" means a service provider that provides high-speed connections to the Internet using whatever technology, including but not limited to cable networks, telephone networks, fiber optic connections, and wireless transmission;
 - (2) "Broadband Users" means residential and business customers of a Broadband Operator;
 - (3) "Broadband Network" means the physical network owned and operated by the Broadband Operator;
 - (4) "Restrictions on the Use of an Internet Connection" means any contractual, technical, or other limits placed with or without notice on the Broadband user's Internet Connection.

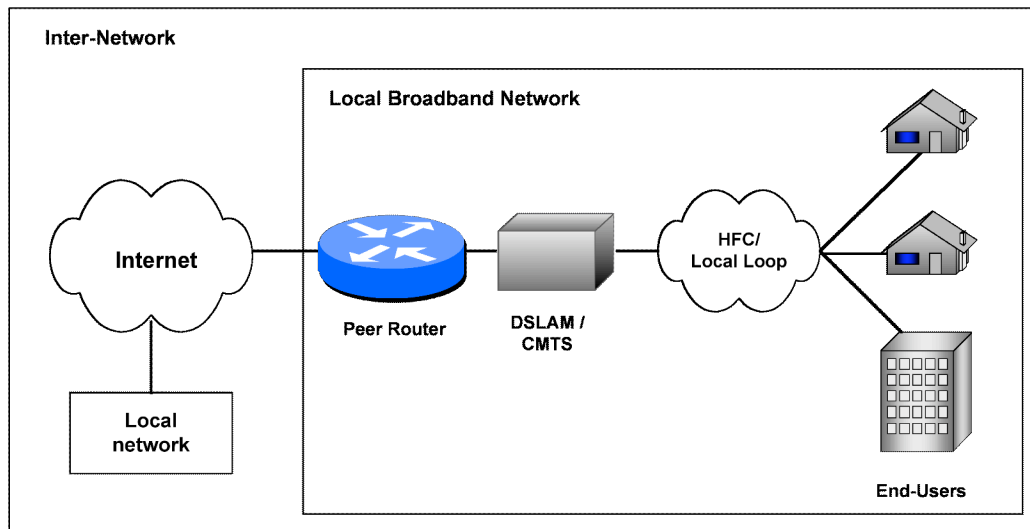
Commentary

Structurally, this network neutrality regime creates a non-discrimination rule with several exceptions. The exceptions are important and reflect the need to allow certain grounds of discrimination: those necessary to network administration and to prevent

harm to the network or other users. The existence of these needs, in turn, is driven by several technical aspects of broadband networks that we shall now explain.

The structure of the exceptions reflect the fact that Broadband Carriers are members of two logically distinct networks. Each Broadband Carrier owns a local network, which it manages individually. But each is also a member of the Internet, which all service providers manage collectively.

Figure 1: Broadband Carriers, Members of Two Networks



As a result, *local* network restrictions will generally affect only the network run by a single service provider, and therefore should generally be allowed. In contrast, by definition, other restrictions will generally affect the entire network, and consequently, the neutrality of the Internet as a platform for application development. It is for this reason that the proposal is designed to allow broadband operators to enforce usage restrictions that will affect conditions of communication on the broadband network. It is a policy, in other words, that allows operators to “police what they own.”

Stated more technically, the criteria of discrimination that cause concern tend to be those of the shared network, or Internet, such as discrimination based on IP address, domain name, cookie information, TCP port, and others. Hence, the general principle can be stated as follows: absent evidence of harm to the local network or the interests of other users, Broadband Carriers should not discriminate in how they treat traffic on their broadband network on the basis of internetwork criteria. The negative inference is that operators generally *may* discriminate in their treatment of traffic on the basis of *local* network criteria. In technical terms, this means imposing restrictions on the basis of what network engineers call “link” information, like bandwidth, jitter, or other local Quality of Service indicia.

Finally, the proposal contemplates the accommodation of new usage restrictions as justified on a case-by-case basis, on a showing of harm justifying such a restriction.

Example: Online Gaming

Before concluding, we offer an example of how the proposed neutrality regime would function with respect to online gaming restrictions. Popular online gaming applications⁴⁰ like *Everquest* or *Online Quake* tend to be bandwidth intensive, particularly compared with episodic applications like email. As seen above, concerned Broadband Carriers have therefore been inclined to restrict the usage of such applications. However, with the neutrality regime proposed, the potential problems created by the popularity of online games can be managed in a better way.

First, in the absence of a Neutrality Regime, a broadband carrier could restrict the amount traffic from gaming sites. It could do it either by enforcing a contractual provision in a usage agreement or using its control of the local network to block traffic from gaming sites based on either application information, or the IP address of the application provider.⁴¹ Some carriers might elect, for a given supplemental fee, to remove the filter for specified users.

Under the neutrality principle here proposed, this approach would be disallowed. Instead, a carrier concerned about bandwidth consumption would police bandwidth usage, not block individual applications. Users interested in a better gaming experience would then need to buy more bandwidth. The market for online games would therefore not depend on Broadband Carriers granting permission to use a given application.

The neutrality of such control would prevent the distortion in the market for Internet applications. If carriers choose to block online games in particular, this gives a market advantage to competing applications that have not been blocked. But if Broadband Carriers only police bandwidth, the result is an even-playing field. It may be that the expense of more bandwidth leads people to choose different ways to spend their money. But if so, that represents a market choice, not a choice dictated by the filtering policy of the Broadband Carrier.

⁴⁰ Also commonly referred to as “Massively Multiple Online Games,” or MMOGs.

⁴¹ For an explanation of how a broadband carrier would do so, see, e.g., *The Cisco Content Delivery Network Solution for the Enterprise*, Cisco White Paper (April 2002) available at <http://www.cisco.com>; Cosine, Inc., *Digital Subscriber Lines and Managed Network-based Services: A Perfect—and Profitable—Marriage*, Cosine White Paper, available at <http://www.cosine.co>

Conclusion

It is hardly news to recognize that the Commission's "horizontal" model of telecommunications regulation is an uneven match with the "vertical" structure of today's communications networks.⁴² But the Commission is fully aware of this fact, and is in the midst of a salutary and important transition between the horizontal and vertical models. Its ongoing effort to achieve regulatory parity in broadband is an important step toward a vertical orientation.

Yet the job remains incomplete. It is now focused exclusively on infrastructure. Neutrality is also the baseline for promoting fair competition in the application market. It is the starting point for the Commission to begin creating a clear environment that facilitates both investment in broadband applications and competition among them. The full realization of the Commission's broadband policy objectives demands no less.

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⁴² See, e.g., Kevin Werbach, *A Layered Model for Telecommunications Policy*, 1 COLO. J. TELECOMM. & HIGH TECH. L. ____ (2002); Lawrence Solum & Minn Chung, *The Layers Principle: Internet Architecture and the Law*, Loyola-LA Public Law Research Paper No. 15 (2003) (available at <http://ssrn.com/abstract=416263>).

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