Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
Broadband Industry Practices	)	
Vuze, Inc. Petition to Establish Rules Governing Management Practices by Broadband Network Operators	)	
Free Press et al. Petition for Declaratory Ruling that Degrading an Internet Application Violates the FCC's Internet Policy Statement and Does Not Meet an Exception for "Reasonable Network Management"	)	WC Docket No. 07-52

COMMENTS OF AT&T INC. ON PETITIONS OF FREE PRESS AND VUZE

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INTRODUCTION AND SUMMARY

For many years, the Commission has embraced a bipartisan consensus that "[t]he Internet has evolved at an unprecedented pace, in large part due to the absence of government regulation," and that this "'hands-off' Internet policy" remains essential "[t]o ensure that the Internet is available to as many persons as possible."[1] Under this well-established policy of "unregulation," the Commission has "avoid[ed] regulation based solely on speculation of a potential future problem" and has "let the marketplace, not the government, pick the winners and losers among new services."[2] As AT&T explained in response to last year's Commission inquiry into broadband industry practices, market forces will continue to serve consumers in the Internet marketplace better than command-and-control regulation ever could.[3] In addition, AT&T observed that consumers will prosper so long as the government limits any intervention to narrowly tailored, fact-based responses to clearly identified market failures, if and when they ever arise. Finally, AT&T lauded the Commission's 2005 *Broadband Policy Statement* for making clear that national broadband policy would focus on the rights of *consumers* rather than the rights of particular *providers.*

In their own comments in that proceeding, the main figures in the net neutrality lobby, including Google, invited the Commission to medicate the Internet with a preemptive cocktail of experimental regulatory tonics. But those proposals fell flat because, among other problems, the patient—the Internet marketplace—was not sick. To the contrary, that market was and is in the

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1 FCC, *Connecting the Globe: A Regulator's Guide to Building a Global Information Community*, at Section IX (June 1999) (http://www.fcc.gov/connectglobe/sec9.html).

2 Jason Oxman, *The FCC and the Unregulation of the Internet*, Office of Plans and Policy, FCC, OPP Working Paper No. 31, at 24-25 (July 1999) (http://www.fcc.gov/Bureaus/OPP/working_papers/oppwp31.pdf).

3 *See* AT&T Comments and Reply Comments in WC Dkt. No. 07-52.

peak of health. Thus, it is no surprise that competition authorities as diverse as the Federal Trade Commission and the Organisation for Economic Co-operation and Development ("OECD"), Internet founders David Farber and Robert Kahn, former FCC Chairman William Kennard, preeminent economists such as Michael Katz, Gerald Faulhaber, William Baumol, and Alfred Kahn, and the editorial boards of the *Washington Post*, the *Wall Street Journal*, and the *Economist* all oppose net neutrality regulation.[4] As the OECD recently explained, "[t]here is little evidence of anti-competitive conduct to date," and "it seems premature for governments to become involved at the level of network-to-network traffic exchange and demand neutral packet treatment for content providers."[5]

When the news broke last fall that Comcast, apparently faced with instances of network congestion, may have taken steps to constrain the bandwidth consumed by the use of certain peer-to-peer technologies, the net neutrality lobby could barely conceal its glee at this purported sneeze. Free Press and others duly proposed a new regimen of interventionist measures to "cure"

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[4] *See* AT&T Comments in WC Dkt. 07-52, at 3-4; AT&T Reply Comments in WC Dkt. 07-52, at 5-7. Although Free Press and others continue to claim that the U.S. broadband services are somehow deficient compared to their foreign counterparts, that claim is both empirically false and logically incoherent as a basis for new regulation. First, as the FTC has found, the U.S. broadband market is characterized by "fast growth [and] declining prices for higher-quality services," and "comparisons of broadband deployment and adoption rates across countries may not be meaningful," given that the foreign countries with the most impressive statistics are much more densely populated than this country and, unlike the United States, often *subsidize* broadband deployment through tax and other mechanisms. FTC Staff Report, *Broadband Connectivity Competition Policy*, at 100, 119 (June 2007) (http://www.ftc.gov/reports/broadband/v070000report.pdf); *see id.* at 113-18; *see also The Connectivity Scorecard*, Nokia-Siemens (Jan. 18, 2008) (http://www.nokiasiemensnetworks.com/global/IndustryThemes/ConnectivityScorecard/?languagecode=en) (analyzing global information and communications technology and finding that the U.S. has the highest "connectivity" score). In any event, even if the U.S. broadband market were somehow deficient, the solution would be to give broadband providers additional incentives to build out networks, not to saddle them with new regulatory burdens as they contemplate risking many billions of dollars in additional deployment.

[5] OECD Report, *Internet Traffic Prioritisation: An overview*, at 5 (Apr. 6, 2007) (http://www.oecd.org/dataoecd/43/63/38405781.pdf).

the Internet, including a flat ban on all network-management techniques that operate to limit the network resources available for the use of bandwidth-hogging applications during peak load periods, even when those techniques are needed to avoid degrading everyone else's Internet experience. But the Internet marketplace remains fundamentally healthy, and the purported "cure" could only make it sick. At best, the network-management restrictions proposed by Free Press and others would inflict wasteful costs on broadband providers in the form of expensive and needless capacity upgrades—costs that would ultimately be passed through to end users, raise broadband prices across the board, and force ordinary broadband consumers to subsidize the bandwidth-hogging activities of a few. At worst, the proposed network-management restrictions would threaten network integrity itself.

Fortunately, the Commission has already established both a procedural and a substantive framework for dealing with company-specific complaints like this. First, as a procedural matter, the Commission has mechanisms to assess such grievances. Free Press and others have filed a complaint against Comcast, the Commission has reportedly issued a Letter of Inquiry, and Comcast has filed a response. Based on that fully developed factual record, the Commission will decide whether or not the complaint states an actionable claim and whether or not Comcast's behavior warrants corrective action. As a non-party to that non-public proceeding, AT&T has no access to the record and thus cannot speak to the merits. Nonetheless, that fact-specific proceeding is where this controversy about Comcast's conduct should begin and end. The Commission should *not* consider prescribing rules of general application that purport to distinguish between "good" and "bad" decisions by network engineers and then preemptively ban the latter. The Internet exists in a uniquely volatile technological environment, and engineers must have the flexibility to address the constantly changing demands on their

networks—and the ever-growing threats to network security—with a full toolbox of network-management techniques.

Second, as a substantive matter, the *Broadband Policy Statement* provides a roadmap to the proper resolution of grievances about particular network-management practices. The *Policy Statement* properly elevates the interests of *consumers* over the interests of particular *providers*, and it makes clear that reasonable network management is essential to consumer welfare. If it faithfully adheres to those principles, the Commission will intervene in network-management decisions, if at all, only to redress conduct that harms consumers overall, as opposed to conduct that limits network resources available to particular providers or end users who would otherwise consume disproportionate bandwidth at the *expense* of consumers overall.

Because consumer interests are paramount, the Commission should encourage broadband networks to make voluntary disclosure of *customer-usage limitations* as *consumers* will experience them. The Commission should not expect, let alone require, broadband networks to disclose actual *network-management practices*. That distinction follows from the essential purpose of disclosure, which is to protect the interest of consumers in making informed market choices, not to facilitate network manipulation by third parties. Indeed, there is no surer way to compromise the integrity of a given network than by broadcasting the technical details of how that network will be managed.

Finally, if the Commission were to impose binding "nondiscrimination" or disclosure rules on broadband providers, which it should not, logical consistency would require it to extend those same rules to every other Internet company that exerts structural influence on whether the Internet will treat applications and content "neutrally." For example, Free Press complains that

"only Comcast knows the algorithm they use" to shape traffic within Comcast's network.[6] But Free Press might just as easily have been complaining about Google, which alone knows the secret algorithms *it* uses to order its search results. Those search results determine winners and losers on the Internet more decisively than any other single force—and certainly more than any broadband company's network-management practices.[7] And Google has acknowledged that it has manipulated search results to *shape public debate*, as discussed in Part III below. It would be wholly arbitrary to regulate Comcast's purported "traffic shaping" but not the *content-shaping* practices of Google within the search and on-line advertising markets it monopolizes. Of course, as AT&T has stressed before, the Commission can best serve the public interest by following its established policy of unregulation and rejecting any prescriptive economic regulation of *any* participant in the Internet marketplace. If the Commission does intervene with prescriptive net neutrality regulation, however – and it should not – that regulation should itself apply in a neutral fashion to all entities whose practices shape whether the Internet treats all content and applications "neutrally."

ARGUMENT

I. The Legitimacy of Particular Network-Management Practices Is Not a Proper Subject for a Declaratory Ruling or Rules of General Application.

AT&T cannot speak to the specific facts at issue in the Comcast proceeding, which are not a matter of public record. But AT&T can address a more general question: why, in the face

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[6] Free Press Pet. 14.

[7] *See* Kim Hart, *Some Businesses at Mercy of Google See Hope in Bid*, Wash. Post, Feb. 7, 2008, at D1 (http://www.washingtonpost.com/wp-dyn/content/article/2008/02/06/AR2008020604245.html) ("Phil Davies relies heavily on Google for his two online businesses. The search engine drives half the traffic to his antiques retail Web site. But when Google recently made a change to the algorithm that it uses to rank sites, it bumped his down in the results and made pages within his site invisible. That sent traffic—and sales—plummeting. . . . 'It almost destroyed our business—the amount of control that company has is frightening,' said Davies[.]").

of network threats and escalating congestion, any broadband network needs to use a variety of efficient network-management techniques to maintain network security and harmonize the disparate needs of its customers. Any general rules that restrict the use of such techniques would have devastating consequences for broadband networks in particular and consumer welfare in general.

A. Network Management Techniques Are Critical to the Internet's Future.

1. The explosive growth of bandwidth-intensive Internet applications.

Until recently, the most popular Internet activities consisted of surfing mostly text-oriented webpages, conducting basic e-commerce, exchanging e-mails, and downloading document files. Although none of these activities consumed enormous bandwidth by today's standards, networks still had to make substantial capacity upgrades over time in order to accommodate increasing traffic volumes. Access and backbone networks were built to meet those consumer needs quickly and efficiently, and they succeeded. Over the past few years, however, bandwidth-intensive applications such as streaming video have exploded in popularity. These applications have dramatically increased the volume of Internet traffic—both downstream and upstream—and have begun placing unprecedented demands on the shared capacity of the Internet's access and backbone networks. In this subsection, we discuss that development generally; in the next, we discuss the role of peer-to-peer ("P2P") applications in particular.

Although broadband architecture varies from network to network, virtually all broadband networks contain shared facilities. In cable modem systems, most of the distribution network is typically shared among the subscribers in a given neighborhood. In most telco broadband networks, subscribers typically share all links on the network side of the DSLAM (the "digital subscriber line access multiplexer"). During peak usage periods, congestion in these shared facilities has the potential to degrade basic Internet access for all subscribers. Such congestion

presents a rapidly growing challenge for network engineers, who must balance the need for *high-quality* service against the need for *affordable* service, and must do so across a subscriber base with disparate and constantly changing usage patterns.[8]

The explosive growth of YouTube, which did not even exist in January 2005, graphically illustrates the nature of the challenge. One year after its inception, in February 2006, it had begun purchasing backbone transit services for 20 Gbps of video traffic—equivalent to about two million simultaneous emails—with a growth rate of 20% *compounded monthly*.[9] Today, users in the United States download more than *9.5 billion* video clips from YouTube per month,[10] and the trajectory of that service's bandwidth consumption is staggering:

> Each year the original content on the world's radio, cable and broadcast television channels adds up to about 75 petabytes of data—or, 10 to the 15th power. If current estimates are correct, the two-year-old YouTube streams that much data in about *three months.* But a shift to high-definition video clips by YouTube users would flood the Internet with enough data to more than double the traffic of the entire cybersphere.[11]

YouTube is just the vanguard of the Internet video distribution business. Netflix is beginning to shift its massive distribution of feature-length movies from the postal service to the Internet,[12]

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[8] The congestion problem is even more severe in wireless networks, where providers must contend not just with *economic* constraints on capacity upgrades, but with *regulatory* constraints on the spectrum available for voice and data uses. For that reason, the Commission should be even more careful to avoid hamstringing network-management practices on wireless networks than on wired networks, as CTIA explains in its comments in this docket.

[9] William B. Norton, *Video Internet: The Next Wave of Massive Disruption to the U.S. Peering Ecosystem*, v1.3, at 2 (Equinix 2007) (*"Video Internet"*).

[10] Erica Morphy, *YouTube Sucking in More Viewers*, E-Commerce Times (Jan. 18, 2008) (http://www.ecommercetimes.com/story/61287.html?welcome=1201549033); *see also* Rob Hof, *YouTube: 100 Million Videos a Day*, BusinessWeek, July 14, 2006 (http://www.businessweek.com/the_thread/techbeat/archives/2006/07/youtube_100_mil.html).

[11] Bret Swanson, *The Coming Exaflood*, Wall St. J., Jan. 20, 2007, at A11.

[12] *See* Terrence Russell, *Netflix, LG to Bring Streaming Movies to TVs*, Wired, Jan. 3, 2008 (http://blog.wired.com/business/2008/01/netflix-partner.html); Press Release, *Netflix Offers*

and Apple recently launched a similar service of its own.[13] Meanwhile, various P2P technologies have exploded in popularity as a means of distributing extremely bulky video files, as discussed below. Overall, industry experts expect that "video traffic will represent at least 80 percent of all Internet traffic" by 2010.[14]

Video is only one of several bandwidth-intensive applications that are placing new demands on the Internet's access and backbone networks. Others include such music downloading services as iTunes, which have supplanted compact discs as the primary means of music distribution; on-line printing and photo-sharing services such as Kodak, Snapfish, Shutterfly, and Photobucket; and the enormously popular class of "massively multiplayer online role-playing game[s]," such as Sony's *EverQuest* and Blizzard Entertainment's *World of Warcraft.*[15]

The network-management challenges posed by consumer use of bandwidth-intensive applications arise, moreover, not just from an increase in the *total* volume of Internet traffic, but also from the escalating magnitude of unpredictable *spikes* in Internet traffic. Like conventional

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Subscribers the Option of Instantly Watching Movies on Their PCs, Jan. 16, 2007 (http://www.netflix.com/MediaCenter?id=5384).

[13] *See* Apple Press Release, *Apple Premieres iTunes Movie Rentals with All Major Film Studios* (Jan. 15, 2008) (http://www.apple.com/pr/library/2008/01/15itunes.html); *see also* Apple website at http://www.apple.com/itunes/store/movies.html ("With movie rentals from every major Hollywood studio, the iTunes Store now makes it easy to rent your favorite movies with a click. . . . Standard-definition movie rentals are $2.99 for library titles and $3.99 for new releases. And for just a dollar more, you can rent HD movies directly from your widescreen TV via Apple TV.").

[14] Norton, *Video Internet*, *supra*, at 2; Yankee Group, *2006 Internet Video Forecast: Broadband Emerges as an Alternative Channel for Video Distribution* 6-7 (Dec. 2006) (projecting that the number of video streams viewed will increase from 86 billion in 2006 to 166 billion in 2011 and that the average length of each video stream will increase more than five-fold during the same period (from 4.87 minutes per stream to 25.09 minutes)).

[15] *See* Robert Litan & Hal Singer, *Unintended Consequences of Net Neutrality Regulation*, 5 J. Telecomm. & High Tech. L. 533, 547 (2006-2007).

telephone networks, IP networks are sized to handle demand during periods of peak usage. The closer that peak usage is to average usage, the more efficient the network's cost structure will be, and the more predictably the network operator can recover those costs from the users of its network. According to some estimates, however, video applications roughly double the "peak-to-mean" ratio of traffic on IP networks.[16] The reason relates in part to the "viral" (self-intensifying) nature of popular video files. A video clip accompanying a breaking news or entertainment story often triggers unexpected network congestion by "generating massive 'Flash Crowd' effects," and "Viral Amplifiers (sites that do not host but rather highlight the most popular videos) amplify any viral properties a video may have."[17]

The need for effective network management is not limited to the consumer marketplace, however. Businesses and government agencies of all shapes and sizes are increasingly utilizing bandwidth-intensive services and applications that place significant demands on network resources.[18] Public and private health-care providers, for example, have been demanding more robust and sophisticated capabilities from broadband networks to facilitate the delivery of remote diagnostic and surgical services, high-definition imaging, and converged voice, video and data applications. A recent report from the Joint Advisory Committee ("JAC") on Communications Capabilities of Emergency Medical and Public Health Care Facilities highlights this point. The JAC, which was established by this Commission together with the National Telecommunications and Information Administration to examine the communications capabilities and needs of emergency medical and public health-care facilities, concluded that "[c]onverged healthcare, clinical, business, and EMS applications, can only perform well on well-designed managed

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16 *See* Norton, *Video Internet, supra*, at 3.

17 *Id.* at 1.

18 *See* AT&T Comments in WC Dkt. No. 07-52, at 5-8, 28-42.

networks with sufficient bandwidth to enable reliable, secure, application-aware networking."[19] As the JAC explained:

> Many of the emerging real-time life-saving technologies (remote surgical procedures, tele-presence networks, and even converged voice and video) require very consistent and predictable handling of traffic by the network. Packet loss, delays in packet transmission ('latency'), and inconsistent packet delivery interval times ('jitter') have significant impact on a variety of emerging real-time health care applications. To reduce latency and jitter, managed networks are generally needed that can prioritize real-time (and potentially life-saving) communications ahead of packets used for file transfer and e-mail.[20]

Given these and similar demands being placed on broadband networks, engineering experts are expressing growing concern that, in the words of Deloitte Touche Tohmatsu, broadband networks "may struggle to keep pace with demand" because increased bandwidth consumption "may threaten their ability to deliver a consistent quality of service to their customers."[21] Vincent Dureau, Google's head of TV technology, warned: "The web infrastructure—and even Google's—doesn't scale . . . . It's not going to offer the quality of service that consumers expect."[22] The Yankee Group likewise predicts that, "[w]ithout the availability of unlimited bandwidth, network demand will far outpace network resources in the

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19 Report to Congress, Joint Advisory Committee on Communications Capabilities of Emergency Medical and Public Health Care Facilities, at 47 (Feb. 4, 2008) (http://energycommerce.house.gov/Press_110/JAC.Report_FINAL%20Jan.3.2008.pdf). The JAC was established at Congress' direction pursuant to the Implementing Recommendations of the 9/11 Commission Act of 2007. Additional information about the JAC and its mission is available on the Commission's website at http://www.fcc.gov/pshs/advisory/jac/index.html.

20 *Id.*

21 Deloitte Touche Tohmatsu, *Telecommunications Predictions: TMT Trends 2007,* at 6 (2007) (http://www.deloitte.com/dtt/cda/doc/content/dtt_TelecomPredictions011107.pdf).

22 Bobbie Johnson, *Rise of video downloads threatens gridlock on net*, The Guardian (Feb. 10, 2007) (http://www.guardian.co.uk/uk_news/story/0,,2010031,00.html) (quoting Vincent Dureau, Google's head of TV Technology).

coming years."[23] Former Assistant Secretaries of Commerce Larry Irving and Bruce Mehlman similarly observed:

> [A]s new content proliferates, today's high-speed connection could be tomorrow's traffic jam. The strain on broadband capabilities and the looming data deluge is often called the *Internet exaflood*. "Exaflood" stems from the term exabyte, or 1.074 billion gigabytes. Two exabytes equal the total volume of information generated in 1999. The Internet currently handles one exabyte of data *every hour*. This mushrooming amalgamation of data is pushing the Internet to its limits. . . . The Internet infrastructure must be robust enough to handle all of the new data; this is often a challenge because the Internet is really thousands of privately owned, individual networks stitched together. It requires constant investment so that it will continue to grow and run smoothly.[24]

And William Norton of Equinix, a leading provider of data centers and Internet exchange services, predicts "a new wave of disruption that potentially dwarfs currently peered Internet traffic," causing "a serious supply side problem in the Internet today."[25]

2. The Role of P2P Technologies in Internet Congestion

Much of this "serious supply side problem" (though certainly not all) can be traced to the explosive growth of bandwidth-intensive applications that often use P2P technologies for content distribution, technologies that underlie the proceeding involving against Comcast. Thus, while network operators must have sufficient flexibility to address *all* types of traffic traversing their

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[23] David Vorhaus, *Confronting the Albatross of P2P* at 1, Yankee Group (May 31, 2007).

[24] Bruce Mehlman & Larry Irving, *Bring on the Exaflood!*, Wash. Post, May 24, 2007, at A31 (http://www.washingtonpost.com/wp-dyn/content/article/2007/05/23/AR2007052301418.html). One exabyte equals 1024 petabytes, or 1,048,576 terabytes, or 1,073,741,824 gigabytes. "[F]ive exabytes are equal to all the words ever spoken by human beings." Internet Innovation Alliance, *Leading Internet Alliance Says Web's Capacity Is Nearing Its Limit*, Apr. 18, 2007 (http://www.internetinnovation.org/iia/page/show/news_clips_041807b) By comparison, "[t]he information added annually to the digital universe between 2006 and 2010 is expected to increase more than six fold—to 988 exabytes." *Id.* One recent analysis has speculated that, by 2015, the "exaflood" will become a "zettaflood." Bret Swanson & George Gilder, *Estimating the Exaflood: The Impact of Video and Rich Media on the Internet*, at 2, Discovery Institute (Jan. 2008) (http://www.discovery.org/a/4428).

[25] Norton, *Video Internet*, *supra*, at 1, 15.

networks, we focus on P2P traffic here because of the emphasis that Free Press and Vuze place on it in their petitions. One point is worth stressing at the outset: AT&T agrees that P2P technologies can be highly valuable in many contexts. In fact, as discussed below, AT&T is actively engaged in a cooperative effort with a variety of P2P distribution service providers and other stakeholders to develop the next generation of peer-based distribution technologies ("P4P") that address many of the shortcomings in today's P2P services. While that effort is pending, however, current P2P technologies will continue to present a complex challenge to network engineers.

With traditional content-distribution methods, a complete copy of a content file (such as a song or a feature-length movie) is stored on a centralized server (or servers) and distributed from there to end users that request it.[26] In contrast, P2P technologies disassemble content into small files and widely distribute those files to different end-user computers for storage and subsequent retrieval and reassembly by other end users.[27] The result is the functional equivalent of a massively distributed server network, in which each end user's computer acts as an individual server for a portion of the content being distributed. By effectively transforming end-user computers into servers, P2P technologies invert a key engineering assumption about the direction of traffic flows on the Internet. While many residential broadband networks were built on the premise that end users would download far more data than they would upload, the use of P2P applications and services may result in symmetrical traffic patterns or, in some instances, heavier

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[26] In addition to the centralized server-client distribution model, "content distribution networks" or "CDNs" offer content and applications providers the ability to store their content and applications on a distributed network of servers located closer to end users, which typically results in more efficient use of network resources and improved performance for end users. *See* AT&T Comments in WC Dkt No. 07-52, at 14-20 (discussing CDN technology).

[27] *See, e.g.*, Detlef Schoder, Kai Fischbach, & Christian Schmitt, *Core Concepts in Peer-to-Peer Networking* (2005) (http://www.idea-group.com/downloads/excerpts/Subramanian01.pdf).

uploading than downloading by certain end users, thus placing a much greater strain on available upstream bandwidth than network engineers anticipated. That strain has only grown more substantial as the size of P2P content has increased. Several years ago, P2P technologies were best known for their role in the exchange of relatively small MP3 music files. Today, "Peer-2-Peer file sharing users around the world have shifted from sharing 4MB music files to sharing 700MB movies on the Internet."[28]

To be sure, P2P technology has been used (and continues to be used) by some parties for the unlawful distribution of pirated content. But it has also been adopted as a mechanism for the distribution of lawful content by a variety of companies. Vuze, for example, claims that it "has attracted over 100 content partners, including A&E, BBC, CBC, G4 TV, The History Channel, Ministry of Sound, National Geographic, PBS, Showtime, Starz Media, The Poker Channel, TV Guide Channel, and many more."[29] Likewise, Joost—created in January 2007 by the founders of Skype—delivers video programming over a hybrid P2P/CDN architecture under contractual arrangements with major programmers, including CBS, Viacom, Time Warner, Sony, and the National Hockey League.[30]

In the past, content providers (and their distribution partners) have traditionally borne the costs of maintaining enough centralized storage and server capacity to convey their content to end users. By converting end user devices into content caches for other end users, however, P2P technology offers a way to shift those costs to end users and their network providers. But while P2P distribution may thereby offer content providers a relatively cheap storage and distribution

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[28] William B. Norton, *The Evolution of the U.S. Internet Peering Ecosystem*, at 8 (2003) (http://www.equinix.com/pdf/whitepapers/PeeringEcosystem.pdf).

[29] Vuze Pet. 5-6.

[30] Alex Pham, *Joost Strikes TV Deals with Sony, Time Warner, NHL and Hasbro*, L.A. Times, May 2, 2007, at 3.

mechanism, it imposes enormous upstream and downstream traffic burdens on broadband networks, particularly with the rise of shared video. In addition, because of the viral nature of P2P content and applications, the traffic they generate is both temporally and geographically unpredictable. As William Norton of Equinix explains, "These applications *relentlessly consume all of the end user's available Internet bandwidth* attempting to download chunks of the files from any sources on-line at the time. . . . [T]he access networks are filling up 24/7, resulting in significant costs to the access-heavy ISPs (Cable Companies and DSL Providers in particular)."[31]

Indeed, "BitTorrent" sessions are so named precisely because they aggressively consume disproportionate amounts of upstream subscriber bandwidth by opening up multiple connection streams to seize capacity for themselves.[32] In this respect, "BitTorrent's basic approach to bandwidth consumption actually conflicts quite strongly with a key assumption of the internet's architects, that the relationship between users and traffic flows is essentially a constant."[33] Whereas an average consumer browsing the web may initiate a small number of brief, bursty traffic flows, the number of traffic flows initiated by a BitTorrent user may be an order of magnitude greater, and those flows may be constant, rather than bursty.[34] As a result—

- P2P traffic "constitutes approximately 60% of all traffic that traverses the public internet";
- "BitTorrent alone accounts for roughly 40% of all bandwidth";

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[31] Norton, *The Evolution of the U.S. Internet Peering Ecosystem*, *supra*, at 8 (emphasis in original).

[32] *See, e.g.*, Bob Briscoe, *Flow rate fairness: Dismantling a Religion*, 37 Computer Commc'n Rev. 63 (2007) (http://portal.acm.org/citation.cfm?doid=1232919.1232926).

[33] Richard Bennett, *Dismantling a Religion: The EFF's Faith-Based Internet*, The Register, Dec. 13, 2007 (http://www.theregister.co.uk/2007/12/13/bennett_eff_neutrality_analysis/).

[34] *See id.* (compared to "people browsing the web [who may] use four connections in short bursts," "BitTorrent users consume 40 or 50 constantly . . . .").

- "[i]n times of peak usage, bandwidth-hogging users sharing large files over P2P can push networks to their absolute limit"; and

- "[t]his problem is poised to worsen in the coming years" because, "[a]s content owners migrate more video content to IP networks, bandwidth demand will inevitably skyrocket."[35]

Free Press suggests that P2P file-sharing is always the most efficient means of content distribution and that any network-management practice that has the effect of constraining the bandwidth available for such file-sharing is therefore inefficient.[36] But that is simply untrue.[37] Indeed, one of the reasons P2P technology consumes so much bandwidth is that it can be an extremely *inefficient* means of content distribution. That is because today's P2P technologies are inefficiently "network-oblivious" in the sense that they typically do *not* place any premium on proximity when choosing routes for the exchange for data. Someone in Philadelphia who wishes to share files using a P2P application, for example, is just as likely to be paired with users on other networks in Hong Kong or Berlin as with other users on the same network in Philadelphia. As network-engineering scholars from Yale and the University of Washington have explained, this "network-oblivious peering strategy . . . may cause traffic to scatter and unnecessarily traverse multiple links within a provider's network, leading to much higher load on some

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35 Vorhaus, *Confronting the Albatross*, *supra*, at 1-2

36 Free Press Pet. 19-20.

37 In many circumstances, the most efficient means of distributing bulky data files is to cache them in multiple locations near individual end users and hand them off directly to the broadband networks serving the end users at those locations. The efficiency of that content-distribution model explains why Akamai and other CDNs have enjoyed great commercial success. *See* AT&T Comments in WC Dkt No. 07-52, at 14-20 (discussing CDN technology).

backbone links" and producing "inefficiencies for both P2P applications and network providers."[38]

Accordingly, the great popularity of existing P2P technologies should not be mistaken for unvarying technological efficiency. Those technologies enjoy the popularity they do today in part because they *appear* cost-free to the consumers that use them even though they are *not* cost-free to network operators or to consumers generally. When new applications increase the traffic load on shared facilities, they obviously impose costs in the form of expensive facilities upgrades. Costs must be borne by someone, and here they are borne by the networks that carry the traffic (and ultimately the networks' customers).[39] A CDN, for example, must enter into market-based peering or transit arrangements to accommodate the costs it imposes on other networks for terminating the traffic the CDN hands off to them for delivery to their subscribers. In contrast, the end users who use P2P file-sharing technologies do not pay by the bit under today's standard broadband pricing plans (as discussed below) and thus internalize practically none of the costs associated with the incremental burdens those technologies impose on IP networks throughout the Internet. And because they face no efficient price signals, these end users often have incentives to overconsume shared bandwidth.

At the same time, the distributed, peer-based content delivery model underlying today's P2P technologies could bring tremendous benefits for content providers, network operators and consumers alike—faster distribution at lower cost—*if* the industry can resolve the current inefficiencies in that model. To that end, AT&T is part of a new industry-wide working group—composed of representatives from BitTorrent, Joost, LimeWire, Cisco, Verizon, Verisign and

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[38] Haiyong Xie et al., *P4P: Explicit Communications for Cooperative Control Between P2P and Network Providers*, Distributed Computing Industry Ass'n, at 1 (May 2007) ("*P4P: Explicit Communications*") (http://www.dcia.info/documents/P4P_Overview.pdf).

[39] *See generally* Vorhaus, *Confronting the Albatross*, *supra*, at 1.

researchers from Yale and Washington Universities, among others—that is trying to develop an efficient, network-*aware* peer-to-peer technology. Known as "P4P," this new generation of technology is being developed to optimize network resources rather than hoard them.[40]

Specifically, under the auspices of the Distributed Computing Industry Association,[41] the Working Group is pursuing "win-win" solutions that recognize the legitimate business interests of all of the parties affected by this industry-wide issue—including, most importantly, end users.[42] These objectives include:

- Providing ISPs with the ability to optimize utilization of network resources while enhancing service levels for P2P traffic;
- Providing P2P software distributors with the ability to accelerate content delivery while enhancing efficient usage of ISP bandwidth;
- Providing researchers who are developing P4P mechanisms with the support to advance and the ability to publish their work;
- Determining, validating, and encouraging the adoption of methods for ISPs and P2P software distributors to work together to enable and support consumer service improvements as P2P adoption and resultant traffic evolves, while protecting the intellectual property (IP) of participating entities;
- Establishing appropriate and voluntary best practices for the deployment of P4P mechanisms to meet the above identified objectives in a way that can be sustained by all of the necessary participants.[43]

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[40] *See P4P: Explicit Communications* at 1. Companies that have taken "observer status" in this effort include Abacast, Cablevision, CacheLogic, Cox Communications, Comcast, MPAA, NBC Universal, Oversi, PeerApp, Time Warner Cable, and Turner Broadcasting. *See* Laird Popkin and Doug Pasko, *P4P: ISPs and P2P*, DCIA (http://www.dcia.info/activities/p4pwg/1-8%20P4P%20--%20ISPs%20&%20P2P.ppt) ("*P4P Working Group Presentation*").

[41] *See* DCIA P4P Working Group Mission Statement (http://www.dcia.info/documents/P4PWG_Mission_Statement.pdf) ("*P4P Working Group Mission Statement*"). The working group's mission is to "work jointly and cooperatively . . . to ascertain appropriate and voluntary best practices for the use of 'P4P' mechanisms to accelerate distribution of content and optimize utilization of ISP network resources in order to provide the best possible performance to end user customers." *Id.*

[42] *See P4P Working Group Presentation, supra*.

[43] *See P4P Working Group Mission Statement, supra*.

While the P4P Working Group may, or may not, ultimately achieve all of these goals, the very existence of the Group and the progress it has made to date vividly illustrates how private industry initiatives can promote consumer interests without any need for government intervention.[44]

Against this backdrop, it would be patently short-sighted to adopt Free Press's proposed ban on network-management practices that, in order to promote the collective welfare of all end users, constrain network resources consumed by inefficiently bandwidth-intensive applications such as today's generation of P2P technologies. Free Press is essentially asking the Commission to declare that those technologies are inviolate in their present forms, despite their flaws and despite the ample room for improvement. That request ignores the very consumers it purports to help, and it specifically ignores the progress made by the P4P Working Group, which is occurring in a commercial, business-to-business environment *without* government regulation. Indeed, the regulatory intervention Free Press seeks could only chill the incentives of interested parties to engage in such voluntary, industry-wide initiatives—and would therefore ultimately harm consumers.

B. Regulatory Interference with Network-Management Practices Would Raise Broadband Prices and Disadvantage the Overwhelming Majority of Consumers

The challenges posed by the proliferation of bandwidth-intensive applications are exacerbated by the risk of a classic tragedy-of-the-commons dynamic, in which each network

[44] Early results from the P4P Working Group appear promising. In simulations and Internet-based tests, P4P researchers achieved substantial efficiency improvements. *See* Xie, et al., *P4P: Explicit Communications, supra*, at 5 (observing that experiments run on the Abilene and AT&T networks demonstrated that "P4P improves P2P completion time by approximately 45%;" "P4P improves the link utilization by 50% and 70% in Abilene and AT&T, respectively;" and "P4P also reduces the duration of high traffic load by approximately a half, as peers finish their downloads faster.").

user has strong incentives to hoard shared bandwidth for itself at the expense of others. To avoid this result, each network provider needs to ensure that sufficient network resources are available for all of its customers on an equitable basis and that no single customer (or group of customers) diminishes the value of the network for others. In the teeth of these concerns, Free Press nonetheless demands a flat ban on *any* network-management practice that "delays" *any* application for *any reason* at *any time*, even during periods of peak congestion, no matter how badly enforcement of that rule would degrade network performance for the majority of ordinary users.[45] This proposal is as ill-conceived as it is radical.

As the Yankee Group observes, unconstrained use of P2P video file-sharing and other bandwidth-intensive applications "can push networks to their absolute limit" during peak-usage periods, such that "users of latency-sensitive applications such as VoIP, streaming video or gaming may experience network lag and poor quality of experience."[46] Free Press does not dispute that this is a problem; instead, it demands that networks solve the problem by "invest[ing] in upgrading networks to carry *all traffic* at higher speeds" at all times.[47] But this single-minded emphasis on building fatter "dumb pipes" would impose billions of dollars in unnecessary costs on broadband networks—costs that networks could avoid through reasonable network-management practices. Although Free Press facilely suggests otherwise,[48] those

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45 Free Press Pet. 17.

46 Vorhaus, *Confronting the Albatross*, *supra*, at 1.

47 Free Press Pet. 26 (emphasis added).

48 Free Press Pet. 31-32 (suggesting that network efficiencies redound only to the benefit of "network operators' executives" and that banning such efficiencies is akin to banning "insider trading").

inefficiencies would hardly be free to consumers. Instead, consumers would bear these extra network costs in the form of substantially higher broadband subscription prices.[49]

That outcome would not only thwart consumer interests generally, but also treat different categories of consumers inequitably. As the Yankee Group analysis explains, "[t]he top 5% of users account for roughly 50% of all downstream traffic, indicating that it is these few 'bandwidth hogs' that are pushing the limits of network capacity through massive P2P file transfers."[50] Free Press's position would thus compel the great majority of broadband users, who make moderate use of shared network resources, to subsidize the extreme bandwidth consumption of a few. That policy would artificially depress broadband subscribership, particularly among the large number of consumers who would prefer to, or can only afford to, pay low rates for basic broadband connectivity and do not make use of bandwidth-intensive applications in the first place.

Worse yet, the pricing pressures imposed by Free Press's elitist agenda would depress broadband subscribership most in those low-income communities where consumers are most sensitive to variations in price.[51] In this respect as well, the net neutrality agenda is at war with the Commission's objective of bridging the "digital divide." As one NAACP official explains:

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49 Some economic studies have shown that, as IP video services escalate in popularity, this "dumb network" approach would raise the network costs of broadband access somewhere between $100 and $400 *per subscriber*. *See, e.g.*, George Ford, Thomas Koutsky & Lawrence Spiwak, *The Efficiency Risk of Network Neutrality Rules*, Phoenix Center Policy Bulletin No. 16 (May 2006) (http://papers.ssrn.com/sol3/papers.cfm?abstract_id=925347); Richard N. Clarke, *Costs of Neutral/Unmanaged IP Networks* 21 (Aug. 2007) (http://papers.ssrn.com/sol3/papers.cfm?abstract_id=903433); *see also* Steven Pociask, *Net Neutrality and the Effects on Consumers*, American Consumer Institute 14 (2007) (http://www.theamericanconsumer.org/ACI%20NN%20Final.pdf).

50 Vorhaus, *Confronting the Albatross*, *supra*, at 1.

51 Pociask, *Effects on Consumers*, *supra*, at 2.

> Given the proven impact of broadband prices on its adoption, policies that increase the cost to users should be forbidden. Now, some well-intentioned online activists are pushing regulations called "net neutrality," which would keep costs low for the large Internet content companies but shift the costs of network expansion mostly to consumers. *The effects could be disastrous for low-income and minority communities, pricing them out of the broadband market[.]*[52]

That would not be a rational telecommunications policy. To the contrary, it would undermine the core objective, repeatedly embraced by both Congress and the Commission, of encouraging widespread broadband deployment.[53] As former Chairman William Kennard has explained, "[p]olicymakers should rise above the net neutrality debate and focus on what America truly requires from the Internet: getting affordable broadband access to those who need it."[54]

In passing, Free Press suggests that the Commission should force broadband providers to deal with this problem by abandoning the flat-rated pricing structure that has dominated U.S. Internet access since its inception and "charge [consumers] by usage" instead—*i.e.*, by the bit.[55] It appears that Free Press did not think this position completely through, because the ink was hardly dry on its petition before Free Press declared that, to the contrary, "telling consumers they

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[52] Greg Moore, *Extend Internet's Full Reach to Black Communities*, Asbury Park Press, May 11, 2007 (http://www.app.com/apps/pbcs.dll/article?AID=/20070511/OPINION/705110384/1030) (emphasis added).

[53] *See, e.g.*, Telecommunications Act of 1996, Pub. L. 104-104, Title VII, § 706, 110 Stat. 153 (47 U.S.C. § 157 note) (declaring Congress's purpose to "encourage the deployment on a reasonable and timely basis of advanced telecommunications capability" by adopting a policy of "regulatory forbearance" and other measures to "remove barriers to infrastructure investment"); Report and Order and Notice of Proposed Rulemaking, *Appropriate Framework for Broadband Access to the Internet over Wireline Facilities*, 20 FCC Rcd 14853, ¶ 44 (2005) ("*Wireline Broadband Order*"), *aff'd Time Warner Telecom, Inc. v. FCC*, 507 F.3d 205 (3d Cir. 2007).

[54] William E. Kennard, *Spreading the Broadband Revolution*, N.Y. Times, Oct. 21, 2006, at A13.

[55] Free Press Pet. 29.

must choose between blocking and metered pricing is a worrying development."[56] In any event, the merits of metered pricing should be decided neither by Free Press nor by the Commission, but by consumers themselves. It is entirely possible that the market will respond to the type of network-management challenges discussed above by moving from today's flat-rated, all-you-can-eat pricing plans to more usage-sensitive pricing plans, which will recover more of the costs of unusually bandwidth-heavy applications from the consumers that use such applications. For example, Time Warner recently announced that it will experiment with such a usage-sensitive approach on a trial basis.[57] But this is only one possible approach to the problem of cost-recovery for shared and finite network resources, and regulators should not assume that it is the optimal solution for all networks at all times.

The Commission certainly should not do what Free Press proposes here: impose broad-brush network-management prohibitions that would force broadband providers to recover their costs either by raising prices for all consumers or by adopting usage-sensitive prices for Internet access. Simply as a practical matter, most broadband networks are not set up to monitor customer-specific network usage for billing purposes today, and it would take several years before such networks could build that capability into their systems. In the short to medium term, therefore, any restrictions on efficient network management techniques would force broadband providers to recover the extra costs of the resulting *inefficient* network management from *all* end users.

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[56] Press Release, *Time Warner Metering Exposes America's Bigger Broadband Problems*, Free Press, Jan. 17, 2008 (quoting policy director Ben Scott) (http://www.freepress.net?press?release.php?id_328) ("Free Press 1/28/08 Press Release").

[57] *See* Marguerite Reardon, *Time Warner to test metered Web use*, CNET News, Jan. 17, 2008 (http://www.news.com/8301-10784_3-9852800-7.html).

Moreover, as Free Press's own flip-flop reveals, net neutrality advocates will never be happy with any regime of metered pricing, except conceivably one accompanied by full-blown price regulation.[58] Time Warner's pricing announcement sparked strong reactions from the net neutrality lobby, ranging from the merely ambivalent to the overtly hostile.[59] At bottom, that lobby opposes *both* efficient network management techniques *and* efficient usage-sensitive pricing. This dual prohibition would raise average network costs, increase average retail rates, and ultimately force tens of millions of ordinary consumers to cross-subsidize the exponentially more bandwidth-intensive activities of an elite minority.[60] That is yet another reason why network cost-recovery practices should arise from market dynamics, not governmental fiat.

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[58] *See, e.g.*, Fred von Lohmann, *Time Warner Puts a Meter on the Internet*, Electronic Freedom Foundation, Jan. 22, 2008 (http://www.eff.org/deeplinks/2008/01/time-warners-puts-meter-internet) (expressing concern that metered pricing "could be used as a cover for price increases on existing customers (bad)," and insisting that "the pricing for 'overages' should bear some relation to costs"); Marvin Ammori, *Time Warner Goes Back to the Future*, Jan. 25, 2008 (http://www.savetheinternet.com/blog/2008/01/25/back-to-the-future-time-warner-broadband-plan-recalls-aols-walled-garden/) (arguing that metered pricing "raises Net Neutrality issues," because Time Warner is unlikely "to apply its new high-bandwidth surcharges to its own product," and "favoring its own content over other channels or programs like BitTorrent would be discriminatory").

[59] *See, e.g.*, sources cited in note 58, *supra*; *Time Warner Metered Pricing: Not the Solution*, SavetheInternet.com, Jan. 17, 2008 (http://www.savetheinternet.com/blog/2008/01/17/time-warner%e2%80%99s-metered-pricing-not-the-solution/) (arguing that metered pricing is "far from an ideal solution for the millions of people who use the Internet for a range of rich media applications" and that "[n]etwork providers should build better networks, and not squeeze users to pay more").

[60] Free Press's proposed straitjacket on efficient network management would thwart the public's interest in affordable, high-quality Internet access even under "ordinary" circumstances where Internet traffic is already increasing exponentially. But that rule would also threaten national security in times of crisis. Internet traffic would spike in the wake of a pandemic, terrorist attack, or other emergency that suddenly causes millions of people to turn to the Internet for information and, subsequently, to become telecommuters. *See* AT&T Comments in WC Dkt. No. 07-52, at 25. Such crises would pose a formidable challenge to network engineers even in the absence of FCC rules barring efficient network-management techniques. But the rule Free Press proposes here would further hamstring these engineers by forbidding them, even in times of crisis, to protect the bandwidth available to ordinary consumers.

C. The Commission Should Limit Any Oversight of Network-Management Practices to the Case-by-Case Disposition of Individual Complaints Alleging That Given Practices Harm Consumers Generally.

1. Network-Management Practices Are Insusceptible to Rules or Policies of General Application.

For the reasons discussed, the Commission should reject Free Press's demand for a flat ban on any network-management practice that has the effect of constraining the bandwidth consumed by the use of particular applications during peak load periods. Such a ban would likely lead to lower quality service at higher prices for the vast majority of end users. Moreover, even if such rules were desirable—which they are not—no Government agency, including this Commission, has the resources or technical expertise to micromanage the nation's broadband networks.[61]

Network management practices are as complex, dynamic, and protean as the Internet itself. Every hour of every day, network engineers must devise creative solutions to new problems, ranging from unexpected equipment failures and spikes in bandwidth demand to the proliferation of viruses, worms, spyware, denial-of-service attacks, and other threats to network security. AT&T estimates, for example, that more than 80 percent of the e-mail bound for its network is spam and that approximately one million home computers today are infected with "bots" that reach out to other computers to propagate malicious code.[62] As these and other

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[61] For purposes of these comments, AT&T will assume arguendo, but does not concede, that the Commission has regulatory jurisdiction to convert the non-binding principles of its *Policy Statement* into enforceable requirements. *Cf. FCC v. Midwest Video Corp.*, 440 U.S. 689, 700-09 (1979) (invalidating assertion of Title I jurisdiction); *Motion Picture Ass'n of Am. v. FCC*, 309 F.3d 796, 806 (D.C. Cir. 2002) (same); *American Library Ass'n v. FCC*, 406 F.3d 689, 701 (D.C. Cir. 2005) (same). There are sound arguments, however, that the types of concerns raised in these petitions are best addressed through traditional antitrust mechanisms and consumer-protection laws of general application.

[62] Sarah D. Scalet, *Introducing AT&T, Your Internet Security Company*, CIO, May 17, 2007 (http://www.cio.com/article/110250/Introducing_AT_T_Your_Internet_Security_Company).

network threats grow more sophisticated, network owners must adopt sophisticated tools of their own to counteract them. Moreover, all of those tools, one way or another, require network providers to "discriminate" among types of data traffic. The government can thus ban such "discrimination" only at the cost of causing widespread network congestion, failures or security breaches. Even Timothy Wu, a key exponent of net neutrality regulation, acknowledges that "no one really believes in systems that ban discrimination completely," including on the Internet.[63]

In short, regulators must proceed with extreme caution before second-guessing engineering judgments about what is, and what is not, an appropriate network-management technique. This proceeding underscores that concern. Much of the petitioners' rhetoric is directed at "TCP reset," a technique used for slowing down data exchanges between two computers. Free Press equates TCP reset with "Internet censorship systems in China" and refers to any use of this technique as a "forgery tactic[]."[64] Free Press thus seems to ask the Commission to outlaw TCP reset altogether. But granting that request would have unintended and unwelcome consequences.

The "reset" command has been an accepted part of the Transmission Control Protocol (or TCP) for more than a quarter century.[65] TCP reset is commonly used to enable one computer to abort a TCP connection with another computer for any of a number of reasons, such as when the communications between the two computers become unsynchronized. TCP reset has also played a role in network security. For example, AT&T, like many other providers, uses TCP reset packets—openly and uncontroversially—as part of a firewall service that it offers to individual

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63 *Keeping the Internet Neutral?: Tim Wu and Christopher Yoo Debate*, 59 Fed. Commun. L.J. 575, 577 (2007).

64 Free Press Pet. 11, 13.

65 DARPA Internet Program Protocol Specification, *Transmission Control Protocol*, RFP 793 (Sept. 1981) (http://tools.ietf.org/html/rfc793).

customers.[66] In that service, the TCP reset command, among other techniques, is used to thwart intrusions from malicious computer programs seeking access to a customer's network.

The question posed here thus cannot be whether TCP reset is inherently "bad" and should be banned; like other technologies, it can be used in different contexts for distinct purposes. In some settings it is a completely benign part of TCP-based communications, and in others it is a critical tool for network security. The only meaningful question is whether, if as alleged, Comcast used the TCP reset technique to undermine overall consumer welfare by anticompetitively suppressing rivals. As discussed below, that question can be answered only by looking at the precise details of Comcast's conduct, what business or technological justifications Comcast might have had for that conduct, and what effect that conduct had on consumers and competition. Such questions are insusceptible to the type of broad-brush answers found in generalized rules or policy declarations.

Generalized rulemaking in this context would likewise be completely infeasible. Internet technology changes daily, as do large-scale traffic patterns and threats to network integrity, and network engineers need access to all available means of protecting the interests of end users. In this intensely dynamic environment, any rule of general application would become obsolescent before its publication in the Federal Register. The only way the Commission could even hypothetically supervise changing network management practices on a prospective basis without tying operators' hands would be to set up an FCC command center staffed around the clock by well-informed and perfectly objective engineering experts available for consultation and prompt decisionmaking. But as a practical matter, even the experts in that hypothetical command center

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[66] *See, e.g.*, StillSecure Strata Guard (http://www.stillsecure.com/strataguard/index.php) ("Strata Guard® is an award-winning family of network-based intrusion detection/prevention systems (IDS/IPS) that provide real-time, zero-day protection from network attacks and malicious traffic."); *see also* Sans Institute (http://www.sans.org/resources/idfaq/active.ph).

could not effectively supervise, in real time, the minute-by-minute choices that network engineers on the ground must make to protect their networks and the interests of their overall customer base.

In short, prospective regulation in this area would be imprudent and infeasible, as would be any declaratory ruling of general application. To the extent that the Commission can and should intervene in this area, that intervention should take the form of case-by-case proceedings involving specific facts. Indeed, that approach is in place and functioning properly: Free Press and others have filed a complaint against Comcast, Comcast has in turn filed a response, and the Commission will decide the merits of the case, presumably on the basis of a fully developed factual record. As a non-party to the complaint proceeding, AT&T cannot speak to the merits of Comcast's conduct. But AT&T can speak more generally to the substantive standards that should govern such proceedings, as we do below.

2. The Commission Should Not Second-Guess Network-Management Practices Unless a Complainant Has Made a Prima Facie Case of Anticompetitive Conduct That Harms Consumers.

The Commission's broadband policies properly focus on the interests of *consumers* in general rather than the interests of *particular providers*.[67] The Commission thus framed the issue exactly right when it articulated the four principles in its *Policy Statement*. Rather than propose new regulatory entitlements for providers, the Commission emphasized that any entitlements belong instead to consumers. Specifically, "*consumers* are entitled to access the lawful Internet content of their choice," "*consumers* are entitled to run applications and use services of their choice, subject to the needs of law enforcement," "*consumers* are entitled to

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[67] *See, e.g.*, Report and Order and Notice of Proposed Rulemaking, *Appropriate Framework for Broadband Access to the Internet over Wireline Facilities*, 20 FCC Rcd 14853, ¶¶ 1,62 (2005) ("*Wireline Broadband Order*").

connect their choice of legal devices that do not harm the network," and "*consumers* are entitled to competition among network providers, application and service providers, and content providers."[68] The Commission further noted that all of these four principles "are subject to reasonable network management."[69] That qualification, too, is designed to serve consumers. As discussed, consumer welfare would suffer if the government barred network providers from preventing the extraordinary bandwidth consumption of a few end users from impairing the ability of ordinary consumers to enjoy affordable, high-quality Internet access.

The Commission has likewise emphasized in a variety of contexts that its "statutory duty is to protect efficient competition, not competitors."[70] That orientation towards "competition" rather than entitlements for particular providers certainly comports with the fourth of the broadband principles, which confirms the entitlement of "consumers . . . to competition" among providers. But more generally, that orientation comports with the consumer-oriented focus of the *Policy Statement* as a whole and with a central tenet of modern competition policy: that the government should intervene in markets only to protect the interests of consumers in the *competitive process*, not to promote the interests of particular *competitors.*[71]

This consumer-oriented focus suggests a key limiting principle for any Commission involvement in network-management practices. Any inquiry into complaints about particular

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68 Policy Statement, *Appropriate Framework for Broadband Access to the Internet over Wireline Facilities*, 20 FCC Rcd 14,986, ¶ 4 (2005) ("*Broadband Policy Statement*").

69 *Id.* n.15.

70 Mem. Op. and Order, *AT&T Inc. and BellSouth Corporation Application for Transfer of Control*, 22 FCC Rcd 5662, ¶ 195 (2007) ("*AT&T-BellSouth Merger Order*"); *see also* First Report and Order, *Implementation of the Local Competition Provisions of the Telecommunications Act of 1996*, 11 FCC Rcd 15499, 15812, ¶ 618 (1996).

71 *See, e.g., Brunswick Corp. v. Pueblo Bowl-O-Mat, Inc.*, 429 U.S. 477, 488 (1977) (antitrust laws are enforced "for the protection of competition not competitors") (citation omitted).

network practices should focus not on whether the Commission "agrees" or "disagrees" with the decisions of network engineers, but on whether the complainant has pleaded and proved that practices in question are *anticompetitive* and thus harm *consumers generally*. The Commission should make clear that complainants cannot avoid the need to make that showing by alleging instead that a given network practice harms *particular providers* whose bandwidth-intensive applications can degrade network performance for all consumers, much less that the practice aggrieves *particular end users* by constraining their ability to consume bandwidth at the expense of consumers in general. Except where a network provider behaves without any legitimate justification, regulators—no matter how well-intentioned and conscientious—should not get into the business of second-guessing network engineers about what is "reasonable" in the abstract or what is best for a network's user base as a whole. They should instead rely on established competition-law principles to distinguish between forms of market intervention that are properly pro-*competition* (and thus pro-consumer) and forms of intervention that are merely pro-*competitor* (and thus potentially anti-consumer).[72]

Free Press makes no effort to tailor the relief it seeks to legitimate concerns about anticompetitive conduct that harms consumers. Free Press also ignores the economic realities of the competitive broadband marketplace, which spur broadband providers to act in the best interests of their collective customer base, lest they those customers to a competing broadband provider.[73] Oblivious to those market factors, Free Press simply repeats the "paradigmatic fear"

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[72] *See generally* William J. Baumol & Alan S. Blinder, *Economics: Principles and Policy* 425-26 (8th ed. 2000) ("[V]igorous competition may look very similar to acts that *undermine* competition and support monopoly power. The resulting danger is that the courts will prohibit, or the antitrust authorities will prosecute, acts that *appear* to be anticompetitive but that really are the opposite."); *see also Spectrum Sports, Inc. v. McQuillan*, 506 U.S. 447, 458-59 (1993).

[73] AT&T Comments in WC Dkt. No. 07-52, at 66-71; *see also* sources cited in note 76, *infra*.

of net neutrality advocates "that network providers who compete[] (or [seek] to compete) with independent applications [will] secretly degrade those applications . . . , undermining consumer choice, innovation, and a competitive market."[74] But that "paradigmatic fear" overlooks many years of economic scholarship demonstrating that vertical integration of platform and applications providers produces important pro-consumer efficiencies and that, except in well-defined circumstances, vertically integrated companies generally have no greater incentive to engage in welfare-reducing anticompetitive conduct than non-vertically integrated companies.[75]

Here, the Commission itself has already found that robust broadband competition keeps any individual provider from diminishing the value of its broadband platform to consumers by degrading the complementary applications that ride on top of it.[76] But even if there were some competitive defect in the overall broadband platform market—and the Commission's own orders have found none—there would still be no basis for concern that a vertically integrated broadband provider would act anticompetitively towards unaffiliated applications and content providers. As AT&T has explained, even platform *monopolists* generally lack an incentive to discriminate against unaffiliated providers of complementary applications, because doing so could not

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74 Free Press Pet. ii.

75 *See, e.g.*, Richard A. Posner, Antitrust Law 223-29 (2d ed. 2001); Christopher S. Yoo, *Network Neutrality and the Economics of Congestion*, 94 Geo. L.J. 1847, 1885-87 (2006); Christopher S. Yoo, *Vertical Integration and Media Regulation in the New Economy*, 19 Yale J. on Reg. 171 (2002); *see generally* Herbert Hovenkamp, *Antitrust After Chicago*, 84 Mich. L. Rev. 213, 255-83 (1985).

76 *See, e.g.*, *AT&T-BellSouth Merger Order*, at ¶¶ 116-20; Mem. Op. and Order, *Applications for Consent to the Assignment and/or Transfer of Control of Licenses, Adelphia Communications Corp., Assignors*, 21 FCC Rcd 8203, ¶¶ 212-23 (2006) (*"Adelphia Transaction Order"*) ; *Wireline Broadband Order*, at ¶¶ 61-64; *see also* Christopher Yoo, *Would Mandating Broadband Network Neutrality Help or Hurt Competition? A Comment on the End-to-End Debate*, 3 J. Telecomm. & High Tech. L. 23, 67 (2004).

ordinarily increase the profits they can earn for the sale of the platform product (unless that product is subject to price regulation).[77]

Of course, if a given platform market—*unlike* the broadband market—is uncompetitive, a monopoly platform provider might have an incentive to discriminate against applications providers that threaten the market dominance of the platform itself. That concern underlay the government's successful claim that Microsoft had behaved anticompetitively towards Netscape in the 1990s.[78] Free Press tries to make an analogous claim here: it contends that Comcast suppressed BitTorrent applications as part of an overall scheme "to undermine competitors to its cable video-programming distribution."[79] Again, AT&T lacks access to the record in the complaint proceeding, and it has no basis for assessing the merits of this narrow claim of anticompetitive conduct.[80] Nonetheless, the fact-specific question of whether a particular broadband provider has both the incentive and the ability to engage in anticompetitive conduct is the right question to ask. That question should not be conflated, as Free Press does, with the net neutrality lobby's much broader and more intrusive agenda for *ex ante* regulation of network-management practices generally.

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77 *See, e.g.*, Joseph Farrell & Philip J. Weiser, *Modularity, Vertical Integration, and Open Access Policies: Towards a Convergence of Antitrust and Regulation in the Internet Age*, 17 HARV. J.L. & TECH. 85 (2003).

78 *See United States v. Microsoft Corp.*, 253 F.3d 34 (D.C. Cir. 2001).

79 Free Press Pet. ii.

80 It is our understanding that Comcast's alleged conduct affected its customers' ability to *upload* content to others, not *download* it for themselves. That practice would appear to be an ineffective means of preserving revenues that those customers would otherwise pay to receive video programming from Comcast.

II. The Commission Should Encourage the Voluntary Disclosure of Customer-Usage Limitations but Should Not Require Disclosure of Actual Network-Management Practices.

In its separate rulemaking petition, Vuze asks the Commission to adopt rules requiring broadband providers to "publicly disclose[]" their "[n]etwork-management practices."[81] And Free Press, while focusing mostly on restricting network practices themselves, likewise seeks a declaratory ruling that failure to publicize those practices is a "deceptive practice[]."[82] Although consumer-oriented disclosure is important and desirable, both Vuze and Free Press overreach. The Commission should encourage broadband networks to make voluntary disclosure of *customer-usage limitations* as *consumers* will experience them. The Commission should not expect, let alone require, broadband networks to disclose actual *network-management practices*.

Here, too, the consumer focus of the *Policy Statement* should guide the Commission's analysis. Although the *Policy Statement* does not itself discuss the question of disclosure, its fourth principle—"consumers are entitled to competition among network providers, application and service providers, and content providers"—assumes that consumers will be able to make informed choices among providers. As such, consistent with the Commission's fourth principle, disclosures about network management should be tailored to the usage limitations experienced by *consumers*. In particular, a broadband network operator can and should tell consumers, at an appropriate level of detail, about any material restrictions or limitations on their broadband Internet service. The Commission should encourage all providers of Internet applications, content, services and networks to voluntarily develop such disclosures, rather than mandating any prescriptive one-size-fits-all disclosure requirement.

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81 Vuze Pet. 15.

82 Free Press Pet. 32.

Broadband providers cannot be expected, however, to disclose the *actual technical methods* they use they use to manage their networks. Those details are often highly proprietary, and keeping them confidential is essential to network security. Disclosing them would give third parties a shortcut to overcoming network defenses and exploiting each network's vulnerabilities. The surest way to expose networks to worms, spam, and effective denial-of-service attacks is to give would-be attackers, worm-designers, and spammers notice of precisely how network engineers plan to address the threats they pose. Moreover, publicizing the details of how a network plans to engineer traffic loads may also preclude a network from ensuring high-quality Internet access for its customers generally. For example, "network providers go to great lengths to estimate traffic matrices and determine routing based on them[.]"[83] If that information were publicly disclosed and exploited by third parties, it would exacerbate the "oscillations in traffic matrices and sub-optimal routing decisions" that are already occurring today due to "network oblivious" P2P technologies.[84] In any event, because network management is an intensely dynamic process, network providers could not be expected as a practical matter to give constant updates each time its engineers design a new technological method to defeat network threats or ensure efficiently balanced traffic loads.

Finally, such mandatory technical disclosures would be unnecessary to give the public the information it needs to detect purportedly anti-consumer network-management practices. The controversy animating this proceeding underscores that point. Comcast's alleged practices here came to light not because the government had insinuated itself into the Internet marketplace, but because private individuals ran straightforward tests on how Comcast's network handled P2P file-sharing applications. In particular, an Associated Press journalist and analysts from the

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83 Xie, et al., *P4P: Explicit Communications, supra*, at 1.

84 *Id.*

Electronic Frontier Foundation ("EFF") *independently* ran such tests and made similar observations about Comcast's TCP reset techniques.[85] And EFF's own website gives the consuming public step-by-step instructions on how to download and use Wireshark, a "network analyzer" program designed to detect this and similar network practices.[86] Again, AT&T has no basis for concluding that Comcast's network-management practices were at odds with the Commission's *Broadband Policy Statement*, and the Commission will draw its own conclusions on the basis of a full record. Our sole point is that, in this respect as well, private initiative is more than sufficient to protect consumer interests in the well-functioning Internet marketplace.

III. If the Commission Were to Adopt Binding "Neutrality" or Disclosure Rules for the Broadband Industry (and It Should Not), Such Rules Would Have to Extend to *All* Providers of IP-Based Services, Applications, Content, and Networks.

As AT&T explained in response to the Notice of Inquiry in this docket, if the Commission were to pursue the net neutrality agenda by subjecting access or backbone networks to general rules governing Internet "discrimination" or disclosure, it could not stop there. Logical consistency would require the Commission to extend those same rules to every other Internet company that exerts structural influence on whether the Internet will treat applications and content "neutrally."[87] That point is as true of the rules proposed by Free Press and Vuze as of any other rule favored by the net neutrality lobby. AT&T reiterates this point here not because it favors economic regulation of any Internet-based company—indeed, it strongly opposes all such regulation—but because the Commission could not rationally confine such

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85 EFF, *Packet Forgery by ISPs: A Report on the Comcast Affair*, at 2 (Nov. 28, 2007) (http://www.eff.org/files/eff_comcast_report2.pdf) ("The Associated Press (AP) apparently was conducting similar experiments [to EFF's], and they subsequently brought the story to widespread public attention.").

86 Seth Schoen, *Detecting Packet Injection: A Guide to Observing Packet Spoofing by ISPs*, at 1 (Nov. 28, 2007) (http://www.eff.org/files/packet_injection.pdf).

87 *See* AT&T Comments in WC Dkt. No. 07-52, at 85-92.

regulation to broadband Internet access providers. Instead, it would necessarily have to apply the same principles to other entities that have the ability to affect the "neutrality" of the Internet.

The Internet ecosystem features a number of companies that have exceptionally large shares of their respective markets. For example:

- Microsoft dominates the markets for Web browsers (with a share of nearly 80%) and desktop operating systems (with a share of about 90%);[88]
- Intel has an 80.5% share of the microchip market;[89]
- YouTube (owned by Google) has a 60.2% share of the U.S. on-line video market,[90] and by itself now accounts for almost *10% of all traffic on the Internet*;[91] and
- Google accounted for more than 65% of Internet searches in late 2007, and its market share is *growing*.[92]

Each of these companies commands its respective markets and is integral to the evolution of the Internet. But no federal authority subjects these companies to prescriptive economic regulation of any kind; at most, Microsoft is subject to narrowly tailored consent decrees based on *demonstrated antitrust violations*. No federal regulator tells Microsoft how to write its code to accommodate users who would like to run non-Microsoft applications (such as WordPerfect or Mozilla Firefox) on top of the dominant Microsoft Windows operating system. No federal

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88 *See* Top Operating System Market Share Trend, July, 2006 to June 2007 (http://marketshare.hitslink.com/report.aspx?qprid=5); Browser Market Share for June, 2007 (http://marketshare.hitslink.com/report.aspx?qprid=0).

89 Tom Krazit, *Intel's market share rises on AMD's problems*, CNET News.com, Apr. 24, 2007 (http://news.com.com/2100-1006_3-6178921.html).

90 *YouTube visits larger than rivals combined: survey*, Reuters UK, June 28, 2007 (http://uk.reuters.com/article/technologyNews/idUKN2742598120070628?pageNumber=1).

91 *See* Ellacoya Networks Press Release, June 18, 2006 (http://www.ellacoya.com/news/pdf/2007/NXTcommEllacoyamediaalert.pdf).

92 Marshall Kirkpatrick, *Hitwise—Google Continues to Grow Market Share*, ReadWriteWeb (Dec. 11, 2007) (http://www.readwriteweb.com/archives/hitwise_google_continues_to_gr.php); Eric Bangeman, *Microsoft, others suffer as Google's web search share grows*, Ars Technica (Feb. 28, 2007) (http://arstechnica.com/news.ars/post/20070228-8946.html).

regulator supervises Intel's dealings with complementary hardware manufacturers. And no federal regulator asks Google to publicize its search algorithms to ensure "nondiscriminatory" treatment for all websites and advertisers.

Despite all this, net neutrality advocates urge the government to adopt prescriptive "neutrality" rules to govern broadband Internet access, even though no broadband provider has committed any antitrust violation and no provider accounts for more than 22% of the broadband subscribers nationwide.[93] Viewed from the perspective of the Internet ecosystem as a whole, that proposal is absurdly myopic.

For example, with its dominance of the search market, Google—far more than any broadband provider—affects where end users spend their time on the Internet, which websites will succeed or fail, and which viewpoints will influence public debate and which will not. And Google's dominance of that market is highly entrenched, because it owns a capital-intensive data network of unsurpassed scope and processing power. Google owns "a staggering collection of hardware, whose constituent servers number 450,000, according to the lowest estimate,"[94] combined with a fiber-optic transmission network "so massive that several service provider specialists believe it could end up with one of the world's largest core transport networks, effectively building its own private Internet" and "controlling distribution of much of the world's Internet traffic."[95] "By building its own infrastructure rather than relying on commercial data centers, [Google CEO Eric] Schmidt told analysts in May [2007], Google gets 'tremendous

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93 *See* Verizon Comments in WC Dkt. No. 07-52, at 51-52.

94 George Gilder, *The Information Factories*, Wired, Oct. 2006 (http://www.wired.com/wired/archive/14.10/cloudware_pr.html).

95 R. Scott Raynovich, *Google's Own Private Internet*, Light Reading, Sept. 20, 2005 (http://www.lightreading.com/document.asp?doc_id=80968).

competitive advantage.'"[96] That "tremendous competitive advantage" helps explain why, "the bigger Google gets, the harder it will be for the competition to close the gap";[97] why a growing number of independent analysts have concluded that Google's business is "a natural monopoly";[98] and why some net neutrality advocates argue that a government-run scheme of "search neutrality" is now necessary to keep Google "from corrupting search results for its own benefit."[99] Indeed, the Washington Post recently concluded that Google's "unmatched reach on the Web, both through its dominant search engine as well as its large base of advertisers and publishers, has allowed it to wield so much power that it can shape markets, anoint winners and declare losers, and set prices for advertising, leaving customers . . . feeling they're at Google's mercy."[100]

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96 Gilder, *The Information Factories*, *supra.*

97 Bangeman, *Microsoft, others suffer as Google's web search share grows*, *supra*.

98 Bloomberg News, *Web search engine will take 90% of market, analysts say*, Chi. Trib., July 12, 2007 ("Google Inc., owner of the world's most popular Internet search engine, will take 90 percent of the market over the next decade through increased spending on research and development, analysts at Cowen & Co. said . . . . 'We believe Internet search is a natural monopoly[.]'"); James B. Stewart, *Google Is Best-Positioned to Dominate Online Ads*, SmartMoney.com (May 22, 2007) (http://www.smartmoney.com/commonsense/index.cfm?story=20070522&hpadref=1) ("[S]urely the jury is now in on the fundamental question about Google's search business: It is a natural monopoly."); *see also* Rob Hof, *Is Google Too Powerful? As the Web giant tears through media, software, and telecom, rivals fear its growing influence*, BusinessWeek, Apr. 9, 2007 (http://www.businessweek.com/magazine/content/07_15/b4029001.htm) (arguing that "the vast commercial landscape of the Net, like so many other tech markets in the past," may "condense to one dominant force for the foreseeable future"—namely, Google).

99 John C. Dvorak, *A Threat to Web Search*, PCMag.com (Jan. 1, 2007) (http://www.pcmag.com/print_article2/0,1217,a=198269,00.asp); *see also* Timothy Wu, *Why Have a Telecommunications Law? Anti-Discrimination Norms in Communications*, 5 J. Telecomm. & High Tech. L. 15, 46 (2006) (suggesting potential need for preemptive government intervention to "block discrimination by powerful applications providers").

100 Kim Hart, *Some Businesses at Mercy of Google See Hope in Bid*, Feb. 7, 2008, at D1 (http://www.washingtonpost.com/wp-dyn/content/article/2008/02/06/AR2008020604245.html).

There is already some evidence that Google has shaped its users' Internet experiences in non-"neutral" ways. In its service agreement, Google "reserves the right . . . to pre-screen, review, flag, filter, modify, refuse or remove any or all Content" found on the Internet as Google sees fit.[101] According to press accounts, Google has acknowledged that it has discriminated in favor of political messages that it supports:

> Google's top Washington lobbyist disclosed [in 2006] that the company had configured its search engine to return paid links that support Google's position on net neutrality after the entry of certain key words. "This week we've been running a large set of which I would call public service announcement-type advertisements. So if you type in net neutrality at Google, you'll see advertisements for the Its Our Net coalition or other sites we may be pointing to," Google policy counsel Alan Davidson said[.][102]

And in late 2007, Google sparked further controversy when, invoking obscure trademark concerns, it blocked political advertisements by Senator Susan Collins that criticized the left-leaning think tank MoveOn.org, which has joined Google in supporting an aggressive net neutrality agenda.[103]

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101 Google Terms of Service, § 8.3 (http://www.google.com/accounts/TOS?loc=US).

102 *Google Web Search: Do No Evil?*, Multichannel Newsday, June 12, 2006. Questioned further about this practice, Google unapologetically explained that it "participated in its own auction for the keywords 'net neutrality' and that if opponents of the concept wanted their ads to appear higher in sponsored Internet search results, they could have decided to pay more." Sarah Lai Stirland, *Google E-Mail Highlights Division Over Net Neutrality*, Technology Daily PM, June 13, 2006 (citing Google spokesman Jon Murchinson). Google appears oblivious to the relevance of its net neutrality advocacy to its own conduct. Google repeatedly professes concern that vertically integrated firms will misuse their position in a platform market to disadvantage unaffiliated providers of Internet applications or content. Yet Google *avowedly* exploits the dominance of its search engine to give its preferred content greater visibility than its competitors' content, and Google never explains what it means when it claims to have "participated in its own auction" (*id.*); all we know is that it unilaterally moved its favored political messages to the head of the queue, apparently at no cost to itself. Among other things, "neutrality" or "nondiscrimination" regulation would require Google to publicize and justify its search algorithms, the details of its keyword auctions, and the precise manner in which it "participate[s] in its own auction[s]."

103 *See* Robert Cox, *Google bans anti-MoveOn.org ads*, Examiner.com, Oct. 11, 2007 (http://www.examiner.com/printa-983100~Google_bans_anti-MoveOn.org_ads.html) ("The

If the Commission were to conclude that an interventionist regulatory regime is needed to preserve the "neutrality" of the Internet, it could not defensibly apply that regime to broadband providers but *not* to Google (or any other provider of Internet-based services). Indeed, some advocates of net neutrality regulation have already begun calling for "search neutrality" rules as well:

> Let's take a closer look at Google itself, and the potential for losing what I call search neutrality—which could happen if search-engine companies gain the ability to control results. If Google became a monopoly, what would prevent it from corrupting search results for its own benefit? I hear about how Google is "not evil," but that's today. Things change. . . . With an entire Web-universe structured to rely on a limited number of search engines, when does corruption sneak into the equation, and what do you do about it?[104]

Leading net neutrality proponent Timothy Wu has likewise suggested a possible need for preemptive regulations to "block discrimination by powerful applications providers."[105] In short,

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banned advertisements said, 'Susan Collins is MoveOn's primary target. Learn how you can help' and 'Help Susan Collins stand up to the MoveOn.org money machine.' The ads linked to Collins' campaign Web site with a headline reading 'MoveOn.org has made Susan Collins their #1 target.'"). According to the article, Google claimed that it removed the advertisements because, by mentioning "MoveOn.org" by name, "they violated Google's trademark policy," even though "Google routinely permits the unauthorized use of company names such as Exxon, Wal-Mart, Cargill and Microsoft in advocacy ads. An anti-war ad currently running on Google asks 'Keep Blackwater in Iraq?' and links to an article titled 'Bastards at Blackwater — Should Blackwater Security be held accountable for the deaths of its employees?'" *Id.* Google later explained this selective solicitude for trademarks on the ground that MoveOn.org had submitted an official request to prohibit others from using its name in advertisements and that Google would honor similar requests from other companies.

104 John C. Dvorak, *A Threat to Web Search*, PCMag.com, Jan. 1, 2007 (http://www.pcmag.com/print_article2/0,1217,a=198269,00.asp).

105 Timothy Wu, *Why Have a Telecommunications Law? Anti-Discrimination Norms in Communications*, 5 J. Telecomm. & High Tech. L. 15, 46 (2006); *see, e.g.*, CFA Comments in WC Dkt. No. 07-52, at 9 ("The role of regulation should be to ensure that *strategically placed actors with market power* cannot undermine innovation *at any layer* of the platform.") (emphasis added); *id.* at 29 (urging Commission to "declare that *discrimination of any kind* . . . undermines competition among network providers, applications and service providers, and content providers") (emphasis added; quotation marks omitted); Jeff Chester, *Is The Open Internet Coalition About A Real Democratic Net—or One Safe for Data Collection and Interactive Advertising?*, Digital Destiny, May 25, 2007 (http://www.democraticmedia.org/jcblog/?p=287)

if the Commission were to conclude that preemptive regulation is needed to ensure "neutrality" on the Internet, it would need to start with Google. Indeed, regulation of Google would follow *a fortiori* from regulation of Comcast. While Comcast stands accused of "traffic-shaping,"[106] Google has already admitted to *content*-shaping.

AT&T nonetheless repeats what it made clear in the general net neutrality docket: it opposes prescriptive economic regulation of *any* participant in the Internet's phenomenally diverse and robust ecosystem. The Internet became the most successful engine of consumer value-creation ever made *not* because the Commission told information service providers what they could and could not do, but because it has allowed the "free market . . . , unfettered by Federal or State regulation,"[107] to serve consumers in countless and increasingly innovative ways with every passing minute. That is the worthiest legacy in the Commission's history, and its abandonment now would be a mistake of similarly historic proportions.

("We are uneasy about the alliance between public interest groups and Open Internet Coalition members such as Google and Interactive Corp. (Ask.com). . . . [W]ithout rules governing Google's expansion, limits on data collection, a strong legal framework for privacy, and policies promoting meaningful open non-commercial civic space, the Internet will be 'open' in name only. The Google's, Yahoo!'s, IAC's, Microsoft's, etc. will be working with the phone and cable broadband monopolists on a playing field which still unfairly favors the giants."); *cf.* Competitive Enterprise Institute Comments in WC Dkt. No. 07-52, at 4 ("Google faces similar market power and information-gatekeeper accusations, even as a content company. . . . Any regime that a successful net neutrality campaign establishes would make the entire communications sector more vulnerable to future political predation . . . . One consulting firm approvingly notes that the NOI 'has the potential to broaden the scope of the debate substantially and to put some of the parties who have been pushing net neutrality on the defense.'").

[106] Eric Bangeman, *Comcast shooting itself in the foot with traffic shaping "explanations,"* Ars Technica, Oct. 23, 2007 (http://arstechnica.com/news.ars/post/20071023-comcast-shooting-itself-in-the-foot-with-traffic-shaping-explanations.html).

[107] 47 U.S.C. § 230(b)(2); *see also* Pub. L. 104-104, Title VII, § 706, 110 Stat. 153 (47 U.S.C. § 157 note) (instructing FCC to follow a policy of "regulatory forbearance" where needed to "remove barriers to infrastructure investment").

CONCLUSION

The petitions for declaratory ruling and for rulemaking should be denied, and complaints about individual network-management practices should be resolved on a case-by-case basis. The Commission should nonetheless encourage the broadband industry to voluntarily disclose customer-usage limitations.

Respectfully submitted,

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