

Before the  
Federal Communications Commission  
Washington, DC 20554

In the Matter of )  
)  
Broadband Industry Practices ) WC Docket No. 07-52  
)  
Vuze, Inc. Petition for Rulemaking to Establish ) WC Docket No. 07-52  
Rules Governing Network Management )  
Practices By Broadband )  
Network Operators )  
)  
Free Press et al. Petition for Declaratory ) CC Docket No. 02-33 et al.  
Ruling )

To: The Commission

**REPLY COMMENTS OF THE UNITED STATES TELECOM ASSOCIATION**

The United States Telecom Association (“USTelecom”)<sup>1</sup> hereby submits its reply comments in response to the Petition for Declaratory Ruling and Petition for Rulemaking filed by Free Press *et al.* (“Free Press”)<sup>2</sup> and Vuze, Inc. (“Vuze”), respectively.<sup>3</sup> As a broad array of commenting parties has argued, the Commission should reject calls for broad one-size fits all network-management regulation like those contained in these petitions.

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<sup>1</sup> USTelecom is the premier trade association representing service providers and suppliers for the telecommunications industry. USTelecom members provide a full array of services, including broadband, voice, data, and video over wireline and wireless networks.

<sup>2</sup> *Petition of Free Press, et al. 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, Petition (filed Nov. 1, 2007) (“*Free Press Petition*”).

<sup>3</sup> *Vuze, Inc. Petition for Rulemaking to Establish Rules Governing Network Management Practices By Broadband Network Operators*, WC Docket No. 07-52, Petition (filed Nov. 14, 2007) (“*Vuze Petition*”).

**I. COMMENTERS OVERWHELMINGLY AGREE THAT ANTICIPATORY REGULATION IS UNNECESSARY AND WOULD HARM CONSUMERS.**

If there had been any doubt before, the record compiled in response to the instant petitions puts it to rest: Prescriptive rules regarding the ways in which providers manage their broadband networks would harm consumers. Contemporary broadband networks must be managed, and the imposition of categorical requirements reflecting today's assumptions would be harmful to consumers and network providers alike. As the Competitive Enterprise Institute states: "Nothing important can be known today about proper pricing and routing of content on the networks of tomorrow; and nothing can be gained and a lot can be lost by prescribing it now, or imposing conditions on how producers make their decisions or disclose information."<sup>4</sup>

Commenting network providers and the trade groups representing them uniformly agree that the imposition of burdensome mandates would undermine consumer interests.<sup>5</sup> Ultimately, "requirements [such as those] proposed by the petitioners will produce perhaps the worst of all possible combinations – unnecessary and correspondingly ineffective yet overly burdensome and counterproductive regulation."<sup>6</sup> Importantly, though, this view is *not* limited to network providers. Rather, a broad coalition of third-party commenters has come forward to underscore the dangers posed by preemptive network-management regulation. These commenters share the belief that such regulation would reduce innovation and investment in broadband networks, and

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<sup>4</sup> Competitive Enterprise Institute Comments at 5.

<sup>5</sup> *See, e.g.*, AT&T Comments at 18-23; Verizon Comments at 5-6; Time Warner Comments at 1-2; Comcast Comments at 8-11; Frontier Comments at 7-8; Qwest Comments at 3; Embarq Comments at 4-5; Global Crossing Comments at 2-4; Independent Telephone & Telecommunications Alliance Comments at 1; CTIA Comments at 3-4, 16-17; National Cable & Telecommunications Association Comments at 1-3.

<sup>6</sup> Fiber-to-the-Home Council Comments at 33. *See also* Free State Foundation Comments at 6-7 ("[T]he agency could not possibly anticipate all conduct that should fall within the reasonableness realm. Before the ink dried on any rule, almost certainly it would be outdated and overinclusive, threatening to curtail network management techniques that ought to be considered reasonable in light of the then-prevailing circumstances.").

thus undermine consumer welfare. The American Homeowners Grassroots Alliance, for example, notes that “[t]he surge in network traffic is straining the capacity of current networks, and network operators must be empowered to deal with that challenge and appropriate short and long term solutions, which may include pricing models that encourage prudent network use practices...”<sup>7</sup> The Labor Council for Latin American Advancement, “a national organization representing the interests of approximately 1.7 million Latino trade unionists throughout the United States and Puerto Rico,” underscores its belief “that management by providers leads to more efficient and reliable networks.”<sup>8</sup> And the Institute for Policy Innovation pithily observes that “[e]mergency services and first responders should have their traffic receive higher priority than an Internet-connected toaster.”<sup>9</sup>

These third-party commenters also, however, cite numerous concrete ways in which network-management tools will benefit specific classes of users – including rural consumers, small businesses, health-care providers, and the elderly:

- The National Grange states that “[m]ore and more, rural Americans are using broadband to connect with doctors, telecommute, run small businesses, and access the world”; in light of increasing demands on the network, “Internet providers must maintain the unmitigated ability to manage that traffic so as to maximize the consumer’s experience.”<sup>10</sup>
- The University of Arkansas for Medical Sciences’ Antenatal and Neonatal Guidelines, Education and Learning System (“ANGELS”) notes the growing importance of telemedicine in the lives of rural Americans, stating that “in order to continue to offer citizens this service, it is imperative that the infrastructure is in place for high-speed broadband networks with sufficient capacity for high-bandwidth applications such as telemedicine.” To this end, ANGELS expresses its “belief[] that burdening providers with further regulations will only detract

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<sup>7</sup> American Homeowners Grassroots Alliance Comments at 3.

<sup>8</sup> Labor Council for Latin American Advancement Comments at 1.

<sup>9</sup> Institute for Policy Innovation Comments at 3.

<sup>10</sup> National Grange Comments at 2.

from achieving goals like universal broadband and improvement on the network.”<sup>11</sup>

- The National Black Chamber of Commerce explains that regulations limiting the freedom of online entrepreneurs “would erode the dynamism that makes the Internet a tool that serves individuals.”<sup>12</sup>
- The OASIS Institute (“OASIS”), an organization dedicated to “enhanc[ing] the quality of life for adults age 50 and over,” states that older users increasingly rely on the Internet “to connect socially, to share knowledge and experience, to continue learning, and to access critical information and services related to their health, benefits and finances.”<sup>13</sup> These users also increasingly rely on voice over Internet protocol offerings. “Network management,” writes OASIS, “is necessary to maintain efficient delivery of” such services.
- The Small Business and Entrepreneurship Council explains that “[w]hether a home healthcare consumer is receiving a medical x-ray from their doctor, or a small business harnesses VOIP technology to make marketing calls, network management practices by providers affords a seamless and efficient path for all these things to be accomplished and avoid data traffic jams on the Internet’s backbone.”<sup>14</sup>
- Health Tech Strategies, a “Virginia-based consulting firm focused on the public and private sector policy environment with regard to research, development and implementation of emerging health care technologies,” emphasizes the critical link between network management tools, on the one hand, and public health and safety, on the other: “[M]anagement on the network permits one individual to upload to their primary care physician his/her diabetes test results in a timely manner, not stuck in a traffic jam with gaming, VOIP calls, and any other applications. Finally, network management can ensure that seamless communication will not be interrupted during times of medical emergencies, when hospitals, law enforcement, and first responders need to remain in close contact...”<sup>15</sup>

In light of the above, the Commission should follow the advice of USTelecom and many others, rejecting calls for broad regulatory prescriptions in favor of a market-based approach that

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<sup>11</sup> University of Arkansas for Medical Sciences Comments at 1.

<sup>12</sup> National Black Chamber of Commerce at 1.

<sup>13</sup> OASIS Institute Comments at 1.

<sup>14</sup> SBE Council Comments at 2.

<sup>15</sup> Health Tech Strategies, LLC Comments at 1-2.

gives appropriate weight to the many and varied benefits of consumer-oriented management practices.

## **II. INDUSTRY FORA, NOT REGULATION, ARE BEST SUITED TO DEVELOPING NETWORK, APPLICATION AND TRAFFIC MANAGEMENT SOLUTIONS.**

Although the overwhelming majority of commenters agree that network providers must be permitted to manage the traffic on their networks, the Petitioners and their few supporters suggest that certain types of traffic should somehow be exempt from these reasonable practices. Specifically, these parties rely on a series of offhand assertions that peer-to-peer (“P2P”) traffic such as that facilitated by BitTorrent and Vuze is somehow “efficient,” and therefore should be immune from carriers’ reasonable management practices. This claim should be rejected. P2P traffic constitutes a majority of all Internet traffic today, and a regime that excluded such traffic from reasonable management practices would therefore be largely ineffective. Moreover, there is no reason to believe, from a general consumer welfare economic perspective, that Torrent-based P2P traffic is efficient, as discussed below. In all, these points underscore the fundamentally technical nature of the disputes presented in this docket – and the reason why they would be more productively addressed in the context of collaborative industry fora than in any broad, one-size fits all proceeding.

Nearly all parties commenting in this docket agree that increasing capacity demands necessitate robust network management.<sup>16</sup> At its heart, then, the dispute presented by the instant

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<sup>16</sup> See, e.g., American Homeowners Grassroots Alliance Comments at 3; Free State Foundation Comments at 4-5; Hands Off the Internet Comments at 9-13; Health Tech Strategies Comments at 1-2; Information Technology & Innovation Foundation Comments at 10; Institute for Policy Innovation at 1-2; Labor Council for Latin American Development Comments at 1; University of Arkansas for Medical Sciences Comments at 1; Progress & Freedom Foundation (“PFF”) Comments at 3-4; AT&T Comments at 6-11; Verizon Comments at 28-34; Comcast Comments at 17; CTIA Comments at 13-16; Fiber-To-  
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petitions is a dispute over whether or not such management should be limited to certain types of traffic (i.e., to non-P2P traffic). Put differently, the instant dispute is between (1) parties that believe that it may *sometimes* be appropriate for a provider to limit access to high-bandwidth P2P traffic during periods of peak load in order to preserve network resources for the majority of users who seek to make use of the Internet, and (2) parties that believe such limits are *never* appropriate. If providers are to be able to protect their consumers through reasonable network management, however, the first view must prevail.

As the record makes clear, P2P traffic constitutes a clear majority of all Internet traffic. “[P2P], although still used by a small minority of consumers, is precisely what is increasingly causing network overload.”<sup>17</sup> Indeed, several observers suggest that P2P traffic now accounts for about 60 percent of all Internet traffic.<sup>18</sup> Moreover, this figure appears likely to rise over the immediate future as consumers become more and more accustomed to downloading full-length movies and with transition from “standard definition” to “high definition” offerings (although, as discussed below, improvements in P2P efficiency may reduce the burden of this traffic, or other, superior protocols may emerge). Under these circumstances, network management efforts will be meaningless if they do not reach P2P traffic – the Internet equivalent of yield signs that do not apply to male drivers or highway hazardous waste restrictions that do not apply to trucks.

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The-Home Council Comments at 10-11; National Black Chamber of Commerce Comments at 1; The National Grange Comments at 2; NBC Universal Comments at 2-4; Reason Foundation Comments at 1-2; TIA Comments at 9.

<sup>17</sup> PFF Comments at 4.

<sup>18</sup> See AT&T Comments at 14-15 (quoting David Vorhaus, *CONFRONTING THE ALBATROSS OF P2P* at 1, Yankee Group (May 31, 2007); Time Warner Comments at 11 (“Such consumption patterns have resulted in fewer than five percent of users consuming as much as 60-70 percent of all available bandwidth.”); NBC Universal Comments at 1-2 (stating that five percent of Internet users consume 50 percent of network capacity). See also Christopher S. Yoo, *Network Neutrality and the Economics of Congestion*, 94 GEO. L. J. 1847, 1878 n.145 (2006) (citing six sources which attribute up to 73% of upstream traffic and 60% of overall traffic to peer-to-peer file sharing).

Indeed, P2P traffic is among the least delay-sensitive traffic being carried on the Internet, rendering management of such traffic especially important: Whereas VoIP calls, telemedicine applications, and live-streaming content are tremendously susceptible to jitter and latency, most P2P file-sharing applications will not be significantly impacted by momentary delay.<sup>19</sup> Thus, where management is necessary, providers are likely to have to manage some P2P traffic.

In defense of their view that management of P2P traffic is always inappropriate, even at times of peak demand, Petitioners state that such traffic is inherently “efficient,” suggesting that any efforts to manage this traffic are contrary to the public interest. Free Press, for example, emphasizes that Torrent technology “permits several users to max out their slow upload speeds,” and affords content providers “an inexpensive way to distribute content” without relying on “central servers.”<sup>20</sup> Vuze states that “Torrent technologies make use of resources ... on a decentralized basis, allowing large data transfers to be made more efficiently and cost-effectively than ever before.”<sup>21</sup>

In formal economic terms, however, P2P traffic has not been shown to be efficient. P2P applications by their nature shift costs from content providers and P2P users, on the one hand, to network providers and users who do not use P2P services, on the other. Ordinarily, a content-delivery application would require the operation of numerous servers and high-capacity connections to the Internet to store and transmit the music, video, or other files offered to users.

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<sup>19</sup> LARIAT Comments at 3 (reasonable to prioritize interactive activities such as Web browsing in which a human being’s productivity would be markedly affected by long delays, over and above non-interactive activities such as file downloads, which are less time-critical).

<sup>20</sup> Free Press Petition at 19.

<sup>21</sup> Vuze Petition at 7. Vuze relies in particular on the claim that “torrent technology ... permits uploads and downloads to be resumed mid-way rather than restarted.” *Id.* Other commenters, however, eviscerate this claim, questioning the frequency of interruptions overall and noting that *all* common file-transfer protocols are capable of resuming downloads mid-stream. *See* LARIAT Comments at 6.

Content providers relying on Torrent technologies, however, avoid the costs associated with procuring and operating such servers and transmission links by using their own customers' computers and broadband facilities instead. This arrangement saves money for the content providers and direct costs for their customers (who need not pay the charges that would otherwise be passed through to them) – but only by placing those costs on broadband Internet access providers and particularly their lower-volume customers, who must cope with reduced network capacity as a result of their fellow-customers' excessive usage. As ITIF explains:

Even a few peer-to-peer users can clog a network. One study found that web response time increased by a factor of 2.5 when only 15 BitTorrent users were active on a simulated network with 150 users....<sup>22</sup>

In short, the majority of consumers, who do *not* use excessive network resources, are subsidizing P2P content providers and their customers, and the subsidy comes in the form of involuntarily “donated” network capacity.<sup>23</sup> Market systems are most efficient when those who cause costs are required to “internalize” such costs – i.e., to take account of those costs in the course of evaluating whether an activity creates social value overall and should be pursued. When content providers and high-volume users are permitted to “externalize” the significant costs associated with P2P traffic, it is likely that the P2P offering itself will be consumed even when the service's overall costs exceed the total value created.

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<sup>22</sup> ITIF Comments at 5 (citing James J. Martin and James M. Westall, “Assessing the Impact of BitTorrent on DOCSIS Networks,” Clemson University, *available at* <<http://people.clemson.edu/~jmarty/papers/bittorrentBroadnets.pdf>>).

<sup>23</sup> As LARIAT puts it, “[w]hat Vuze and other P2P-based content providers are doing, in shifting costs to ISPs’ ‘flat rate’ users, is akin to what would happen if a third party were to encourage customers to smuggle food out of an ‘all you can eat’ buffet.” LARIAT Comments at 5.

Finally, the record suggests that from a technical perspective, current-generation P2P applications may operate in affirmatively inefficient ways.<sup>24</sup> Petitioners attempt to ward off these claims by assailing network providers' "poor network design decisions," but do not address the central quandary of how best to manage increasing traffic volumes.<sup>25</sup> The Commission, however, cannot and should not second-guess how broadband networks are built and operated based on such unsubstantiated technical assertions. How to increase the efficiency of the interaction between networks, application and content delivery would best be addressed in the context of Internet fora of the sort that have been relied upon to resolve other technical issues. USTelecom members have participated in such working groups with respect to other issues, and would be amenable to doing so again. For example, AT&T and Verizon point in their comments to ongoing efforts to design more efficient next-generation P2P applications.<sup>26</sup> Similar industry groups have formed to address issues such as the migration to the IPv6 protocol,<sup>27</sup> and standards-setting groups such as the Alliance for Telecommunications Industry Solutions ("ATIS") have worked to create cooperative technical and operational standards for the communications industry for decades. Processes such as these are well-suited toward deriving results that reflect technical realities, account for the different needs presented by different network platforms

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<sup>24</sup> AT&T points out that "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." AT&T Comments at 15. Time Warner, moreover, emphasizes that P2P applications rely on "flooding" requests as a means of querying whether connected peers have access to the requested content, and then "continue[] to consume downstream and upstream bandwidth *even after a user's file download is complete.*" Time Warner Comments at 11-12 (emphasis added). In both of these ways, Torrent technology uses more network resources than necessary.

<sup>25</sup> See Free Press Comments at 22.

<sup>26</sup> See AT&T Comments at 16-17; Verizon Comments at 36-37.

<sup>27</sup> See, e.g., North American IPv6 Task Force website, available at <[http://www.nav6tf.org/html/ipv6\\_related\\_links.html](http://www.nav6tf.org/html/ipv6_related_links.html)>.

(cable, fiber, hybrid, wireless, and so forth), and respond flexibly to evolving technologies. As it works to resolve disagreements over network management, therefore, the Commission should thus favor collaborative industry efforts over the imposition of regulatory mandates.

### **CONCLUSION**

For the reasons described herein and in USTelecom's opening comments, the Commission should deny the Free Press and Vuze petitions.

Respectfully submitted,

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