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SUMMARY

The Telecommunications Industry Association and a diverse array of commenters make clear that the Commission should ensure that network operators retain sufficient latitude to innovate and develop new technologies to manage the network in a manner that best responds to the ever-changing traffic patterns of today's broadband usage. The network management techniques that these operators implement are continually evolving and improving to meet skyrocketing demand to the benefit of all users. Indeed, an unmanaged Internet does not guarantee a neutral network, and the "neutrality" that some commenters strive for is possible only through management that broadband providers and infrastructure manufacturers employ. Without this management, the network becomes strained by the different and often competing interests and requirements of users, applications, and platforms. In the wireless broadband space, providers experience unique network management challenges, derived from limited and dynamically changing radio resources that must be addressed to ensure users can maximize the service.

To effectuate an "open Internet," the Commission should decline to replace the flexibility of the *Policy Statement* with prophylactic rules. The proposed "nondiscrimination" rule, for example, would throttle innovations essential to ensuring a fair and equitable broadband experience. Should the Commission adopt rules beyond the four principles included in the *Policy Statement*, enforcement must presume reasonableness of the management techniques currently employed as well as reasonable future approaches to ensure that the benefit of the Internet continues to inure to all. With such a presumption, broadband providers may still be able and willing to respond to the endless increase of demand for bandwidth among all Internet users.

**Before the
Federal Communications Commission
Washington, DC 20554**

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

To: The Commission

**REPLY COMMENTS OF THE
TELECOMMUNICATIONS INDUSTRY ASSOCIATION**

I. INTRODUCTION

The record in this proceeding is clear that that network management is essential, and, given the very technical nature of broadband network management, the Commission should decline to adopt rules that will limit the flexibility of broadband providers and manufacturers to manage their networks to the maximum benefit of consumers. As the leading trade association for the information and communications technology industry, the Telecommunications Industry Association (“TIA”) is concerned that any efforts by the Commission to develop rules under the guise of enhancing the “open Internet” will in fact hinder innovation and investment in a way that could seriously undermine the continued evolution of the network, all to the detriment of consumers.¹

Commenters agree with TIA that the Commission should decline to replace the flexible approach afforded by the *Policy Statement*² with prophylactic rules.³ The record demonstrates

¹ See Comments of the Telecommunications Industry Association at 2 (“TIA Comments”).

² See *Appropriate Framework for Broadband Access to the Internet Over Wireline Facilities*, Policy Statement, 20 FCC Rcd 14986 (2005) (“*Policy Statement*”).

that a managed network is in fact the best way to promote an “open Internet,” and the adoption of the proposed “nondiscrimination” rule would undermine this foundation of broadband innovation. Appropriate capacity management tools, which are employed in a neutral manner, further pro-competitive, pro-consumer purposes, and should not be barred unless such conduct is used in an anticompetitive manner.

Network management techniques have been, and continue to be, used by providers to keep the Internet neutral and to ensure that consumers have a fair and equitable broadband experience. In particular, broadband wireless providers face unique network management challenges, and TIA includes a declaration (attached) that details the great strains on wireless resources that have resulted from exploding customer demand and the tools that providers are using to support this growth, which is currently outpacing demand.

Finally, if, despite the overwhelming record to the contrary, the Commission adopts prophylactic rules, it must ensure that any associated enforcement process includes a presumption of reasonableness on behalf of the network operator. Moreover, such a presumption could only be overcome by a showing that a broadband provider has violated a rule and caused significant harm. Otherwise, broadband providers will be hamstrung in their ability and incentive to develop and deploy new and innovative network management technologies. Ultimately, with the explosion of demand for broadband capacity, Commission adoption of any rules will only serve to exacerbate the growing challenge of managing the broadband network to satisfy the increasingly sophisticated expectations of consumers.

³ TIA Comments at 3. At most, if the Commission chooses to adopt rules, it should limit itself to the four principles of the *Policy Statement* and a fifth principle of *consumer* disclosure.

II. MANAGING BROADBAND NETWORKS POSES SIGNIFICANT TECHNICAL CHALLENGES

A. Broadband Networks Currently Are Managed in Order to Provide for a Neutral, Fair and Equitable Customer Experience

TIA stressed in its comments that the open Internet is, and always has been, a managed Internet.⁴ TIA chronicles the movement over the past three decades to drive more and more intelligence into the network core through the use of a variety of management techniques.⁵ This development has significantly promoted the user experience, essential during a time of exponential growth of consumer demand.⁶ Other commenters agree with TIA that an unmanaged Internet does not guarantee a neutral network.⁷ In other words, the “neutrality” that some commenters strive for is in fact made possible by the management actions of broadband providers and infrastructure manufacturers; if management practices are limited, the network becomes strained by the different requirements of users and applications, both lawful and unlawful.⁸ Indeed, AT&T echoes this position in arguing that “The Internet Is Not Now, Nor Has It Ever Been, a ‘Neutral’ Place.”⁹

⁴ *Id.*

⁵ *See also* Comments of Verizon and Verizon Wireless at 66-67 (“[A] prohibition on ‘discrimination’ in the Internet context inherently lacks meaning and would be virtually impossible to interpret or apply because different forms of traffic have long been treated differently. For example, the use of content delivery networks and caching services and differing arrangements between networks for handing off traffic depending on the type of traffic involved mean that not all traffic is treated equally on the Internet today.”) (“Verizon Comments”).

⁶ TIA Comments at 6-11.

⁷ Comments of Sandvine Incorporated at 11 (“an unmanaged network is not a neutral network”) (“Sandvine Comments”).

⁸ *See* Comments of George Ou at 3 (“Proponents of ‘Net Neutrality’ Internet regulation make the unfortunate assumption that fairness and neutrality stems from a dumb and unmanaged network.”) (“Ou Comments”). *See also* Comments of Corning Incorporated at 17 (“Network management is one of the most important functions of an Internet service provider. It simply wouldn’t be possible to function in a safe or reliable manner without such management.”) (“Corning Comments”).

⁹ Comments of AT&T Corporation at 34 (“AT&T Comments”).

There is consensus among a wide range of commenters that providers and manufacturers must actively manage the broadband network to maximize the consumer experience.¹⁰ Sandvine, for example, rightly observes that both applications and users place different demands on a network based on capacity requirements and performance expectations.¹¹ Indeed, the original Internet’s IP design allowed for prioritization of certain packets to reflect the reality that “first come first serve is only fair when everyone makes the *same* demands and everyone has the *same* etiquette.”¹² But as Ou notes, the reality in the networking world is that “some applications can grab tens or even hundreds of times more network resources than other applications and prevent other applications from working correctly.”¹³ Consequently, failure to manage the IP platform would produce non-neutral outcomes among the packets associated with different applications, because it would allow applications with “selfish” protocols to trump those with “polite” protocols in the contest for finite capacity.¹⁴ Thus, an intelligent managed network, not an unmanaged network, truly is the best way to ensure fair distribution of bandwidth and achieve true neutrality.¹⁵

¹⁰ See, e.g., Comments of Google and Verizon at 7 (“We also continue to agree – as do virtually all parties – on the importance of network management. Network operators must have flexibility to manage their networks to deal with a range of network-impacting issues, including traffic congestion, spam, “malware” and denial of service attacks, as well as other network threats or challenges that may emerge in the future.”) (“Google/Verizon Comments”).

¹¹ Sandvine Comments at 11.

¹² See Ou Comments at 3 (emphasis added). See also TIA Comments at 10-11; Comments of Alcatel-Lucent at 8 (“Network management is not new. . . . Today, broadband network operators and other partners in the broadband ecosystem engage in a variety of additional network management practices. These practices involve enforcing per-subscriber service-level agreements; managing the aggregate traffic as it is multiplexed across the IP edge and IP/MPLS and optical core networks; preventing harms to the network by malicious activities such as Denial of Service attacks; ensuring the requisite security of VPNs and administration and adherence to Digital Rights Management agreements. All of these activities are necessary to ensure that the expected level of services are delivered to subscribers, in accordance with the subscriber contract with respect to bandwidth, availability, security, and reliability.”) (“Alcatel-Lucent Comments”).

¹³ Ou Comments at 3.

¹⁴ See AT&T Comments at 39.

¹⁵ See Ou Comments at 3; TIA Comments at 10 (“The open Internet is . . . preserved through an intelligent network that uses numerous tools to meet the evolving demands of consumers.”).

It is not practical for network providers to routinely overbuild network capacity to meet accelerating and sometimes spiky demand in a reasonably economic fashion. Indeed, relying on new capacity alone to solve current bandwidth limitations would impose huge and unnecessary costs on consumers, and studies indicate that this approach would increase the cost of broadband access between \$100 and \$400 per subscriber per month.¹⁶ Cisco's research suggests that the use of network management and quality of service is a much more practical alternative to unlimited capacity increases as these techniques can provide a 2.5 times increase in bandwidth on existing networks.¹⁷

Instead of regulating network management, the Commission should make every effort to ensure that network operators retain sufficient latitude to innovate and develop new technologies to manage the network in a manner that best responds to the ever-changing traffic patterns of today's broadband usage. Active network management has become imperative for both wired and wireless networks in order to ensure "an optimal experience for the vast majority of users of the 'best effort' Internet service." Such management may mean limiting the peak information rate for a broadband subscriber to ensure fair usage of the bandwidth among subscribers, or in some cases even rate-limiting particular types of traffic that have a disproportionate impact on other users. Thus, a Commission policy that requires that all packets be treated exactly the same, irrespective of potential Quality of Service ("QoS") needs, would upset the current approach to network management and have the perverse effect of ensuring that latency-sensitive applications like VoIP and real-time video not have the QoS that they require to be most competitive. The current proposal – prohibiting any "discrimination" – would have such an effect. And while the rule against "discrimination" would be subject to "reasonable network management," that

¹⁶ Comments of Cisco Systems, Inc. at 8-10 ("Cisco Comments").

¹⁷ *Id.* at 10.

concept is so ill-defined as to provide no comfort to network operators. The resulting inability of network operators to provide QoS, and thus meet customers' expectations, would be the complete opposite effect of what the Commission hopes to accomplish in this proceeding.

As it moves forward, the Commission must acknowledge the benefits of a managed network and how critical it is that providers be allowed to freely manage their networks to ensure that today's network remains as "open" as it has in the past. As technical issues arise, it may prove valuable for the Commission to turn towards a group comprised of relevant stakeholders with relevant technical expertise, such as the Technical Advisory Groups proposed by Google and Verizon, that interacts with the broadband network on a day-to-day basis for guidance on technical disputes arising out of network management.¹⁸

B. Broadband Wireless Networks Have Unique Management Challenges

Broadband wireless is a relatively nascent market.¹⁹ As a result, the FCC should take the same hands-off approach as it did with the new wireline Internet marketplace, and allow wireless carriers the flexibility to manage their networks to maximize quality and efficiency.²⁰ While all broadband providers face capacity challenges, broadband wireless providers face a particularly unique operating environment because wireless networks are constrained by limited and dynamically changing radio resources.²¹ Simply put, wireless operators must contend with an

¹⁸ See Google/Verizon Comments at 5.

¹⁹ See Comments of MetroPCS Communications, Inc. at 45 ("MetroPCS comments").

²⁰ *Id.* at 45-46.

²¹ Alcatel-Lucent Comments at 27; *id.* at 10 ("Notably, for wireless networks, some applications tie up a radio bearer with 'keep alive' control messages, but do not actually transmit any data over this bearer, effectively wasting this precious resource (spectrum)."); Comments of Clearwire at 10 ("In mobile broadband networks, spectrum assets are inherently shared, creating a greater potential for network congestion than is found with a wireline broadband network, where each end user has dedicated access. The same wideband radio channel must be shared among many user sessions that may each involve many different types of data streams and protocols.") ("Clearwire Comments").

environment of mobility, spectrum constraints,²² interference, and other unique issues that change rapidly and erratically. As the Center for Democracy and Technology observed, the conditions of the wireless broadband network “might require more aggressive traffic management to ensure the smooth and effective operation of the network.”²³ Even those who would impose Open Internet rules on all providers acknowledge that what constitutes “reasonable network management” would vary from platform to platform.²⁴

While some have argued that there are no technical reasons precluding broadband wireless providers from complying with specific rules, TIA contends that these commenters misunderstand the challenges of managing a wireless broadband network and the impact such rules could have on provider flexibility.²⁵ As is reflected in the attached declaration of Matt Grob, wireless networks are intricate systems. These networks rely on base transceiver stations, mobile switching centers, and base station controllers to link calls to the public switched telephone network or to serve as a gateway to the Internet.²⁶ Wireless networks must employ

²² See, e.g., Comments of T-Mobile USA, Inc. at 16-18 (noting that the need for wireless network management is exacerbated by the well-recognized shortage of wireless spectrum and that 3G networks worldwide could be overwhelmed by congestion in just one or two years); AT&T Comments at 142 (FCC’s focus should be on allocating more spectrum for wireless broadband, as NTIA and DOJ urged, not saddling it with new regulations); Comments of Internet Innovation Alliance (“Rather than battle over net neutrality, the FCC should lead the effort to expand spectrum availability for commercial use, identifying hundreds more megahertz that can support high-speed Internet services.”).

²³ Comments of Center for Democracy and Technology at 51.

²⁴ See Comments of New America Foundation *et al* at 3 (“NAF Comments”). See also Comments of Public Interest Commenters at 18 (noting that the metes and bounds of what constitutes reasonable network management may and likely will differ depending on the broadband platform) (“Public Interest Group Comments”).

²⁵ See NAF Comments at 5; Comments of Free Press at 126 (“Fundamental to the concept of nondiscrimination and device attachment policy, for both fixed and mobile broadband networks, is that network operators should not be permitted to exercise control over the devices and applications used on an Internet access service. Consistent with this, the Commission should remain skeptical of any actions by providers of mobile broadband Internet access service to restrict the use of applications on devices, as such actions likely mask (or, less commonly, admittedly are) anti-competitive and anti-consumer behaviors that undermine the goals of this proceeding.”) (footnote omitted) (“Free Press Comments”).

²⁶ See Declaration of Matt Grob at 2-3 (“In a typical cellular wireless system, geographic areas are divided into cell sites, each of which is served by a base transceiver station (‘BTS’). To complete a call, a wireless user connects to the local BTS, which interfaces to the Mobile Switching Center (‘MSC’) via a Base Station Controller (‘BSC’)”) (“Grob Declaration”).

network management techniques to meet dramatically increased demand for wireless broadband and ensure the most efficient use of available spectrum.²⁷ As the Grob declaration makes clear, “wireless operators require absolute flexibility to manage their networks in light of spectrum and bandwidth limitations. Without this flexibility, the experience for all users will suffer.”²⁸

Wireless providers rightly note that with mobile broadband networks, spectrum assets are inherently shared, creating a greater potential for network congestion than is found with a wireline broadband network, where each end user has dedicated access.²⁹ Moreover, “one strand of fiber optic cable has greater capacity than the entire RF spectrum.”³⁰ In addition, wireless broadband is fundamentally different from wired broadband and Wi-Fi (typically in a home or small business location) in that wireless devices do not exist on the “edge” of the network, but in fact are an integral part of the wireless broadband network itself.³¹ The same wideband radio channel must be shared among many user sessions that may each involve many different types of data streams and protocols.³² As a result, “[i]nterference limits capacity in a wireless system on a dynamic basis, varying by location and from one millisecond to the next, and this problem has no counterpart in wireline systems.”³³ Wireless network management practices thus include a

²⁷ *See id.* at 5.

²⁸ *Id.* at 6. *See also id.* at 5 (“In short, the growth in mobile usage in the United States has been, and continues to be, enormous.... [N]etwork congestion management techniques are essential to addressing this exponential growth as well as constantly changing traffic patterns across networks.”).

²⁹ *See* Clearwire Comments at 10.

³⁰ Rysavy Research, *Net Neutrality Regulatory Proposals: Operational and Engineering Implications for Wireless Networks and the Consumers They Serve*, at 9 (January 14, 2010) (attached to Comments of Mobile Future).

³¹ *See* Comments of CTIA-The Wireless Association[®] at 41-42 (Ultimately, mobile devices for licensed mobile broadband services are licensed to the network operators, not the end users. Thus, it is particularly important that mobile broadband network operators be allowed to carefully manage all aspects of the network, including devices, because improperly functioning devices have the ability to negatively impact the network as well as service to other users of the shared wireless resource.).

³² *See* Clearwire Comments at 10.

³³ *See* Jeffrey H. Reed & Nishith D. Tripathi, *The Application of Network Neutrality Regulations to Wireless Systems: A Mission Infeasible*, at 22 (attached to AT&T Comments).

wide variety of unique factors, including admission-control, load-balancing, handover or handoff, scheduling, power-control, and limitations on applications, which lead to unique network management issues.³⁴ Each of these must be meticulously and dynamically managed to ensure the customer experience is maximized.

Manufacturers and providers agree that multiple network management techniques are in use at all times in communications networks, particularly on wireless networks, as they are “critical to a satisfactory consumer experience.”³⁵ Moreover, without network management, “network performance on the wireless network is not optimized and users experience instances of degraded service caused by packet loss, packet delay (latency), and jitter – problems that are most prevalent when wireless networks are congested.”³⁶ Simply put, wireless carriers must have the flexibility to manage their own networks.³⁷

The Grob Declaration highlights a variety of wireless network management techniques – including power control, vocoders, strength of signal measurements – which providers regularly use to maximize the customers’ mobile broadband experience.³⁸ But factors outside a provider’s control, such as the number of subscribers concentrated within a specific cell, the capabilities of the customers’ wireless device, and whether the subscriber is within the provider’s coverage

³⁴ *Id.* at 26. *See also* Verizon Comments at 64 (“For example, to operate the network efficiently and optimize data throughput, operators may use sophisticated queuing and scheduling algorithms that send more packets of data to users during times of good signal-to-noise conditions and less when signal-to-noise conditions are bad. They also may restrict applications and devices that can degrade the service of other users, such as applications that keep an access connection alive for more than is needed for typical usage through the use of ‘keep alive’ and retry functions, which tie up available resources without providing any benefit to customers.”).

³⁵ Comments of Ericsson at 8 (“Ericsson Comments”).

³⁶ *Id.*

³⁷ *See* Comments of Leap Wireless International, Inc. and Cricket Communications, Inc. at 10 (“Leap Comments”).

³⁸ *See* Grob Declaration at 7-8. *See also* Comments of Nokia Siemens Networks at 7 (“For example, in a typical UMTS/HSPA mobile radio access network today, QoS techniques can be used to differentiate treatment of traffic to ensure sufficient quality for all services while maximizing the number of users served by the available capacity.”) (“Nokia Siemens Comments”).

area, will impact wireless network management techniques at any one time.³⁹ These independent events require minute-to-minute, second-to-second, and millisecond-to-millisecond adjustments from broadband wireless providers. These adjustments are facilitated by queuing and scheduling algorithms, along with other evolving network management techniques that vary based upon individual network attributes.⁴⁰ These techniques, designed to “provide particular quality of service levels required by end users,”⁴¹ would be threatened by the adoption of the proposed prophylactic rules that inevitably will limit network operator flexibility. Further, the proposed regulations would “inhibit advances in management techniques and have direct, unintended, and likely harmful consequences upon wireless broadband service deployments, applications, devices, and innovative business models.”⁴²

Finally, it is important to note that the technical challenges of the wireless broadband network are further compounded by the high rate of growth in demand for wireless broadband services over the past couple of years.⁴³ While the industry continues to develop new technologies like HSPA and EV-DO Rev. B, as well as LTE⁴⁴ and WiMAX, to achieve higher data rates by using more spectrum, the Grob declaration rightly notes that “there is now, and will continue to be until considerable amounts of additional spectrum are made available, a wireless

³⁹ See Leap Comments at 6-7.

⁴⁰ See Grob Declaration at 6. See also *id.* at 10 (“When it comes to network management tools, there is no set menu of tools that carriers look to implement. The congestion management techniques that carriers use are constantly changing and evolving. In addition, each carrier takes a different approach to network management, which depends upon the network configuration and deployed service (which vary on a customer-by-customer basis), as well as end-user demands, equipment, and location.”).

⁴¹ *Id.*

⁴² *Id.*

⁴³ See, e.g. Grob Declaration at 4 (noting that monthly worldwide mobile data traffic in 2014 will exceed the total for all of 2008 (citation omitted); see also *id.* at 5 (“The Pew Research Center found in April 2009 that usage of mobile devices to access the Internet had grown 73% from their prior study, which was completed just 16 months earlier. The April 2009 study found that on a typical day, approximately 19% of all Americans use the Internet on a mobile device.”) (citation omitted).

⁴⁴ See *id.* at 3.

bandwidth shortage.”⁴⁵ This is an unprecedented time of growth and technological development for mobile broadband, and indeed the entire broadband sector. In this transformative environment, the Commission should not replace the flexible framework of the *Policy Statement* with the proposed rules for any platform.⁴⁶

III. ANY NONDISCRIMINATION RULE ADOPTED SHOULD BE AIMED AT ANTICOMPETITIVE BEHAVIOR, NOT AT ANY DISPARATE TREATMENT OF TRAFFIC OR THE USE OF SPECIFIC TECHNOLOGIES

A rule barring any “discrimination” would have deleterious effects for investment, innovation, and consumer demand in the broadband marketplace.⁴⁷ In the event the Commission concludes that it is necessary to adopt some nondiscrimination rule, TIA believes that the Commission should limit the scope of any such rule to bar only *anticompetitive* discrimination. More broadly, however, TIA agrees with the parade of commenters urging the Commission to reject the proposed “strict” nondiscrimination requirement in favor of a standard that permits and promotes flexible, consumer-oriented development of the Internet. There is no basis for a blanket rule barring all traffic prioritization, all use of any particular technology to effectuate such prioritization, or all business arrangements that involve payment by a party other than the end user. Rather, the dynamic growth and evolution of the Internet ecosystem will best be promoted by the current *Policy Statement*. If, nonetheless, the Commission decides it must adopt

⁴⁵ *Id.* at 6. See also FEDERAL COMMUNICATIONS COMMISSION OMNIBUS BROADBAND INITIATIVE, CONNECTING AMERICA: THE NATIONAL BROADBAND PLAN (2010) at 77 (“The growth of wireless broadband will be constrained if government does not make spectrum available to enable network expansion and technology upgrades.”).

⁴⁶ See Comments of Qualcomm at 11 (“All of this growth in usage underscores the need for wireless operators to retain the unfettered flexibility to manage their networks and undermines the NPRM’s conclusion that the Commission should regulate wireless network management.”). See also Comments of National Organizations at 18 (The National Organizations – sixteen civil rights, professional, service and elected officials’ organizations have observed that wireless is the only broadband technology for which minority adoption and use currently indexes at higher levels than for White Americans. For these and other reasons, the group urges the Commission to allow “broadband providers the flexibility necessary to maintain the proper functioning of their networks matters for all broadband platforms, and particularly in the wireless context.”).

⁴⁷ TIA Comments at 27.

a non-discrimination principle, then it should limit that rule to bar only “anticompetitive” – or at most “unreasonable” – discrimination.

A. A Broad Range of Commenters Recognize that the Proposed Nondiscrimination Rule Is Overbroad and Would Stymie User Interests

Parties representing a wide range of interests have cautioned against the overbreadth of the proposed rule. For example, Amazon.com, a longtime proponent of “net neutrality” rules, expresses alarm at the proposed rule, urging modification to allow various types of discrimination.⁴⁸ Specifically, under Amazon’s proposal, an ISP would be permitted to “offer enhanced quality, speed, or other functionality to individual providers of lawful content, applications, services, or devices, so long as doing so does not degrade the quality, speed, or other functionality provided for any other lawful content, applications, services, or devices, from any source or for any user.”⁴⁹ Alcatel-Lucent correctly explains that the Commission’s consideration of an unqualified nondiscrimination standard is not only unsupported by any clear showing that the current rules are inadequate, but that such a strict regulation, which typically has been limited to monopoly markets, “will harm the very innovation and investment the Commission is seeking to protect.”⁵⁰ This view is shared by broadband Internet access providers of all types, including incumbent LECs,⁵¹ competitive telecommunications carriers,⁵² cable

⁴⁸ See Comments of Amazon at 2.

⁴⁹ *Id.*

⁵⁰ Alcatel-Lucent Comments at 24.

⁵¹ See, e.g., Verizon Comments at 66 (“[T]he Commission’s proposed rule is extraordinarily broad, going beyond even traditional common carriage regulation by prohibiting *all* discrimination, rather than simply ‘unjust or unreasonable’ discrimination.”); Comments of Qwest Communications, Inc. at 29 (“The Commission should impose, at most, a reasonable discrimination standard.”) (“Qwest Comments”).

⁵² See, e.g., Comments of PAETEC Holding Corporation at 11 (The standard should not be an absolute nondiscrimination standard such as that in Section 251(c)(2). Rather, it should be an “unjust or unreasonable discrimination” standard similar to that imposed under Section 202(a)); Comments of BT Americas, Inc. at 2 (“The Commission’s proposal to depart from its common carrier standard of prohibiting only ‘unjust and unreasonable’ discrimination is unwise.”).

operators,⁵³ and wireless providers.⁵⁴ As one commenter states: “Discriminatory conduct and anti-competitive conduct are not the same. It is entirely possible for behavior to be discriminatory and in the best interest of the consumers using the network, but not anti-competitive....”⁵⁵

Commenters urging limitations on the proposed nondiscrimination rule share a common view that, left unaltered, the existing rule would hamper the growth and development of the Internet, undermining consumer welfare. Nokia Siemens emphasizes that the draft rule’s “starting premise that all ‘discrimination’ is unwarranted is fundamentally flawed.”⁵⁶ It adds that the Internet market today includes extensive differentiated treatment of packets to manage traffic and that “some applications and services at times require priority treatment to function properly. This is healthy.”⁵⁷ A rule barring all disparate treatment of Internet traffic would destroy that health. CenturyLink adds that a strict rule against discrimination would “handicap broadband service providers. It would prevent them from innovating to ensure more efficient use of networks, to improve quality of service, and to offer new services in competition with other application, content, and service providers.”⁵⁸ As Cisco notes: “At the very most, if the Commission does adopt some form of the proposed nondiscrimination rule, it should only adopt

⁵³ Bright House states that “[i]f there is to be regulation, it must be freed from blanket suspicion about ‘discrimination,’ and adopt a far more refined focus on unreasonable and anticompetitive forms of discrimination that adversely affect consumers.” Comments of Bright House Networks at 10 (“Bright House Comments”). *See also* Comments of Comcast Corporation at 39 (“The overbreadth of such a rule will have serious unintended consequences that could jeopardize the Commission’s overarching goals of expanding broadband Internet deployment and promoting broadband adoption.”) (“Comcast Comments”).

⁵⁴ Sprint Nextel flatly states that “[a] strict nondiscrimination rule as applied to mobile broadband Internet access providers is not workable.” Sprint Nextel Comments at 20.

⁵⁵ Comments of National Cable & Telecommunications Association at 7-8 (“NCTA Comments”). *See also* Comments of Information Technology Industry Council at 5 (“The principles adopted in this proceeding should, as a general matter, apply only where the conduct of the provider of broadband Internet access service is either anticompetitive or harmful to consumers in a manner defined by the terms of the Communications Act.”).

⁵⁶ Nokia Siemens Comments at 3.

⁵⁷ *Id.*

⁵⁸ Comments of CenturyLink at 16 (“CenturyLink Comments”).

a requirement barring anticompetitive discrimination that results in substantial consumer harm. Absent these qualifiers, a blanket nondiscrimination requirement would affirmatively bar even practices that are widely recognized as enhancing consumer welfare.”⁵⁹

This type of approach exercises a reasonable balance while at the same time provides discipline to the market. In contrast, the Public Interest Commenters suggest that “any prioritization should be either *essential* to the network’s operation or undertaken in compliance with legal obligations”⁶⁰ and that very few, if any, applications absolutely depend on QoS.⁶¹ The harms posed by the strict nondiscrimination rule contemplated here are hardly theoretical. For example, the Communications Workers of America write that the “strict nondiscrimination language would prohibit broadband Internet services providers from providing different levels of quality-of-service.”⁶² Such a standard would prohibit a network operator from prioritizing a VoIP call over an e-mail, and it would bar a broadband provider from providing the QoS needed to transmit a high-resolution medical CAT Scan.⁶³ For its part, the Songwriter’s Guild of America explains that “there is substantial evidence of harm to copyright owners if the Commission extends its reach from ‘anticompetition’ to ‘nondiscrimination.’”⁶⁴

⁵⁹ Cisco Comments at 8 n.14. Time Warner Cable emphasizes that “[b]y failing to target harmful discrimination, the proposed nondiscrimination requirement has the potential to be substantially (and unpredictably) overbroad,” and “would preclude broadband Internet access service providers from undertaking a range of practices that would otherwise expand customization and consumer choice.” Comments of Time Warner Cable, Inc. at 53-54 (“Time Warner Cable Comments”). See also Comments of Rural Cellular Association at 6 (“An unqualified prohibition on discrimination would be restrictive and would likely lead to a ban on practices that in fact would not have any socially harmful consequences.... The problem with the Commission’s proposed rule—even with its caveats and carved out exceptions—is that it would likely produce results that would be antithetical to the agency’s goal of pursuing ‘light and flexible’ Internet policies.”) (“RCA Comments”).

⁶⁰ Comments of Public Interest Commenters at 45-46 (emphasis included).

⁶¹ See *id.* at 49.

⁶² CWA Comments at 14-16.

⁶³ *Id.*

⁶⁴ Comments of Songwriters Guild of America at 2.

The proposed limits on content provider/ISP business arrangements would be similarly damaging. ISP/content provider charges “may be distinctly pro-competitive in certain circumstances.”⁶⁵ NCTA agrees that an across-the-board prohibition on charging for enhancements or prioritization would, in essence, “provide that unless an ISP chooses to charge its subscribers for any enhancements or prioritization that it may provide for particular applications and content, quality of service can never exceed the level of service that can economically and technologically be offered to *all* application and content providers.”⁶⁶ Qwest concurs, noting that the strict nondiscrimination rule “will effectively mandate an exclusively end-user funded network,” “impede investment generally in broadband networks,” “preclude the necessary investment and innovation to build next-generation networks as desired,” and “have a negative impact on broadband adoption.”⁶⁷ Ultimately, such a rule “will likely prevent development and deployment of a broad array of innovative IP products and services.”⁶⁸

B. Any Nondiscrimination Rule Adopted Should Bar Only Anticompetitive – or at Least “Unreasonable” – Discrimination.

Given the significant harms threatened by the proposed “strict” nondiscrimination rules, parties who actually manage and operate the broadband network unsurprisingly highlight the importance – and benefits – of flexibility. Thus, if a nondiscrimination rule is adopted, TIA believes that the network is best served by a rule that bars only anticompetitive discrimination. Such an approach would still allow the Commission to pursue potential “bad actors” but, equally as important, allow providers and manufacturers some level of flexibility to manage their networks and hopefully continue innovating and investing in their networks. Those parties who

⁶⁵ Time Warner Cable Comments at 55.

⁶⁶ NCTA Comments at 34-35.

⁶⁷ Qwest Comments at 29-30.

⁶⁸ *Id.* at 30.

contend that a vague and arbitrary “unjust” or “unreasonable” non-discrimination standard would create uncertainty, are attempting to turn Section 202(a)’s 75-history on its head.⁶⁹ Their call for an absolute nondiscrimination standard for the Internet should be ignored. Indeed the very arguments that they rely on for a strict antidiscrimination rule – the dynamic nature of network behavior and usage patterns – actually support the need for provider flexibility to manage these network changes rather than a rule that will create a more restrictive management environment.⁷⁰

Many parties likewise argue that, if the Commission determines that a nondiscrimination rule is necessary, such a rule should be modeled on Section 202(a) of the Act, which bars only “unjust or unreasonable” discrimination. For example, Clearwire states that “[t]he Section 202(a) standard accomplishes the Commission’s goals while at the same time providing broadband Internet access service providers the freedom necessary to fully develop businesses models, innovative services and applications that are in their infancy, or have yet to be developed. These include innovative pricing strategies and content and new applications.”⁷¹ Qwest highlights the past success of Section 202’s approach, noting that “[t]he Commission has decades of experience with [that provision’s] prohibition against ‘unreasonable discrimination,’” and that “[t]his standard has proved equal to the task of providing the Commission with adequate authority to prevent harmful forms of discrimination while permitting desirable forms of discrimination.”⁷² Sprint Nextel observes that “[a]n unjust or unreasonable discrimination

⁶⁹ Free Press Comments at 79 (“the standard of ‘unjust and unreasonable discrimination’ of Section 202(a) of Title II is neither substantively nor procedurally appropriate for Internet access service”).

⁷⁰ *Id.* (“A vague and arbitrary standard . . . cannot be meaningfully applied to a generative, multi-purpose network such as the Internet, in which typical network behavior and usage patterns can change dramatically and permanently in a period of days, making it impossible to accurately predict future harm of any network operator activity that restricts user or content provider innovation -- and thus impossible to gauge, based solely on the activity itself and ignoring its context, repercussions, and alternatives, whether or not an activity imposes “unreasonable” discrimination.”).

⁷¹ Clearwire Comments at 15.

⁷² Qwest Comments at 43-44.

standard would be far preferable [to the proposed rule], because such a standard contains the flexibility needed to distinguish socially beneficial discrimination from socially harmful discrimination.”⁷³ CWA agrees that the Section 202(a) standard, unlike a strict nondiscrimination standard, would permit more network service innovation and more diversity in network services.⁷⁴

Other parties – including TIA – argue that any nondiscrimination principle adopted here should be further refined to reflect competition in the broadband Internet access market, barring only discrimination that was not simply unjust or unreasonable, but *anticompetitive*. As Corning writes: “By focusing on unreasonable discrimination that results in anticompetitive conduct, the Commission will be able to perform a case-by-case analysis of any such allegations against a broadband service provider, while at the same time promoting reasonable and competitive conduct that benefits consumers and spurs investment in broadband infrastructure throughout the broadband industry.”⁷⁵ CenturyLink agrees that “[a] narrower approach to discrimination – addressing only unreasonable and anticompetitive forms of discrimination that materially harm consumers – would allow service providers to innovate, developing options for consumers as well as application and contents providers.”⁷⁶

IV. ANY ENFORCEMENT PROCESS MUST START WITH A PRESUMPTION OF REASONABLENESS

To the extent the Commission adopts the rules contemplated in this docket, over the objections of many, any associated enforcement process must take special care to facilitate, not

⁷³ Sprint Nextel Comments at 24.

⁷⁴ CWA Comments at 14-16.

⁷⁵ Corning Comments at 16 (“Limiting this nondiscrimination standard to substantial harm to consumers clarifies that the Commission is not concerned with conduct that may appear harmful to consumers, but in fact is conduct essential to running a broadband network.”).

⁷⁶ CenturyLink Comments at 16.

chill, the development and deployment of innovative new offerings. To that end, TIA emphasizes the importance of a strong presumption of reasonableness as to network management or other challenged practices more broadly that can only be overcome by powerful evidence of anticompetitive behavior resulting in consumer harm. Any other approach would deter innovation by exposing broadband providers and their vendors to excessive legal uncertainty. Cox agrees that providers may be forced into the awkward position of asking the Commission for permission to innovate.⁷⁷ “Given the lack of any demonstrated network management harm, the Commission would be well served to ensure that the regulatory environment encourages providers to continue to innovate, but without the obligation of securing prior approval from policymakers.”⁷⁸

Commenters with otherwise varying positions on the issues raised in the Notice agree that complainants alleging a violation of network openness rules should be required to make a *prima facie* case before any obligations fall on the challenged ISP. For example, in their joint comments, Google and Verizon state that “[a]ll complaints must include a *prima facie* showing that one or more of any rules adopted by an agency have been violated.”⁷⁹ So, too, the joint Public Interest Commenters approvingly note that the Commission’s formal complaint rules require complainants to state a *prima facie* case before the complaint will proceed.⁸⁰ And the Ad Hoc Telecommunications Users Committee states that “the Commission should establish that a complainant has the burden of presenting sufficient evidence to make a *prima facie* showing of discriminatory treatment with respect to a specific network management practice.”⁸¹ Ericsson

⁷⁷ See Cox Comments at 33.

⁷⁸ *Id.*

⁷⁹ See Google/Verizon Comments at 6.

⁸⁰ Public Interest Group Comments at 70-71.

⁸¹ Comments of Ad Hoc Telecommunications Users Committee at 27.

agrees that the Commission should clarify that “all network management practices will presumptively be considered reasonable, especially those that are standardized or widely used....”⁸²

TIA generally agrees with these comments.⁸³ However, it is not *sufficient* to place on the complainant the burden of establishing a *prima facie* case. The Commission must also specify just what that *prima facie* case must demonstrate, and do so in a way that adequately protects broadband providers. As Ericsson makes clear, the burden borne by a complainant in overcoming the initial presumption of reasonableness should be substantial: “[T]he party objecting to a network management practice must demonstrate factually, on a case by case basis, that it has caused significant harm to consumers and has had a significant anticompetitive effect.”⁸⁴

Similarly, the Commission’s enforcement procedures – just like the underlying rules – must be technologically neutral. The Commission should resist calls to establish bright-line rules or mechanisms that can fail to take account of inherent differences between network platforms⁸⁵ and should tread carefully with proposals that a *prima facie* case can be established by a showing that an ISP has engaged in any particular practice.⁸⁶ Different network platforms may require

⁸² Ericsson Comments at 33. *See also* Comments of Vonage Holdings Corp. at 32 (“as an initiator of a complaint, the complainant should bear the burden of proof that a network management practice violates one of the codified principles, and that the respondent (the network service provider) is subject to the Commission’s relevant open Internet rule”).

⁸³ *See also* Cox Comments at 31 (“Cox can also attest from its own experience that broadband service providers will be chilled in experimenting with new network management technologies and tools as long as the Commission does not afford them an express presumption of reasonableness.”).

⁸⁴ Ericsson Comments at 33.

⁸⁵ *See, e.g.*, Comments of DISH Network L.L.C. at 7-8 (proposing a system of automated monitoring agents); National Association of State Utility Consumer Advocates Comments at 24-25 (noting that “neutrality rules must apply across platforms” and suggesting that successful enforcement requires “clear, bright-line *ex ante* rules”).

⁸⁶ Public Interest Groups at 71 (“[P]arties aggrieved should be required to make a *prima facie* showing that an ISP has engaged in a practice in violation of the open Internet rules. Upon this *prima facie* showing, *the ISP should bear the burden of demonstrating that its practice qualifies as a reasonable network management practice*, as defined by these rules.”) (emphasis added).

different types of management, using different technologies. The Commission should make clear that a complainant does not establish a *prima facie* case simply by showing the use of a particular network tool or practice – rather, the *sine qua non* of a *prima facie* case must be significant harm to consumers.⁸⁷

V. CONCLUSION

For the foregoing reasons, TIA encourages the Commission to take action in this proceeding consistent with the recommendations set out above.

Respectfully submitted,

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⁸⁷ See, e.g., RCA Comments at 26 (“[T]he Commission should avoid creating procedural rules that differ depending on the characteristics of the defendant. The Commission must be mindful of the convergence that is occurring in today’s telecommunications marketplace. Competitive neutrality should be a guiding principle for the Commission in overseeing the entire marketplace and that neutrality should extend into the enforcement procedures.”).