

**Before the  
FEDERAL COMMUNICATIONS COMMISSION  
WASHINGTON, D.C. 20554**

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

**COMMENTS OF SKYPE COMMUNICATIONS S.A.R.L.**

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## SUMMARY

Skype Communications S.A.R.L. (“Skype”) welcomes the Commission’s focus on preserving an open Internet and strongly supports the proposed six principles described in the *Notice of Proposed Rulemaking*. Adopting enforceable rules in this proceeding will foster competition and innovation throughout the Internet ecosystem. This proceeding presents the FCC with an historic opportunity to propose a new model for competition and innovation policy: a “multi-modal” approach to competition and innovation policy that encourages competitive service offerings from not only traditional access providers, but also from new players at the edge of the network, leading to greater levels of investment and job creation in core and edge technologies.

In these comments, Skype addresses the issues summarized below:

- The six-principle framework proposed by the NPRM is the correct direction for the Commission, complemented by case-by-case adjudications of consumer claims thereunder.
- Evidence suggests that carriers have the incentive and ability to harm innovation in the communications application market either by outright blocking or more subtle forms of discrimination. Because these applications offer consumers additional choice and savings, they should not be delayed, obstructed, or throttled by broadband access providers.

- Quality of Service (“QoS”) tiers and network management practices that are controlled by the end user represent an opportunity to improve the quality of Internet connections, benefitting consumers.
- The Commission’s openness policies should apply in a competitively neutral way across all broadband platforms.

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Skype Communications S.A.R.L. (“Skype”) welcomes the Commission’s focus on preserving an open Internet and strongly supports the proposed six principles described in the *Notice of Proposed Rulemaking*.<sup>1</sup> Adopting enforceable rules in this proceeding will foster competition and innovation throughout the Internet ecosystem. The proposed open Internet rules would further a “multi-modal” approach to competition and innovation policy that encourages competitive service offerings from not only traditional access providers, but also from new players at the edge of the network. In these comments, Skype supports balanced policies complimented by case-by-case adjudication of the Commission’s framework that will lead to greater levels of investment and innovation in core and edge technologies.

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<sup>1</sup> *Preserving the Open Internet; Broadband Industry Practices*, Notice of Proposed Rulemaking, GN Docket No. 09-191, WC Docket No. 07-52, FCC 09-93 (rel. Oct. 22, 2009) (“*Notice*”).

Skype and other edge providers create products that provide consumers with additional reasons to subscribe to ever-faster broadband connections. Thus, our national policy framework must promote investment incentives of carriers and innovative companies at the edge.<sup>2</sup>

As a member of the Open Internet Coalition and the Information Technology Industry Council, Skype joins the growing number of industry voices, consumer groups and technology trade associations endorsing the direction of the Commission's NPRM. Skype submits these comments to address a discrete set of issues of particular importance to Skype, as summarized below:

- This proceeding provides the Commission with an opportunity to improve upon the limited levels of intermodal competition in the broadband market by adopting a balanced "multimodal" approach to innovation throughout the Internet ecosystem.
- The six-principle framework proposed by the NPRM is the correct direction for the Commission, complemented by case-by-case adjudications.
- Evidence suggests that network operators have the incentive and ability to harm innovation in the communications application market either by outright blocking or more subtle forms of discriminatory practices.

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<sup>2</sup> See Comments of Skype Communications S.A.R.L., GN Docket No. 09-51, at 22-25 (July 21, 2009); see also Christopher Libertelli, *Defining a New Competition and Innovation Policy*, Jan. 9, 2010, at [http://share.skype.com/sites/en/2010/01/competition\\_and\\_innovation.html](http://share.skype.com/sites/en/2010/01/competition_and_innovation.html).

Because these products offer consumers additional choice and savings, they should not be delayed, obstructed, or throttled by broadband access providers.

- Quality of Service (“QoS”) tiers and network management practices that are controlled by the end user represent an opportunity to improve the quality of Internet connections, benefitting consumers.
- The Commission’s openness policies should apply in a competitively neutral way across all broadband platforms.

#### **I. THE TIME IS RIPE FOR THE COMMISSION TO ADOPT RULES TO PRESERVE AN OPEN INTERNET**

Skype has long supported the adoption of rules to safeguard an open Internet irrespective of the particular broadband network used for Internet services. Indeed, in February of 2007, Skype filed a Petition seeking confirmation that the Commission’s *Broadband Policy Statement* applies to wireless broadband networks, a Petition that remains pending today.<sup>3</sup> Skype’s Petition focused on

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<sup>3</sup> Skype Communications S.A.R.L., *Petition to Confirm A Consumer’s Right To Use Internet Software and Attach Devices to Wireless Networks*, RM-11361 (filed Feb. 20, 2007) (“*Skype Petition*”). Since filing this petition, Skype has continued to advocate for openness policies for all broadband networks, including wireless. *See, e.g.*, Reply Comments of Skype Communications S.A.R.L., RM-11361 (filed May 15, 2007); Letter from Christopher D. Libertelli, Senior Director, Government and Regulatory Affairs, Skype Communications S.A.R.L. to Chairman Kevin J. Martin, *Ex Parte* submission in WC Docket Nos. 06-150 & 06-129, PS Docket No. 06-229, and WT Docket No. 96-86 (filed July 10, 2007) (arguing in favor of openness conditions with respect to the 700 MHz auction); Reply Comments of Skype Communications S.A.R.L., WT Docket No. 09-66, at 5-7 (filed July 13, 2009) (arguing that a complete examination of competition in the wireless industry must consider not only services offered by wireless carriers but also open access to mobile applications and devices); *Reply Comments of Skype Communications*, (cont’d)

protecting the ability of consumers to use applications and attach devices of their choosing to wireless networks. The Skype Petition envisioned a vibrant, consumer-centric wireless market in which all parts of the wireless ecosystem thrived and where consumers and edge providers of applications and devices had a measure of confidence that they could reach users without being limited by network operators acting as gatekeepers. Innovation at the edges of networks by software applications developers leads to a virtuous cycle of innovation as the demand for innovative applications leads to greater demand for broadband deployment and greater bandwidth use.

The Notice in this proceeding shares core ideas developed in these earlier dockets and accordingly, Skype supports moving quickly toward a policy which will provide greater certainty to the entire broadband ecosystem. Openness rules designed to ensure that consumers can use applications with and attach devices of their choosing to broadband access networks, and that such networks will be free from discrimination, will help provide applications developers and device manufacturers with the certainty needed to invest in designing new and innovative products. More importantly, consumers will have the confidence that they will be able to use devices and access content, applications, and services of their choice; that broadband access providers will not act as gatekeepers,

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*S.A.R.L.*, WT Docket No. 09-66, at 2-6 (filed Oct. 22, 2009).

Skype requests that the Commission incorporate the Skype Petition docket, RM-11361, into this rulemaking to inform the Commission's consideration of openness issues.

favoring certain traffic over others; and that they will be provided sufficient information about their broadband access service to make informed choices in the broadband marketplace.

## **II. THE PROPOSED RULES SHOULD APPLY ACROSS ALL BROADBAND NETWORKS, INCLUDING WIRELESS BROADBAND NETWORKS**

### **A. The Proposed Openness Framework Acknowledges the Different Technical Characteristics of Mobile Broadband Networks**

Skype embraces the Commission's affirmation that the proposed open Internet rules "would apply to all platforms for broadband Internet access."<sup>4</sup> As wireless broadband connections become more popular and ubiquitous, and with the rise of smartphones, a growing number of consumers are subscribing to wireless broadband connections. These consumers increasingly expect similar Internet experiences across all broadband connections. By applying the proposed rules across all broadband networks, the Commission would "establish a consistent regulatory framework across broadband platforms by regulating like services in a similar manner."<sup>5</sup>

Skype agrees with parties who argue that the technical characteristics of wireless networks could justify network management practices that differ from

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<sup>4</sup> Notice at 54, ¶ 154.

<sup>5</sup> *Appropriate Regulatory Treatment for Broadband Access to the Internet Over Wireless Networks*, Declaratory Ruling, WT Docket No. 07-53, FCC 07-30, at 2, ¶ 2 (rel. Mar. 23, 2007) ("Wireless Broadband Order").

those used by wireline broadband services.<sup>6</sup> Skype notes that the *Notice* appropriately takes into account such differences.<sup>7</sup> The exception for “reasonable network management” is flexible enough to address different broadband platforms — what is not reasonable for a fiber-based broadband network may be reasonable in a bandwidth-constrained wireless network. In keeping with its proposed approach of adopting broadly-framed rules with case-by-case enforcement, the Commission need not adopt specific rules that codify the differences between different broadband platforms.<sup>8</sup> Instead, the Commission’s case-by-case application of the proposed rules should take into account the differences between wireless and wireline networks.<sup>9</sup> The Technical Advisory Process discussed in the *Notice* and already underway will assist the Commission in determining how the differences among various broadband

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<sup>6</sup> See, e.g., Comments of CTIA, WT Docket No. 09-157, GN Docket No. 09-51 (Sept. 30, 2009) at 92 (“[I]t is critical that the Commission recognize that wireless broadband networks are fundamentally different than other broadband networks for many reasons.”); see also Reply Comments of Skype Communications S.A.R.L., RM-11361, at 15 (May 15, 2007) (“Skype recognizes that there are technical differences between applying the Commission’s Broadband Policy Statement to wireless networks and applying it to wireline networks.”).

<sup>7</sup> *Notice* at 56-60, ¶¶158-74.

<sup>8</sup> The Commission could, of course, provide general guidelines in an eventual Order in this proceeding, outlining examples of practices that would and would not fall under the definition of “reasonable network management.” Such an approach would be similar to the approach followed by the Commission when it announced the openness provisions for the 700 MHz C Block license. See *Service Rules for the 698-746, 747-762 and 777-792 MHz Bands*, WT Docket No. 06-150, FCC 07-132, at 89-91, ¶¶ 222-25 (rel. Aug. 10, 2007) (“700 MHz Order”); see also 47 C.F.R. § 27.16.

<sup>9</sup> Though the technical realities of wireless broadband networks may necessitate different network management techniques, network management practices that block or throttle particular applications or protocols, without regard to the actual amount of bandwidth being consumed, should be viewed as categorically unreasonable.

platforms should inform application of the “reasonable network management” standard in a given instance.<sup>10</sup>

Because the definition of “reasonable network management” already accounts for differences among broadband platforms, there is no need for separate time frames or phases for applying the proposed “any device,” “any application,” and nondiscrimination rules to wireless broadband networks. Should the Commission adopt more specific requirements relating to the “any device” and “any application” rules, such as a carrier certification process similar to that adopted with respect to the openness rules for the 700 MHz C Block,<sup>11</sup> a phase-in period of a few months may be appropriate. However, the nondiscrimination rule should apply as soon as the rules are effective, understanding, of course, that an analysis of “reasonable network management” by wireless broadband service providers will take into consideration the current state of technology.

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<sup>10</sup> Notice at 61, ¶ 177; see also FCC Open Internet Workshop: Technical Advisory Process Workshop on Broadband Network Management, December 8, 2009, at <http://www.openinternet.gov/workshops/technical-advisory-process-workshop-on-broadband-network-management.html> (archived video of workshop and copies of powerpoint presentations).

<sup>11</sup> See *Service Rules for the 698-746, 747-762 and 777-792 MHz Bands*, WT Docket No. 06-150, FCC 07-132, at 90, ¶¶ 223-24 (rel. Aug. 10, 2007) (“700 MHz Order”); 47 C.F.R. § 27.16(c).

**B. The Blocking of Specific Applications Without Regard to the Bandwidth Consumed Is Not a Reasonable Practice and Should Not Be Permitted**

In the *Notice*, the Commission asks: “[A]re there are any circumstances in which it could be reasonable for a wireless network to block video applications because they consume too much capacity? What about third-party VoIP applications or peer-to-peer applications?”<sup>12</sup>

Skype believes that it should never be reasonable for any network operator, including wireless network operators, to block, throttle or degrade particular applications without regard to the network capacity such applications actually are consuming. Not all video applications, or peer-to-peer or VoIP applications, consume the same amount of bandwidth or place the same demands on network capacity. Skype, for example, optimizes its software application to adapt to network congestion and consume very few network resources — between 6 kbps and 40 kbps for a voice call depending on the level of network congestion, which is less than traditional POTS or other popular voice protocols.<sup>13</sup>

Thus, simply blocking all VoIP applications in response to network congestion is an overbroad practice not based on fact and should be viewed as

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<sup>12</sup> *Notice* at 60, ¶ 173.

<sup>13</sup> See Jonathan Rosenberg, *Skype and the Network*, Presentation at the FCC Open Internet Workshop: Technical Advisory Process Workshop on Broadband Network Management, December 8, 2009, at 6, available at [http://www.openinternet.gov/workshops/docs/ws\\_tech\\_advisory\\_process/Skype-FCC.pdf](http://www.openinternet.gov/workshops/docs/ws_tech_advisory_process/Skype-FCC.pdf) (“Rosenberg Presentation”).

unreasonable. In addition, blocking practices or network management practices that use categories such as “P2P” or “VoIP” are both over- and under-inclusive. Some P2P applications might consume large amounts of network resources, while others, such as Skype, do not. Some VoIP applications include video communications capabilities, while others do not. Skype is but one example of a P2P application that both transcends the ‘voice’ category but is respectful of network resource issues and does not consume large amounts of bandwidth. The Commission should therefore reject network management practices that rely on these broad application descriptions because they do not bear any close relationship to actual demands placed on broadband networks.

Instead, any network management practice that blocks or throttles only third-party applications and not those affiliated with the network operator should be deemed unreasonable *per se* as they strike at the core of the concern behind the proposed nondiscrimination rule.

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

Access-level competition is a necessary but not sufficient condition for the protection of an open Internet. Opponents of openness rules for wireless networks argue that open Internet rules are not necessary because the wireless industry is sufficiently competitive to ensure that consumers have access to products and services that they desire.<sup>14</sup> Skype has previously argued that the

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<sup>14</sup> See, e.g., Comments of CTIA-The Wireless Association, WT Docket No. 09-66, at 57, 81 (cont’d)

wireless broadband market is not as competitive as the wireless industry often claims.<sup>15</sup> The Department of Justice has also noted the structural deficiencies of the wireless market, noting that two of the largest wireless carriers are also two of the largest wireline carriers, giving them less incentive to deploy wireless broadband infrastructure that encourages substitution between wireline and wireless broadband.<sup>16</sup> Moreover, as the Commission recognized in the *Notice*, openness rules are needed to protect innovation regardless of the specific level of competition in the network — *i.e.*, more competition in the wireless market, while no doubt desirable, may not be enough to prevent network operators from blocking or discriminating against certain innovative applications.<sup>17</sup>

As explained by Dr. Barbara van Schewick of Stanford Law School, network operators have common incentives to discriminate against third parties, which are not necessarily addressed by increased facilities-based competition. In an article assessing the need for network neutrality rules to protect application-level innovation, Professor van Schewick concluded that “a network provider

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(Sep. 30, 2009).

<sup>15</sup> Reply Comments of Skype Communications, S.A.R.L., WT Docket 09-66, at 6-14 (filed Oct. 22, 2009).

<sup>16</sup> *Ex Parte* Submission of the United States Department of Justice, GN Docket No. 09-51, at 11 (Jan. 4, 2010) (“DoJ *Ex Parte*”) (“[T]wo of the major providers of [LTE] services (Verizon and AT&T) also offer wireline services in major portions of the country, raising the question of whether they will position their LTE services as replacements for wireline services, either within the region where they provide wireline services or elsewhere.”). As DoJ notes, tower and antenna siting issues as well as the high cost of special access services also hinder wireless broadband competition from the smaller providers such as Clearwire, T-Mobile, and Sprint. *Id.* at 21 n.57.

<sup>17</sup> *Notice* at 29, ¶¶ 67-69.

may have the ability and incentive to exclude rival content, applications or portals from its network” and that such incentives exist *even if* the network provider faces competition from other network providers.<sup>18</sup>

Moreover, should network operators follow through on their incentive to discriminate against third-party applications, competition may not protect consumers.<sup>19</sup> First, all network operators may have the same incentive to block certain applications – for example, voice calling software that threatens operators’ legacy revenue models – giving consumers no meaningful choice to use otherwise social welfare-enhancing applications. Second, competition is effective in discouraging discriminatory network operator practices only if consumers are well-informed. In this case, consumers may not realize that network operators are interfering with a particular application. Many consumers lack information or are not sophisticated enough technologically to detect interference by network operators, and may attribute diminished performance by an application or website to poor design of the application rather than bit throttling or other forms of discriminatory network management. Unlike price,

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<sup>18</sup> Barbara van Schewick, *Toward and Economic Framework for Network Neutrality Regulation*, 5 J. on Telecomm. & High Tech. L. 329, 370 (2007). Professor van Schewick describes a problem analogous to one that the FCC is familiar with: the abuse of a terminating access monopoly. *Access Charge Reform; Reform of Access Charges Imposed by Competitive Local Exchange Carriers*, CC Docket No. 96-262, FCC 01-146, 16 FCC Rcd 9923, 9934-35, ¶ 28 (2001) (discussing the difficulties posed by the terminating access monopoly, and noting that “providers of terminating access may be particularly insulated from the effects of competition ....”).

<sup>19</sup> The following discussion is based on the work of Professor van Schewick. See van Schewick, *supra* note 18, at 368-78; see also Barbara van Schewick, *Point/Counterpoint: Network Neutrality Nuances*, Communications of the ACM, Feb. 2009, at 31, 33.

which is generally transparent and therefore something that consumers will respond to when choosing among competitors, network operators' practices of blocking or discrimination against applications is often opaque to consumers and therefore far less responsive to competitive forces.

Finally, even if consumers were well informed as to the closed practices of wireless networks, they may face high switching costs for other reasons, such as early termination fees, handset exclusivity practices, bundling of handsets and service contracts, etc. Given the cost and the time and effort involved, a consumer may decide that the switching costs exceed the loss in utility of the closed network, but the loss in utility remains – to say nothing of the crippling effect such individual actions have on the market for innovative third-party applications, services, and devices.

Thus, regardless of the specific level of competition in the wireless market, openness rules are needed and must be applicable to all network operators to protect consumers and facilitate continued innovation at the application layer. Openness rules provide basic “rules of the road” that provide certainty to all – network operators, applications developers, device manufacturers, and, most importantly, consumers.

Finally, it is important to note that an open Internet is best preserved and safeguarded through the Commission's enforcement of the proposed rules, rather than simply the enforcement of generally applicable antitrust laws. As the expert agency charged with oversight and regulation of the nation's

communications infrastructure, the Commission is best positioned to oversee the rapidly-evolving broadband marketplace and address broadband network operator practices that run afoul of the openness rules.<sup>20</sup> As the Department of Justice acknowledged, consumers are best served when policymakers use all appropriate policy levers rather than simply strive for “competitive markets,” particularly in oligopolistic markets like the market for broadband access services.<sup>21</sup>

### **III. THE PROPOSED FRAMEWORK FOR SAFEGUARDING AN OPEN INTERNET PRESERVES THE ABILITY OF NETWORK OPERATORS TO MANAGE THEIR NETWORKS**

#### **A. Reasonable Management of Congestion on Broadband Networks Benefits the Entire Broadband Ecosystem**

Broadband network operators have long argued against openness requirements, saying that such rules would limit their ability to manage their networks to address congestion, spam, and other issues, and would also limit innovation at the network level.<sup>22</sup> Skype disagrees and believes that the Commission’s proposed framework and openness rules preserve the ability of broadband network operators to manage their networks and to innovate in ways that do not harm the broadband ecosystem.

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<sup>20</sup> Of course, many of the Commission’s rules address concerns that arise from horizontal and/or vertical market concentration – interconnection rules, roaming rules, number portability, and program access, to name just a few examples.

<sup>21</sup> DoJ *Ex Parte* at 11.

<sup>22</sup> See, e.g., Comments of AT&T, WC Docket No. 07-52, at 31-36 (June 15, 2007).

As a software application that consumers run on their Internet service, Skype depends on consumers having access to robust broadband connections. It is well understood that real-time voice and video applications must operate with low latency – studies have shown that delays of over 150 ms render voice communications unworkable, for example.<sup>23</sup> While Skype’s software and its SILK codec have been optimized to work on a variety of best-efforts Internet connections,<sup>24</sup> VoIP remains a real-time application and cannot be delayed, obstructed or “throttled” without the end user being unable to use her Skype application as intended.

Skype appreciates the need for broadband network operators to manage congestion on their networks and otherwise improve the quality of broadband connections, particularly in the last mile. Though Skype believes that the Commission’s policies should promote deployment of faster broadband networks, it recognizes that network operators will have to manage their network accordingly to ensure the reliability of broadband connections.<sup>25</sup> The

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<sup>23</sup> See, e.g., Alan Percy, *Understanding Latency in IP Telephony*, at [http://www.telephonyworld.com/training/brooktrout/iptel\\_latency\\_wp.html](http://www.telephonyworld.com/training/brooktrout/iptel_latency_wp.html) (last visited Jan. 14, 2010).

<sup>24</sup> See Jonathan Rosenberg, *Skype and Network Management*, Dec. 30, 2009, at [http://share.skype.com/sites/en/2009/12/skype\\_and\\_network\\_management.html](http://share.skype.com/sites/en/2009/12/skype_and_network_management.html).

<sup>25</sup> As it has explained in previous filings, Skype does its part to optimize its software’s performance in less than ideal network conditions. Skype software (specifically, its SILK codec) senses and adapts to network congestion, utilizing less bandwidth when faced with network congestion. With over 500 million registered users worldwide, Skype’s software must operate on a variety of user connections and network congestion levels. See Reply Comments of Skype Communications S.A.R.L., GN Docket Nos. 09-157 & 09-51, at 11-13 (filed Nov. 5, 2009) (describing Skype’s SILK codec); see also Rosenberg (cont’d)

exception for “reasonable network management” allows broadband network operators to take the necessary steps to deal with network congestion and the growing volume of traffic on the Internet.

Because Skype benefits from consumers having robust broadband connections, it supports the Commission’s approach of broad rules with case-by-case enforcement rather than more detailed, prescriptive rules that would unduly restrict network operators’ ability to manage congestion and provide new and innovative network and service offerings to broadband users. The Commission’s enforcement of its openness rules should focus on two main concerns: (1) network management practices that have the effect of delaying, blocking, throttling, or otherwise discriminating against applications, content, and devices, especially where such practices exacerbate the vertical integration concerns described in the *Notice*,<sup>26</sup> and (2) the transparency of network management practices, so that consumers and edge providers of applications and devices know what to expect and have a degree of certainty regarding their broadband service and business plans.<sup>27</sup>

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Presentation at 2, 5-8, 12.

<sup>26</sup> *Notice* at 31, ¶ 72.

<sup>27</sup> The latter transparency concern was critical in the case of Comcast’s blocking of bittorrent traffic. See *Formal Complaint of Free Press and Public Knowledge Against Comcast Corporation for Secretly Degrading Peer-to-Peer Applications*, Memorandum Opinion and Order, File No. EB-08-IH-1518, WC Docket No. 07-52, FCC 08-183, at 31-32, ¶¶ 52-53 (rel. Aug. 20, 2008). In that case, not only were Comcast’s network management practices overbroad and unreasonable, but its failure to disclose them meant that applications and content providers that used certain technical protocols were harmed without any advance notice that their business model ran afoul the network operator’s unilateral (cont’d)

In evaluating broadband access providers' network management practices under a case-by-case basis, the Commission should endorse only those network management practices that are narrowly tailored toward addressing a legitimate purpose. Thus, in evaluating network management practices, the Commission should engage in a two-step analysis. First, it should examine the broadband access provider's purpose for engaging in the particular network management practice, ensuring that such purpose was legitimate (*e.g.*, reasonably managing congestion would be a legitimate purpose). Second, the Commission should ensure that the network management practice is limited only to the legitimate purpose and does not have a broader adverse effect on network traffic than is necessary to accomplish the stated purpose.<sup>28</sup> In all cases, broadband access providers should to the extent possible use network management practices that put the control in the hands of end users (as discussed in further detail below) over unilateral approaches adopted by the network operator.

**B. Network Management Practices That Are Controlled By Broadband Users Should Be Encouraged**

Wherever possible, the Commission should side with broadband users when adopting its network management policy. An over-arching principle upon which the Internet was based was that users — not network operators — decided which applications succeed or failed. Policies that move control

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network management practices.

<sup>28</sup> See Comments of the Open Internet Coalition, GN Docket No. 09-191, WC Docket No. 07-52, at 48-49 (January 14, 2010).

elements away from the end-user and toward the network operator should be viewed with substantial skepticism. Instead the Commission should adopt rules that foster end-user control over network management practices used to limit congestion or improve the quality of Internet access connections.

The Commission does not have to choose between a network-centric model for Quality of Service (QoS) or no improvement in the quality of Internet connections. The Commission's framework can enable network operators to improve Internet connections while avoiding many of the negative effects on consumers and edge providers of network-centric QoS models. A network-centric model for QoS will necessarily raise barriers to entry in a way that biases consumer's choices for the best application that suits their needs. A policy environment in which network operators manage capacity based on the requirements of end users is a model that will maximize value throughout the Internet ecosystem and remain true to one of the core principles upon which the Internet was based.

As a software developer with experience across different platforms and access technologies, Skype is mindful of the challenges network operators face meeting the demands of today's Internet users. Given that not all broadband networks are adequately provisioned for the purposes consumers seek, it is difficult to achieve perfect equity in the allocation of network resources at all times. The Commission can, however, achieve a Pareto efficient outcome whereby broadband resources are allocated so that both the end user purchaser

of the QoS and the network operator are better off and individuals who chose not to purchase prioritization are not worse off.

As discussed above, the proposed rules leave in place the flexibility of broadband network operators to manage their networks and offer innovative network and service features to cope with increasing traffic. For example, appropriately structured and adequately disclosed service tiers can be used to differentiate efficiently between high-bandwidth and low-bandwidth users. Similarly, network management techniques that put the broadband subscriber in charge do not raise the same discrimination concerns discussed above and importantly are no less effective at managing capacity. Therefore they should be presumptively reasonable.

Not all users need or desire improved QoS. For instance, users of free services may choose those services based on price while trading off other attributes of the service and therefore may choose to purchase basic connectivity or best efforts Internet access. When the user is using a multimedia application or service that is more sensitive to packet loss, delay and/or congestion, network issues may adversely affect the user experience and the user should have the option of requesting QoS capabilities. The issue is: who is in the best position to decide whether a given application requires QoS – the end user or the network operator? Network operators cannot possibly replicate the number of individual decisions made by consumers in the marketplace. The Commission should avoid a network-centric approach to QoS capabilities because it runs the

risk of network operators substituting their judgment for the choices of the consumers who purchase Internet access with or without QoS capabilities. Network operators would be better able to manage their networks and prioritize traffic based on specific user's needs, while the network operators could price such prioritization appropriately to recover costs and facilitate continued investment in the build out of sufficiently provisioned networks.<sup>29</sup> Because the choice to prioritize certain traffic will rest with the consumer and not the network operator, such end user driven prioritization will not raise the same competitive or transparency concerns as network driven QoS to the extent that, as stated above, consumers and edge providers of applications and devices know what to expect and have a degree of certainty regarding their broadband service and business plans.

In short, the Commission's rules should encourage consumer adoption by establishing rules that permit users to request QoS capabilities from the network operator and prohibit unreasonable discrimination. These rules should be balanced with policies that encourage network operators to continue to invest in

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<sup>29</sup> Network-centric QoS models reflect the recreation of implicit support mechanisms designed to create additional payments to terminating carriers. It is worth noting that the very parties that proffer pro-consumer justifications for these models on the Internet are precisely the same parties that argue for their elimination on the PSTN. *See Comments of the United States Telecom Association on NBP PN #19, The Role of the Universal Service Fund and Intercarrier Compensation in the National Broadband Plan*, GN Docket Nos. 09-47, 09-51, 09-137, at 6 (Dec. 7, 2009) (arguing that intercarrier compensation reforms key to facilitating broadband build out include reductions in terminating access charges and increases in subscriber line charges (SLCs) and retail rates for telecommunications services, thus moving cost recovery to the end user).

innovations that increase broadband capabilities to ensure a sufficiently provisioned network. The ideal broadband network would enable the end user to adopt and use bandwidth intensive applications without the need for complicated QoS mechanisms to enhance the user experience. Additional investment in sufficient network capacity must always be the ultimate goal.

**IV. THE PROPOSED RULES SHOULD APPLY TO BROADBAND INTERNET ACCESS PROVIDERS ONLY, AND NOT TO EDGE PROVIDERS OF SOFTWARE APPLICATIONS OR DEVICES THAT ATTACH TO THE NETWORK**

As the Commission has proposed in the *Notice*, the proposed open Internet rules will apply “to all providers of broadband Internet access service (other than via dial-up), regardless of the technology over which such service is delivered.”<sup>30</sup> The *Notice* also asks whether these rules should be binding on content, applications and service providers in addition to broadband Internet access providers.<sup>31</sup> However, contrary to the suggestion by AT&T, the proposed rules should not apply to software applications used with, content provided over, or devices attached to broadband Internet access networks.<sup>32</sup> As the Commission rightly notes, open Internet principles were never intended to apply to entities other than broadband Internet access service providers, which is why

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<sup>30</sup> *Notice* at 38, ¶ 91.

<sup>31</sup> *Notice* at 40-41, ¶ 101.

<sup>32</sup> See Letter from Robert W. Quinn, Jr., Senior Vice President Federal Regulatory, AT&T to Sharon Gillett, Chief, Wireline Competition Bureau, FCC, Re: Google Voice; Establishing Just and Reasonable Rates for Local Exchange Carriers, WC Docket No. 07-135; Broadband Industry Practices, 07-52 (filed Sept. 25, 2009).

the *Broadband Policy Statement* was included in Commission dockets dealing with broadband access providers and not in the *IP-Enabled Services docket*.<sup>33</sup> The openness concerns raised in this proceeding arise because of the bottleneck control and terminating access monopoly that network operators possess; providers of software applications, online content, and equipment exercise no such power in the marketplace. To the extent that all Internet access providers are subject to the Commission's openness principles, there are few barriers to entry for broadband-enabled application and content providers. The market should remain highly competitive, offering consumers choice and innovation.

By ensuring that the proposed rules apply to broadband Internet access providers and not to edge providers of software applications, content, and devices, the Commission will avoid needlessly regulating segments of the industry that present no risk to an open Internet.

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<sup>33</sup> Notice at 40 n.223.

Respectfully submitted,

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