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 CTIA – THE WIRELESS ASSOCIATION®

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SUMMARY

In the instant proceeding, the Commission has proposed, among other things, to adopt as rules the four principles enumerated in the *Internet Policy Statement*, as well as two additional principles, and to apply those rules to the wireless broadband industry. CTIA strongly opposes the proposal. As the Commission finalizes its National Broadband Plan, the goal of which is to "ensure that all people of the United States have access to broadband capability," it seems counterintuitive to simultaneously regulate the exact companies that are being asked to deploy or upgrade broadband service in support of the broadband plan. It is troubling when these rules are being considered during an economic crisis, when wireless carriers continue to invest tens of billions of dollars in the U.S. economy. It is even more troubling when the uncertainty that will flow from these regulations is actual, and has been realized in the 700 MHz auction, while the harms that the rules seek to protect against are theoretical. The risk is too great.

The United States wireless industry is an innovation, investment and job leader within the United States, and a beacon that other countries strive to replicate around the world. U.S. consumers enjoy the lowest prices, the highest minutes of use, the most mobile web surfing, the most competitive choices, the newest handsets (which are launched first in the U.S.), high speed networks (with both WiMax and LTE leadership), and an amazing array of over 150,000 applications. The risk is real, but where is the harm that needs to be addressed?

As an initial matter, the NPRM fails to offer any rationale for adopting "net neutrality" rules for wireless broadband networks. Indeed, adoption of such rules would reverse, without justification, the Commission's longstanding and highly successful deregulatory policies with regard to wireless broadband. As discussed in a number of recent dockets, these deregulatory policies have led to the creation of a wireless ecosystem that is highly competitive and vibrantly innovative, resulting in substantial benefits to wireless consumers. It would be unlawful and

unwise for the Commission to change course by adopting prescriptive rules based upon speculative predictions of consumer harm—indeed, prior calls for applying net neutrality regulations to the wireless industry were accompanied by dramatic prophecies of mischief and harm that have never materialized.

The recent history of the wireless ecosystem, in fact, has borne out CTIA's repeated contention that the wireless industry will continue to compete, innovate and deliver significant benefits to consumers without the need for onerous regulation. The Commission's proceedings regarding wireless innovation and investment, wireless competition, and various issues related to broadband deployment highlight the strengths of the wireless broadband ecosystem and its unique needs. While the NPRM recognizes that wireless networks are different, the rules themselves fail to create any distinction between wireless and wired networks in practical application. Significantly, wireless broadband networks stand alone in their reliance on limited spectrum resources to provide service to consumers. Additionally, wireless networks are unique in that their customers are mobile. Further, wireless service is unique in that the CPE, the wireless handset, actually is directly linked to the network. The core and the edge are interrelated. And finally, wireless service is unique in that whether measured on a national or local level, providers face competitive pressure that acts as a control on behavior. Wireless service providers are regulated by their customers.

The rules as proposed fail to recognize these differences, and put at risk all U.S. leadership and all of the positive innovation, investment and job creation that are the hallmarks of the U.S. wireless industry. The entire wireless ecosystem, core to edge, carrier to content provider, manufacturer to infrastructure supplier, operating system developer to application developer may suffer. Instead of finalizing a set of rules that are unnecessary and could be

harmful, the Commission should focus on driving broadband deployment and keep a vigilant eye on the actions of the wireless industry.

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COMMENTS OF CTIA – THE WIRELESS ASSOCIATION®

CTIA – The Wireless Association® ("CTIA")[1] respectfully submits these comments in response to the Commission's Notice of Proposed Rulemaking ("NPRM") seeking public input on draft net neutrality rules.[2] Among other matters, the Commission seeks comment on adopting as rules a modified version of the four principles of its *Internet Policy Statement*, together with two additional rules, that would apply to wireless broadband networks.[3] CTIA strongly opposes the proposal. As the Commission finalizes its National Broadband Plan, the goal of which is to "ensure that all people of the United States have access to broadband capability," it seems counterintuitive to simultaneously regulate the exact companies that are being asked to deploy or

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[1] CTIA – The Wireless Association® is the international organization of the wireless communications industry for both wireless carriers and manufacturers. Membership in the organization covers Commercial Mobile Radio Service ("CMRS") providers and manufacturers, including cellular, Advanced Wireless Service, 700 MHz, broadband PCS, and ESMR, as well as providers and manufacturers of wireless data services and products.

[2] *Preserving the Open Internet*, Notice of Proposed Rulemaking, FCC 09-93 (Oct. 22, 2009) ("*Net Neutrality NPRM*").

[3] *Id.* at ¶ 16; *see also Appropriate Framework for Broadband Access to the Internet over Wireline Facilities; Review of Regulatory Requirements for Incumbent LEC Broadband Telecommunications Services; Computer III Further Remand Proceedings: Bell Operating Company Provision of Enhanced Services; 1998 Biennial Regulatory Review – Review of Computer III and ONA Safeguards and Requirements; Inquiry Concerning High-Speed Access to the Internet Over Cable and Other Facilities Internet Over Cable Declaratory Ruling; Appropriate Regulatory Treatment for Broadband Access to the Internet Over Cable Facilities*, Policy Statement, 20 FCC Rcd 14986 (2005) ("*Internet Policy Statement*").

upgrade broadband service in support of the broadband plan. It is troubling when these rules are being considered during an economic crisis, when wireless carriers continue to invest tens of billions of dollars in the U.S. economy. It is even more troubling when the uncertainty that will flow from these regulations is actual, and has been realized in the 700 MHz auction, while the harms that the rules seek to protect against are theoretical. The risk is too great.

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As discussed below, there is no justification for such rules as the wireless broadband ecosystem is dynamic, innovative, and consumer-oriented. Moreover, the Commission's proposed rules are inappropriate for the technologies used to provide wireless broadband services and inconsistent with international efforts to maintain an open Internet. Accordingly, CTIA

urges the FCC to reject the application of network neutrality rules to wireless broadband services.

I. AS THE COMMISSION FINALIZES ITS NATIONAL BROADBAND PLAN, IT IS COUNTER-INTUITIVE TO ADD REGULATORY UNCERTAINTY AND ADDITIONAL RISK INTO THE INVESTMENT MODEL OF THE EXACT COMPANIES BEING ASKED TO INVEST HUNDREDS OF BILLIONS OF DOLLARS TO MAINTAIN U.S. GLOBAL BROADBAND LEADERSHIP.

While the Commission is working on a National Broadband Plan to bring broadband Internet access to all Americans, it is considering taking action that would directly harm those efforts in the form of the Commission's *Net Neutrality NPRM*. As the Commission considers prescriptive, *ex ante* regulation of wireless broadband Internet access in the absence of a defined harm, no less than U.S. global leadership in wireless broadband hangs in the balance. The 700 MHz auction is an illustration of the impact of this regulatory uncertainty.

CTIA is concerned that the potential harms do not offset the actual impact of the rules. What is the justification for adding this uncertainty? The U.S. wireless industry leads the world in nearly every wireless broadband metric. According to a Nielsen Media study, the U.S. has a higher percentage of consumers actively using mobile Internet capabilities – 15 percent – than any country measured in the survey.[4] Put in terms of total number of users, roughly 40 million American consumers are "active users" of mobile web service – 75 percent more than just two years earlier.[5] Additionally, while much has been made of reports on U.S. rankings for wired broadband, when it comes to *mobile* broadband, U.S. consumers lead the way.[6] U.S. wireless

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[4] *See* Nielsen Mobile at 2, 4.

[5] *Id.* at 2.

[6] *See* Om Malik, *U.S. Leading the Global Mobile Data Boom* (Sept. 22, 2009), *available at* http://gigaom.com/2009/09/22 /us-leading-the-global-mobile-data-boom/ (last visited Sept. 29, 2009) ("This wireless data boom, while creating many bottlenecks, also spells opportunity for companies big and small. From backhaul service providers to little app developers, the entire mobile ecosystem has been re-energized.").

web use ranks first in the world, accounting for 29.3 percent of all mobile web surfing worldwide according to Bango, a firm that tracks statistics for surfing of web sites optimized for mobile users.[7] Additionally, mobile wireless broadband is proving to be more rapidly adopted and used in communities that have traditionally trailed in broadband adoption, such as low-income and minority consumers.[8]

Significantly, Americans are using some of the most advanced and extensive broadband wireless networks in the world. According to a July 2009 release from the GSM Association ("GMSA"), the U.S. has 32 million HSPA subscribers out of the 131 million worldwide.[9] In fact, while the U.S. has less than 7 percent of all GSM subscribers in the world, it has 23 percent of all HSPA subscribers in the world. Similarly, according to Informa Telecoms & Media Group's June 2009 report on World Cellular Information Service, the U.S. has 63.1 million EV-DO subscribers out of 106.78 million worldwide.[10] The U.S. has 23 percent of all CDMA subscribers yet has 59 percent of EV-DO subscribers in the world. In addition to network leadership, innovation in smartphones is occurring in the U.S. first as a result of our robust marketplace. According to NPD Group, 28 percent of the wireless handsets sold in the U.S. in

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[7] *See* Sarah Keefe, Bango, *U.S. tops worldwide charts for mobile web browsing and spending* (March 12, 2009) *available at* http://news.bango.com/2009/03/12/us-tops-mobile-web-browsing-and-spending-charts/ (last visited Sept. 28, 2009).

[8] *See* John Horrigan, Pew Internet & American Life Project, *Seeding The Cloud: What Mobile Access Means for Usage Patterns and Online Content* (March 5, 2008), *available at* http://pewresearch.org/pubs/754/cloud-computing (last visited Sept. 28, 2009).

[9] *See* Press Release, GSMA, Global Mobile Broadband Connections to Pass 150 million (July 22, 2009), *available at* http://www.gsmworld.com/newsroom/press-releases/2009/3494.htm.

[10] *See generally* Informa Telecoms & Media, *available at* http://shop.informatm.com/marlin/30000001001/INDEX?proceed=true&MarEntityId=1252681475091&entHash=10058c78ae1%20+%20hashInfo%20+ (last visited Sept. 28, 2009).

the second quarter of 2009 were smartphones.[11] In the last two years, some of the most advanced handsets have been launched in the U.S. including the Apple iPhone 3G,[12] Apple iPhone 3GS,[13] HTC's G1,[14] T-Mobile MyTouch 3G,[15] four Research in Motion BlackBerry devices (BlackBerry Storm, BlackBerry Bold, BlackBerry Pearl Flip and BlackBerry Curve 8900),[16] Samsung Instinct,[17] the Palm Pre,[18] and the Google Nexus One.[19] The U.S. marketplace is leading the world.

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[11] *See* Press Release, The NPD Group, Feature Phones Comprise Overwhelming Majority of Mobile Phone Sales in Q2 2009 (August 19, 2009), *available at* http://www.npd.com/press/releases/press_090819.html.

[12] *See* Press Release, AT&T, AT&T to Offer iPhone 3G S on June 19 (June 8, 2009), *available at* http://www.att.com/gen/press-room?pid=4800&cdvn=news&newsarticleid=26853.

[13] *See* Press Release, AT&T, AT&T to Offer Next-Generation iPhone on Its High-Performance 3G Network (June 18, 2009), *available at* http://www.att.com/gen/press-room?pid=4800&cdvn=news&newsarticleid=26868.

[14] *See* Martyn Williams and James Niccolai, T-Mobile's Android-based G1 goes on sale (Oct. 22, 2008), *available at* http://www.computerworld.com/action/article.do?command=viewArticleBasic&taxonomyName=mobile_and_wireless&articleId=9117740&taxonomyId=15&intsrc=kc_top (last visited Sept. 24, 2009).

[15] *See* Press Release, T-Mobile, http://www.t-mobile.com/company/PressReleases_Article.aspx?assetName=Prs_Prs_20090622&title=T-Mobile%20USA%20Unveils%20the%20T-Mobile%20myTouch%203G%20with%20Google%20Featuring%20Personalization%20Front%20and%20Center.

[16] *See* BlackBerry, *Smartphones*, *available at* http://na.blackberry.com/eng/devices/ (last visited Sept. 29, 2009).

[17] *See* Press Release, Sprint, Samsung Instinct(TM), Exclusively from Sprint, Brings Speed, Simplicity and a Fully Integrated Touch-Screen Experience to Wireless Marketplace (April 1, 2008), *available at* http://newsreleases.sprint.com/phoenix.zhtml?c=127149&p=irol-newsArticle_newsroom&ID=1124417.

[18] *See* Press Release, Sprint, Sprint to Offer Palm Pre Nationwide on June 6 (May 19, 2009), *available at* http://newsreleases.sprint.com/phoenix.zhtml?c=127149&p=irol-newsArticle_newsroom&ID=1289761.

[19] Nexus One Phone, Google.com *at* http://www.google.com/phone (last accessed Jan. 14, 2010).

Absent among this profile of U.S. wireless broadband leadership are concrete examples of wireless providers preventing consumers from accessing the Internet. Rather, efforts by every aspect of the wireless ecosystem continue to bring faster and more robust access to the Internet to U.S. consumers.

There is a direct correlation between U.S. wireless broadband leadership and investment by wireless network providers. Despite the economic crisis, wireless providers continue to spend significant amounts to improve the capacity and expand the coverage of their networks. For the twelve months ending June 2009, providers reported making capital investments totaling $19.5 billion, without even including investment made in non-operational spectrum.[20] That investment translated into over 25,000 new cell sites, up 11.5% over the prior year and representing the largest growth in new sites in the past five years.[21] The total number of reported operational sites stands at 245,912 as of June 30, 2009.[22] This level of expansion, especially given the economic climate, certainly reflects no lack of competitive forces. To the contrary, it indicates that providers are expanding geographic coverage and increasing network capacity for broadband services in order to compete for additional subscribers.

A recent submission to the Commission by the U.S. Department of Justice ("DOJ") underscores that this high-level of competition and lack of market failure in the wireless sector are driving network investment. In fact, the DOJ Ex Parte with the Commission goes on to highlight the trend toward mobility in Internet access services:

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[20] CTIA's Wireless Industry Indices Report at 8.

[21] CTIA's Survey Summary at 2.

[22] *Id.*

> In the case of broadband services it is clear that the market is shifting generally in the direction of faster speeds and additional mobility.[23]

Moreover, this investment in wireless infrastructure is driving competition for Internet access services generally:

> Wireless may be a very attractive alternative for consumers who greatly value mobility … [wireless] appears to offer the most promising prospect for additional competition in areas where user density or other factors are likely to limit the construction of additional broadband wireline infrastructure.[24]

Finally, the DOJ filing highlights concerns that Commission action to constrain broadband Internet access providers may have the unintended consequence of stifling infrastructure investment[25] – an outcome that would be directly at odds with the Commission's congressional mandate under the American Recovery and Reinvestment Act. The Commission must consider the impact of the uncertainty that its proposed net neutrality rules will bring to the network access providers and infrastructure manufacturers – and ultimately the entire ecosystem.

II. THE NPRM PROVIDES NO RATIONALE OR FACTUAL BASIS FOR THE APPLICATION OF NETWORK NEUTRALITY RULES TO WIRELESS BROADBAND NETWORKS.

A. The NPRM Does Not Identify Any Market Failure That Would Justify Regulating Wireless Broadband Networks.

The Commission's NPRM fails to meet the high hurdle required to reverse the Commission's consistent deregulatory path. It also fails to demonstrate in any way how

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[23] Ex Parte Submission of the United States Department of Justice, GN Docket No. 09-51, at 6 (filed Jan. 4, 2010) ("DOJ Ex Parte").

[24] *Id.* at 8.

[25] DOJ Ex Parte at 28 ("Although enacting some form of regulation to prevent certain providers from exercising monopoly power may be tempting with regard to [areas with one or two broadband providers], care must be taken to avoid stifling the infrastructure investments needed to expand broadband access.").

regulation of wireless broadband network practices is necessary to ensure consumers can access the "open Internet" the proposed rules are intended to protect. In fact, U.S. wireless consumers lead the world in the use of broadband Internet access and continue to enjoy mobile access to the Internet.

In the Commission's NPRM, the two examples cited as evidence of the need for regulation – Madison River Communications' blocking of VoIP[26] and complaints regarding Comcast's network management practices[27] – did not involve wireless networks. Further, these examples – some of which predate wireless broadband as a service – are useless as barometers of the future conduct of wireless broadband providers.[28] The examples cited in the NPRM demonstrate only that such problems are rare and that the Commission (or the market itself) has the capabilities needed to resolve these issues quickly and effectively should they arise in the future. More importantly, the lack of identification of true consumer-harming behavior in the FCC document that is supposed to provide the rationale for regulation is an indication that the harms are not actual, but rather speculative. On the other hand, the potential harm from net neutrality regulation, as evidenced by the 700 MHz auction, is very real. As described in Section VI, *infra*, the high-level of competition and lack of market failure in the wireless sector,[29] coupled with the absence of any observable harm to date, squarely places the burden on those who seek to impose regulations on the provision of wireless broadband services to demonstrate the need for rules such as those proposed in the *Open Internet NPRM.*

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[26] Net Neutrality NPRM at ¶ 32

[27] *Id.* at ¶¶ 36-37.

[28] For example, the consent decree with Madison River Communications was adopted nearly five years ago, before the *Internet Policy Statement* had even been adopted, while the complaint about Comcast was filed over two years ago. *Id.* at ¶¶ 32, 35-37.

[29] DOJ Ex Parte at 17-19.

Moreover, the rules proposed in the *Open Internet NPRM* would by their terms apply to providers of broadband Internet access services, but would not appear to impose similar restrictions on other entities in the wireless ecosystem, like app stores and developers – or as some claim, to other providers of VoIP service.[30] However, despite the *Open Internet NPRM*'s stated concern about broadband network operators' conduct, most recent examples of actions that have or may raise questions at the Commission have not involved Internet service providers, but application providers and operating system developers like Google, Speakeasy, Apple, Palm, News Corp. and Microsoft.[31]

Seemingly the only attempt at an example in the wireless context is the NPRM's characterization of the lack of universal device tethering capabilities as a service restriction in the wireless context.[32] Such a characterization is misguided. Whether or not customers can tether mobile phones to other devices has no bearing on their ability to access content on the Internet or how "open" the Internet is to that customer. Furthermore, tethering restrictions are not limitations on accessing particular Internet content and often are a function of the physical

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[30] Letter from Richard Whitt, Washington Telecom and Media Counsel, Google, Inc., to James Schlichting, Senior Deputy Bureau Chief, Wireless Telecom. Bureau, FCC (Aug. 21, 2009) *available at* http://wireless.fcc.gov/releases/8212009_google_filing_iPhone_Inquiry_PUBLIC_REDACTED.pdf.

[31] *See* Letter from Sharon Gillett, Chief, Wireline Competition Bureau, to Richard Whitt, Google, DA 09-2210 (rel. Oct. 9, 2009); *see also* Letter from James Schlichting, Acting Chief, Wirleess Telecommunications Bureau, to Catherine Novelli, Apple Inc., 24 FCC Rcd 10167 (2009); "Apple-Palm Wars: Apple Wins iTunes Syncing Battle," Fast Company (Sept. 23, 2009), *available at* http://www.fastcompany.com/blog/kit-eaton/technomix/apple-palm-wars-apple-wins-itunes-syncing-battle; ., "Murdoch Could Block Google Searches Entirely," The Guardian (Nov. 9, 2009), *available at* http://www.guardian.co.uk/media/2009/nov/09/murdoch-google.

[32] Net Neutrality NPRM at ¶¶ 164, 167 (stating that "[t]ethering is not universally permitted by providers" and asking whether the Commission should "require providers to allow 'tethering' as a form of device interconnection").

capabilities of the devices used.[33] Wireless device manufacturers create devices to meet a variety of consumer needs, and the reality is that not all wireless consumers want or need Internet tethering. Mandating tethering thus implies a federal mandate to create physical capabilities in phones that will impose additional costs and intrude upon decisions that, to date, have been the province of manufacturers better able to conduct the cost/benefit analysis of a phone's capabilities.

And, in any event, no need exists for a tethering mandate imposed by regulatory fiat, as the market has adequately responded to consumer desires for tethering functionality. There are a variety of tetherable devices available to consumers,[34] including the recently-introduced Droid[35] and the LG Lotus.[36] Just as not all phones include music players or cameras, the inclusion or exclusion of tethering capabilities is a competitive matter that is most appropriately left to the marketplace, which has proven its ability to be responsive to consumer needs. The reality is that the vibrant, consumer-focused wireless ecosystem is thriving, providing consumers with the open Internet experience they demand, and evolving to ensure consumer needs continue to be met. In the absence of a demonstrable market failure the Commission should not impose restrictive, prospective rules.

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[33] Carriers also may restrict tethering to prevent consumers from arbitraging rate plans that provide great value to consumers who are not interested in wireless data services. A "tethering" mandate would have the unintended consequence of eliminating less expensive rate plans designed for consumers who do not want or need Internet tethering.

[34] For example, Verizon Wireless permits tethering on several of its devices. *See* Verizon Wireless – Mobile Broadband, *at* http://www.verizonwireless.com/b2c/mobilebroadband/?page=products_connect (last visited Jan. 6, 2010).

[35] Priya Ganapati, "Verizon to Offer Tethering For Motorola Droid," Wired (Nov. 6, 2009), *available at* http://www.wired.com/gadgetlab/2009/11/tethering-droid/ (last visited Jan. 6, 2010).

[36] LG Lotus, Sprint.com *at* http://nextelonline.nextel.com/NASApp/onlinestore/en/Action/DisplayPhones?phoneSKU=LG600KIT&id16=phone+as+modem (last accessed Jan. 13, 2010).

B. The FCC Should Not Attempt to Justify Its Proposed Rules Based Upon Speculative Predictions About Consumer Harms That Allegedly Will Occur.

Because there is no factual basis to justify the adoption of net neutrality rules, the NPRM seeks to fill this gap by speculating about consumer harms that allegedly will occur without such rules. But more than speculation is required to justify the dramatic shift the proposed rules represent.[37] Over the years supporters of net neutrality regulation have made dire predictions about numerous harms that allegedly would befall consumers unless the Commission immediately regulated this area. As discussed below, however, such harms never came to pass, and in fact, time and again, the market has responded to address consumer needs.

For example, just three years ago, in February 2007 Professor Tim Wu published a working paper for the New America Foundation titled "Wireless Net Neutrality: Cellular *Carterfone* and Consumer Choice in Mobile Broadband."[38] Professor Wu asserted that the wireless market was non-competitive and that only through a litany of changes could U.S. mobile carriers adequately serve consumers. Professor Wu claimed that carriers had a "near lock" on the retailing of mobile devices,[39] took measures to give them control over handset design,[40] restricted the diversity of handsets available to U.S. consumers,[41] "crippled" the

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[37] *See FCC v. Fox Television Stations, Inc.*, 129 S. Ct. 1800, 1810 (2009) (agency must "'articulate a satisfactory explanation for its action'" by proffering a "more detailed justification" where it adopts new policy that "rests upon factual findings that contradict those which underlay its prior policy" or where its departure disrupts "prior policy [that] has engendered serious reliance interests."); *Verizon Tel. Cos. v. FCC*, 570 F.3d 294, 300 (D.C. Cir. 2009) ("If the FCC changes course, it 'must supply a reasoned analysis' establishing the prior policies and standards are being deliberately changed.") (citation omitted).

[38] Tim Wu, New America Foundation, Working Paper No. #17, *Wireless Net Neutrality: Cellular Carterfone and Consumer Choice in Mobile Broadband* (Feb. 2007) ("Wu Paper"), *available at* http://www.newamerica.net/files/WorkingPaper17_WirelessNetNeutrality_Wu.pdf (last visited Jan. 6, 2010).

[39] *Id.* at 7.

[40] *Id.* at 9.

availability of technologies such as Bluetooth and Wi-Fi,[42] and "stalled" the application market such that developers were unable to design applications for mobile devices.[43] Professor Wu denied that this "anti-competitive or anti-consumer behavior will be self-correcting," stating "[t]heir pattern of parallel behavior casts doubt on arguments that the limited competition in a spectrum-based oligopoly can be expected to solve all problems."[44] Professor Wu was wrong. In the three years since his filing, the wireless ecosystem has evolved dramatically. As the second generation wireless networks evolved from the 2006 model on which Professor Wu based his paper, everything addressed by his paper has changed. Everything.

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41 *Id.* at 9.

42 *Id.* at 11-12.

43 *Id.* at 14-17.

44 *Id*. at 3.

COMPETITION AND HANDSETS	
What Professor Wu Predicted in 2007	• "[I]t is *de facto* necessary to obtain the permission of the carrier to market a wireless device in the United States. That fact creates an important bottleneck on innovation and product diversity. To make it to market, any device must 'fit' with the business plans of the major carriers. . . . The major carriers have a near-lock on the retailing of mobile wireless devices in the United States."[45]
What CTIA Predicted in 2007	• "This is not a market that is broken. There are about 160 licensees providing mobile wireless services and more competitors are on the way . . . There are numerous handset manufacturers and network equipment providers. There are also countless content providers."[46]
The State of the Market in 2010	• More than 630 unique wireless devices are manufactured for the U.S. market, and U.S. consumers have access to the most advanced handsets in the world. In the last two years, some of the most advanced handsets have been launched in the U.S. including the Apple iPhone 3G,[47] Apple iPhone 3GS,[48] HTC's G1,[49] T-Mobile MyTouch 3G,[50] four Research in Motion BlackBerry devices (BlackBerry Storm, BlackBerry Bold, BlackBerry Pearl Flip and BlackBerry Curve 8900),[51] Samsung Instinct,[52] the Palm Pre,[53] and

[45] Wu Paper at 7.

[46] Opposition of CTIA – The Wireless Association®, RM-11361, at iv (filed April 30, 2007) ("CTIA Skype Opposition").

[47] *See* Press Release, AT&T, AT&T to Offer iPhone 3G S on June 19 (June 8, 2009), *available at* http://www.att.com/gen/press-room?pid=4800&cdvn=news&newsarticleid=26853.

[48] *See* Press Release, AT&T, AT&T to Offer Next-Generation iPhone on Its High-Performance 3G Network (June 18, 2009), *available at* http://www.att.com/gen/press-room?pid=4800&cdvn=news&newsarticleid=26868.

[49] *See* Martyn Williams and James Niccolai, T-Mobile's Android-based G1 goes on sale (Oct. 22, 2008), *available at* http://www.computerworld.com/action/article.do?command=viewArticleBasic&taxonomyName=mobile_and_wireless&articleId=9117740&taxonomyId=15&intsrc=kc_top (last visited Sept. 24, 2009).

[50] *See* Press Release, T-Mobile, http://www.t-mobile.com/company/PressReleases_Article.aspx?assetName=Prs_Prs_20090622&title=T-Mobile%20USA%20Unveils%20the%20T-Mobile%20myTouch%203G%20with%20Google%20Featuring%20Personalization%20Front%20and%20Center.

[51] *See* BlackBerry, *Smartphones*, *available at* http://na.blackberry.com/eng/devices/ (last visited Sept. 29, 2009).

	the Google Nexus One.[54] The U.S. marketplace is leading the world. There is a vast range of retail options for the purchase of a mobile phone including large and small retail stores as well as directly from handset manufacturers.[55]

MOBILE DEVICE DESIGN	
What Professor Wu Predicted in 2007	• Professor Wu alleged that "American wireless carriers are wielding a heavy hand in the design of mobile devices," "crippling" features such as web access, Bluetooth, and Wi-Fi.[56] Carriers create technical barriers to mobile phones from network to network.[57]
What CTIA Predicted in 2007	• "A host of carriers – including AT&T Mobility – offer other phones with integrated Wi-Fi access. . . . So although one particular handset may have had a capacity disabled, many other devices with that same capability are available on the market from the major wireless carriers, including the same carriers highlighted by Skype."[58] • "While some carriers have opted to define a set of services for use on their wireless data network, others have maintained a liberal policy allowing customers some flexibility to use the network moderately as they see fit."[59]
The State of the	• Web access, Bluetooth, and Wi-Fi are available on a dizzying array of devices, literally hundreds of devices. Many carriers have

[52] *See* Press Release, Sprint, Samsung Instinct(TM), Exclusively from Sprint, Brings Speed, Simplicity and a Fully Integrated Touch-Screen Experience to Wireless Marketplace (April 1, 2008), *available at* http://newsreleases.sprint.com/phoenix.zhtml?c=127149&p=irol-newsArticle_newsroom&ID=1124417.

[53] *See* Press Release, Sprint, Sprint to Offer Palm Pre Nationwide on June 6 (May 19, 2009), *available at* http://newsreleases.sprint.com/phoenix.zhtml?c=127149&p=irol-newsArticle_newsroom&ID=1289761.

[54] Nexus One Phone, Google.com *at* http://www.google.com/phone (last accessed Jan. 14, 2010).

[55] *See, e.g.*, *id.*; *see also* Nokia Online Store U.S. *at* http://store.nokia.com/webapp/wcs/stores/servlet/shophome_10500_10101_-1 (last accessed Jan. 12, 2010).

[56] Wu Paper at 9-12.

[57] *Id.* at 8-9.

[58] CTIA Skype Opposition at 18-19.

[59] *Id.* at 21.

Market in 2010	extensive open network development platforms for devices and software. Absent contractual and technology restrictions, customers are generally free to move their phones from carrier to carrier. Handsets available today include a broad array of varying functions, allowing U.S. consumers to choose the capabilities they desire based on solely on price and intended use.

MOBILE APPLICATIONS	
What Professor Wu Predicted in 2007	• "[T]he carriers have not helped in fostering a robust applications market. In fact, they have imposed excessive burdens and conditions on application entry in the wireless application market, stalling what might otherwise be a powerful input into the U.S. economy. In the words of one developer, 'there is really no way to write applications for these things.' The mobile application environment is today, in the words of one developer, 'a tarpit of misery, pain and destruction.'"[60]
What CTIA Predicted in 2007	• "[T]he market for wireless handset applications is vibrant, competitive, and open to any developer willing to program within a handset's limitations."[61] • "Consumers are not being denied access to the applications they desire, and are free to purchase handsets capable of running the applications they desire, so long at they are not harmful to the network in violation of their terms and conditions of service. The services and applications that consumer desire change regularly, and the competitive wireless industry changes to match those desires."[62]
The State of the Market in 2010	• Apple iPhone, the Android system, Palm, Blackberry, Nokia and Windows Mobile offer applications stores for wireless devices, which consumers have enthusiastically embraced. There are now more than 150,000 applications available to wireless consumers that were not available when Skype filed its petition. Wireless carriers are also working to develop applications to specifically address critical national priorities, such as health care, energy efficiency, and smart transportation. There has been a massive industry shift toward open architecture and development.

60 Wu Paper at 2.

61 CTIA Skype Opposition at 20.

62 *Id.* at 2-3.

Also in 2007, Skype Communications S.A.R.L. ("Skype") filed a Petition to establish regulations requiring competitive wireless carriers to cede management over the design, operation, and management of their networks and services.[63] Skype's Petition contained dire predictions about the evolution of the wireless ecosystem, arguing that wireless carriers were limiting the ability of subscribers to operate wireless devices and run applications of their choosing[64] and that regulation was essential to "liberate software innovation and free equipment manufacturers from unreasonable control by carriers."[65] Skype also pointed to purported examples of wireless carriers' disabling access to Wi-Fi functionality,[66] locking handsets to a particular operator,[67] favoring a proprietary network model over open development platforms,[68] and adopting allegedly restrictive terms of service limitations on connections to the wireless network.[69] Finally, Skype argued that in the absence of Commission intervention, consumers would be unable to attach non-harmful devices to wireless networks.[70] Skype, like Professor Wu, was wrong.

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[63] Petition to Confirm a Consumer's Right to Use Internet Communications Software and Attach Devices to Wireless Networks, Skype Communications S.A.R.L., RM-11361 (filed Feb. 20, 2007) ("*Skype Petition*").

[64] *See id.*

[65] *Id*. at 6.

[66] *See id.* at 14-15.

[67] *Id.* at 16-17.

[68] *Id.* at 19-20.

[69] *Id.* at 18-19.

[70] *Skype Petition* at ii.

COMPETITION AND HANDSETS	
What Skype Predicted in 2007	• "Consolidation and the relationship between handset manufacturers and carriers are producing market practices that raise substantial questions about whether consumers are receiving the maximum benefits of wireless competition."[71]
What CTIA Predicted in 2007	• "This is not a market that is broken. There are about 160 licensees providing mobile wireless services and more competitors are on the way . . . There are numerous handset manufacturers and network equipment providers. There are also countless content providers."[72]
The State of the Market in 2010	• As stated above, more than 630 unique wireless devices are manufactured for the U.S. market, and U.S. consumers have access to the most advanced handsets in the world. Consumers are in fact enjoying the maximum benefits of competition. In the last two years, some of the most advanced handsets have been launched in the U.S. including the Apple iPhone 3G,[73] Apple iPhone 3GS,[74] HTC's G1,[75] T-Mobile MyTouch 3G,[76] four Research in Motion BlackBerry devices (BlackBerry Storm, BlackBerry Bold, BlackBerry Pearl Flip and BlackBerry Curve 8900),[77] Samsung Instinct,[78] the Palm Pre,[79]

[71] *Skype Petition* at 1.

[72] CTIA Skype Opposition at iv.

[73] *See* Press Release, AT&T, AT&T to Offer iPhone 3G S on June 19 (June 8, 2009), *available at* http://www.att.com/gen/press-room?pid=4800&cdvn=news&newsarticleid=26853.

[74] *See* Press Release, AT&T, AT&T to Offer Next-Generation iPhone on Its High-Performance 3G Network (June 18, 2009), *available at* http://www.att.com/gen/press-room?pid=4800&cdvn=news&newsarticleid=26868.

[75] *See* Martyn Williams and James Niccolai, T-Mobile's Android-based G1 goes on sale (Oct. 22, 2008), *available at* http://www.computerworld.com/action/article.do?command=viewArticleBasic&taxonomyName=mobile_and_wireless&articleId=9117740&taxonomyId=15&intsrc=kc_top (last visited Sept. 24, 2009).

[76] *See* Press Release, T-Mobile, http://www.t-mobile.com/company/PressReleases_Article.aspx?assetName=Prs_Prs_20090622&title=T-Mobile%20USA%20Unveils%20the%20T-Mobile%20myTouch%203G%20with%20Google%20Featuring%20Personalization%20Front%20and%20Center

[77] *See* BlackBerry, *Smartphones*, *available at* http://na.blackberry.com/eng/devices/ (last visited Sept. 29, 2009).

[78] *See* Press Release, Sprint, Samsung Instinct(TM), Exclusively from Sprint, Brings Speed, Simplicity and a Fully Integrated Touch-Screen Experience to Wireless Marketplace (April 1,

	and the Google Nexus One.[80] The U.S. marketplace is leading the world. In addition, mobile broadband offerings have expanded greatly, including in rural areas, and numerous carriers have announced plans to deploy next generation wireless broadband networks greatly surpassing the capabilities of existing networks. Wireless carriers have established new calling plans, expanding the voice and data capabilities available to wireless subscribers at ever lower prices. There is a vast range of retail options for the purchase of a mobile phone.

MOBILE DEVICE DESIGN	
What Skype Predicted in 2007	• Skype alleged that wireless carriers were disabling access to Wi-Fi functionality, locking handsets to a particular operator, favoring a proprietary network model over open development platforms, and adopting allegedly restrictive terms of service limitations on connections to the wireless network. Skype argued that, without Commission regulation, consumers would be unable to attach non-harmful devices to wireless networks.[81]
What CTIA Predicted in 2007	• "A host of carriers – including AT&T Mobility – offer other phones with integrated Wi-Fi access. . . . So although one particular handset may have had a capacity disabled, many other devices with that same capability are available on the market from the major wireless carriers, including the same carriers highlighted by Skype."[82] • "While some carriers have opted to define a set of services for use on their wireless data network, others have maintained a liberal policy allowing customers some flexibility to use the network moderately as they see fit."[83]
The State of the	• As stated above, a dizzying number of handset are manufactured for

2008), *available at* http://newsreleases.sprint.com/phoenix.zhtml?c=127149&p=irol-newsArticle_newsroom&ID=1124417.

[79] *See* Press Release, Sprint, Sprint to Offer Palm Pre Nationwide on June 6 (May 19, 2009), *available at* http://newsreleases.sprint.com/phoenix.zhtml?c=127149&p=irol-newsArticle_newsroom&ID=1289761.

[80] Nexus One Phone, Google.com *at* http://www.google.com/phone (last accessed Jan. 14, 2010).

[81] *Skype Petition at 14-19.*

[82] CTIA Skype Opposition at 18-19.

[83] *Id.* at 21.

Market in 2010	the U.S. market. In addition, many carriers have extensive open network development platforms for devices and software. Absent contractual and technology restrictions, customers are generally free to move their phones from carrier to carrier. Handsets available today include a broad array of varying functions, allowing U.S. consumers to choose the capabilities they desire based on solely on price and intended use.

MOBILE APPLICATIONS	
What Skype Predicted in 2007	• "[C]arriers are using their considerable influence over handset design and usage to maintain an inextricable tying of applications to their transmission networks and are limiting subscribers' rights to run applications of their choosing."[84]
What CTIA Predicted in 2007	• "[T]he market for wireless handset applications is vibrant, competitive, and open to any developer willing to program within a handset's limitations."[85] • "Consumers are not being denied access to the applications they desire, and are free to purchase handsets capable of running the applications they desire, so long at they are not harmful to the network in violation of their terms and conditions of service. The services and applications that consumer desire change regularly, and the competitive wireless industry changes to match those desires."[86]
The State of the Market in 2010	• Over 150,000 applications are available to consumers, and Skype is available on over 125 handsets according to their website. Apple, Android, Palm, Blackberry, Nokia and Windows Mobile offer applications stores for wireless devices, which consumers have enthusiastically embraced. There has been a massive industry shift toward open architecture and development.

Since 2007, carriers have deployed next generation networks, established new calling plans, lowered prices, and increased the number of devices available to their customers. Consumers can purchase handsets from a number of sources: from carriers, directly from manufacturers, through retail chains, through internet discounters, and through the secondary

84 *Skype Petition* at 2.

85 CTIA Skype Opposition at 20.

86 *Id.* at 2-3.

market. Notably, integrated Wi-Fi capabilities are nearly ubiquitous among new smart phones, and unlocked handsets are routinely available through third-party and manufacturer websites.[87] Indeed, Google just unveiled its new Nexus One phone that will be sold through a Web store operated by Google and is available either with or without mobile service.[88] Many other handset developers also sell their handsets through web stores.[89] Many carriers have extensive open network development platforms for devices and software, industry groups have developed the Open Handset Alliance (which has created the Android operating system), and customers are generally free to move their phones from one carrier to another, absent contractual and technology restrictions.

As many commenters observed in the Commission's wireless innovation proceeding, there has also been explosive growth in mobile applications, with providers aggressively developing and consumers enthusiastically using numerous applications.[90] There are now more

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[87] Amazon.com, for example, advertises 520 phones with service plans from AT&T, Verizon Wireless, Sprint, T-Mobile, Kajeet, TracFone and Virgin Mobile, 42 prepaid phones, and 564 "unlocked" phones. *See* http://www.amazon.com/cell-phones-service-plans-accessories/b/ref=sa_menu_wi5?ie=UTF8&node=301185&pf_rd_p=328655101&pf_rd_s=left-nav-1&pf_rd_t=101&pf_rd_i=507846&pf_rd_m=ATVPDKIKX0DER&pf_rd_r=0BJSGH89MC882B8R54PP (last visited Nov. 23, 2009).

[88] Walt Mossberg, "Google's Nexus One Is Bold New Face in Super-Smart Phones," Wall Street Journal (Jan. 5, 2010), *available at* http://online.wsj.com/article/SB10001424052748703580904574638582669722774.html?mod=WSJ_PersonalTechnology_LEADTop (last visited Jan. 6, 2010) ("[Google] has decided to offer the new phone—and future models—to consumers directly, unlocked, via the Web, and then invite multiple carriers to compete to sell service plans and subsidized versions of the hardware.").

[89] *See, e.g.*, Nokia Online Store U.S. *at* http://store.nokia.com/webapp/wcs/stores/servlet/shophome_10500_10101_-1 (last accessed Jan. 12, 2010).

[90] *See, e.g.*, Comments of Motorola Inc., GN Docket No. 09-157, at 25-26 (filed Sept. 30, 2009) (observing that "[m]obile device application development is exploding"); T-Mobile Innovation/Competition Comments at 5, 11 (filed Sept. 30, 2009) (stating that "the wireless market and companion wireless applications and broadband markets have flourished and

than 150,000 applications available to wireless consumers that were not available when Skype filed its Petition,[91] and the Apple iTunes App Store sells 350 apps per second.[92] The Skype application, whose availability and adoption Skype argued would languish in the absence of regulatory intervention, is now available for more than 125 wireless devices according to Skype's own website.

In sum, just as there was no reason to believe the predictions of net neutrality advocates in the past, no reason exist to give credence to such claims today. Today's wireless market is vibrant and constantly innovating, and is doing so in the minimally regulatory environment mandated by Congress and embraced by the Commission over the past 15 years.[93] Theoretical claims of harm and future market failure – whether advanced by Skype, Professor Wu, or commenters in response to the NPRM – cannot provide a basis for imposing government regulation on a highly competitive and innovative wireless market.

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expanded in the absence of prescriptive regulation" and that "[i]n the past year alone, consumers have downloaded about 2 billion applications for use on wireless devices").

[91] *See e.g.*, http://www.apple.com/pr/library/2009/11/04appstore.html (last visited Jan. 7, 2010) (discussing that there are more than 100,000 apps available in the Apple Store). *See also* http://phandroid.com/2009/12/15/20000-android-applications/ (last visited Jan. 7, 2010) (discussing the more than 20,000 apps available in the Android app store)..

[92] Jesus Diaz, "Apple Now Selling 350 Apps Per Second," Gizmodo (Jan. 5, 2010), *at* http://gizmodo.com/5440432/apple-now-selling-350-apps-per-second (last visited Jan. 6, 2010).

[93] *See also* Gerald R. Faulhaber and David J. Farber, "Innovation in the Wireless Ecosystem: A Customer-Centric Framework" at 26-27 ("Faulhaber-Farber Paper"), attached to Comments of AT&T Inc., GN Docket No. 09-157 (filed Sept. 30, 2009) ("The well-known paper by Wu (2007) argued that wireless carriers have blocked application providers, caused device makers to 'cripple' their phones, and violated network neutrality 'regulations.' In fact, many of these allegations applied only to isolated examples at the time they were made, and since that time virtually all of the carriers have made it quite easy for application providers to write apps for their networks. Carriers such as AT&T now have a 'bring your own phone' plan. Are we to conclude that Tim Wu's paper caused the carriers to see the light and change their evil ways? Of course not. It was competition that did the trick. When the iPhone showed that customers really loved apps, then everyone else responded. When some customers wanted to bring their own phones, carriers responded. A competitive market imposes the discipline on firms to meet their customers' demands.").

C. The Commission's Existing Deregulatory Policies for Wireless Broadband Have Successfully Stimulated Competition, Promoted Innovation and Benefited Wireless Consumers.

Without explanation or justification, the NPRM would dramatically reverse the Commission's consistent deregulatory approach to both the Internet and wireless broadband – an approach endorsed both by Congress and by the FCC. In 1993, Congress amended the Communications Act to implement its "general preference in favor or reliance on market forces rather than regulation."[94] Section 230 of the Communications Act states that it is the policy of the United States "to preserve the vibrant and competitive free market that presently exists for the Internet and other interactive computer services, unfettered by Federal or State regulation."[95]

Consistent with Congress's mandate, the Commission has classified broadband services, including wireless broadband services, as information services, subject to minimal regulation.[96]

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[94] *See Petition of New York State Public Service Commission To Extend Rate Regulation*, Report and Order, 10 FCC Rcd 8187, ¶ 18 (1995); Omnibus Budget Reconciliation Act of 1993, Pub. L. No. 103-66, Title VI, § 6002 (1993) (codified in principal part at 47 U.S.C. § 332).

[95] 47 U.S.C. § 230(b)(2).

[96] *Inquiry Concerning High-Speed Access to the Internet Over Cable and Other Facilities; Internet Over Cable Declaratory Ruling; Appropriate Regulatory Treatment for Broadband Access to the Internet Over Cable Facilities*, Declaratory Ruling and Notice of Proposed Rulemaking, 17 FCC Rcd 4798, 4801, ¶ 5 (2002) ("[W]e believe 'broadband services should exist in a minimal regulatory environment that promotes investment and innovation in a competitive market.' In this regard, we seek to remove regulatory uncertainty that in itself may discourage investment and innovation. And we consider how best to limit unnecessary and unduly burdensome regulatory costs."); *Appropriate Framework for Broadband Access to the Internet over Wireline Facilities, Report and Order and Notice of Proposed Rulemaking*, 20 FCC Rcd 14853, ¶ 3 (2005) ("Today, we decide that the appropriate framework for wireline broadband Internet access service, including its transmission component, is one that is eligible for a lighter regulatory touch. . . . We are confident that the regulatory regime we adopt in this Order will promote the availability of competitive broadband Internet access services to consumers, via multiple platforms, while ensuring adequate incentives are in place to encourage the deployment and innovation of broadband platforms consistent with our obligations and mandates under the Act."); *United Power Line Council's Petition for Declaratory Ruling Regarding the Classification of Broadband over Power Line Internet Access Service as an Information Service*, Memorandum Opinion and Order, 21 FCC Rcd 13281, ¶ 2 (2006) ("This approach is consistent with the framework that the Commission established for cable modem service and wireline broadband Internet access service, as it establishes a minimal regulatory

In particular, the Commission has recognized that classifying wireless broadband Internet access as an information service "establishes a minimal regulatory environment for wireless broadband Internet access service that promotes our goal of ubiquitous availability of broadband to all Americans."[97]

As a result of the Commission's deregulatory approach, wireless subscribers have reaped substantial benefits, as CTIA has demonstrated in recent filings with the Commission.[98] These policies have contributed to a wireless broadband market that is robustly competitive, highly innovative and serves its customers well.[99] In fact, as detailed above, and in multiple filings before the Commission, United States customers enjoy the newest handsets, most up-to-date networks, the lowest price, and the least concentrated market in the world.

Reversing these deregulatory policies would inject uncertainty into a wireless ecosystem that is not only working, but thriving and providing incredible value to consumers and businesses or all sizes in the midst of an economic downturn. The innovation that is occurring in the wireless marketplace is creating jobs and new business opportunities in all segments of the wireless ecosystem. As stated above, there has been no market failure that would justify the

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environment for BPL-enabled Internet access service that promotes our goal of ubiquitous availability of broadband to all Americans.").

[97] *Appropriate Regulatory Treatment for Broadband Access to the Internet Over Wireless Networks*, Declaratory Ruling, 22 FCC Rcd 5901, ¶ 2 (2007).

[98] *See, e.g.*, Comments of the Telecommunications Industry Association, GN Docket No. 09-157, at 12 (filed Sept. 30, 2009) ("The Commission's shift to a competition-based, technology neutral regulatory structure has resulted in the development of a variety of wireless technologies, platforms, service, applications, and devices available to American consumers."); Comments of T-Mobile USA, Inc., GN Docket Nos. 09-157 and 09-51, WT Docket No. 9-66, at 33 (filed Sept. 30, 2009) ("T-Mobile Innovation/Competition Comments") ("In fact, the wireless market is as robust, open, and dynamic as it is today because the Commission took a deregulatory approach to the market early on, allowing competition to promote consumer welfare and drive innovation.").

[99] *See generally* GN Docket No. 09-157; WT Docket No. 09-66.

unprecedented regulation of broadband access, particularly wireless broadband services, as proposed in the NPRM. Imposing new net neutrality regulations would amount to reverting to a bygone era of common carrier regulation, even though the wireless broadband marketplace bears no resemblance to the wireline arena to which the Commission's *Internet Policy Statement* was intended to apply.

Indeed, recognizing the risks associated with regulation in the wireless space, the Commission recently rejected the imposition of "open access" rules on the entire 700 MHz band. Instead, recognizing the wireless industry's evolution and the historical benefits of a deregulatory approach, it determined to conduct a limited test and apply open access requirements only on the 700 MHz C Block:

> While we adopt a requirement for the C Block licensees to provide open platforms for devices and applications, we decline at this time to impose these same principles or other openness obligations broadly in the 700 MHz Band, as recommended in PISC's open access and Google's broader proposals. Given the state of the record, we believe that a more measured approach is appropriate. While the open platform requirement for devices and applications in the C Block holds the potential to foster innovation, we cannot rule out the possibility that such a requirement may have unanticipated drawbacks as well. Therefore, we think that it is appropriate to impose the open platform requirement only on a limited basis.[100]

Because the 700 MHz C block has yet to be made operational, the Commission's regulatory experiment with regard to "open access" remains incomplete, and adopting new regulatory requirements would be a significant reversal of policy without any reasoned basis. This reversal would be especially troubling for those companies that chose not to bid on the 700 MHz C block but instead bid on other licenses at higher cost. Already, however, there is evidence that

[100] *Service Rules for the 698-746, 747-762 and 777-792 MHz Bands*, Second Report and Order, FCC 07-132, ¶ 205 (2007) ("*700 MHz Second Report and Order*").

consumers who value open access will have a choice of facilities-based wireless broadband services to choose among.[101]

Further, experience since the Commission's ruling shows only more movement toward openness, not less. Indeed, the Commission's approach to the 700 MHz band demonstrates a basic tenet of competition policy: so long as consumers express a preference for and have the ability to choose open access services, competing carriers will run the risk of losing customers if they do not embrace such services themselves.[102] The Commission expressly recognized as much in allowing the market to respond, by limiting its open access requirement to the 700 MHz C Block licenses.[103] The market has, in fact, responded. Almost all U.S. carriers are offering an open platform for developers and customers.[104] By limiting its mandate to C block licensees, the Commission achieved its public policy goal without the risk of unintended consequences from

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[101] *See, e.g.*, Voice, Video and Broadband: The Changing Competitive Landscape and Its Impact on Consumers, U.S. Dept. of Justice, at 50-51 (Nov. 2008) *available at* http://www.justice.gov/atr/public/reports/239284.pdf (last accessed Jan. 14, 2010).

[102] Faulhaber-Farber Paper at 26-27, attached to Comments of AT&T Inc., GN Docket No. 09-157 (filed Sept. 30, 2009) ("AT&T Wireless Innovation Comments") ("But this is more than the government intervening with no evidence whatsoever of market failure. We believe that this prospective rulemaking is the *polar opposite of a customer-centric* policy. If network neutrality in wireless is something customers want, then in the competitive carrier market a competitor will offer a neutral network service offering, and customers will flock to it. Other carriers will be forced to follow suit, or not.") (emphasis in original). *See also id.* at 25 ("Different carriers will adopt different network management strategies; provided customers are informed (see below) as to what their carriers are up to, they can make informed decisions about which carriers will get their business. Network management that is too restrictive, perhaps anticompetitive, will be punished by customers. Likewise, network management that is too lax, that permits outages and dropped calls because of congestion will also be punished.").

[103] *700 MHz Second Report and Order* at ¶ 205 ("Moreover, we note that to the extent the results of our C Block requirements prove attractive to consumers, we would anticipate that providers in other 700 MHz Band blocks and other bands will have competitive incentives to offer similar choices.").

[104] *See, e.g.*, Open Handset Alliance *at* http://www.openhandsetalliance.com/; *see also* Verizon Wireless Open Development *at* https://www22.verizon.com/opendev/.

applying well-meaning rules, that nevertheless impede new technologies and new business models, to the industry as a whole.

III. THE COMMISSION'S PROPOSED NET NEUTRALITY RULES WOULD BE UNPRECEDENTED AROUND THE WORLD.

The FCC must consider how U.S. net neutrality regulation will affect investment in infrastructure and next generation networks. Taking a cue from the FCC's history of encouraging innovation through market-based policies, regulatory bodies across the world are focusing on competition and investment as a means for deploying broadband and 4G wireless networks. In these National Broadband Plan-type efforts, the United Kingdom (UK), the European Union (EU), Japan, and Hong Kong have all reached the same conclusion: net neutrality regulation will not provide an environment most conducive to investment and build-out.

A. While The Net Neutrality Debate in the United States Considers *Ex Ante* Regulation of Broadband Providers, Other Regulatory Bodies are Taking More Pragmatic Approaches to Net Neutrality.

1. United Kingdom.

The Office of Communication ("Ofcom"), the UK's independent telecommunications regulator, recently released a year-long assessment of the wireless, or mobile, industry.[105] Ofcom concluded that in a wireless industry where competition "has delivered substantial benefits to consumers and citizens today, and will continue to do so in the future,"[106] net neutrality regulation of wireless networks is not necessary.[107] Instead competition and consumer demand are best capable to determine network management practices. As stated by Ofcom's

[105] "Mostly Mobile," UK Office of Communications, available at http://www.ofcom.org.uk/consult/condocs/msa/msa.pdf (July 9, 2009) ("Mostly Mobile")

[106] *Id*. at 15.

[107] *Id*. at 67.

CEO Ed Richards: "In a more competitive environment, there is less inherent problem with traffic management and prioritisation [sic] or with the principle of expecting customers who receive greater benefits to pay more. If network operators get these calculations wrong, consumers will switch to another provider."[108]

Rather than a regulatory approach, Ofcom is focused on facilitating investment by "remov[ing] as many obstacles as possible to next generation deployment and to ensure that there is a framework against which companies and investors can make decisions that will see next generation access emerge"[109] and that net neutrality "should not be allowed to become an obstacle or a distraction to investment in next generation networks in the UK."[110] *Ofcom adopted this approach in a wireless environment that is less competitive and more concentrated than the current U.S. environment.* The UK's wireless market is comprised solely of five carriers, four of which serve 93.5% of the market.[111] Comparatively, as of the third quarter of 2009, the top four U.S. wireless providers served 90% of the market, with the remaining 10% made up of numerous dynamic competitors. A similar approach in the U.S. would foster even more investment as carriers compete for customers by improving network coverage and unveiling 4G coverage.

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108 Ed Richards, CEO UK Office of Communications, Broadband Britain – Towards the Next Generation, Address Before the Institution of Engineering (Apr. 16, 2008), *available at* http://www.ofcom.org.uk/media/speeches/2008/04/ietspeech.

109 *Id*.

110 *Id.*

111 Letter from Christopher Guttman-McCabe, CTIA, to Marlene Dortch, FCC, RM-11361, GN Docket No. 09-51, WC Docket No. 07-52 (May 12, 2009) (citing Merrill Lynch, "Global Wireless Matrix 4Q08")

2. European Union.

In contrast to the approach taken by the European Union, the Commission would impose net neutrality rules on wireless broadband providers even in the absence of a need for such rules. Instead of preemptive net neutrality regulations, the EU has pledged to closely monitor developments while allowing national regulators the flexibility to address network issues in their respective environments.[112] Under its new "telecoms reform" package, the EU empowered national regulators to "safeguard the openness of the Internet" in cases where "competitive forces alone are not enough,"[113] but stopped short of imposing specific regulations. Viviane Reding, the European Commissioner in charge of Information Society and Media, stressed that these reforms were sufficiently "robust" without imposing prescriptive regulation on access providers.[114] The EU has also adopted transparency rules, requiring consumers to be informed of the nature of the service, including traffic management techniques and their impact on service quality.[115] Such service disclosures foster consumer choice and increase competition among ISPs.

3. Japan.

Japan has taken a competition-based approach to net neutrality that fosters industry-based solutions. Japan's telecommunications organizations are currently working to draft industry

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[112] Press Release, European Union, Agreement on EU Telecoms Reform paves way for stronger consumer rights, an open internet, a single European telecoms market and high-speed internet connections for all citizens (Nov. 5, 2009), *available at* http://europa.eu/rapid/pressReleasesAction.do?reference=MEMO/09/491.

[113] Viviane Reding, European Commissioner, Information Society and Media, Remarks at the Debate on the Future of the Internet and Europe's Digital Strategy (Oct. 6, 2009), *available at* http://europa.eu/rapid/pressReleasesAction.do?reference=SPEECH/09/446&format=HTML&aged=0&language=EN&guiLanguage=en.

[114] *Id.*

[115] *Id.*

guidelines – as opposed to prescriptive regulation – for packet shaping and network management.[116]

4. Hong Kong.

Similarly, in Hong Kong, the Regulatory Affairs Advisory Committee ("RAAC") recently concluded an analysis of net neutrality approaches in several countries including the U.S., the EU, the UK, and Japan.[117] It concluded that its existing telecommunications laws and policies, which combat anti-competitive behavior, are sufficient to address net neutrality issues and "[a]dopting more vigorous regulations at this stage may have unintended consequences that can stifle investment and innovation."[118] Like Japan and the EU, Hong Kong has pledged to closely monitor the market for harmful behavior, and only pursue regulation if there is a demonstrable harm.[119]

B. The FCC Should Monitor Competition and Industry Practices Instead of Enacting *Ex Ante* Regulations.

The FCC should follow the example of the aforementioned countries and exercise pragmatism in enacting net neutrality regulations. As each foreign regulator has concluded, heavy-handed net neutrality regulation may chill carrier investment in next generation networks. But more importantly, the FCC should carefully consider its decision as a global leader in telecommunications policy. While the UK and others have embraced competition as a means to

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[116] Ministry of Internal Affairs and Communications, New Competition Promotion Program 2010 (Sept. 19, 2006), *available at* http://www.soumu.go.jp/main_sosiki/joho_tsusin/eng/Releases/Telecommunications/pdf/news071023_2_ap.pdf.

[117] Office of the Telecommunications Authority, Hong Kong "Regulatory Affairs Advisory Committee: Network Neutrality" RAAC Paper No. 2/2009 (March 26, 2009) http://www.ofta.gov.hk/en/ad-comm/raac/paper/raac02_2009.pdf.

[118] *Id*. at 17-18.

[119] *Id*. at 20-21.

network build-out, preemptive U.S. net neutrality regulation could start a landslide of international Internet regulation aimed at controlling the global network. Recent remarks by Philip Verveer, U.S. Coordinator for International Communications and Information Policy, highlight this risk and underscore the importance of this proceeding around the world:

> In some countries [the FCC's proposed regulations are] being interpreted as an initiative by the United States to regulate the Internet. And we are concerned that in some countries it may be used as a justification for blocking access for purposes of preventing unwelcome political, social, or cultural information from being disseminated to their citizens.[120]

As more and more countries follow the FCC's net neutrality example, investment in the broadband worldwide would be stifled. In parts of Africa, South America, Asia, and even in unserved parts of the U.S., low population density combined with a lack of transportation infrastructure and geography make wireless the only viable option for providing broadband to remote communities. But without the ability to drive investment, reasonably manage networks, and spur competition, innovation in these vital networks will dry up and remote consumers will be left behind.

IV. COMMISSION ACTION TO IMPOSE NET NEUTRALITY ON WIRELESS BROADBAND ACCESS PROVIDERS WILL HAVE ADVERSE, UNINTENDED CONSEQUENCES FOR CONSUMERS AND THE ENTIRE WIRELESS ECOSYSTEM.

Application of the Commission's proposed net neutrality rules to wireless broadband networks will negatively impact the market for these services. In an attempt to permit "innovation without permission" at the network edge, the Commission's proposed net neutrality rules would impose the exact opposite regime on the network core – in essence causing carriers

[120] Philip L. Verveer, U.S. Coordinator for International Communications and Information Policy, Remarks at the Swedish-American Chamber of Commerce (Dec. 3, 2009).

and infrastructure providers to seek FCC permission before implementing new and novel network management practices or run the risk of having these practices deemed unlawful. For the Commission's innovation objectives to be met, innovation at the network core should be promoted, not discouraged. It is the innovation at the core, through the movement to 3G technologies – and now 4G – that has created the environment for handset innovation and application development.

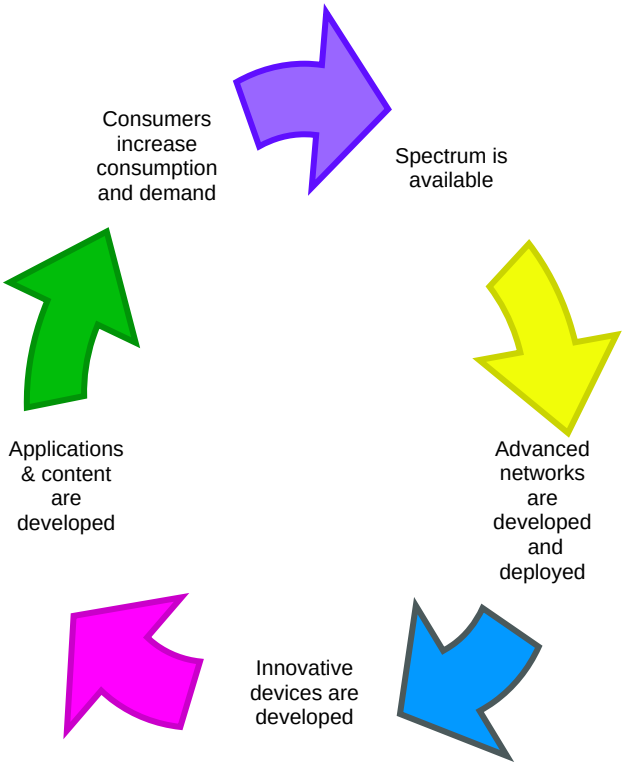

Figure 1. The Virtuous Cycle of the Mobile Wireless Ecosystem

Close integration between the network core and the innovative devices that comprise its edges, including reasonable network management methods, ensure a robust, high-quality

consumer experience for all users and enable the innovative service wireless consumers enjoy.[121] The Internet itself has continually evolved to meet increasing demands for throughput and network quality. The ability to manage networks has allowed carriers to compete on network quality through innovative network management techniques. Carriers compete vigorously on network quality, capacity, and other non-price criteria. One need look no further than the recent advertising campaigns of various providers to see that coverage, capacity, and quality of wireless broadband access is a major area of competition and differentiation for wireless providers.[122] Recent Commission proceedings have illustrated the vigor with which carriers compete to win customers, and they do so by competing on nearly every aspect of service. In the absence of this ability to compete, consumers will suffer the consequences of technology frozen at the time the Commission sets its rules.

Even beyond that, it is inevitable that network neutrality regulations risk unintended consequences that will limit competition and innovation in the complex wireless ecosystem of which wireless broadband is only a part. Under this model, consumers have multiple points of contact with the wireless ecosystem depending on how individual consumers decide to make wireless broadband a part of their lives. It is simplistic for the Commission to assume that regulation of consumers' access to the Internet will flow to the entire ecosystem. The Commission's recent proceeding on innovation and investment in the wireless market, in fact,

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[121] Charles L. Jackson, "Wireless Handsets Are Part of the Network" at 3 (Apr. 27, 2007), attached to CTIA Skype Opposition ("Implementing such innovations requires interaction between the network and handsets to an extent that is unparalleled in wireline telephony. Seeding the market with handsets providing expanded capabilities is an essential step in fostering the rapid adoption of more efficient or more capable wireless services.").

[122] *See, e.g.*, "Wireless," Communications Daily (Nov. 20, 2009) ("AT&T launched its own commercial hours after the court decision. The ad, featuring actor Luke Wilson, compares the carriers' 3G speed, service features, applications and devices and claims that AT&T has better 3G services.").

demonstrates the numerous ways in which consumers interact with the wireless ecosystem. A recent investigation of Google, Apple and AT&T illustrates how consumers interact with the wireless ecosystem.[123] As commenters have demonstrated, and as the Commission has affirmed, smartphone users on many platforms are provided with access to "app stores" that provide a point of aggregation for software written for that particular device or operating system.[124] For the most part, these application store providers are not Commission licensees or entities that fall under the Commission's regulatory authority. Moreover, the applications provided through these stores are written by another player in the wireless ecosystem – the application provider – who, again, is rarely a Commission licensee.

The Commission's proposed rules suggest that regulation of broadband Internet access providers will ensure the open nature of the Internet. However, the Commission must be wary of the unintended consequences of altering the interaction between various elements of the wireless ecosystem. Moreover, it is the very investment of wireless providers that facilitates the vibrant

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[123] *See, e.g.*, Letter from James Schlichting, Acting Chief, Wireless Telecommunications Bureau, FCC to Catherine Novelli, Vice President, Worldwide Government Affairs, Apple, Inc., DA-09-1736 (July 31, 2009) *available at* http://hraunfoss.fcc.gov/edocs_public/attachmatch/DA-09-1736A1.pdf.

[124] *See, e.g.*, Comments of Mercatus Center at George Mason University, GN Docket No. 09-157, at 8 (filed Sept. 30, 2009) ("In the last year, Microsoft, Google, RIM, and Palm have all announced or launched their own app store initiatives. What's key to note about this is that while consumers could always download and install third-party applications on open platforms such as Windows Mobile, BlackBerry, and Symbian, the process was difficult. The unified app store innovation has created an explosion in mobile application development and consumer use."); AT&T Wireless Innovation Comments at 14 ("As wireless devices have become more sophisticated – many today are essentially pocket-sized computers – tens of thousands of innovative applications are also now flooding the marketplace."); *Fostering Innovation and Investment in the Wireless Communications Market*, Notice of Inquiry, FCC 09-66, at ¶ 57 (2009) ("In the previous decade, mobile wireless applications were largely limited to paging, voice service, and text messaging. Now, thanks in part to significant advances in network infrastructure and mobile device capabilities, the market for mobile wireless applications has dramatically expanded to include, for example, web browsing, location services, music services, instant chat, streaming video and radio services, downloadable ringtones, and many other uses.").

and innovative applications market that has developed in the last 20 months. Without carrier investment, the burgeoning wireless platform for innovation is put at risk.

The Commission's rules, as written, bring a level of uncertainty to the provision of broadband Internet access, both in application and intent. The proposed rules' vague descriptions of "reasonable network management," "managed access," "content providers," and other terms leave access providers and the companies that produce network equipment unable to do exactly what the Commission is trying to achieve: innovate without permission. Should the Commission apply its proposed net neutrality rules to wireless broadband, innovative products, services, and plans – all of which would improve consumers' Internet experience – will face the specter of long, expensive, and unnecessary challenges at the FCC. These challenges, predictably brought by competitors and not customers, would move the process of selecting winners and losers from the marketplace to the Commission, and in the process would harm, not benefit consumers. The U.S. Department of Justice stated in its recent ex parte filing that "[i]n any industry subject to significant technological change, it is important that the evaluation of competition be forward-looking rather than based on static definitions of products and services."[125]

Indeed, the Commission's application of open access regulation to the Upper 700 MHz C Block sharply demonstrates that the uncertainty injected into the market by such rules has a demonstrable effect on the value of spectrum. The C Block, which was auctioned as a 22 MHz band made up of four licenses covering the continental United States, sold for approximately half the price of the B Block, even though the B Block was licensed with far less spectrum (12 MHz)

[125] DOJ Ex Parte at 6.

covering far smaller license areas (734 covering the continental U.S.).[126] Indeed, the B Block license covering the New York-Newark Cellular Market Area ("CMA") sold for $884 million, $382 million more than the C Block license covering the northeastern United States including New York, Buffalo, Philadelphia, Buffalo, and Hartford.[127] The same is true for the west coast C Block license which included L.A., San Francisco, San Diego, Seattle, Salt Lake City and more. That 22 MHz license sold for $319 million, with one bid from two bidders, while the 12 MHz B Block license for L.A. sold for $488 million. The charts below detail the impact of the open access obligation on carrier investment in the 700 MHz C block license:

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[126] *See* Auction of 700 MHz Band Licenses Closes, Winning Bidders Announced for Auction 73, Public Notice, DA08-595, at 2 (2008).

[127] *Id.* at Attachment A. The B Block license for the New York-Newark CMA sold for $884,703,000, while the C Block license for the Northeast REA sold for $502,774,000. *Id.* at 13, 63.

700 MHz Auction

	WEST REAG **(L.A., San Diego, Seattle, San Francisco, Salt Lake City)**	**LOS ANGELES – ANAHEIM CMA**
Winning Bid Amount	$319 Million	$483 Million ($164 Million more)
Block Size	22 MHz	12 MHz
Bidders	2 Bidders	13 Bidders
Bids	1 Bid (9 including dropped bids)	87 Bids

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700 MHz Auction

	NORTHEAST REAG **(NY, Boston, Philadelphia, Buffalo, Hartford)**	**NEW YORK – NEWARK CMA**
Winning Bid Amount	$502 Million	$884 Million ($382 Million more)
Block Size	22 MHz	12 MHz
Bidders	1 Bidder	9 Bidders
Bids	1 Bid (5 including dropped bids)	50 Bids

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700 MHz Auction

	GREAT LAKES REAG (Chicago, Detroit, Pittsburgh, Cleveland, Minneapolis, Milwaukee, Cincinnati, Indianapolis)	CHICAGO CMA
Winning Bid Amount	$1.109 Billion ($217 Million more)	$892 Million
Block Size	22 MHz	12 MHz
Bidders	2 Bidders	6 Bidders
Bids	5 Bids (6 including dropped bids)	31 Bids

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It is clear that the uncertainty surrounding the C Block license, driven by its accompanying open access rules, drove down prices for that block and discouraged companies from bidding. This actual example of the uncertainty that follows net neutrality regulation should be illustrative to the Commission.

V. THE PROPOSED RULES DO NOT RECOGNIZE THAT WIRELESS NETWORKS ARE FUNDAMENTALLY DIFFERENT THAN WIRED NETWORKS.

Wireless broadband networks are inherently and fundamentally different than the wireline networks for which the *Internet Policy Statement* was intended and the proposed net neutrality rules are designed. Reliance on spectrum, the recognition that wireless customers are mobile, and significant interaction between customer equipment and the network make wireless completely different from a technology perspective. Wireless, with its ultra-competitive environment, whether measured nationally or from market-to-market is also completely different

from a competition, market structure, and consumer perspective.[128] Indeed, the Commission acknowledged this difference in the NPRM itself, stating that "we recognize that there are technological, structural, consumer usage, and historical differences between mobile wireless and wireline/cable networks."[129] Unfortunately, the acknowledgement that wireless is different is lost in the proposed rules, which do not distinguish among types of networks. As discussed below, these differences should compel the conclusion that net neutrality rules are wholly inappropriate in a wireless context.

A. The Mobility of the Wireless Consumer Base and the Reliance on Spectrum for Last-Mile Connectivity Make the Rules Particularly Inapplicable to CMRS.

There should be no dispute that meaningful technical differences exist between wireless networks and wireline networks. The differences include the underlying network infrastructure and its reliance on spectrum resources, the mobility of the customer base, and the integration of consumer equipment. These three elements make wireless completely different than other broadband services.

Wireless service, whether voice or data, is inherently mobile in nature. Traffic patterns are often hard to predict. The need for "hand off" of sessions from cell site to cell site, the need to manage interference, and the need to address issues like signal fading all make the service very complex to engineer and manage. Additionally, because the information capacity of a wireless cell site is available to all users served by that cell, a wireless user in the cell must share available bandwidth with other users in their vicinity. In contrast to wireline infrastructure with a dedicated connection to each home, wireless broadband users' service quality may be degraded

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128 *See* Reply Comments of CTIA – The Wireless Association, WT Docket No. 09-66, at 10 (filed Oct. 22, 2009).

129 *Net Neutrality NPRM* at ¶ 159.

by other users demanding significant capacity that compromises the service quality for others in their vicinity. Network management is therefore necessary to prevent the user of a bandwidth-intensive application from occupying the entire capacity of the base station to which it is connected.

In fact, in some air interface implementations, a cell's capacity is shared by all services running over the network, including both voice and data. As a result, wireless carriers must balance consumers' desire for innovative data and video services with high-quality voice service. This balance is critical, as voice data is highly susceptible to the latency of the connection. By prioritizing voice data over other non-voice data packets, wireless carriers maximize the efficiency of their networks – and their value to consumers. Further, unlike wireline broadband providers, wireless providers cannot "build their way out" of capacity constraints. Chairman Genachowski has recognized this issue, and is working to address the critical role of spectrum availability to the provision of wireless broadband services.[130] Numerous parties also have stressed the importance of additional spectrum allocation for wireless broadband.[131]

The Commission's recent Technical Advisory Process workshop highlighted the unique network management challenges faced by wireless broadband providers. Facing ever-increasing demand for bandwidth, wireless broadband service providers must engage in complex

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[130] Julius Genachowski, Chairman, Federal Communications Commission, America's Mobile Broadband Future, Remarks at International CTIA WIRELESS I.T. & Entertainment at 4 (Oct. 7, 2009) *available at* http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-293891A1.pdf ("Spectrum is the oxygen of our mobile networks. While the short-term outlook for 4G spectrum availability is adequate, the longer-term picture is very different. In fact, I believe that the biggest threat to the future of mobile in America is the looming spectrum crisis.").

[131] *See, e.g.*, DOJ Ex Parte at 21 ("Given the potential of wireless services to reach underserved areas and to provide an alternative to wireline broadband providers in other areas, the Commission's primary tool for promoting broadband competition should be freeing up spectrum.").

procedures to maintain service quality, all while protecting their customers against the growing threat of cybersecurity risks.[132] In the absence of this careful management, the use of data-intensive applications over scarce spectrum resources will harm consumers.[133] The reliance on spectrum and the mobile nature of the service make the management and engineering of the service very complicated and very time sensitive, something that is counter to a static set of rules such as those proposed.

B. The Commission's Proposed "Any Device" Rule for Wireless Broadband Networks Ignores Technological Considerations and Consumer Preferences.

1. Wireless Devices are Not Part of the Network "Edge."

The Commission's NPRM erroneously assumes that, like wireline devices, wireless devices exist on the "edge" of the network and may be harmlessly interchanged via an industry standard interface – the wireless equivalent of an RJ-11 (telephone) or RJ-45 (Ethernet) jack. This assumption is reflected in the NPRM's discussion of device attachment in the unlicensed Wi-Fi context,[134] where the suggestion is that the "edge" of the network is between an unlicensed router and the Wi-Fi device (*e.g.*, a laptop) attached to it. But this assumption is wholly

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[132] *See* Tom Sawanobori, Vice President of Network and Technology Strategy, Verizon, "Network Management: Network and Technology" (Dec. 8, 2009), *available at* http://www.openinternet.gov/workshops/docs/ws_tech_advisory_process/Tom%20Sawanobori%20Slides.pdf.

[133] *See, e.g.*, Comments of CTIA – The Wireless Association, GN Docket No. 09-51, at 29 (filed June 8, 2009) ("On wireless networks in the absence of network management, bandwidth intensive applications and other spectrum uses would have the potential to prevent or degrade the use of the voice service that consumers rely upon….").

[134] *See Net Neutrality NPRM* at ¶¶ 165-166. ("Unlicensed wireless devices can generally attach to a local-area or personal-area network without requiring the network owner (typically a consumer) to test for whether the device is non-harmful, since this would be impractical. Typically this is accomplished by using industry standard interfaces such as a WiFi connection. We note that private sector certification programs have been established to ensure compatibility with the standards. For example, in order to advertise a product as WiFi compliant the device must undergo third-party testing in accordance with a program established by the WiFi Alliance.").

inaccurate and application of the Commission's proposed "any device" rule would be incompatible with wireless broadband networks.

The "edge" of the network in the Wi-Fi example is not between the router and the laptop, but between a wireline broadband network and the router – a point demarcated by the RJ-45 Ethernet jack into which the router is plugged. The presence of this controlled access point ensures that if a Wi-Fi device malfunctions or is defective, it impairs only the link between the device and the broadband network to which it is attached, not the network itself. Similarly, in the wired and cable broadband contexts, a DSL router or cable modem is used to control access to network resources by subscribers. By contrast, there is no such controlled access point between a licensed wireless device and the network on which it operates. So while consumers' choice of devices reflects a high level of personal choice, licensed wireless devices exist – from a technical perspective – on the network side of the "edge" and are part of the network itself. A licensed wireless device cannot properly be considered an "edge" device because when it malfunctions it can impair the network itself and service to other users of the shared wireless resource, and when it is working well, it can improve network performance and the service available to others.

2. Under FCC Rules, Wireless Devices are Radios Licensed to Carriers, Not Consumers.

The technical integration of wireless devices into the network is, not surprisingly, reflected in the FCC's own rules. Indeed, the NPRM ignores the fact that mobile devices for licensed wireless services are radios licensed to network operators, not to end users.[135] Under FCC rules, wireless devices are clearly and expressly licensed to the network operator. Section

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[135] *See Net Neutrality NPRM* at ¶¶ 163-170.

1.903(a) provides that "[s]tations in the Wireless Radio Services must be used and operated only . . . with a valid authorization granted by the Commission."[136] Additionally, Sections 1.903(c) and 22.3(b) provide that a subscriber's authority to operate a device stems directly from the "authorization held by the licensee providing service to them."[137] And, while the FCC rules give wireless licensees "blanket" authority to operate a variety of transmitters in their spectrum, the rules exclude end-user subscribers from this authorization. Indeed, Section 22.165 provides that a "*licensee* may operate additional transmitters at additional locations on the same channel or channel block as its existing system without obtaining prior Commission approval[,]"[138] but makes no mention of parallel end user rights.

These rules are grounded in critical technical differences between device attachment in the wireline and wireless contexts which are regrettably ignored in the NPRM. Wireless communications have the capability of interfering not only with the licensee's service and its own customer uses, but also with competitors' radio services and radio services in adjacent bands. For this reason, FCC rules impose upon a wireless network operator the positive obligation to control devices on its network to prevent interference to itself and others. Specifically, Section 22.927 provides that "[c]ellular system licensees are responsible for exercising effective control over mobile stations receiving service through their cellular

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[136] 47 C.F.R. § 1.903(a); *see also* 47 C.F.R. § 22.3 (requiring a valid license to operate cellular stations).

[137] *Id*.

[138] *See* 47 C.F.R. § 22.165 (emphasis added); *see also* 47 C.F.R. § 24.11(b) ("Blanket licenses are granted for each market and frequency block.").

systems."[139] By contrast, interference that results from an incompatible or improperly functioning device on a wireline network impacts only the customer using that device.

3. Wireless Devices are Not Perfectly Interchangeable, They Are Designed for Specific Wireless Networks.

Beyond the technical compatibility issues presented by the use of both CDMA and GSM platforms in the United States, differences within those platforms also present unique technical challenges to device portability. For example, while a given wireless device may be compatible with a carrier's platform it may or may not have the same capabilities when taken from the network for which it was designed to another carrier's network. This may be due to network differences or to issues involving the bands of spectrum that a carrier is using to provide service.

The recent announcement of Google's Nexus One demonstrates this issue. Google announced the Nexus One and began selling it as a subsidized, term-contract device on the T-Mobile network and as an unsubsidized, unlocked device capable of operation on other GSM-based networks.[140] However, because different carriers implement network standards across different spectrum bands, the Nexus One is not a 3G device on the AT&T network. Rather, because the Nexus One does not support the 850 MHz band that AT&T uses for 3G service, AT&T subscribers who choose to bring a Nexus One to the AT&T network will not enjoy the 3G speeds associated with wireless broadband.[141]

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[139] *See, e.g.*, 47 C.F.R. § 22.927.

[140] *See* "Nexus One: What would you like to buy?", *available at* https://www.google.com/phone/choose?locale=en_US&s7e= (last accessed Jan, 11, 2010).

[141] *See* "Nexus One: Using the phone with your SIM card", *available at* http://www.google.com/support/android/bin/answer.py?answer=166507 (last accessed Jan. 11, 2010) ("The Nexus One device is unlocked and will recognize SIM cards from any mobile service provider using the GSM standard. The Nexus One's antenna supports four GSM radio frequencies (850/900/1800/1900) and three 3G/UMTS Bands - 1/4/8 (2100/AWS/900). These cover most major GSM mobile providers worldwide, including T-Mobile US, but not the 850

The Nexus One is also an apt example of the consumer confusion that a mandated "any device" rule would bring to wireless broadband. Even when phones are sold by entities that are not carrier licensees, customer concerns and inquiries about the performance of the phone still flow to the carrier. Since its release by Google, recent press coverage show that this had led to significant consumer confusion leading consumers to inundate T-Mobile's customer care centers, not just Google's.[142]

C. The Commission's Proposed Non-Discrimination Rule is Overbroad and Would Discourage Innovation in Service Plans and Pricing Models.

The Commission historically has allowed "competitive market forces to govern rate and rate structures for wireless services," and the wireless industry has a long history of innovation in pricing and service plans.[143] From the introduction of the first voice plan to include a "bucket of minutes" to the innovation in bundled service offerings, the post-paid wireless world has seen many innovative offerings change the face of wireless time and again.[144] The pre-paid wireless world has similarly seen the introduction of new and innovative models combining wireless voice plans, broadband data and other wireless service to bring pre-paid wireless consumers the options they demand.[145] However, the breadth of the Commission's proposed

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MHz 3G band used by AT&T. The Nexus One phone will, however, deliver 2G/EDGE speeds on these networks….").

[142] Sam Gustin, "Google's Nexus One Backlash: Shoddy Service", DailyFinance *available at* http://www.dailyfinance.com/story/googles-nexus-one-backlash-shoddy-service/19312087/ (last accessed Jan. 12, 2010).

[143] *See Reexamination of Roaming Obligations of Commercial Mobile Radio Service Providers*, Report and Order and Further Notice of Proposed Rulemaking, 22 FCC Rcd 15817, ¶ 35 (2007).

[144] *See generally* Comments of CTIA – The Wireless Association®, WT Docket No. 09-66, at 40-44 (filed Sept. 30, 2009).

[145] *Id.*

non-discrimination rule threatens to curtail the ability of innovative and disruptive new pricing models from bringing new benefits to consumers.

Imposition of the proposed net neutrality rules will freeze the current business model for wireless services, stifling innovative technologies, service offerings and interactions among ecosystem players that benefit consumers. One example of an innovation that would be stifled by net neutrality regulation is the Amazon Kindle – an e-book reader that uses commercial wireless networks to download books into the device. The Kindle's hardware could be used to perform any Internet access function, but Amazon's Terms of Service require that users limit use of the device's built-in wireless connectivity for Amazon purposes.[146] In turn, Amazon subsidizes the cost of the device's Internet connectivity. The same is true for Barnes & Noble's Nook. Economists call this a "two-sided" market, and the structure allows many providers of Information Services, including broadcasters and newspaper publishers, to offer consumers selected content at a discounted (or even "free") price. Such innovations have proven extremely popular with consumers, but they are unlikely to continue in the presence of net neutrality regulation, as makers of these devices will no longer have the incentive to provide the wireless connection for their customers.

D. The Commission's Transparency Requirement Presents Unique Challenges in the Mobile Environment.

In the NPRM, the Commission also seeks to impose a transparency requirement on broadband access providers.[147] CTIA and the wireless industry support disclosure to consumers. As CTIA has stated in the Commission's recent Notice of Inquiry examining consumer

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[146] AT&T Wireless Innovation Comments at 109-10.

[147] *Net Neutrality NPRM*, Appendix A at 13,129 ("[s]ubject to reasonable network management, a provider of broadband Internet access service must disclose such information concerning network management and other practices as is reasonably required for users and content, application, and service providers to enjoy the protections specified in this part.").

disclosures in the broadband market, CTIA and its members developed and voluntarily adopted a "Consumer Code" to facilitate the provision of accurate and complete information to consumers by wireless service providers.[148] The CTIA Consumer Code is now viewed as the industry standard for providing potential customers with information to help them make informed choices when selecting wireless service, and to ensure that consumers understand their wireless service and rate plans. The Consumer Code remains a highly effective method of creating stringent but evolving norms within the wireless industry that benefit consumers and avoid the delay, uncertainty, and associated administrative costs of federal governmental intervention.

However, the Commission's NPRM would take disclosures a step further. Not only would the Commission's NPRM compel disclosure of network management practices to consumers – which itself would be difficult due to the dynamic nature of mobile wireless network management – but would require wireless broadband providers to provide content and application developers with detailed information regarding network architecture, network elements, and proprietary management techniques. The Commission should not impose these onerous obligations on wireless broadband providers.

The transparency requirements will have a real and lasting impact on carriers' ability to innovate in the provision of quality network access services by limiting the tools available to those that have already been disclosed to consumers. Wireless broadband networks are a dynamic and multi-faceted technology, constantly managed to provide a quality user experience and dynamically managed as a result of consumer mobility. Moreover, research and development by broadband infrastructure providers continue to bring new and innovative tools to wireless broadband providers to maintain high-quality service. Commission action to mandate

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[148] *See* CTIA - Consumer Code for Wireless Services, *available at* http://files.ctia.org/pdf/ConsumerCode.pdf (last visited Oct. 2, 2009) ("*Consumer Code*").

disclosure of network management tools could limit their availability by bringing uncertainty to both research and development and implementation decisions.

Additionally, similar to CTIA's comments on detailed mapping of wireless network elements, provision of data on wireless network elements or the specific tools and equipment used by wireless carriers presents both competitive and security concerns. Disclosure of this information could negatively impact wireless carriers by detailing for competitors the extent of network infrastructure and by disclosing to competitors sensitive information about how a particular carrier may engineer and optimize its network to maximize coverage and service quality.

Moreover, for obvious national security reasons, wireless carriers do not advertise detailed information on their cell site equipment, switches or other network elements. This very real consideration was highlighted by participants at the Commission's September 30, 2009 National Broadband Plan public workshop on cybersecurity.[149] An overbroad transparency requirement would give hackers and other bad actors a roadmap to circumvent carrier security measures.

VI. THERE ARE OTHER LESS RISKY AND MORE NEUTRAL WAYS TO ENSURE THAT CONSUMERS ARE PROTECTED.

As CTIA has highlighted above, there are significant risks associated with the uncertainty that prescriptive net neutrality regulation brings to the mobile wireless broadband Internet access market, including the potential to stifle new service and products, new and novel network management techniques and equipment, and more. Given these real risks, the Commission should consider alternatives to the prescriptive regulation that is contemplated by the NPRM.

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[149] *See generally* Remarks at the Cyber Security Workshop (Sept. 30, 2009) *available at* http://www.broadband.gov/docs/ws_26_cyber_security.pdf (last accessed Jan. 12, 2010).

A. The Antitrust Analysis Approach

In an August 2009 working paper on the case for wireless net neutrality, Gregory Rosston and Michael Topper of the Stanford Institute for Economic Policy Research detailed the pitfalls of the type of regulation the Commission is now considering:

> Regulation that is preemptive and overly broad will prevent pro-competitive vertical arrangements alongside anti-competitive ones.[150]

The solution proposed in the Rosston paper is to instead take a rational, *ex post* approach to net neutrality that is akin to the method used in traditional antitrust analysis. In fact, specifically addressing some of the conduct that the Commission's NPRM seeks to prevent, Rosston and Topper urge restraint and a more rational look at the potential upside to carrier broadband practices. For example, according to Rosston and Topper, "[s]ome vertical practices of the wireless carriers, such as bandwidth restrictions, may appear to be anticompetitive, but may also have plausible efficiency justifications so should be judged under a rule of reason analysis."[151]

Above, CTIA urges the Commission to consider the impact of the proposed rules on investment in networks and research and development of new technologies. This is a sentiment echoed by the economic analysis of the Rosston paper, urging the Commission to evaluate the inefficiencies and regulatory costs versus the potential benefits.[152]

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[150] Gregory Rosston and Michael Topper, An Antitrust Analysis of the Case for Wireless Network Neutrality, Stanford Institute for Economic Policy Research Working Paper (August 2009) at 35, *available at* http://www.stanford.edu/group/siepr/cgi-bin/siepr/?q=system/files/shared/pubs/papers/pdf/08-040.pdf (last accessed Jan. 13, 2010) ("Rosston Paper").

[151] *Id.* at 1.

[152] *Id.* at 3.

> Importantly, regulation is difficult in a dynamic industry like wireless, where innovation and investment are key to competition among incumbent firms and potential entrants. Preventing a firm from reaping the rewards of its investments and ingenuity or the threat of taking away such rewards can change a firm's actions. In fact, such worries help to motivate some of the proponents of network neutrality – they worry that the threat that network operator(s) will exclude innovators or expropriate their innovations will in turn cause a much lower level of innovative activity. Innovation and investment incentives are important considerations and the same issues of incentives apply to network operators' decisions to continue to invest in their networks to provide the services that consumers want.[153]

A more reasoned, antitrust-style approach to net neutrality will not only preserve the open Internet by addressing conduct that harms consumers, but it would do so without sweeping in pro-competitive conduct that benefits consumers.

B. Market Analysis in the Skype Petition Docket.

Criticism of the need for prescriptive rules to address carrier conduct in the wireless industry is by no means a new phenomenon. In fact, in the 2007 responses to the Petition by Skype Communications S.A.R.L. to impose *Carterfone*-style regulation on wireless providers, several leading economists and antitrust experts provided analysis of the wireless market and carrier practices. They reached a conclusion similar to the Rosston Paper, focusing on competition analysis and promoting consumer choice, rather than sweeping rules of general applicability.

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[153] *Id.* at 30.

Professor Marius Schwartz and Federico Mini provided one such analysis for consideration in the docket.[154] After an extensive analysis of the competitive offerings in the 2007 wireless marketplace, the Schwartz Paper reaches the conclusion that:

> In any industry, there will be some consumers or outside observers who are not entirely satisfied with certain aspects of firms' offerings. But this hardly provides sufficient grounds for contemplating regulation. Regulation has a proper role to play when there is a clear and durable competitive failure and reasonable confidence that the regulation will not inflict undue harm. In the absence of convincing evidence of an initial failure — which Professor Wu's examples certainly do not provide — regulation should not even be entertained seriously. This is especially true in a complex and dynamic industry like wireless, where regulation is likely to produce considerable harm. The wireless industry is very far from needing regulatory remedies, let alone those as drastic as access regulation.[155]

Clearly in the case of net neutrality, there has not been the "clear and durable competitive failure" envisioned by the professors.

Similarly, CTIA's own filing contained a paper by Willkie Farr and Gallagher analyzing Skype's suggested regulations – which are now found at the center of the Commission's proposed device attachment rule and the non-discrimination rule – from an antitrust perspective.[156] In considering the remedies proposed by Skype, the Willkie Antitrust Paper agrees with the Rosston Paper's analysis of the current market – that the regulation proposed may have adverse and unintended consequences for consumers:

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[154] Marius Schwartz and Federico Mini, Hanging up on *Carterfone*: The Economic Case Against Access Regulation in Mobile Wireless, Reply Comments of AT&T, Inc. Opposing Skype Communication's Petition to Apply *Carterfone* Attachement Regulations to the Wireless Industry, RM-11361, at Exhibit A (filed May 15, 2007) ("Schwartz Paper").

[155] *Id.* at 31.

[156] Bernard A. Nigro Jr. and Michael P. Trahar, "An Antitrust Perspective in Response to Skype's Petition", Opposition of CTIA – The Wireless Association®, RM-11361 at Attachment D (filed April 30, 2007) ("Willkie Antitrust Paper").

> [T]he wireless carriers do not have unlimited capacity and ability to accommodate all technologies. If Skype's request is granted, it will not be without consequence. To the extent that regulation requires carriers to adapt their businesses in ways that increase their costs or compromise their service, Skype may be happy but consumers will either pay more or get less. That is because, fundamentally, Skype wants the Commission to intervene to correct what it believes are bad business decisions by the wireless carriers; it wants the Commission to give priority to what Skype thinks the market desires and how Skype thinks the wireless carriers should manage their businesses, rather than let the competitive process determine the direction the market will take.[157]

The Commission's proposed regulations would foreclose the idea that there are consumer benefits to the wireless carriers' actions in managing network resources, innovating in service provision that includes alternative compensation structures, providing closely managed services, and a host of other innovations that are as yet uncontemplated.

Under the antitrust approach outlined above, the Commission retains the flexibility to ensure consumer welfare. Under the Commission's proposed rules, the damage to competition is already done. The Commission would do well to remain a vigilant supporter of competition without irrevocably impacting the innovation that continues to mark the wireless industry.

VII. THE COMMISSION SHOULD MAINTAIN ITS FOCUS ON "SEEK[ING] TO ENSURE THAT ALL PEOPLE OF THE UNITED STATES HAVE ACCESS TO BROADBAND CAPABILITY" AND WORK TO BENEFIT CONSUMERS BY FACILITATING INVESTMENT IN BROADBAND COMPETITION.

The actions the Commission contemplates in the instant NPRM are seemingly at odds with its congressional mandate in the American Recovery and Reinvestment Act to "seek to ensure that all people of the United States have access to broadband capability" as the Commission's actions would upset the wireless ecosystem that is delivering to every American

[157] Willkie Antitrust Paper at 2.

"broadband to the person."[158] Rather than a focus on regulation of potential conduct and theoretical problems, CTIA looks forward to working with the Commission to bring, as the Department of Justice detailed in recent comments to the FCC, more competition to the broadband market.

The focus on competition as the driver of consumer benefits is by no means a new concept, nor is it absent from the current debate. For example, the DOJ Ex Parte's antitrust analysis features a focus on promoting competition as the best way to meet the goals of providing the best possible services and a choice of provider.[159] The Rosston Paper similarly agrees from an economics perspective, stating that "[p]olicy proposals should have as their primary focus promoting consumer welfare. In general consumer welfare is enhanced by removing obstacles to competition by private firms, not favoring any one particular firm."[160]

As the Commission moves forward with its dual goals of promoting consumer welfare and adoption through competition and increasing broadband availability across the United States, it should be acutely aware of the impact of its proposals on the very industry that is driving innovation, competition, and investment within the United States.

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158 *See* American Recovery and Reinvestment Act, PL 111-5, at § 6001(k)(2).

159 DOJ Ex Parte at 29.

160 Rosston Paper at 31.

VIII. CONCLUSION

Net neutrality regulation is wholly inappropriate for the wireless ecosystem, an ecosystem that is highly innovative, robustly competitive and consumer-oriented. There is no market failure justifying intervention in the highly successful wireless broadband market, and the proposed rules fail to recognize the unique needs of wireless networks. Because application of network neutrality rules would affirmatively harm consumers in the mobile market, and would be likely to cause unintended harms to an ecosystem that is driving significant benefits to consumers, CTIA strongly opposes adoption of the proposed regulations.

Respectfully submitted,

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