

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554**

In the Matter of

Preserving the Open Internet

Broadband Industry Practices

GN Docket No. 09-191

WC Docket No. 07-52

COMMENTS OF QUALCOMM INCORPORATED

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QUALCOMM Incorporated (“Qualcomm”) hereby responds to the FCC’s Public Notice seeking additional input on two under-developed issues in the net neutrality proceeding, namely the application of so-called “open Internet rules” to (i) mobile Internet access services (*i.e.*, mobile broadband connectivity) and (ii) specialized services (*i.e.*, services provided by broadband operators over their own last-mile facilities).¹

SUMMARY

As a mobile broadband technology developer and innovator, Qualcomm applauds the Commission for seeking further comment on these two issues because inappropriate regulation will irreparably harm the mobile industry – a burgeoning sector of the U.S. economy that is improving virtually every facet of American life. As Qualcomm has explained in its prior filings, the FCC should not impose net neutrality regulation upon mobile broadband services, devices, or applications because mobile network operators, equipment makers, software developers, and other entrepreneurs require the utmost flexibility to develop new business

¹ See FCC Public Notice, *Further Inquiry Into Two Under-Developed Issues In the Open Internet Proceeding*, GN Docket No. 09-191, WC Docket No. 07-52, DA 10-1667 (Sept. 1, 2010) (“FCC Notice”).

models, bring innovative mobile broadband products and services to market, and offer consumers an unrestricted range of mobile broadband connectivity options.²

It is no exaggeration to say that every week, a blizzard of new mobile broadband devices, applications, and services enter the market, demonstrating that the pace of innovation in mobile is accelerating rapidly. While the FCC Notice refers to usage-based pricing for pure connectivity, there are many mobile broadband devices, such as e-readers, tablets, and smartphones, that accommodate pay-by-the download, pay-by-the service, and pay-by-app business models. These business models, and other new ones, will become increasingly prevalent as consumers in the mid-market segment (*i.e.*, in between data heavy smartphone users and prepaid voice-only subscribers) seek mobile broadband apps and services without necessarily having to pay for pure connectivity.

Indeed, consumer usage of mobile broadband is exploding and network operators need the tools to manage their networks in the face of severe spectrum constraints. Mobile operators also need to be able to encourage application developers to conserve scarce bandwidth because developers otherwise lack any incentive to do so.

The FCC Notice itself acknowledges that today's flexible regulatory regime has facilitated robust mobile innovation, novel business models, the introduction of new pricing plans, countless wireless devices and applications, and has enabled multiple overlapping means of mobile broadband access: cellular, satellite, and unlicensed connectivity complimented by

² See generally Comments of Qualcomm Incorporated (Jan. 14, 2010) in Preserving the Open Internet, GN Docket No. 09-191, and Broadband Industry Practices, WC Docket No. 07-52; Comments of Qualcomm Incorporated (July 15, 2010) in Framework for Broadband Internet Services, GN Docket No. 10-127.

wireline fiber, coax, and copper connections.³ The current regulatory regime thus offers the best means of meeting the core goal of the National Broadband Plan: universal broadband.⁴

For all of these reasons, it would be counter-productive for the Commission to impose net neutrality rules on mobile broadband at this time. To do so would introduce uncertainty into the market, limit innovation, and retard investment. A highly competitive market and constantly evolving eco-system are keeping mobile networks open.

If some isolated problem develops that is outside the ambit of current law, the problem likely will be solved by the marketplace and in the court of public opinion because American consumers will not stand for being denied any new mobile innovation. The Commission should not act until there is a problem to be solved.

Likewise, the FCC should not burden specialized services with regulation. Instead, the Commission should allow specialized wireless broadband services and applications to serve as incubators of innovation for potential mass market deployment.

Finally, Qualcomm believes that the FCC should continue monitoring the ongoing discussions among industry players, for these sessions may well lead to a long-lasting framework to the satisfaction of industry, government, and public interest stakeholders.⁵

³ See generally FCC Notice.

⁴ FCC National Broadband Plan: Connecting America (Mar. 16, 2010) (“FCC NBP”).

⁵ Separate from the issues in the FCC Notice, Commission jurisdiction to impose net neutrality regulation on mobile broadband very much remains an open question. See, e.g., Comments of AT&T in Framework for Broadband Internet Service, GN Docket No. 10-127, at 112-14 (July 15, 2010) (explaining, among other jurisdictional problems with the FCC’s proposed “Third Way” approach, that Section 332(c) of the Communications Act, 47 U.S.C. § 332(c)(2), independently precludes the agency from treating mobile broadband as a common carrier service).

DISCUSSION

I. The Mobile Broadband Market Is A Remarkable Engine Of Economic Growth And Model Of Successful Competition

A. Net Neutrality Regulation Could Well Stifle Future Wireless Innovation

The FCC must consider the successful results of its existing mobile broadband regulatory policy before adopting any new regulations. There is absolutely no question that the mobile broadband ecosystem is a successful, vibrant, and highly competitive market. As stated in the National Broadband Plan: “By any measure, innovation is thriving in mobile and computing devices.”⁶ Whole new device classes, many of which have integrated Qualcomm’s technologies and products, such as mobile broadband-based tablets, e-readers and smartphones,⁷ are now on the market, offering new options for consumers and expanding the mobile broadband eco-system to include new entrants and offering exciting new possibilities for so many device manufacturers.⁸ Given that the mobile broadband ecosystem is a vibrant, competitive marketplace, there is no need to impose additional regulatory burdens on this sector of the economy.

The imposition of network neutrality regulations upon mobile broadband connectivity may stifle the future, successful growth of a critically important sector of our economy and driving force behind the lengthy economic recovery. As the Department of Commerce noted recently in its Global Free Flow of Information on the Internet Request for Comment, mobile

⁶ FCC NBP at 49. “The mobile phone market has seen robust innovation” with over “850 different certified mobile products in 2009.” *Id.* at 18. Not only will “growth in the netbook and tablet markets [over the next five years] far outpace growth in the traditional PC market,” but smartphone sales are expected to overtake standard mobile phone sales soon. *Id.*

⁷ See Qualcomm Comments (Jan. 14, 2010) at 1-9, 11-15. Qualcomm and other technology innovators also are developing new classes of broadband devices that will not interface with a person but instead will operate on a machine-to-machine basis.

⁸ See FCC NBP at 49.

broadband-enabled U.S. sales reached \$1.2 billion in 2009, representing a 200% increase over the prior year.⁹ The Commerce Department also noted that the private sector expects to spend more than \$3.8 billion on mobile advertising in just this year.¹⁰

Not surprisingly, the growth in consumer-centric mobile applications in the U.S. is driving smartphone sales and wireless data needs. In 2009 alone, U.S. consumers downloaded more than 1 billion mobile applications.¹¹ The number of applications available from AT&T has grown from 1,500 in 2006 to more than 200,000 this year.¹² Data traffic on mobile networks will continue to explode, fueled also by consumer purchases of other types of wireless-enabled devices, such as e-readers, tablet computers, navigation aids, and gaming devices. Sales of these devices are expected to grow to more than 86 million in 2014 from just 6 million in 2008.¹³

The National Broadband Plan appropriately recognizes that the mobile communications ecosystem is in a period of tremendous growth, and this surge is requiring mobile broadband operators to constantly adjust traffic management and routing algorithms to support the entire population of users in a limited amount of spectrum. As one of the technology developers advancing “the science of spectrum access” to increase the capacity of mobile broadband networks,¹⁴ Qualcomm knows firsthand the importance of giving wireless network operators the

⁹ See Department of Commerce, Global Free Flow of Information on the Internet, Request for Comment, 75 Fed. Reg. 60068, 60069 (Sept. 29, 2010).

¹⁰ See *id.*

¹¹ Application developer and industry analyst Asymco has noted that while the Apple iTunes Music Store took 5 years to reach 6 billion downloads, the App Store required only 2.2 years to reach that same milestone. See Athima Chansanchai, “Apps Will Soon Overtake Songs on iTunes” MSNBC Technolog (Sept. 10, 2010).

¹² See Joan Marsh, “Wireless is Different” and “A Few More Thoughts on Wireless,” AT&T Public Policy Blog (Aug. 13 & 17, 2010).

¹³ *Id.*

¹⁴ FCC NBP at 76, 77.

utmost flexibility in implementing network management and bandwidth conservation tools.

Wireless broadband network management is an extraordinarily complex undertaking that requires increasing levels of flexibility.

Each mobile broadband user's connection is affected by RF noise, multipath, and signal blockage conditions, and these impairments vary by time and location, and occur randomly. These harsh realities of the RF environment introduce added complexity and variability into the wireless broadband ecosystem and impose great challenges upon service providers to provide the best service to the greatest number of users. To support this growth in broadband data usage, devices, applications and services, mobile operators need to be accorded the utmost flexibility to manage their networks, free of unnecessary – and potentially counterproductive – regulation.

In contrast to the operators, application developers do not have a strong incentive to conserve bandwidth. They typically write apps without knowing how much bandwidth will be available on a mobile network at a particular time or location. Consumers also do not have the information available to conserve bandwidth. Usage-based pricing plans, once fully implemented, will require operators to provide consumers with detailed bandwidth usage information. Nonetheless, top-tier smartphone users will want and willingly pay for “all-you-can-eat” service. As noted herein, operators may well implement pay-by-the-service, pay-by-the-download, and pay-by-the-app services for consumers who prefer certain mobile broadband applications or services rather than pure connectivity. Mobile broadband operators need the flexibility to implement a panoply of technical and economic measures to support the increasing data demands of a growing population of users via bandwidth conservation tools.

B. The Commission Should Not Impose Net Neutrality Regulation On Mobile Broadband In The Absence Of Any Documented Problem

Qualcomm agrees with Commissioner Clyburn’s recommendation that the FCC needs to collect “data that demonstrate the quantitative benefits of a citizenry that is well connected through high-speed broadband.”¹⁵ Indeed, hard data are critically important – not just data that quantify the benefits of broadband, but data or evidence that a problem exists necessitating specific FCC intervention.

In this same vein, when deciding to impose such far-reaching regulations as those at issue in this proceeding, the FCC needs to understand fully the impact that imposition of network neutrality rules would have on the mobile broadband ecosystem before imposing any such rules. The FCC should discern the “totality” of the benefits and the resulting harms.¹⁶ It should not impose regulation based on anecdotal information, unfounded concerns, and what ifs.¹⁷

¹⁵ Prepared Remarks of FCC Commissioner Mignon L. Clyburn, “Promoting Broadband Policies to Improve our Nation,” Telecommunications Policy Research Conference, George Mason University Law School at 3 (Oct. 1, 2010) (“I have heard numerous anecdotes of communities that have been transformed by the availability of high-speed broadband. ... While ... qualitative stories are quite compelling, we should strive to obtain data that demonstrate the quantitative benefits of a citizenry that is well connected through high-speed broadband. *When we have a more informed understanding of the overall economic benefits broadband offers, our nation’s policymakers can better assess the inputs required to achieve those benefits.* If we know that with an investment of X, we can attain a very significant benefit of Y—then X may not appear as considerable, and the right policy choice is more evident and acceptable.”) (emphasis added).

¹⁶ *Id.*

¹⁷ See FCC Notice at 2-3 (“Open Internet protections *may* be weakened if Broadband providers *may* constrict or fail to continue expanding the network capacity ... [also they] may have the ability and incentive to engage in anti-competitive conduct”) (emphasis added). As Qualcomm and others have noted, *see* n.2, *supra*, to the extent the rationale for new regulation is based on the possibility of anti-competitive practices, existing antitrust and tort laws deter and punish such misconduct.

C. Harmful FCC Regulation Would Devalue Mobile Broadband Spectrum

Imposition of the regulations at issue here may also deprive the federal government of the full value of the 500 MHz of spectrum that the National Broadband Plan recommends auctioning for mobile broadband use. In Auction 73, *i.e.*, the 700 MHz auction, the paired spectrum block with an open access requirement sold for far less per MHz Pop than the paired blocks that did not have such a requirement. The NBP notes that given the goal of freeing 500 MHz of spectrum to be auctioned for wireless broadband, “the overall plan will be revenue neutral.”¹⁸ If, however, the FCC burdens new spectrum allocations with net neutrality rules, the spectrum may be valued for much less than it would otherwise be worth. It therefore would render false the NBP’s claim that the potential costs of the Plan would be offset by the proceeds from spectrum auctions.¹⁹

II. The Commission’s Current Regulatory Approach Has Allowed The Mobile Broadband Ecosystem To Serve As An Incubator For Innovation

The Commission should not require mobile broadband Internet access service providers to offer services on a nondiscriminatory basis. Such FCC action would limit unnecessarily opportunities for new business models, which are essential to continued investment and innovation. Indeed, if the true focus of this proceeding is to ensure that Internet access services continue to provide a platform for investment, innovation, and civic engagement, prescribing affirmative behavioral rules upon mobile broadband connectivity, or for that matter, specialized services, will not advance this objective. It would undermine unnecessarily mobile broadband service providers’ investment incentives.

The mobile ecosystem occupies a unique area within the broadband Internet space, for it relies upon a finite resource – wireless spectrum – that must be shared among the entire

¹⁸ NBP at xv.

¹⁹ *Id.*

population of users.²⁰ This key limitation requires that wireless network operators retain the greatest flexibility to manage access by increasing numbers of mobile users through an unconstrained array of bandwidth conservation tools.

Indeed, as wireless connectivity is embedded into more and more devices, even greater flexibility in network management will be needed to manage the still nascent, yet increasingly complex, mobile broadband ecosystem.²¹ The current regulatory regime for mobile broadband has facilitated a wide range of business models and uses for mobile broadband-enabled devices. In order to offer increased choices to consumers, the Commission must continue to allow the scarce spectrum resource to be conserved via any reasonable economic and technical means.

A. Any And All Mobile Broadband Pricing Plans And Business Models Should Be Allowed, And, In Fact, Encouraged

The FCC Notice points out that AT&T and Cricket Communications recently introduced usage-based data pricing and goes on to speculate that this pricing model “may reduce mobile broadband providers’ incentives to employ more restrictive network management practices that could run afoul of open Internet principles.”²² This makes Qualcomm’s point exactly. The FCC should not be favoring one pricing mechanism over another based on the possibility that one is less likely to “run afoul of open Internet principles.” Nor should the FCC prescribe more restrictive network management practices for “all-you-can-eat” data plans. Providers should be allowed to offer any number of consumer-focused data plans and pricing models without any threat of a sliding scale of government regulation.

²⁰ See n.2, *supra*.

²¹ FCC NBP at 9.

²² See FCC Notice at 4.

For example, mobile broadband network operators should be allowed to charge heavy data users less per unit of data than light users. They also should be able to charge more for real-time high-definition video uploads and other bandwidth intensive applications than for uses that do not require real-time communications or use less bandwidth. In addition, operators should be able to offer an “all-you-can-eat” data plan to certain users and service those other users that wish to buy bandwidth for a single device or collection of devices via a pay-per-use plan. These pricing models are consumer-friendly and encourage bandwidth conservation, which is becoming increasingly essential to support the rapidly growing number of mobile broadband users and their skyrocketing data demands.

Sponsored connectivity approaches, which support the sale of a variety of wireless-enabled devices, such as cellular-embedded tablets, e-readers, smartbooks, navigation devices, and gaming devices without a data plan, present another useful means of managing spectrum access. Here, service providers or third party content providers sell content or services on a pay-as-you-go basis to consumers owning the devices. Consumers gain access to particular content or services without having to sign up for any data plan with a wireless provider. In this way, wireless operators can offer, through third parties and direct to consumer (“D2C”) channels, broadband connectivity to wireless devices, like photo frames, e-readers, personal navigation devices, and gaming devices.

Operators also must be permitted to sell applications to consumers who do not want pure connectivity at all. Consumers may want access to a particular social network or certain content to be delivered via mobile broadband, but have no interest in purchasing pure connectivity. Likewise, there will be whole categories of devices (gaming devices, home energy control devices, health care devices, and more) that depend on mobile broadband for connectivity, but do

not offer pure connectivity. These devices can be sold through third parties and D2C channels and be supported via either a limited data plan or sponsored connectivity approach.

Each of these consumer-focused business models encourages bandwidth conservation by providing consumers only the wireless content and services they desire. And, as explained below, providing consumers with a large menu of mobile data access options will help to introduce individuals who may otherwise avoid broadband to the wonders of online connectivity.

B. Fostering A Wide Variety Of Mobile Broadband Data Plans And Business Models Will Further Core NBP Goals and National Purposes

Maintaining today's mobile broadband regulatory regime will foster the creation of new business models that spur further adoption of broadband connectivity. Building on the examples in the previous section, mobile users unwilling to sign up for pure connectivity on a pay-per-use or "all-you-can-eat" basis may decide to purchase a less costly mobile device with focused functionality, such as a home energy controller or a medical emergency communicator.

These new types of wireless devices, services, and applications will introduce more Americans to the benefits of broadband connectivity and may well encourage them to use such mobile connectivity more broadly in furtherance of the goals set forth in the National Broadband Plan. Indeed, the mobile broadband ecosystem not only will play a key role in universal broadband adoption but it also will support in a significant manner the Plan's other important national purposes: (i) the timely rollout of e-health and smart energy products and services; (ii) modernization of the educational broadband infrastructure; (iii) enhanced civic engagement; (iv) enhanced public safety, and (v) local and regional economic development. Accordingly, by fostering a wide variety of mobile broadband data options, the FCC will help achieve the core goals of the Plan.

CONCLUSION

Imposing additional regulations on the mobile broadband sector where there is no demonstrated need would impact the ability of the U.S. to “lead the world in mobile innovation” with the “fastest and most extensive wireless networks of any nation.”²³ To achieve this laudable National Broadband Plan goal, the mobile broadband industry needs to maintain its sharp focus on creating “a more productive, creative, efficient America in which affordable broadband is available everywhere and everyone has the means and skills to use valuable broadband applications.”²⁴ Thus, the FCC should maintain today’s highly-successful regulatory regime for it is stimulating intense competition and robust innovation, and will keep the mobile broadband Internet open to all.²⁵

Respectfully submitted,

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²³ FCC NBP at xiv.

²⁴ FCC NBP at 9.

²⁵ See FCC NBP at 5 (to meet the stated goals of the National Broadband Plan “the role of government is and should remain limited”).