

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

In the Matter of

Protecting and Promoting the Open Internet

GN Docket No. 14-28

COMMENTS OF QUALCOMM INCORPORATED

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QUALCOMM Incorporated (“Qualcomm”) hereby comments on the FCC’s *Notice of Proposed Rulemaking* in the Open Internet proceeding¹ to reiterate that the Commission should maintain its light touch regulatory regime governing the dynamic and burgeoning mobile broadband ecosystem because it is working well — driving job creation, innovation, and growth in all sectors of our economy and creating new business models that continue to bring advanced services, applications, and capabilities to consumers. The FCC should not, through Title II or otherwise, attempt to impose heavy-handed regulations on mobile broadband network management or on the constantly changing, highly beneficial development of new mobile broadband business models.

INTRODUCTION AND SUMMARY

The FCC’s existing regulatory approach toward mobile broadband has afforded wireless operators the flexibility they need to manage their networks on inherently scarce bandwidth in the face of constantly increasing consumer data demands, and this approach has led to the creation of exciting new business models, applications and services for consumers. Spectrum,

¹ See Protecting and Promoting the Open Internet, GN Docket No. 14-28, *Notice of Proposed Rulemaking*, FCC 14-61 (May 15, 2014) (“*NPRM*”).

the mother's milk of mobile broadband networks, is a finite resource, and, therefore, the bandwidth that mobile broadband networks must allocate among users is inherently limited. The FCC's 2010 rules recognized this characteristic of mobile broadband networks and wisely regulated mobile with a light touch. There is no factual or legal basis for the FCC now to take any other approach, and perhaps for this reason, the *NPRM* does not propose to do so. Certainly, there is no basis for the FCC to impose Title II public utility-type regulation on mobile, given that mobile is such a competitive, vibrant sector of the economy.

It is critically important that the Commission maintain mobile broadband operators' current network management flexibility and freedom to support the exploding data demands of users on scarce spectrum, particularly amidst the constant, ongoing reinvention of the wireless ecosystem, and that the FCC not attempt to favor or disfavor particular business models. Over the coming decades, network management flexibility will become increasingly important as mobile use continues to grow by leaps and bounds while the available spectrum remains limited. There is no question that the flexibility to develop new business models in the mobile broadband space has been highly beneficial for consumers.

The Commission should maintain the existing regulatory framework for mobile broadband services for three main reasons: (1) it offers mobile providers the flexibility required to successfully support the increasing data demands of a growing number of users and uses in a limited amount of spectrum by promoting bandwidth conservation; (2) it offers the best means of providing robust mobile broadband connectivity across our nation from coast-to-coast, and (3) all objective factors demonstrate that the existing framework has been remarkably successful.

The FCC should not discourage bandwidth conservation by closely regulating mobile network management.² New and innovative mobile broadband business models and pricing plans based on bandwidth usage and technology tools that appropriately manage undue bandwidth use are neutral and sensible forms of bandwidth conservation that need to be permitted. The limited amount of spectrum that mobile broadband providers use to provide service to so many millions of users makes it essential that providers retain the utmost flexibility to manage access to that resource through an unconstrained array of bandwidth conservation tools that involve combinations of technological, pricing, and system design tools to meet user demands that are increasing exponentially and changing from moment-to-moment and location-to-location. Absent such reasonable network management by mobile providers, many application developers and consumers lack the incentive to conserve bandwidth that raises the risk of a tragedy of the commons.

As the FCC itself has found numerous times, mobile service providers compete vigorously on the basis of pricing plans and various non-price factors, such as network upgrades, product information and perception, which include advertising and marketing, and downstream product differentiation, which includes new devices, applications, and service offerings.³ Thus, it is not at all surprising that the *NPRM* provides no evidence of wireless market failure

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

³ See, e.g., Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993; Annual Report and Analysis of Competitive Market Conditions With Respect to Mobile Wireless, Including Commercial Mobile Services, WT Docket No. 11-186, *Sixteenth Report*, FCC 13-34 at ¶ 15 n.78 (rel. Mar. 21, 2013) (noting that the Eighth through Thirteenth Mobile Competition Reports specifically found there to be effective competition in the mobile market).

warranting heavy-handed regulatory action such as Title II reclassification.⁴ Such an extreme action would be completely unwarranted and ill-advised.

Imposing new regulations where there is no demonstrated problem could harm the ability of U.S. mobile network operators to continue their massive investments, which have provided the U.S. with fast and extensive wireless networks that continue to deliver so much many benefits to American consumers.⁵ Indeed, imposing Title II regulation upon mobile broadband will introduce uncertainty into the market, limit innovation, and retard investment. The wireless market is thriving under the current regulatory regime and the wide collection of connectivity options that the current regime enables will continue to be essential to meeting the broadband needs of a diverse population of current and future users.

DISCUSSION

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

A. Regulation Under Title II Could Well Stifle Future Wireless Innovation

The FCC should closely consider the successful results of its existing mobile broadband regulatory policy before it adopts new regulations, particularly Title II regulation, for there can be no question that the mobile broadband ecosystem is vibrant and highly competitive. By any measure, innovation is thriving in mobile computing devices. Whole new device classes, many of which have integrated Qualcomm's technologies and products, such as mobile broadband-enabled smartphones, tablets, and e-readers, are thriving in today's wireless ecosystem. At the same time, innovative business models and pricing plans for mobile broadband-based applications and services are made available to consumers on a daily basis. Because the mobile

⁴ See generally *NPRM*.

⁵ See, e.g., FCC National Broadband Plan (March 2010) at xiv.

broadband ecosystem is an increasingly competitive marketplace, there is no need to impose additional regulatory burdens on this key sector of our economy.

FCC imposition of Title II regulations upon mobile broadband connectivity would stifle future growth of this important and enabling sector of our economy. The White House Office of Science and Technology Policy reported that, under the existing regulatory framework, “[a]nnual investment in U.S. wireless networks grew more than 40 percent between 2009 and 2012, from \$21 billion to \$30 billion, [which] exceeds investment by the major oil and gas or auto companies.”⁶ “Whole new product markets have blossomed [in the mobile space] in recent years, and the market for applications has both diversified and exploded.”⁷ By 2016, approximately half of the U.S. population (*i.e.*, 160 million) is expected to own a tablet, which reflects remarkable growth in this product market given that less than 10 million tablets were sold in 2010.⁸ And earlier this year, for the first time ever, more Americans accessed the Internet using applications on smartphones and tablets than via PCs.⁹

The growth of highly-useful, consumer-centric mobile applications in the U.S. is driving smartphone and tablet sales and mobile data usage. Given that consumers are relying upon these handheld devices more and more due to the growing number of highly useful applications and technologies they support, it is not at all surprising that U.S. users of 4G LTE services already consume considerably more data than users of 3G technologies.¹⁰ In fact, wireless data usage has

⁶ *NPRM* at ¶ 30.

⁷ *Id.* at ¶ 31.

⁸ *Id.*

⁹ See James O'Toole, “Mobile apps overtake PC Internet usage in U.S.” CNN MONEY (Feb. 28, 2014) available at <http://money.cnn.com/2014/02/28/technology/mobile/mobile-apps-internet/index.html>.

¹⁰ See Sue Marek, “Study: U.S. LTE subscribers use about 1.6 GB of data per month,” FIERCEWIRELESS (June 23, 2014) available at <http://www.fiercewireless.com/story/study-us-lte->

been doubling annually over the past several years, and if this trend continues for the next ten years, the level of usage in a decade will be more than 1000 times today's level. Given this extraordinary growth trend, Qualcomm has set a corporate goal to meet what we call the "1000x Challenge" — to support this growth by expanding the wireless capacity of today's mobile broadband networks by 1000 times. To support this growth in devices, applications, services, and data usage, mobile operators need to be accorded the utmost flexibility to manage their networks, free of unnecessary regulation, such as the imposition of Title II constraints.

To handle this intense growth, mobile broadband operators are constantly adjusting traffic management and routing algorithms in addition to deploying new and upgraded infrastructure. As one of the technology developers advancing "the science of spectrum access" to increase the capacity of mobile broadband networks,¹¹ Qualcomm knows firsthand the importance of giving wireless network operators the utmost flexibility in implementing network management tools for their mobile networks have to support an entire population of users in a limited amount of spectrum.

Wireless broadband network management is an extraordinarily complex undertaking that requires increasing levels of flexibility. Each user's mobile broadband connection is affected by RF noise, multipath, and signal blockage conditions, and these impairments vary by time and location and occur randomly. The harsh realities of the RF environment coupled with the limited bandwidth within which these networks must operate introduce added complexity and variability into the wireless broadband ecosystem and impose increasing challenges upon service providers to provide the best service to the greatest number of users. Truth be told, the mobile Internet's

[subscribers-use-about-16-gb-data-month/2014-06-23](#) ("U.S. subscribers ... are among the heaviest users of mobile data [and] LTE subscribers use dramatically more data than 3G subscribers.").

¹¹ FCC National Broadband Plan at 76, 77.

future openness directly depends upon the development of ever-improving traffic management techniques and infrastructure improvements and extensions.

B. The FCC Must Appreciate Fully The Overall Economic and Societal Impact That Title II Regulation Would Have On Mobile Broadband

Before deciding whether to impose such far-reaching regulations as those at issue in this proceeding, the Commission should consider the full impact that imposition of additional Open Internet regulations would have on the mobile broadband ecosystem. The Commission should not impose regulation based on anecdotal information, unfounded concerns, and what ifs.

Imposing a common carrier regime on mobile broadband service now, years after the FCC set out a clear course via light-touch regulation, would thwart the “virtuous cycle” of investment, competition, and innovation that the agency has celebrated and throw the industry and agency into disarray and certain litigation.

For example, over the coming years, billions of objects will become more useful and versatile by exchanging information with humans and with other things. The Internet of Things is creating whole new classes of devices that connect to mobile broadband and thus introducing fundamentally different needs on wireless networks to develop and implement new traffic routing algorithms, and obviously continuing to drive demand for more mobile spectrum. This is yet another reason for the FCC to avoid imposing additional regulations now, which will be inflexible as these new communications paradigms will need to develop.

II. The Commission’s Existing Light Touch Regulatory Regime Has Helped To Make The Mobile Broadband Ecosystem A Successful Incubator Of Innovation

The Commission should not reclassify mobile Internet access service as a Title II service. Such FCC action would limit unnecessarily opportunities for new business models, which are essential to continued investment and innovation in the mobile broadband ecosystem. Indeed, if the true goal of this long proceeding is to ensure that Internet access services continue to provide

a platform for investment, innovation and civic engagement, imposing an ancient regulatory regime such as Title II common carrier regulation upon mobile broadband connectivity will not advance this objective. It would unquestionably undermine mobile broadband service providers' incentive to invest in their networks and new innovative services.

As Qualcomm has explained, 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 population of users.¹² This simple fact requires mobile network operators to retain the utmost flexibility to manage access by users through an unconstrained array of bandwidth conservation tools. Operators must be able to implement any combination of technological, pricing, and system design tools to conserve bandwidth and successfully meet exponentially increasing user demands.

The current regulatory regime for mobile broadband has facilitated a wide range of business models and uses for mobile broadband-enabled devices. 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 and dense, mobile broadband ecosystem. In order to offer increased choices to consumers, the FCC 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 Data Connectivity Models Should Be Permitted And, Indeed, Encouraged

Mobile broadband network providers should be allowed to offer any number of consumer-focused data plans and pricing models without any threat of government regulation. For example, mobile operators should be allowed to continue charging heavy data users less per unit of data than light users. They also should be able to charge more for real-time high-

¹² See n.2, *supra*.

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 “all-you-can-eat” data plans to users who want to pay for such plans and offer more limited plans to other users who wish to buy bandwidth on-demand for a single device or collection of devices. These pricing models are consumer-friendly and encourage bandwidth conservation, which is essential to supporting the rapidly growing number of users and their skyrocketing mobile data demands. There is no reason for the FCC to deny choices to consumers.

Sponsored connectivity approaches, which support the sale of a variety of wireless-enabled devices, such as cellular-embedded tablets, e-readers, smartphones, 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 channels, broadband connectivity to wireless devices, like photo frames, e-readers, personal navigation devices, and gaming devices.

Operators also must be permitted to offer broadband connectivity to wireless devices that support a defined collection of applications, such as social networking, gaming, books and magazines, home energy control, or a patient medical application. These devices can be supported via a limited data plan, a sponsored connectivity approach, or some other type of plan.

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 broad array of options of accessing mobile data will help to introduce individuals who may otherwise avoid broadband to the wonders of online connectivity.

B. The Existing Regulatory Regime Has Fostered A Variety Of Mobile Data Plans and Business Models That Further Universal Broadband Connectivity

Maintaining the light-touch regulatory regime in the mobile broadband space will continue to facilitate the development of business models to spur adoption of broadband connectivity. For example, users unwilling to sign up for broadband Internet access may decide to purchase a device that performs a limited function, such as a home energy control device, a fitness device, or a mobile personal emergency response dongle.

Encouraging the deployment of new types of mobile devices, services, and applications will help to ensure that more Americans understand the benefits of broadband connectivity and will be encouraged to use such services in furtherance of the goals set out in the National Broadband Plan more than four years ago. In this way, mobile broadband operators will continue to play a key role in furthering the National Broadband Plan’s important “national purposes,” namely, to: (i) enable the successful and timely rollout of e-health and smart energy products and services; (ii) modernize the educational broadband infrastructure; (iii) enhance civic engagement; (iv) ensure the continued safety of the American people, and (v) support continued local and regional economic development.

The current light-touch regulatory regime for mobile broadband should not be changed because it has facilitated a wide range of business models and uses for mobile broadband-enabled devices that will achieve these important national purposes.

C. Mobile Broadband Should Not Be Subjected to Additional Unnecessary And Confusing Transparency Requirements

Mobile broadband providers fully support transparency and are committed to informing consumers, edge providers, and others regarding relevant terms, conditions, and practices that govern their network operations. Yet the constantly changing mobile data demands warrant network management techniques that change from moment-to-moment and location-to location

and preclude the disclosure of information at the level of granularity that the *NPRM* proposes to require.¹³ As explained herein, mobile network operators require high levels of flexibility in managing their networks to support in real-time constantly changing data demands.

The Commission should not complicate its existing transparency rule because there is no evidence that the existing rule is insufficient or has caused any customer harm.¹⁴ Moreover, the FCC’s proposed rule that requires mobile broadband providers to disclose “the source, timing, speed, packet loss, and duration of congestion” on their networks would potentially require the disclosure of reams of information without any corresponding benefit to consumers. In fact, disclosures that reflect the multitude and variety of tools providers use would either be so lengthy and vague as to be unhelpful or so specific they would offer information that bad actors could use to harm mobile broadband networks.

* * *

The FCC must reflect upon the remarkable success of its existing wireless regulatory policy before it adopts new regulations. Innovation is thriving in mobile connectivity and in portable computing devices. Whole new classes of devices, many with integrated Qualcomm wireless technologies, are playing key roles within the wireless ecosystem, delivering exciting new applications and services to consumers every day. Given this intensely competitive marketplace, there is no need to impose new regulatory burdens on this sector of the economy.

¹³ See *NPRM*, App. A, Proposed Rule Section 8.3 - Transparency.

¹⁴ See *NPRM* at ¶¶ 84-85.

The *NPRM* contains no evidence to justify imposing Title II regulations upon mobile broadband providers.¹⁵ To the contrary, the robust and rapidly evolving market for wireless devices, applications, and services demonstrates that there is no need to more tightly regulate mobile broadband. Indeed, in the ferociously competitive mobile broadband ecosystem, there is no sound reason for providers to act in commercially unreasonable ways. To the extent the rationale for new regulation is based on an underlying fear of anti-competitive or abusive conduct, existing antitrust and tort laws deter and punish such misconduct. The FCC should not adopt new rules based on fear or alleged harms.

Accordingly, there is no need or basis for the FCC to reclassify mobile broadband service under Title II of the Communications Act of 1934, as amended. The existing regulatory framework for mobile broadband has been quite successful as it has helped create a vibrant wireless ecosystem that is driving economic growth and increasing levels of investment.

¹⁵ There is no evidence that mobile providers have behaved in commercially unreasonable ways. For example, the non-discrimination rule that the FCC imposed in 2010 did not apply to mobile broadband, *see NPRM* at ¶ 140, and even so, there has been no evidence of abuse.

CONCLUSION

For the reasons set forth above, the FCC should maintain the highly-successful, light-touch regulatory regime for mobile broadband that has stimulated robust innovation and intense competition. That will allow the wireless industry to completely focus its efforts on continuing to build a high-performance America — a more productive, creative, and efficient economic engine in which affordable broadband is available everywhere and everyone has the means and skills to take full advantage of, and, in fact, improve upon, valuable broadband applications and technology tools.

Respectfully submitted,

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