

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

In the Matter of)
)
Inquiry Concerning the Deployment of Advanced) GN Docket No. 16-245
Telecommunications Capability to All Americans)
in a Reasonable and Timely Fashion, and Possible)
Steps to Accelerate Such Deployment Pursuant to)
Section 706 of the Telecommunications Act of)
1996, as Amended by the Broadband Data)
Improvement Act)

To: The Commission

REPLY COMMENTS OF CTIA

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I. INTRODUCTION AND SUMMARY.

CTIA respectfully submits this reply in response to the initial comments on the Commission’s Twelfth Broadband Progress Notice of Inquiry¹ (NOI) in the above-captioned proceeding. As discussed in more detail below, the record demonstrates that mobile broadband deployment in the U.S. is the envy of the world, and by any reasonable metric the Commission must find that mobile broadband is being deployed on a reasonable and timely basis. The record also shows that, contrary to some commenters’ assertions, innovative mobile broadband pricing plans, including free data plans and data allowances, promote consumers’ ability to obtain the services they seek at affordable prices, and thus promote the goals of Section 706.

¹ *Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996, as Amended by the Broadband Data Improvement Act*, Twelfth Broadband Progress Notice of Inquiry, GN Docket No. 16-245, FCC 16-100 (rel. Aug. 4, 2016) (NOI).

II. THE RECORD DEMONSTRATES THAT MOBILE BROADBAND DEPLOYMENT IS REASONABLE AND TIMELY.

A. By Any Reasonable Measure, Wireless Broadband Deployment Is Widespread and Rapidly Expanding.

The initial comments in this proceeding make clear that mobile broadband deployment in the U.S. has been much more than reasonable and timely. The percentage of the population that has access to 4G LTE mobile broadband service has skyrocketed from only 67.5 percent in 2013 to 99.6 percent in July 2015 – less than two years later.² Thus, as USTelecom notes, virtually all Americans have access to at least one mobile broadband service provider.³ Indeed, as Mobile Future points out, because those deployment statistics are a year out of date, more than 99.6 percent of all Americans likely have access to mobile broadband service today.⁴

The record also shows that consumers are enthusiastically embracing and benefitting from mobile broadband. The number of wireless connections in the U.S. well exceeds the total population.⁵ And mobile data traffic grew 137 percent from 2014 to 2015.⁶

Commenters also point out that the U.S. continues to lead international comparisons of mobile broadband deployment. A significantly higher percentage of U.S. consumers subscribe

² CTIA Comments at 4; Mobile Future Comments at 2-3. Unless otherwise noted, references herein to parties' "Comments" refer to initial comments in response to the NOI filed on or about Sept. 7, 2016.

³ USTelecom Comments at 3.

⁴ Mobile Future Comments at 3.

⁵ CTIA Comments at 10.

⁶ *Id.* at 11.

to high-speed 4G LTE service than anywhere in the world,⁷ and U.S. mobile carriers lead the world in network investment per customer.⁸

The widespread and rapid deployment of mobile broadband in the U.S. has been made possible by prodigious investments by wireless carriers. Wireless providers have invested more than half a trillion dollars (in 2016 dollars) in their networks, with \$32 billion in 2015 alone⁹ and \$152 billion since 2010, when LTE started to be deployed.¹⁰

As CTIA noted in its comments, “[c]onsidering that providers only gained the technological capability to provide mobile wireless broadband at speeds approaching 10/1 with the advent of LTE a few years ago, the fact that most consumers have access to mobile wireless broadband at 10/1 speeds is remarkable.”¹¹ This progress constitutes reasonable and timely deployment of mobile broadband service by any reasonable criteria.

While the rapid deployment of mobile broadband in the U.S. has included aggressive expansion in rural areas,¹² the record also reflects that some rural areas will remain economically challenging environments to deploy mobile broadband without sufficient support.¹³ For this reason, CTIA continues to support a robust and permanent Mobility Fund that should be

⁷ Mobile Future Comments at 4; CTIA Comments at 20.

⁸ Mobile Future Comments at 3-4.

⁹ CTIA Comments at 8.

¹⁰ Mobile Future Comments at 3.

¹¹ CTIA Comments at 24.

¹² *Id.* at 5-7.

¹³ *See, e.g.*, U.S. Cellular Comments at 4-5.

designed to maintain the reasonable and timely deployment of mobile broadband services in rural areas.¹⁴

B. The Record Does Not Support the Use of Other Benchmarks in Assessing the Reasonableness and Timeliness of Mobile Broadband Deployment.

The record makes clear that specific benchmarks such as latency and service consistency are difficult to establish and measure in the mobile context. As the FCC noted in the NOI, “mobile transmissions are subject to environmental factors that fixed line transmissions do not encounter,” and experience “degrading effects from factors such as congestion, interference, and challenges presented by the physical velocity of a mobile antenna.”¹⁵ As the *2016 Broadband Progress Report* explains, assessment of mobile broadband deployment should take into account “the inherent differences in key capabilities provided by” fixed and mobile broadband services.¹⁶ Indeed, as OTI points out, “mobile broadband internet differs from wireline service in technical and practical ways.” Specifically, OTI notes that the delivery of broadband on spectrum-based networks:

... greatly increases the number of variables that affect performance. Wireless connections are susceptible to interference from other objects that emit radio waves . . . , and connection quality can also vary with distance from the tower, signal strength, and with the presence of physical barriers like walls, buildings, or people. The number of individuals in a given area who are simultaneously attempting to use a mobile network can also greatly impact performance . . . Other factors that can affect mobile internet include

¹⁴ See CTIA Comments at 35-36.

¹⁵ NOI ¶¶ 40, 43.

¹⁶ *Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996, as Amended by the Broadband Data Improvement Act*, 2016 Broadband Progress Report, 31 FCC Rcd 699, 701 ¶ 2 (2016) (“*2016 Broadband Progress Report*”).

device type, operating system and firmware, number of applications running on the device, and whether or not the device is in motion.¹⁷

The initial comments similarly demonstrate that other benchmarks are difficult to assess and unnecessary to the Commission’s analysis under Section 706.¹⁸ As NCTA correctly observes, the “Section 706 inquiry is not the appropriate context for the Commission to examine factors that go beyond deployment into other areas.”¹⁹

The record also demonstrates support for CTIA’s position that privacy and data security issues are irrelevant to the Section 706 analysis.²⁰ To the extent that the Commission considers them here, commenters observe that a more prescriptive approach to data privacy would actually hinder, not support, mobile broadband deployment.²¹

III. THE WIRELESS INDUSTRY’S ABILITY TO OFFER INNOVATIVE MOBILE BROADBAND SERVICE PLANS IN RESPONSE TO COMPETITION AND CONSUMER USAGE ADVANCES THE GOALS OF SECTION 706.

In its initial comments, CTIA observed that innovative mobile broadband service plans, including free data plans and plans including data allowances, are immensely popular with consumers,²² and pointed to a paper by former FCC Chief Economist William Rogerson

¹⁷ OTI, *Getting Up to Speed: Best Practices for Measuring Broadband Performance*, at 18, attached to OTI Comments (internal citations omitted).

¹⁸ NCTA Comments at 5-7; USTelecom Comments at 8-9.

¹⁹ NCTA Comments at 5-6 (referencing “broadband subscription, performance, consistency, and usage allowances”); *see also infra* Section III.

²⁰ *See, e.g.*, CCA Comments at 25-28; Mobile Future Comments at 2; USTelecom Comments at 9.

²¹ *See, e.g.*, CCA Comments at 26-27.

²² CTIA Comments at 12-13.

explaining how these plans benefit consumers and the market.²³ By allowing more consumers to access more of the services they wish to reach on mobile broadband, these innovative offerings advance the goals of Section 706.

A. Competition Has Resulted in Offerings that Promote Consumer Adoption and Usage of Mobile Broadband Services.

Any analysis of the landscape of mobile data plans must initially recognize that a variety of service options have emerged in a hyper-competitive environment where carriers are vying aggressively for customers' business. There are four national mobile broadband carriers, multiple regional carriers, and MVNOs competing head-to-head over pricing, rate structure, quality, and services.²⁴ As of the end of 2014, 91.5 percent of the U.S. population lived in census blocks that were served by at least three facilities-based mobile broadband providers, and 82.5 percent lived in blocks served by at least four such providers.²⁵ Even in areas served by fewer providers, all consumers benefit from the competition because rate levels are set in the national market.²⁶ And in this environment, consumers enjoy a multiplicity of service options, choosing from hundreds of prepaid, post-paid, and pay-as-you-go plans.

As Rogerson notes, the past three years in particular have been an intensely rivalrous era, characterized by innovations in contract structures and pricing plans, including new mobile data options and price cuts.²⁷ The Commission has recognized that the mobile broadband market is

²³ *Id.* at n.47, citing Prof. William P. Rogerson, *The Economics of Data Caps and Free Data Services in Mobile Broadband* (2016), <http://www.ctia.org/docs/default-source/default-document-library/081716-rogerson-free-data-white-paper.pdf> (“Rogerson”).

²⁴ Rogerson at 2-3, 10-14; CTIA Comments at 4-5.

²⁵ CTIA Comments at 4-5.

²⁶ Rogerson at 10.

²⁷ *Id.* at 11.

competitive by refraining from regulating CMRS retail rates.²⁸ The intensifying competition in this market has led to the elimination of long-term contracts for new customers, reducing transaction costs and increasing efficiency.²⁹

As would be expected in such a competitive market, carriers are innovating around the type of plans they offer to consumers. For example, carriers are offering free data plans to deliver new ways for consumers to access the content they want and for sponsors to reach customers effectively and efficiently.³⁰ Carriers also offer data plans with allowances at a variety of levels to best fit customers' needs. This frees customers who are not heavy mobile users from having to subsidize the costs of a user who wants substantially more data per month. Moreover, consumers who prefer unlimited data usage continue to have such service plans available. For example, T-Mobile and Sprint offer both unlimited and data allowance plans, and AT&T offers unlimited data plans to subscribers that purchase AT&T mobile service bundled with DirecTV service.³¹

By maximizing the range of choices, the combination of different types of plans and offerings promotes mobile broadband deployment and usage, furthering the goals of Section 706. Data allowances and free data plans enable carriers to give customers incentives to use existing capacity efficiently, thereby allowing carriers to manage scarce network resources and manage congestion. They also provide content providers an incentive to consider the impact on the

²⁸ *Id.* at 4.

²⁹ *Id.* at 11-13.

³⁰ *Id.* at 5-9.

³¹ *Id.* at 6-7; CTIA Comments at 31.

network of data-intensive services.³² Data allowances and free data plans also enable carriers to expand the market – especially the lower-priced service segment – by offering consumers a range of plans at different prices.³³ The competitive nature of the mobile broadband market causes the resulting efficiencies to flow back to all consumers in the form of lower overall rates,³⁴ thereby maximizing consumer welfare.³⁵

Thus, the introduction of data allowances and free data plans demonstrates the consumer benefits of intensifying competition on pricing terms in the mobile broadband market. American consumers are enthusiastically embracing free data offerings, as CTIA noted in its comments, with 84 percent of U.S. wireless customers surveyed saying they would try a new online service if it was a part of a free data program.³⁶ Given how data allowances “may benefit consumers by offering them more choices over a greater range of service options”³⁷ and how free data plans “could benefit consumers and competition,”³⁸ it is not surprising that the Commission rejected proposals to condemn these innovations categorically in the *Open Internet Remand Order*.³⁹

³² Rogerson at 4. This is an important point to consider in evaluating the validity of Netflix’s comments in the record, in particular, given that Netflix’s service imposes significant burdens on carriers’ broadband networks.

³³ *Id.* at 4, 23.

³⁴ *Id.* at 24.

³⁵ *Id.* at 16.

³⁶ *Id.* at 12.

³⁷ *Protecting and Promoting the Open Internet*, Report and Order on Remand, Declaratory Ruling and Order, 30 FCC Rcd 5601, 5668 ¶ 153 (2015), *aff’d sub nom. USTA v. FCC*, No. 15-1063 (D.C. Cir. June 14, 2016).

³⁸ *Id.* at 5668 ¶ 152.

³⁹ *Id.* at 5666-68 ¶¶ 151-53.

These new and innovative data plans are, in fact, a response to consumer demand and competition that advance the goals of Section 706.

B. Contrary to Netflix’s and OTI’s Assertions, Free Data and Data Allowances Advance the Goals of Section 706.

1. Free Data and Data Allowance Services Expand Consumer Usage of Mobile Broadband.

Given consumers’ positive reactions to data allowances and free data plans, Netflix’s and OTI’s unsupported assertions that data “caps” unreasonably limit mobile broadband usage and frustrate the goals of Section 706 are plainly erroneous.⁴⁰ These commenters misrepresent the facts. Providers offer innovative and varied service plans, including free data offerings, that enable customers the flexibility and freedom to choose the mobile broadband service options that best fit their needs, and thereby contribute to expanding consumer adoption and usage of mobile broadband services. Specifically, free data plans allow customers to use more of the services that they want to enjoy, while managing the burden that those services place on the network (*e.g.*, by adjusting video quality).⁴¹ If carriers had no ability to use tools like data allowances and free data programs to manage network usage, volume could overwhelm wireless network capacity and thereby reduce service quality for all users.⁴² This could impact all users’ ability to access mobile broadband networks, even though a limited number of high-volume users often generate a disproportionate share of total mobile broadband traffic.⁴³ In short, per OTI and Netflix, consumers who do not subscribe to Netflix would subsidize those who do.

⁴⁰ Netflix Comments at 4-7; OTI Comments at 15-17.

⁴¹ Rogerson at 4, 21.

⁴² *Id.* at 16-18.

⁴³ *Id.* at 18-22.

Because low-income and minority households rely disproportionately on mobile services for their broadband needs, excluding mobile data service options that offer economic flexibility and choices, such as data allowance plans, would also disproportionately harm these consumers.⁴⁴ Such consumers also would be harmed by the disappearance of free data plans that may be offered in conjunction with data allowance plans, given that free data plans make mobile broadband services more affordable for low-income consumers.⁴⁵

2. Regulating Data Allowances and Free Data Services Would Raise Rates for Many Consumers and Constitute Rate Regulation.

By effectively precluding lower-priced mobile broadband service options, regulating data allowances and free data plans would likely harm consumers due to increased data rates,⁴⁶ further undermining the goals of Section 706. Shrinking the mobile broadband market by forcibly raising all rates in this manner would reduce consumer welfare by depriving some consumers of advanced communications services.⁴⁷ Such regulation would be unnecessary, harm consumers, and frustrate the goals of Section 706.

Data allowances not only provide incentives for consumers to use the network more efficiently, but they also provide incentives for content providers to manage their data offerings in a more efficient manner. For example, Netflix and other providers are beginning to introduce systems that allow their subscribers to directly control the resolution at which video

⁴⁴ *Id.* at 18-19 & n.19 (citing study showing that African-American and low-income households rely on wireless broadband for their only broadband connection at much higher rates than the population as a whole), 23.

⁴⁵ *Id.* at 26-27 & n.55 (similar study).

⁴⁶ *Id.* at 18.

⁴⁷ *See id.* at 2-3, 18-19.

programming is transmitted, thereby enabling the customer to stay within the usage allowance.⁴⁸ One recent study showed that the introduction of data allowances greatly reduced the usage of the heaviest users, particularly the top one percent.⁴⁹ If data allowances were prohibited, these market efficiencies would be lost, as consumers would be encouraged to maximize their consumption of finite mobile broadband network resources. Prohibiting data allowances and free data plans thus would reduce providers' abilities to create efficiencies, and the loss of efficiencies would raise consumers' rates.⁵⁰ The combination of data allowances with free data plans also encourages content providers to reduce their customers' costs. Prohibiting data allowances and free data plans would thus reduce providers' abilities to create efficiencies and cost savings for consumers.

In order to prevent the massive congestion that would otherwise result from mandated unlimited usage plans, carriers would have to raise rates for all such plans. As a result, they would be unable to accommodate low-usage customers seeking low-priced plans. Those customers, who are disproportionately minority, younger, and lower-income, would be significantly disadvantaged by the higher prices that carriers would have to charge for the mandated "all-you-can-eat" plans that Netflix and OTI advocate.

Moreover, as Professor Rogerson explained, if regulators restrict mobile broadband providers' ability to offer free data services, they will be engaging in retail rate regulation – a stark turnaround from its longtime successful reliance on competition.⁵¹ As Professor Rogerson

⁴⁸ *Id.* at 21-22.

⁴⁹ *Id.* at 21-22.

⁵⁰ *Id.* at 4, 18-19.

⁵¹ *Id.* at 2.

explains, competitively determined rates always will be more efficient than regulated rates.⁵² If regulators instead listen to those urging a ban of free data services, consumers could face increased costs and reduced choice, and some may ultimately be forced to drop their only broadband connection.⁵³

3. There Is No Evidence that Free Data or Data Allowance Service Plans Have Inhibited the Goals of Section 706.

Netflix and OTI arguments fail to acknowledge the complete lack of evidence that free data or data allowance service plans undermine the goals of Section 706. Netflix seems to acknowledge that the availability of free data plans helps resolve its concerns about usage allowances on mobile networks. In fact, the CEO of Netflix endorsed free data plans and “hope[s] those kinds of programs expand.”⁵⁴ Yet Netflix asserts that it can be confusing for consumers to keep track of their data usage.⁵⁵ First, pursuant to CTIA’s Consumer Code for Wireless Service, wireless providers offer free notifications to help consumers avoid overages in their voice, data, and messaging usage, and data allowances create incentives for content providers to offer data efficiently to the benefit of consumers.⁵⁶ Second, consumers have access to many sources of information regarding service plans,⁵⁷ and the broad-based, enthusiastic

⁵² *Id.*

⁵³ See Kevin Ryan, *How Free Data Services Help Wireless Consumers and Why Policymakers Should Care*, CTIA BLOG (Aug. 17, 2016), <http://www.ctialatest.org/2016/08/17/rogerson-free-data/>.

⁵⁴ Scott Bergmann, *Sometimes the Best Things in Life Really Are Free*, CTIA BLOG (Feb. 26, 2016), <http://www.ctialatest.org/2016/02/26/sometimes-the-best-things-in-life-really-are-free/>.

⁵⁵ Netflix Comments at 6-7.

⁵⁶ CTIA Consumer Code for Wireless Service at Art. 11, <http://www.ctia.org/docs/default-source/default-document-library/ctia-consumer-code-for-wireless-service.pdf?sfvrsn=2>.

⁵⁷ *Cf.* Rogerson at 20 (discussing how consumers have become familiar with “buckets of minutes” and data allowances).

consumer response to free data services belies Netflix's prediction of customer confusion.⁵⁸

Finally, it is important to bear in mind that Netflix and other streaming services impose enormous demands on carrier networks.⁵⁹

Netflix is also incorrect that free data services discriminate in favor of one content provider or providers, making other content relatively more expensive. Netflix ignores the fact that where – as is the case in the offerings in the market now – all content providers are eligible to participate, either in a no-fee plan or a sponsored plan, there is no discrimination. As Professor Rogerson notes, content provider fees help reduce consumer costs and provide content providers an incentive to transmit their content in the most efficient manner possible, further reducing costs.⁶⁰ Because of the level of competition that exists in the mobile broadband market, prohibiting free data services would cause economic harm.⁶¹

OTI concedes that wireless data allowances may be justified in certain contexts but similarly argues that bumping up against a data allowance is a negative experience and that a cap under 5 GB per month should be considered inadequate for purposes of assessing achievement of Section 706 goals. OTI's proposed 5 GB cap is entirely arbitrary and much higher than average mobile broadband consumer usage levels which, as OTI acknowledges, are under 3 GB per month.⁶² Like Netflix, moreover, OTI fails to grapple with the actual market effects that a

⁵⁸ See CTIA Comments at 12-16.

⁵⁹ See, e.g., Sandvine, "Global Internet Phenomena" (June 2016), <https://www.sandvine.com/trends/global-internet-phenomena/> (stating that streaming services account for over 70% of evening Internet traffic in North America, with Netflix alone accounting for over a third of total North American evening Internet traffic).

⁶⁰ Rogerson at 25-26.

⁶¹ *Id.* at 27-30.

⁶² OTI Comments at 17.

limitation on data allowances would wreak. As Professor Rogerson explains, if data allowances were prohibited, carriers would be forced to raise rates in order to prevent overwhelming congestion, leaving “all subscribers worse off.”⁶³ And there is no evidence that mobile broadband providers are using data allowances to avoid making needed expansions to network capacity. To the contrary, the evidence clearly shows that U.S. mobile broadband providers are investing prodigiously to expand mobile broadband capacity as fast as possible – though their advances are being met at every turn by ever-increasing demands from consumers.⁶⁴

In short, eliminating efficiencies, increasing congestion, raising rates, and reducing consumer choice by eliminating data allowances and free data plans will impede, rather than advance, the goals of Section 706. Netflix’s and OTI’s suggestion that data allowances and free data plans should be considered detrimental to Section 706 goals thus must be rejected.

⁶³ Rogerson at 18.

⁶⁴ *See supra* Section II.

IV. CONCLUSION.

The record in this proceeding supports no conclusion other than that, by any measure, mobile broadband deployment is reasonable and timely. Innovative pricing plans, including free data plans and data allowances, promote consumer usage and advance the goals of Section 706. The Commission should reject OTI's and Netflix's misguided and unsupported attacks on these innovative, pro-consumer offerings.

Respectfully submitted,

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