

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

In the Matter of	)	
	)	
Inquiry Concerning the Deployment of	)	GN Docket No. 16-245
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	)	

**Comments of Netflix, Inc.**

Netflix, Inc. (“Netflix”) submits these comments in response to the Commission’s Twelfth Broadband Progress Notice of Inquiry in the above-captioned proceeding.<sup>1</sup>

Internet television has become a highly competitive, diverse platform for the distribution of television and movies. Award winning original content and seamless integration with entertainment and mobile devices has led to an increase in the number of hours that consumers spend watching Internet television over broadband connections.<sup>2</sup>

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<sup>1</sup> 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*, FCC 16-100 (Aug. 4, 2016) (“NOI”).

<sup>2</sup> See Letter to Shareholders re: Q2 2016 Earnings, Netflix, at 2 (July 18, 2016), [http://files.shareholder.com/downloads/NFLX/2750736377x0x900152/4D4F0167-4BE2-4DC1-ACC7-759F1561CD59/Q216LettertoShareholders\\_FINAL\\_w\\_Tables.pdf](http://files.shareholder.com/downloads/NFLX/2750736377x0x900152/4D4F0167-4BE2-4DC1-ACC7-759F1561CD59/Q216LettertoShareholders_FINAL_w_Tables.pdf) (stating that “[a]s Internet TV rises in popularity, so do the SVOD offerings. In the US, for example, CBS All

The Commission increased the download speed benchmark for fixed broadband service to 25 Mbps in part to account for consumer expectations that they will be able to access video over the Internet. Watching television shows and movies on the Internet is no longer a novelty.<sup>3</sup> Consumers increasingly expect more from their broadband connection, and they expect that broadband Internet will deliver a television experience that is the same or better than what they receive from their cable service, satellite provider, or local broadcaster. Accordingly, Netflix supports the Commission’s move to define mobile advanced telecommunications capability at the proposed 10/1 Mbps threshold and urges the Commission to evaluate the effects that broadband caps have on the deployment of advanced telecommunications capability.

**I. The FCC should determine whether American households have access to broadband services sufficient to consume Internet television.**

Section 706 requires the Commission to determine “whether advanced telecommunications capability is being deployed to all Americans in a reasonable and timely fashion.”<sup>4</sup> As the Commission recognizes, the ability of consumers to access high quality video

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Access, Seeso, Amazon Prime Video, Hulu, YouTube Red, and many others are all growing. Our view, however, is that we are all growing primarily against linear TV hours...”).

<sup>3</sup> See Comcast, The Advantages of High Speed Internet: Why Invest in faster speed? (accessed September 5, 2016), <http://www.xfinity.com/resources/the-advantages-of-high-speed-internet.html> (“Streaming television shows, movies, slideshows, and music is becoming increasingly popular. More people are investing in high speed Internet, and with good reason. With a high speed Internet connection, one can stream media without interruptions and long gone are the days of reloading videos or movies in the middle of watching.”)

<sup>4</sup> 47 U.S.C. § 1302(b).

over the Internet is a necessary part of the Commission’s inquiry.<sup>5</sup> In particular, consumers increasingly watch television shows and movies over the Internet.<sup>6</sup>

Internet television has transformed consumers’ viewing experiences. It allows consumers to watch as much content as they want, on-demand, on any device, and in any location where there is an adequate broadband connection. Online video distributors (“OVDs”) offer an increasing array of original television series and movies. Services that once exclusively distributed user-generated content, such as YouTube, now offer original, scripted television series (e.g., YouTube Red). Legacy television networks now offer online video services<sup>7</sup> and consumers are even able to watch live sporting events in real time with their Internet connection.<sup>8</sup> And, multichannel video programming distributors (“MVPDs”) and other technology companies are beginning to offer online television packages that replace or compliment traditional cable services.<sup>9</sup>

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<sup>5</sup> See NOI ¶ 5.

<sup>6</sup> See 2016 Global Internet Phenomena – Latin America & North America, Sandvine Intelligent Broadband Networks, at 4-5 (2016), <https://www.sandvine.com/downloads/general/global-internet-phenomena/2016/global-internet-phenomena-report-latin-america-and-north-america.pdf> (indicating that Internet video services represent the top five unique sources of peak period, downstream, fixed-line Internet traffic and that Amazon video rose to be the third largest source of downstream Internet traffic from the eighth largest source in just one year) (“Sandvine Report”).

<sup>7</sup> See Media Bureau Seeks Comment on the Status of Competition in the market for the Delivery of Video Programming, *Public Notice*, DA-896, at 11 (Aug. 5, 2016) (stating that “broadcast networks are increasingly providing OVD services themselves”).

<sup>8</sup> See *NFL Sunday Ticket*, DIRECTV, <http://www.directv.com/sports/nfl> (advertising streaming any Sunday NFL game live); Rio 2016 – The Road to Rio, Comcast, <http://corporate.comcast.com/news-information/news-feed/olympics-primetime-live-a-new-way-to-watch-on-demand-2> (advertising that the 2016 Summer Olympics would be streamed online).

<sup>9</sup> See Anick Jesdanun, *What you get from Dish and Sony online TV channels*, AP (May 11, 2016),

Internet television is also no longer limited to those that want to watch on laptops and tablets. The integration of over-the-top video capabilities into smart televisions, cable set top boxes, and streaming devices (*e.g.*, Roku TV) allow consumers to seamlessly switch between linear video services and Internet television services. For all of these reasons, the Commission is right to see Internet television at the center of a consumer’s expectation for what broadband connections can deliver.

## **II. Data caps can impede the use and availability of advanced telecommunications capabilities.**

Data caps (especially low data caps) and usage based pricing (“UBP”) discourage a consumer’s consumption of broadband, and may impede the ability of some households to watch Internet television in a manner and amount that they would like. For this reason, the Commission should hold that data caps on fixed-line networks--and low data caps on mobile networks--may unreasonably limit Internet television viewing and are inconsistent with Section 706.

A data cap or allotment of 300 GB of data per month or higher is required just to meet the Internet television needs of an average American.<sup>10</sup> This does not account for the other things that consumers typically do with their broadband connections, such as web-browsing or downloading games or apps from the Internet. An above average television watcher, a multi-occupant household, or a consumer wishing to watch in 4K requires a much higher cap or

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<http://bigstory.ap.org/article/54dff416c0634264b32497a6c6aee8f0/what-you-get-dish-and-sony-online-tv-channels> (detailing DISH’s and Sony’s online television services).

<sup>10</sup> Watching 3.4 hours of netflix in HD can use 10GB of data. Ultra HD quality can use nearly 24 GB. *See*, American Time Use Survey--2015 Results, *News Release*, U.S. Department of Labor Bureau of Labor Statistics (June 24, 2016) (indicating that the average american watches 3.4 hours of television every day.) <http://www.bls.gov/news.release/pdf/atus.pdf>

allotment. In this way, today's 'above-average' Internet consumer is tomorrow's average Internet consumer.

Data caps on fixed-line networks do not appear to serve a legitimate purpose: they are an ineffective network management tool. Fixed-line BIAS providers have stated that data caps on fixed line networks do not serve a traffic management function.<sup>11</sup> They have been described alternatively as a way to align consumers' use of the network with what they pay.<sup>12</sup> As a method of price discrimination however, data caps and UBP are redundant to the speed tiers that consumers are used to. Data caps and UBP raise the cost of using the the connections that consumers have paid for, making it more expensive to watch Internet television. The Commission should recognize that data caps and UBP on fixed line networks are an unnecessary constraint on advanced telecommunications capability.

Consumers are less likely to watch Internet television on a mobile BIAS connection when data caps are too low. Mobile BIAS providers use data-caps in similar ways to the speed tiers common on fixed networks: consumers pay more for faster speeds or pay more for higher data-caps.<sup>13</sup> However, as the FCC recently explained, "it would be cost prohibitive for most

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<sup>11</sup> See Government Accountability Office, *Broadband Internet: FCC Should Track the Application of Fixed Internet Usage-Based Pricing and Help Improve Customer Education*, at 17 (Nov. 2014), <http://www.gao.gov/assets/670/667164.pdf> ("2014 GAO Report"), ("Most fixed providers said that their networks do not face widespread congestion.") Comcast's own Vice President of Internet Services previously admitted that the data cap was a "business polic[y]" not an engineering one. Jon Brodtkin, *Comcast VP: 300 GB Data Cap Is "Business Policy," not Technical Necessity*, *Ars Technica* (Aug. 14, 2015), <http://arstechnica.com/business/2015/08/comcast-vp-300gb-data-cap-is-business-policy-not-technical-necessity/>.

<sup>12</sup> See Open Internet Advisory Committee, *2013 Annual Report*, at 14-15, <https://transition.fcc.gov/cgb/oiac/Economic-Impacts.pdf> ("OIAC Report").

<sup>13</sup> See William P. Rogerson, *The Economics of Data Caps and Free Data Services in Mobile Broadband* (August 17, 2016),

consumers to switch from viewing [OTT] content over a wireline BIAS provider to a mobile provider with the same level of service (i.e., 1080p+ resolution). For example, it would cost an average Netflix subscriber using [Charter's] cable BIAS many hundreds of dollars each month to view that same Netflix programming over a wireless provider."<sup>14</sup> This has a material impact on Internet video usage. Consumers watched more video when T-Mobile eliminated the impact of data caps on video viewing.<sup>15</sup> Because of this, the Commission should take into account the impact of data caps--and low data caps in particular--on a consumer's ability to watch Internet television using a mobile network.

Furthering this restraint is that consumers are generally uncertain and confused about what uses of the network will cause them to exceed their data cap or data allotment. As the 2014 GAO Report noted, consumers "face challenges in tracking the data usage of the multiple people and multiple devices in their household."<sup>16</sup> Display of OVD content subject to a data cap or usage fee in a "TV channel-style" that is virtually indistinguishable from channels that are not

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<http://www.ctia.org/docs/default-source/default-document-library/081716-rogeron-free-data-white-paper.pdf> (discussing the impact of mobile providers using data caps to price discriminate).

<sup>14</sup> *Charter-TWC Order* ¶ 56. For example, \$50 will buy 4 GB from Verizon and 5 GB from AT&T. At those levels, a consumer would exhaust their \$50 of data from each carrier well before they finished a single two-hour long HD movie and less than halfway through a 30-minute TV episode in UHD.

<sup>15</sup> See T-Mobile, T-Mobile Quadruples Binge On Services, Now Over 100 Video Providers Stream Data-Free (July 26, 2016), <https://newsroom.t-mobile.com/news-and-blogs/binge-on-100-providers.htm> (stating that "80% of [streaming video services] surveyed are seeing customers watch longer, watch more frequently or watch more on mobile phones" as a result of Binge On).

<sup>16</sup> 2014 GAO Report at 16.

subject to a data cap could lead to additional consumer confusion.<sup>17</sup> Consumer expectations are that similar content will be subject to the same rules.

### **III. Discriminatory application of data caps are an impediment to advanced telecommunications capability.**

In addition to data caps that apply to all broadband Internet content, a BIAS provider could also employ data caps in a way that explicitly discriminates in favor of one content source or another, further limiting consumer choice. By imposing limits only on certain video services, BIAS providers effectively increase the cost that consumers must pay to access those services while making exempt content comparatively cheaper, steering consumers toward the exempted services. The effect is even more significant when combined with a low data cap, and can materially impact how a consumer watches Internet television.

Because of a low data-cap, an online service may need to pay an ISP to zero-rate its traffic to enable that ISP's customers to access the online service. Such arrangements create an incentive for ISPs to maintain artificially low caps. The Commission should clarify that discriminatory application of data caps skew consumer choices and work against consumer-driven incentives to deploy advanced telecommunications capability.

### **IV. Packet loss and failure to enter into interconnection agreements are an impediment to advanced telecommunications capability.**

The Commission has determined that the exchange of traffic is a key component of the open Internet it seeks to advance. When BIAS providers represent to their customers that they will be able to reach "all or substantially all Internet endpoints," they necessarily also promise to

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<sup>17</sup> To the extent BIAS providers do not adequately and accurately notify consumers about what content is subject to data caps and user fees and what content is not, such display features also raise issues under the Commission's transparency rules.

make the interconnection arrangements necessary to allow such access.<sup>18</sup> Without interconnection there is no Internet access.<sup>19</sup>

Congested interconnection points can impair the proper functioning of advanced telecommunications capability. This results in a poor, and sometimes non-existent, online video service even when the customer has paid for a high-speed broadband connection. The Commission should continue its policy of watchful vigilance over the ISP interconnection practices and utilize any and all authority under Title II and Section 706 to prevent such practices from harming the deployment of advanced telecommunications capability.

**V. The Commission should adopt its proposed download speed benchmarks of 10Mbps for mobile Internet.**

The widespread deployment of 3G and 4G wireless technologies and the improvements made to mobile devices allow consumers to watch Internet television wherever they have a mobile broadband connection. Consumers can now watch Internet television on a bus or the waiting room of a doctor's office. The FCC should adopt a 10Mbps benchmark for mobile broadband because that speed responds to consumer expectations that they can watch Internet television on their mobile devices and with these wireless connections.

Netflix supports the Commission's Open Internet policy which treats wireless and fixed-line connections to the Internet similarly. In the *Open Internet Order*, the Commission

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<sup>18</sup> *Protecting and Promoting the Open Internet, Report and Order on Remand, Declaratory Ruling, and Order*, 30 *FCC Rcd.* 5601 (2015) (“*Open Internet Order*”) at 5693-94 ¶ 204.

<sup>19</sup> Joint Brief for Intervenors Cogent Communications, Inc., COMPTTEL, DISH Network Corporation, Free Press, Netflix, Inc., Open Technology Institute – New America, Public Knowledge, *et al.*, in Support of the FCC, *U.S. Telecom Ass’n v. FCC*, No. 15-1063, 2016 WL 3251234 at 45 (D.C. Cir. Jun. 14, 2016).

decided to apply the same standard to both mobile and fixed broadband Internet access as treating them differently would risk creating a lesser broadband experience on mobile.

*...mobile broadband services have evolved to become essential, critical means of access to the Internet for millions of consumers every day. Because of this evolution and the widespread use of mobile broadband services, maintaining a regime under which fewer protections apply in a mobile environment risks creating a substantively different Internet experience for mobile broadband users as compared to fixed broadband users.<sup>20</sup>*

The 10 Mbps download speed proposed by the Commission is appropriate given existing consumer expectations. All of the major Internet television networks offer mobile applications so that their customers can watch easily on mobile devices. While Netflix recommends a download speed of at least 5 Mbps to receive an HD quality picture,<sup>21</sup> consumers do not just do one thing with their mobile device at a given time. Applications in the background may be syncing email, photos, etc.. A 10 Mbps download speed provides a buffer so that consumers can stream HD video while their device also uses the broadband connection in the background.

The Commission should stand ready to adopt a higher benchmark in future reports. Today, consumers are less likely to use their mobile broadband connection to stream video on multiple devices at once, but as consumers increasingly expect mobile to substitute for fixed-line connections, the Commission's criteria in this proceeding should track this evolution. Additional bandwidth will be necessary to support simultaneous streaming and 4K capability when wireless-fixed line substitutability become a reality. Indeed, for some households, mobile broadband is already the only way consumers can access Internet video. Accordingly, the

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<sup>20</sup> *Open Internet Order* at 5638 ¶ 92.

<sup>21</sup> *See Help Center - Streaming Netflix in HD*, Netflix, <https://help.netflix.com/en/node/13844>.

Commission should continue its wise policy of tracking mobile-fixed Internet access substitution and revise its mobile speed benchmark once that substitution reaches a tipping point.

For the reasons stated above, Netflix asks that the Commission consider these views when making its judgment about whether advanced telecommunications capability is being deployed to all Americans in a reasonable and timely manner.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Joshua Korn". The signature is fluid and cursive, with a long horizontal stroke at the end.

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