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**Data Caps: Put Under the Microscope
of Recent Net Neutrality Rules**

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I. Introduction

In the past decade, broadband providers have begun to move away from offering unlimited data to requiring data caps as part of the broadband plans they offer customers. Data caps set limits to how much content (websites, apps, video or music, etc.) a customer can access online per month. The justification broadband providers give for implementing data caps is 1) to increase fairness to customers by holding heavy-data users accountable for the amount of data they use and 2) relieve congestion costs resulting from too much unmonitored broadband consumption. However, because content differs in the amount of data it demands, some content is more affected by data caps than others. This begins to concern net neutrality, which is premised on the idea that broadband providers must treat all content the same regardless of source.¹ For net neutrality to be triggered, non-neutral treatment of content must be unreasonable.² However, this unreasonable treatment may still be permissible so long as it is done primarily for reasonable network management.³

In this paper, I argue that data caps violate the principle of net neutrality because they discriminate against certain types of content over others. This discrimination is unreasonable because it slows innovation by allowing broadband providers to be the gatekeepers for which type of content wins or loses in the Internet marketplace. And though broadband providers justify data caps on the grounds of network management practices, the practices are either ineffective (relieving congestion, see below) or broadband providers do not actually engage in

¹ United States Telecom Association, et al. v. Federal Communications Commission and United States of America, No. 15-1063 (D.C. Cir., June 14, 2016)

² 2015 Open Internet Order, 30 FCC Rcd. at 10

³ *Id.*

network management (no reinvestment of data cap revenue in infrastructure, see below).

I begin this discussion by discussing net neutrality generally and the arguments in favor and against it. I then move on to discuss the legal history of net neutrality in part to show how the desire to uphold net neutrality principles has increased as broadband has become a more essential component to our lives and business and also to highlight the arguments that the Federal Communications Commission (FCC) have given in their support of net neutrality generally. Finally, I will switch to a discussion about data caps and apply the legal and policy arguments that paved the way for our current net neutrality rules to data caps. I argue that because data caps implicate these same issues, data caps, in their current form, should be considered impermissible violations of net neutrality and be proscribed as such.

II. Net Neutrality: Analysis

A. Justifications For Net Neutrality

Net neutrality is the principle that “broadband providers must treat all internet traffic the same regardless of source.”⁴ It is the ideal that the Internet should be open and not subject to restrictions based on specific content. Since its inception, the Internet has central to speech as well as commerce, investment, and innovation.⁵ In only two decades, the Internet grew from nothing to a massively

⁴ United States Telecom Association, et al. v. Federal Communications Commission and United States of America, No. 15-1063 (D.C. Cir., June 14, 2016)

⁵ 2015 Open Internet Order, 30 FCC Rcd. at 3

essential part of life and business. Thus, preserving the open Internet and its neutral treatment is increasingly important.

The movement towards preserving Internet neutrality has progressed in tandem with the growth of the Internet and has made some especially large developments even in just the past few months.⁶ Before the very recent court in *United States Telecom Association, et al. v. Federal Communications Commission* (June 2016) (hereinafter referred to as *USTA v. FCC*) ruled in favor of net neutrality, the primary issue for neutrality was establishing regulations that would restrict broadband providers from selectively blocking and throttling content.⁷ Subject to an appeal to the United States Supreme Court, the issue for net neutrality has shifted to a more case-by-case analysis of the different options that broadband providers offer to find whether they amount to unreasonable interference or create an unreasonable disadvantage to end users' ability to select content of their choice, and if so, whether they are not used primarily for reasonable network management⁸.

The movement to protect and ensure net neutrality are typically lead by the content providers and end consumer. Content providers are companies such as Amazon, Google, and Netflix, which all deliver entertainment and media to the end users to consume at home or elsewhere.⁹ Because their business comes from end users receiving their content, content providers fight for net neutrality to make sure

⁶ See *United States Telecom Association, et al. v. Federal Communications Commission and United States of America*, No. 15-1063 (D.C. Cir., June 14, 2016)

⁷ *Id.*; see also, *Verizon v. FCC*, 740 F.3d 645 (D.C. Cir. 2014); see also, *United States Telecom Association, et al. v. FCC and United States of America*, No. 15-1063 (D.C. Cir., June 14, 2016)

⁸ 2015 Open Internet Order, 30 FCC Rcd. at 10

⁹ Knight Foundation, *Decoding the Net Neutrality Debate* at 14 (2014), <http://www.knightfoundation.org/features/netneutrality/> (Knight Foundation, *Decoding the Net Neutrality Debate*)

content deliver will happen. Content providers and end users advocate for net neutrality on the grounds that Internet as an essential utility for learning, working, civic participation, free expression, and economic competition and innovation.¹⁰

On the other end of the issue are broadband providers. Broadband providers are the sole intermediaries between the content providers and the end users and are companies like Comcast, Time Warner Cable, and AT&T.¹¹ They are like UPS, which is a company that delivers products from a content provider (such as a bookstore) to the consumer.¹² Buy rather than delivering books from the bookstore to the consumer, they deliver bytes of data from the company to the end user, which take the form of content like music, video, webpages, and anything else that can be retrieved from the Internet.¹³ However, unlike UPS, broadband providers traditionally do not gain anything transferring content from content producers to end users; contrarily, it costs them to transfer this data. Instead, their money has come from signing more users onto their flat rate contracts. Therefore, broadband providers have financial interest in limiting the amount of data a user consumes.

Broadband providers can be separated into two distinct categories that have received different legal treatment in the past—fixed broadband and mobile broadband.¹⁴ Fixed broadband refers to broadband that reaches users through fixed endpoints such as through a modem that connects to an end user's home router,

¹⁰ Knight Foundation, Decoding the Net Neutrality Debate at 14 (2014), <http://www.knightfoundation.org/features/netneutrality/> (Knight Foundation, Decoding the Net Neutrality Debate)

¹¹ *Id.*

¹² *Id.*

¹³ 2015 Open Internet Order, 30 FCC Rcd. at 82

¹⁴ See 2010 Open Internet Order, 25 FCC Rcd 17905; *see also*, 2015 Open Internet Order, 30 FCC Rcd

computer, or any other Internet access device.¹⁵ Mobile broadband refers to broadband that reaches the end use primarily through mobile stations. It includes “services that use smartphones or mobile-network-enabled tablets as the primary endpoints for connection to the Internet.”¹⁶ Mobile broadband networks have increased massively since 2010, from supporting 70,000 devices in the U.S. in 2010 to over 140 million devices in 2014.¹⁷ Indeed, AT&T reports that its wireless data traffic has grown 100,000 percent between 2007 and 2014, and 20,000 percent in the past five years.¹⁸

The FCC takes a central role in this issue since they regulate interstate international communications in the United States.¹⁹ In 2010 and 2015, it issued Open Internet Orders aimed at protecting and preserving the open Internet.²⁰ Even earlier than 2010, the FCC took the charge in defining broadband and setting its regulations.²¹

Building upon the necessity of the Internet, the FCC focuses on two main arguments in its support for net neutrality. First, it argues in favor of maintaining the “virtuous circle”— the incentive for economic competition and innovation.²²

¹⁵ See 2015 Open Internet Order, 30 FCC Rcd

¹⁶ See *Id.*

¹⁷ *Id.* at 35

¹⁸ *Id.* at 36

¹⁹ Knight Foundation, Decoding the Net Neutrality Debate at 14 (2014), <http://www.knightfoundation.org/features/netneutrality/> (Knight Foundation, Decoding the Net Neutrality Debate)

²⁰ See 2010 Open Internet Order, 25 FCC Rcd 17905; *see also*, 2015 Open Internet Order, 30 FCC Rcd

²¹ 2015 Open Internet Order, 30 FCC Rcd. at 3

²² *Id.* at 4

Second, it argues in favor of reducing the enormous control that a single intermediary industry can have on the market as a whole.²³

In both the 2010 and 2015 Orders, the FCC emphasized that protecting net neutrality was essential to promote the “virtuous circle” that drives innovation and investment on the Internet²⁴. The FCC maintained this argument that Internet openness is critical to network innovation through its 2015 Open Internet Order and still maintains it.²⁵

Content providers are the leaders of innovation in the large Internet market. Content providers’ support of net neutrality comes from its effects on innovation. Innovation results from content providers’ belief that what they create will be used if useful and from the expectation that their content “will not be countered by strategic actors who might control the flow of commerce.”²⁶

Restrictions on innovation have profound effects on the economy. It slows improvements in making our current applications more efficient and slows or impedes the development of new types of applications we have not yet imagined.²⁷By restricting Internet use to certain types of content, developments in other areas may never occur. Reed, Saltzer and Clark exemplifies this: “had the original Internet design been optimized for telephony-style virtual circuits (as were

²³ 2015 Open Internet Order, 30 FCC Rcd. at 29-30 and elsewhere

²⁴ See 2010 Open Internet Order, 25 FCC Rcd 17905 at 17911; *see also*, 2015 Open Internet Order, 30 FCC Rcd. at 3

²⁵ 2015 Open Internet Order, 30 FCC Rcd. at 4; *see also* United States Telecom Association, et al. v. FCC and United States of America, No. 15-1063 (D.C. Cir., June 14, 2016)

²⁶ Lemley, Mark A. and Lessig, Lawrence, The End of End-to-End: Preserving the Architecture of the Internet in the Broadband Era (October 1, 2000). UCLA Law Review, Vol. 48, p. 925, 2001

²⁷ *Id.*

its contemporaries SNA and TYMNET), it would not have enabled the experimentation that led to protocols that could support the World-Wide Web.”²⁸

The FCC takes the position that broadband providers hold a substantial amount of power and so are in the position to act as a “gatekeeper” between the end users’ access to content, which includes apps, services, and devices.²⁹ In other words, broadband providers have the ability to decide which types of content are the winners and losers based on the interest of the broadband provider.

By allowing broadband providers to have the gatekeeping power to dictate what types of content reaches the end user, content providers will be more cautious on what types of content they create³⁰. They will be more fearful that certain content they create might never reach the consumer even if it’s good, useful content. Thus, to ensure a return on its investment, content providers might obviate innovation that makes them targets for discrimination by broadband providers in favor of creating content that has a history of non-discrimination.³¹ This holds true even if the broadband provider never discriminates against any content—the simple fact that they *can* set restrictions on certain types of content creates a disincentive to content providers to innovate.³²

This effect is even more impactful considering how essential data has become. Since the inception of the Internet, the common user has increased his or her Internet consumption astronomically. Additionally, almost every business

²⁸ See David P. Reed, Jerome H. Saltzer, and David D. Clark, Comment on Active Networking and End-to-End Arguments, IEEE Network 12, 3 (May/June 1998) pages 69-71

²⁹ 2015 Open Internet Order, 30 FCC Rcd. at 29-30

³⁰ Lemley, Mark A. and Lessig, Lawrence, The End of End-to-End: Preserving the Architecture of the Internet in the Broadband Era (October 1, 2000). UCLA Law Review, Vol. 48, p. 925, 2001.

³¹ *Id.*

³² *Id.*

integrates it in some way or another, whether it be by directly offering content over the Internet such as Netflix or by using third-party services to run or support their business. As an example: two years ago in 2014, if a person canceled his normal TV subscription and watched the same amount of video through Netflix, Amazon, or Hulu (as many people increasingly do), they would consume over 350 gigabytes of data per month.³³ This is a staggering increase from the average monthly data consumption of 22.7 gigabytes reported just 3 years earlier in a 2011 Sandvine report.³⁴

This estimated demand for data is primarily sourced on fixed-broadband, since some mobile networks set such low data caps that video streaming the above amount would be impossible without paying over \$3,000 in overage fees a month.³⁵ The mobile explosion resulted not from each user demanding more content, but from having massively more users on the network in general. Combine fixed and mobile broadband consumption and the United States has an industry with an insatiable hunger for data.

This enormous demand for data coupled with the broadband provider's potential ability, as an intermediary, to control what content the end user has access to gives the broadband provider an enormous amount of power to dictate the end

³³ Minne, Jacob Joseph Orion, Data Caps: How ISPs are Stunting the Growth of Online Video Distributors and What Regulators Can Do About it (May 1, 2012)

³⁴ Lyons, Daniel A. "The Impact of Data Caps and Other Forms of Usage-Based Pricing for Broadband Access." Working Paper no. 12-27, Mercatus Center at George Mason University (2012)

³⁵ Verizon Wireless, www.verizonwireless.com/b2c/includes/plans/dataInfoOverlay.jsp (Verizon's overage fees are \$10 per extra gigabyte over the 2 gigabyte cap in a \$30 plan or their highest 10 gigabyte cap in an \$80 plan); *see also*, AT&T <https://www.att.com/shop/wireless/data-plans.html> (AT&T's overage fees are \$15 per extra gigabyte over the their plans which range from 2 to 50 gigabytes per month at \$30 and \$375, respectively.); *see also*, (T-Mobile doesn't charge fees for data consumption in excess of their data cap; however, they drop the customer down to a significantly lower

users' usage and browsing habits and the content providers' ability to autonomously and effectively run their businesses.

Broadband providers may argue that they should be able to charge more for certain types of content. The market will set a reasonable price for content based on consumer demand. The automotive industry does this. Vehicles are essential to life and business, yet it seems ridiculous to restrict dealerships from pricing certain vehicles higher than others (even if the cost to manufacture is the same). And most manufacturers and consumers seem content with the fact that some people will never be able to purchase their vehicles as a result of the price the dealership sets.

However, the broadband industry is distinguishable from the vehicle industry (and most other industries for that matter). Unlike the vehicle industry where a consumer has the choice to buy or lease a vehicle from a dealership or buy from another consumer, Internet content can only be delivered after entering into a contract with a broadband provider. And even if we imagined a world with no used vehicle market, a consumer still has the choice from the plethora of car dealerships in almost every city. Broadband access, contrarily, is restricted to entering into a contract with one of the very few broadband providers that serves the consumer's location.

What is even more restrictive, outside of urban regions there is usually only one broadband provider serving an entire region.³⁶ Even in areas serviced by multiple broadband providers, the similarity between options and the limited

³⁶ 2015 Open Internet Order, 30 FCC Rcd. at 37

options offered take choice completely out of the end-users' hands.³⁷ Indeed, in 2015 the FCC noted that forty-five percent of households have only a single option for broadband speed.³⁸

The result of having limited alternatives is that the market cannot take over and adjust the price. Broadband consumers who need access to a certain type of content cannot walk away from a deal that they find unreasonable because they have no alternatives. Negotiation also breaks down when alternatives are limited. This may avoid the headache we associate with negotiating a vehicle, but it instead results in the headache we associate for having to overpay for content that may be essential to our business or even what we deem to be a common modern and ubiquitous luxury.

Thus, the power that broadband providers have over innovation for content providers and access to an essential resource for consumers creates the need to have firm net neutrality rules to ensure that broadband providers cannot exercise such control.³⁹

B. Arguments against Net Neutrality

On the other side, broadband providers argue against net neutrality on the grounds that the neutrality creates a cost inequality for the large majority of its users, and because the network congestion resulting from free and unlimited broadband creates costs associated with improving the infrastructure.⁴⁰

³⁷ 2015 Open Internet Order, 30 FCC Rcd. at 32

³⁸ *Id.*

³⁹ Brodtkin, J. (2015, February 26). FCC votes for net neutrality, a ban on paid fast lanes, and Title II. Retrieved from <http://arstechnica.com/business/2015/02/fcc-votes-for-net-neutrality-a-ban-on-paid-fast-lanes-and-title-ii/>

⁴⁰ 2015 Open Internet Order, 30 FCC Rcd. at 91-92

Net neutrality is unfair to most users, argue the broadband providers, because the large majority of network traffic comes from a small fraction of users, yet all users pay the same amount for broadband at a certain speed.⁴¹ According to a study by Sandvine in Fall 2011, the heaviest 1 percent of downstream users account for 15.2 percent of total North American fixed downstream traffic and 43 percent of the total upstream traffic, whereas the lightest 60 percent of users account for only 10 percent of this traffic.⁴² Because this small group of high-end users is getting a free ride, the broadband providers should therefore be able to charge these users more to prevent this inequality.⁴³

Second, congestion issues arise because overall data consumption is too high, especially at peak hours.⁴⁴ Congestion strains the networks requiring broadband providers to upgrade their infrastructure by investing in additional interconnection capacity.⁴⁵ This again raises the cost of Internet.⁴⁶ In light of increased costs associated with peak demand, content providers need to contribute something more than just traffic.⁴⁷

These arguments by themselves do not appear to involve net neutrality since they describe content consumption as a whole. However, since an enormous disproportion of data consumption comes from high-definition video such as from

⁴¹ 2015 Open Internet Order, 30 FCC Rcd. at 91-92

⁴² Lyons, Daniel A. "The Impact of Data Caps and Other Forms of Usage-Based Pricing for Broadband Access." Working Paper no. 12-27, Mercatus Center at George Mason University (2012)

⁴³ Knight Foundation, Decoding the Net Neutrality Debate at 14 (2014), <http://www.knightfoundation.org/features/netneutrality/> (Knight Foundation, Decoding the Net Neutrality Debate)

⁴⁴ 2015 Open Internet Order, 30 FCC Rcd. at 91-92

⁴⁵ *Id.*

⁴⁶ *Id.*

⁴⁷ *Id.*

Netflix, Amazon, Hulu, and so on, broadband providers have discretely targeted this category of content providers in attempts to regulate the market—one way is through data caps.⁴⁸

III. Legal Development of Net Neutrality

Though the importance of net neutrality rules seems like a new issue that has developed only within the last half-decade, it is only because in the advent of high-speed broadband and smartphones the Internet has become such a fixture in our lives and economy. However, the pertinent legal history behind broadband regulations stretch back to when Congress adopted the Telecommunications Act of 1996 and incorporate Title II of the Communications Act of 1934.⁴⁹ This was the age of dial-up Internet and was a point in time where businesses still thrived without distribution or connection over the Internet. At the time, it was largely used to share information remotely. Yet, as the Internet speeds improved to high-speed broadband in the early 2000s and different types of information sharing and communication began to occur, the FCC began restricting broadband control.⁵⁰ However, the FCC encountered troubles enforcing its regulations on broadband

⁴⁸ Knight Foundation, Decoding the Net Neutrality Debate at 14 (2014), <http://www.knightfoundation.org/features/netneutrality/> (Knight Foundation, Decoding the Net Neutrality Debate); *see also*, Lyons, Daniel A. "The Impact of Data Caps and Other Forms of Usage-Based Pricing for Broadband Access." Working Paper no. 12-27, Mercatus Center at George Mason University (2012); *see also*, Minne, Jacob Joseph Orion, Data Caps: How ISPs are Stunting the Growth of Online Video Distributors and What Regulators Can Do About it (May 1, 2012)

⁴⁹ See Telecommunications Act of 1996; *see also*, Communications Act of 1934; *see also*, 2015 Open Internet Order, 30 FCC Rcd. at 135-136

⁵⁰ See 2015 Open Internet Order, 30 FCC Rcd. at 140; *see also*, Comcast Corp. v. FCC, 600 F.3d 642 (D.C. Cir. 2010); *see also*, Verizon v. FCC, 740 F.3d 645 (D.C. Cir. 2014); *see also*, Lasar, M. (2010, December 21). It's here: FCC adopts net neutrality (lite). Retrieved from <http://arstechnica.com/tech-policy/2010/12/its-here-fcc-adopts-net-neutrality-lite/>

providers and its proposed net neutrality rules.⁵¹ Nevertheless, by staying persistent, following the court's suggestions, and listening to the public's concerns, the FCC finally established authority to enforce its regulations to keep the internet open and free for both fixed and mobile broadband.⁵²

The FCC's original source of authority over broadband came from the Telecommunications Act of 1996.⁵³ This act vested the FCC with authority to encourage deployment of broadband infrastructure.⁵⁴ However, the power was not absolute because the Act also included definitions for "telecommunications services" and "information services," both of which allowed the FCC different amounts of power to regulate broadband.⁵⁵

When broadband is classified as an information service, the FCC only has "general authority" to ensure "just and reasonable rates" and to generally regulate how broadband providers treat traffic.⁵⁶ In contrast, when broadband is classified as a telecommunications service, the FCC has much greater latitude under section 706(a) and (b)—which applies specifically to telecommunications—to regulate the broadband industry to encourage and accelerate the deployment of broadband

⁵¹ See *Nat'l Cable & Telecomms. Ass'n v. Brand X Internet Servs.*, 545 U.S. 967, 980-81 (2005); *see also*, *Comcast Corp. v. FCC*, 600 F.3d 642 (D.C. Cir. 2010); *see also*, *Verizon v. FCC*, 740 F.3d 645 (D.C. Cir. 2014)

⁵² See 2015 Open Internet Order, 30 FCC Rcd.; *see also*, *United States Telecom Association, et al. v. FCC and United States of America*, No. 15-1063 (D.C. Cir., June 14, 2016)

⁵³ Telecommunications Act of 1996 47 U.S.C. §1302; *see also*, Brodtkin, J. (2014, January 14). Net neutrality is half-dead: Court strikes down FCC's anti-blocking rules. Retrieved from <http://arstechnica.com/tech-policy/2014/01/net-neutrality-is-half-dead-court-strikes-down-fccs-anti-blocking-rules/>

⁵⁴ *Id.*

⁵⁵ Telecommunications Act of 1996 47 U.S.C. §153(53); *see also*, 2015 Open Internet Order, 30 FCC Rcd. at 135-136

⁵⁶ Telecommunications Act of 1996 47 U.S.C. §153(41) and (51); *see also*, 2015 Open Internet Order, 30 FCC Rcd. at 232; *see also*, *Nat'l Cable & Telecomms. Ass'n v. Brand X Internet Servs.*, 545 U.S. 967, 980-81 (2005)

Internet.⁵⁷ In other words, if the FCC classifies broadband as a telecommunication service, it can regulate broadband providers as common carriers, subjecting them to the rules under Title II of the Communications Act of 1934.⁵⁸

The legal history behind Title II makes it clear that blocking traffic generally is unjust and unreasonable under section 201.⁵⁹ Additionally, FCC precedent holds that no carrier “may block, choke, reduce or restrict traffic in any way.”⁶⁰ The court in *Verizon v. FCC* said that these rules only apply to common carrier services (here, telecommunication services) and that the FCC could not impose these rules on information services.⁶¹

The court first classification of broadband service as an information service occurred in the Ninth Circuit Court of Appeals in *AT&T Corp v. City of Portland*.⁶² And again in 2005, the Supreme Court in *National Cable & Telecommunications Association v. Brand X Internet Services (Brand X)*.⁶³ However, the Supreme Court in *Brand X* noted that the Communication Act’s definitions of telecommunication and

⁵⁷ Telecommunications Act of 1996 47 U.S.C. §1302(a) and (b); *see also*, 2015 Open Internet Order, 30 FCC Rcd. at 121

⁵⁸ Communications Act of 1934, 47 U.S.C. § 153(51); *see also*, *Verizon v. FCC*, 740 F.3d 645 (D.C. Cir. 2014); *see also*, Brodtkin, J. (2016, June 14). Tom Wheeler Defeats the Broadband Industry: Net Neutrality Wins in Court, Retrieved from <http://arstechnica.com/tech-policy/2016/06/net-neutrality-and-title-ii-win-in-court-as-isps-lose-case-against-fcc/>

⁵⁹ 2015 Open Internet Order, 30 FCC Rcd. at 126 (referencing *See* USF/ICC Transformation Order, 26 FCC Rcd at 17903 (“Commission precedent provides that no carriers, including interexchange carriers, may block, choke, reduce or restrict traffic in any way.”)); *see also*, Title II, 47 U.S. Code § 201

⁶⁰ 2015 Open Internet Order, 30 FCC Rcd. at 126; *see also*, Title II, 47 U.S. Code § 201 (referencing USF/ICC Transformation Order, 26 FCC Rcd at 17903, para. 734; 2007 Declaratory Ruling, 22 FCC Rcd at 11631, para 6; *see also* Rural Call Completion Order, 28 FCC Rcd at 16155-56, para. 29

⁶¹ *Verizon v. FCC*, 740 F.3d 645 (D.C. Cir. 2014); *see also*, 2015 Open Internet Order, 30 FCC Rcd. at 141; *see also*, Brodtkin, J. (2016, June 14). Tom Wheeler Defeats the Broadband Industry: Net Neutrality Wins in Court, Retrieved from <http://arstechnica.com/tech-policy/2016/06/net-neutrality-and-title-ii-win-in-court-as-isps-lose-case-against-fcc/>

⁶² *See AT&T CORP. v. City of Portland*, 216 F. 3d 871, 877-79 (9th Circ. 2000) (*City of Portland*); *see also*, 2015 Open Internet Order, 30 FCC Rcd. at 138

⁶³ *Nat’l Cable & Telecomms. Ass’n v. Brand X Internet Servs.*, 545 U.S. 967, 980-81 (2005); *see also*, 2015 Open Internet Order, 30 FCC Rcd. at 140

information services are ambiguous, and thus deferred to the FCC under Chevron, which requires federal courts to accept the agency's construction of an ambiguous statute.⁶⁴

In 2007, the FCC released the Wireless Broadband Classification Order (WBCO), which strengthened the classification of broadband as an information service.⁶⁵ The WBCO stated despite broadband having components of telecommunication, the offering of telecommunication transmissions as part of a broadband service is not a telecommunication service under the Communications Act.⁶⁶

In 2008, the FCC investigated Comcast for throttling data transfer through BitTorrent, a peer-to-peer Internet service where users can exchange content online.⁶⁷ BitTorrent became a target because some users transferred and received enormous amounts of content through the service for days at a time.⁶⁸ The FCC sanctioned Comcast for throttling BitTorrent and proposed transparency and non-discrimination rules.⁶⁹ However, the court sided with Comcast, which argued that throttling was necessary for network management reasons.⁷⁰ BitTorrent's networks created unexpected spikes in demand for upload bandwidth, which imposed

⁶⁴ Nat'l Cable & Telecomms. Ass'n v. Brand X Internet Servs., 545 U.S. 967, 980-81 (2005); *see also*, 2015 Open Internet Order, 30 FCC Rcd. at 140

⁶⁵ 2015 Open Internet Order, 30 FCC Rcd. at 140

⁶⁶ *Id.*

⁶⁷ Lasar, M. (2010, December 21). It's here: FCC adopts net neutrality (lite). Retrieved from <http://arstechnica.com/tech-policy/2010/12/its-here-fcc-adopts-net-neutrality-lite/>

⁶⁸ Minne, Jacob Joseph Orion, Data Caps: How ISPs are Stunting the Growth of Online Video Distributors and What Regulators Can Do About it (May 1, 2012)

⁶⁹ Lasar, M. (2010, December 21). It's here: FCC adopts net neutrality (lite)

⁷⁰ Lyons, Daniel A. "The Impact of Data Caps and Other Forms of Usage-Based Pricing for Broadband Access." Working Paper no. 12-27, Mercatus Center at George Mason University (2012)

congestion costs on other consumers who don't use such peer-to-peer networks.⁷¹

This case did not implicate classification, but it did set the predicate for regulations that the FCC begins to enforce.

After losing its battle in *Comcast* in 2010, the FCC made its first big push to preserve net neutrality when it created the Open Internet Order of 2010.⁷² In this order, the FCC treated broadband providers like partial common carriers by adopting three rules, subject to reasonable network management: (1) no content blocking, (2) no unreasonable discrimination, and (3) transparency.⁷³ The anti-blocking and anti-discrimination rules forbid broadband providers from blocking services or charging content providers for access to the network.⁷⁴ The FCC began using the main argument that it has continued to use thereafter—that net neutrality is “necessary to protect and promote the virtuous cycle that drives innovation and investment on the Internet—both at the edges of the network, as well as in the network itself.”⁷⁵

At the time, however, the second rule—that of anti-discrimination—only applied to fixed broadband and exempted mobile.⁷⁶ This accounted for the perceived differences at the time between fixed and mobile markets—likely because

⁷¹ Lyons, Daniel A. "The Impact of Data Caps and Other Forms of Usage-Based Pricing for Broadband Access." Working Paper no. 12-27, Mercatus Center at George Mason University (2012)

⁷² See 2010 Open Internet Order, 25 FCC Rcd 17905

⁷³ *Id.* at 17906

⁷⁴ Brodtkin, J. (2014, January 14). Net neutrality is half-dead: Court strikes down FCC's anti-blocking rules. Retrieved from <http://arstechnica.com/tech-policy/2014/01/net-neutrality-is-half-dead-court-strikes-down-fccs-anti-blocking-rules/>

⁷⁵ 2010 Open Internet Order, 25 FCC Rcd 17905 at 17911 and elsewhere; see also, 2015 Open Internet Order, 30 FCC Rcd. at 3

⁷⁶ 2015 Open Internet Order, 30 FCC Rcd. at 22, Lasar, M. (2010, December 21). It's here: FCC adopts net neutrality (lite). Retrieved from <http://arstechnica.com/tech-policy/2010/12/its-here-fcc-adopts-net-neutrality-lite/>

smartphones and tablets had not yet become as ubiquitous as they soon came to be.⁷⁷ The other rules—no blocking and transparency—still applied to mobile.⁷⁸

The three rules protecting net neutrality are subject to a consideration of reasonable network management.⁷⁹ This means that blocking or discriminating for a network management practice that is “primarily used for and tailored to achieving a legitimate network management purpose” is permissible.⁸⁰

The legal authority that the FCC used to justify implementing these rules came from section 706 of the Telecommunications Act.⁸¹ Section 706(a) grants the FCC a set of powers it may use to encourage deployment of telecommunication capabilities to everyone, while section 706(b) directs the FCC to take action to accelerate deployment of telecommunication capabilities when deployment is not occurring in a reasonable and timely fashion.⁸² Importantly, section 706(b) defines telecommunication capabilities as “high-speed, switched, broadband telecommunications capabilities that enables users to originate and receive high-quality voice, data, graphics, and video telecommunications...”⁸³ Thus, applying section 706 to broadband—which was classified as an information service—did not preclude the FCC from finding authority in the Telecommunications Act.⁸⁴

⁷⁷ 2015 Open Internet Order, 30 FCC Rcd. at 22, Lasar, M. (2010, December 21). It’s here: FCC adopts net neutrality (lite)

⁷⁸ *Id.*

⁷⁹ 2010 Open Internet Order, 25 FCC Rcd 17905 at 17906; *see also*, 2015 Open Internet Order, 30 FCC Rcd. at 99.

⁸⁰ *Id.*

⁸¹ 2015 Open Internet Order, 30 FCC Rcd. at 121; *see also*, Lasar, M. (2010, December 21). It’s here: FCC adopts net neutrality (lite)

⁸² Telecommunications Act of 1996 47 U.S.C. §153(1302(b)); *see also*, 2010 Open Internet Order, 25 FCC Rcd 17905; *see also*, 2015 Open Internet Order, 30 FCC Rcd. at 121

⁸³ *Id.*

⁸⁴ 2010 Open Internet Order, 25 FCC Rcd 17905 at 17908.

Though the FCC found a legitimate grant of power in the Telecommunications Act of 1996, the District of Columbia Court of Appeals in *Verizon* said that the FCC was not justified in treating broadband providers as common carrier regulations without reclassifying broadband as a telecommunications service.⁸⁵ The court held that the 2010 no-blocking and no-unreasonable discrimination rules impermissibly “obligated [broadband providers] to act as common carriers.”⁸⁶ The court referred to the 1934 Communications Act, which reserved common carrier restrictions only for services classified as telecommunications services.⁸⁷ Therefore, because the FCC had not reclassified broadband as a telecommunications service before it adopted the Open Internet Order of 2010, it could not impose common carrier regulations on broadband.⁸⁸

While the court decided in favor of *Verizon*, it did expressly affirm the FCC’s conclusion that “broadband providers represent a threat to Internet openness and could act in ways that would ultimately inhibit the speed and extent of future broadband deployment.”⁸⁹ In other words, the court affirmed the FCC’s justification for preserving the virtuous cycle.

Though the court affirmed the FCC’s conclusion that broadband providers represent a threat, their decision set the groundwork for broadband providers to

⁸⁵ *Verizon v. FCC*, 740 F.3d 645 (D.C. Cir. 2014); *see also*, Brodtkin, J. (2016, June 14). Tom Wheeler Defeats the Broadband Industry: Net Neutrality Wins in Court, Retrieved from <http://arstechnica.com/tech-policy/2016/06/net-neutrality-and-title-ii-win-in-court-as-isps-lose-case-against-fcc/>

⁸⁶ *Verizon v. FCC*, 740 F.3d 645 (D.C. Cir. 2014)

⁸⁷ Communications Act of 1934, 47 U.S.C. 153(51)

⁸⁸ *Verizon v. FCC*, 740 F.3d 645 (D.C. Cir. 2014); *see also*, Brodtkin, J. (2014, January 14). Net neutrality is half-dead: Court strikes down FCC’s anti-blocking rules. Retrieved from <http://arstechnica.com/tech-policy/2014/01/net-neutrality-is-half-dead-court-strikes-down-fccs-anti-blocking-rules/>

⁸⁹ 2015 Open Internet Order, 30 FCC Rcd. at 4; citing *Verizon v. FCC*, 740 F.3d 645 (D.C. Cir. 2014).

implement pay-for-prioritization deals where the broadband providers could charge companies like Netflix for faster data transfer to consumers.⁹⁰

After *Verizon*, the FCC issued a Notice of Proposed Rulemaking (NPRM) to respond to the lack of rules protecting the open Internet.⁹¹ These rules largely identical to the rules incorporated in the Open Internet Order of 2010; however, the FCC proposed including rules to allow broadband providers to charge content providers for faster paths to consumers—i.e., internet fast-lanes.⁹²

By and large, the public expressed dislike for Internet fast-lanes and the desire to have rules protecting the Internet.⁹³ In an unprecedented display of concern over the future of the Internet, over four million public comments from companies, trade associations, advocacy groups, and individuals were sent to the FCC.⁹⁴ FCC Chairman Tom Wheeler himself stated the need for neutrality rules because the Internet is too important to be left without any.⁹⁵

After receiving public response from the NPRM, the FCC created the Open Internet Order of 2015, putting forth rules for preserving the open Internet. Similar to the 2010 Order, the FCC used section 706 of the Telecommunications Act to find power to regulate; however, the FCC took one step further this time around and reclassified broadband Internet as a telecommunications service.⁹⁶ This way, the

⁹⁰ Brodtkin, J. (2014, January 14). Net neutrality is half-dead: Court strikes down FCC's anti-blocking rules. Retrieved from <http://arstechnica.com/tech-policy/2014/01/net-neutrality-is-half-dead-court-strikes-down-fccs-anti-blocking-rules/>

⁹¹ See 2014 Open Internet NPRM, 29 FCC Rcd

⁹² See *Id.*; see also, Brodtkin, J. (2015, May 15). FCC votes for Internet “fast lanes” but could change its mind later

⁹³ Brodtkin, J. (2015, February 26). FCC votes for net neutrality, a ban on paid fast lanes, and Title II.

⁹⁴ *Id.*

⁹⁵ *Id.*

⁹⁶ 2015 Open Internet Order, 30 FCC Rcd. at 14-16, 121

FCC could apply common carrier restrictions to broadband providers under the 1934 Communications Act.

The rules established in the 2015 Order largely reflect the rules against blocking and throttling Internet traffic that were in the 2010 Order.⁹⁷ In addition, the FCC also heard and responded to the public's outcry against Internet fast-lanes and included anti-prioritization rules that proscribed broadband providers from charging third parties for faster paths to customers.⁹⁸

The FCC concluded that blocking and throttling threaten virtuous cycle and deter broadband deployment, which implicate section 706 of the Telecommunications Act.⁹⁹ In addition, the FCC found these practices to be unjust and unreasonable practices under section 201(b) of the Communications Act of 1934.¹⁰⁰

The FCC precluded blocking on the grounds that “[c]onsumers...must get what they have paid for—access to all (lawful) destinations on the Internet. ISPs [Broadband providers] cannot block lawful content subject to reasonable network management.”¹⁰¹ The FCC also proscribed throttling on the grounds that banning throttling is necessary for the same reasons as banning blocking but also to avoid “gamesmanship designed to avoid the no-blocking rule by, for example, rendering

⁹⁷ Brodtkin, J. (2015, February 26). FCC votes for net neutrality, a ban on paid fast lanes, and Title II. Retrieved from <http://arstechnica.com/business/2015/02/fcc-votes-for-net-neutrality-a-ban-on-paid-fast-lanes-and-title-ii/>; *see also*, McKinnon, J. (2016, June 14). Net neutrality Rules Upheld by Appeals Court. Retrieved from <http://www.wsj.com/articles/fcc-net-neutrality-rules-upheld-by-appeals-court-1465914663>

⁹⁸ *Id.*

⁹⁹ 2015 Open Internet Order, 30 FCC Rcd. at 126

¹⁰⁰ Communications Act of 1934, 47 U.S.C. § 201(b); *see also*, 2015 Open Internet Order, 30 FCC Rcd. at 126

¹⁰¹ 2015 Open Internet Order, 30 FCC Rcd. at 7.

an application effectively, but not technically, unusable.”¹⁰² Paid-prioritization was prohibited because the FCC realized that fast-lanes granted broadband providers too much power, and, as Commissioner Mignon Clyburn said, hampered free expression and restricted innovation by allowing companies, not consumers, to pick winners and losers.¹⁰³

The FCC also included a catch-all rule, aimed at targeting practices it deemed inappropriate but weren’t proscribed by the no-blocking, no-throttling, or no-paid-prioritization rules.¹⁰⁴ This rule prevents any broadband provider from unreasonably interfering with or unreasonably disadvantaging end users’ ability to select, access, and use broadband Internet or its content, or content providers’ ability to make such content available to the end user except for reasonable network management.¹⁰⁵ However, given the definition for this rule, any issues arising will be addressed on a case-by-case basis.¹⁰⁶

As in the Open Internet Order of 2010, the FCC included protections for service providers for actions that would otherwise violate the rules established in the Order but are primarily for reasonable network management and not for business purposes.¹⁰⁷

Whereas the 2010 Order expressly did not apply to mobile broadband providers, the 2015 Order did.¹⁰⁸ Ironically, Verizon’s victory in 2014 in having the

¹⁰² 2015 Open Internet Order, 30 FCC Rcd. at 7

¹⁰³ Brodtkin, J. (2015, February 26). FCC votes for net neutrality, a ban on paid fast lanes, and Title II.

¹⁰⁴ 2015 Open Internet Order, 30 FCC Rcd. at 7

¹⁰⁵ *Id.* at 9

¹⁰⁶ *Id.*

¹⁰⁷ *Id.* at 10

¹⁰⁸ *Id.* at 7; *see also*, Brodtkin, J. (2015, February 26). FCC votes for net neutrality, a ban on paid fast lanes, and Title II.

2010 Order—which did not impose no-blocking or no-throttling restrictions on mobile—overruled lead the FCC to impose no-blocking and no-throttling restrictions on mobile.¹⁰⁹

The FCC took the Verizon court’s decision that the FCC cannot impose common-carrier restrictions on information services as an implicit suggestion to reclassify broadband service to be a telecommunication service that would allow common carrier restrictions.¹¹⁰ In the 2015 Order, the FCC did just that and reclassified both fixed and mobile broadband as telecommunications services.¹¹¹ Consequentially, being a telecommunications service implicitly includes the assertion that the broadband provider will make just and reasonable efforts to transmit and deliver its customers’ traffic “to and from all or substantially all Internet endpoints” under section 201 and 202 of the Communications Act.¹¹²

As mentioned above, *Brand X* gave the FCC Chevron deference in interpreting the ambiguous statutory classification of broadband in the Telecommunications Act of 1996.¹¹³ The statutory ambiguity is what is meant by the word “offering” under the definitions of telecommunication and information services.¹¹⁴

Understandably, broadband providers brought the FCC to court again in 2016 in *USTA v. FCC* to challenge FCC’s jurisdiction to impose the rules in the 2015

¹⁰⁹ Brodtkin, J. (2015, February 26). FCC votes for net neutrality, a ban on paid fast lanes, and Title II.

¹¹⁰ 2015 Open Internet Order, 30 FCC Rcd. at 134

¹¹¹ *Id.* at 86, 134; *see also*, Brodtkin, J. (2015, February 26). FCC votes for net neutrality, a ban on paid fast lanes, and Title II.

¹¹² 2015 Open Internet Order, 30 FCC Rcd. at 94.

¹¹³ *Nat’l Cable & Telecomms. Ass’n v. Brand X Internet Servs.*, 545 U.S. 967, 980-81 (2005); *see also*, 2015 Open Internet Order, 30 FCC Rcd. at 144

¹¹⁴ 2015 Open Internet Order, 30 FCC Rcd. at 157

Order.¹¹⁵ This time, however, in a 2-1 vote, the court sided with the FCC and refused to overturn the Order.¹¹⁶ The judges were not persuaded by USTA's argument that broadband service is unambiguously an information service.¹¹⁷ FCC Chairman Wheeler announced that this was a "victory for consumers and innovators who deserve unfettered access to the entire Web, and it ensures the Internet remains a platform for unparalleled innovation, free expression and economic growth."¹¹⁸

V. Data Caps

A. Data Caps Generally

Now that the legal development of net neutrality has been established, we can finally move onto data caps. Data caps or allowances are limits on the amount and type of content a user can access online, usually per month.¹¹⁹ Once a cap has been reached, the end user may either be charged for any excess data used or have his Internet reduced to a much slower speed.¹²⁰ Not all caps are the same, as a customer may have a set of caps, measured in terms of gigabytes (GB), to choose from.¹²¹ And as the limit increases, so does the price.¹²²

¹¹⁵ See *United States Telecom Association, et al. v. FCC and United States of America*, No. 15-1063 (D.C. Cir., June 14, 2016)

¹¹⁶ *Id.*

¹¹⁷ *Id.*; see also, Brodtkin, J. (2016, June 14). Tom Wheeler Defeats the Broadband Industry: Net Neutrality Wins in Court, Retrieved from <http://arstechnica.com/tech-policy/2016/06/net-neutrality-and-title-ii-win-in-court-as-isps-lose-case-against-fcc/>

¹¹⁸ Brodtkin, J. (2016, June 14). Tom Wheeler Defeats the Broadband Industry: Net Neutrality Wins in Court,

¹¹⁹ 2015 Open Internet Order, 30 FCC Rcd. at 32

¹²⁰ *Id.* at 68

¹²¹ Lyons, Daniel A. "The Impact of Data Caps and Other Forms of Usage-Based Pricing for Broadband Access." Working Paper no. 12-27, Mercatus Center at George Mason University (2012)

¹²² *Id.*

Data caps became widespread with fixed broadband around 2008 when Comcast implemented a 250GB cap on residential broadband users.¹²³ Mobile caps have been around even longer, and with much lower limits—the standard starting at around 2GB with the option to increase it, but usually not by a substantial amount.¹²⁴

For fixed broadband, typical data plans have limits ranging from 1 gigabyte to 600GB per month and penalties that include warnings, overage fees, and disconnections.¹²⁵ Overages fees usually average around \$10 for every 50GB of data the consumer goes over their standard cap.¹²⁶

Comcast originally started with a 250GB cap, but very recently increased the cap up to 1 terabyte (TB)—or 1,000GB—with an overage of \$10 per every 50GB over the cap up to a maximum of \$200 in overages per month.¹²⁷ In addition, they will offer an unlimited, cap-free plan at \$80-\$100 per month, varying by download and upload speed—the speed at which the broadband provider allows the consumer to transfer data¹²⁸. AT&T provides very similar plans to Comcast's plan prior to their implementation of the increased 1TB data cap, but offer data transfer at much lower

¹²³ Kehl, D., Lucey, P. (2015, June 30). Artificial Scarcity - How Data Caps Harm Consumers and Innovation. Retrieved from <https://www.newamerica.org/oti/policy-papers/artificial-scarcity/>

¹²⁴ *Id.*; see also, Verizon Wireless <http://www.verizonwireless.com/landingpages/verizon-plan/> (starting at 2GB for \$35/month, 4GB for \$50/month, up to \$24GB for \$110/month)

¹²⁵ Minne, Jacob Joseph Orion, Data Caps: How ISPs are Stunting the Growth of Online Video Distributors and What Regulators Can Do About it (May 1, 2012)

¹²⁶ See Comcast — <http://corporate.comcast.com/comcast-voices/a-terabyte-internet-experience>; see also, AT&T — <https://www.att.com/internet/index.html>

¹²⁷ Brodtkin, J. (2016, May 26). Comcast limits data cap overage fees to \$200 a month. Retrieved from <http://arstechnica.com/business/2016/05/comcast-limits-data-cap-overage-fees-to-200-a-month/>.

¹²⁸ See Xfinity — <http://www.xfinity.com/internet-service.html> (The prices and speeds continue to increase up to \$350 for speeds typically unnecessary for the average user)

speeds.¹²⁹ TWC set its price per speed tier at the same rate as its capped competitors' base tiers (roughly \$30 base tier).¹³⁰ However, when comparing TWC's plans to its competitor's unlimited plans, TWC is roughly \$50 cheaper.¹³¹

Mobile broadband is similar to fixed broadband in terms of base price but differs substantially in terms of data limits and overage charges. Most plans are similar in that they set the base cap at 2GB-3GB for \$30-\$35 and increase at roughly \$5 to \$10 per extra GB with a ceiling of anywhere between 24GB (Verizon) and 50GB (AT&T).¹³² However, only Sprint offers a truly unlimited plan.¹³³ AT&T offers unlimited plans, but drops the user to a lower tier speed (128 kilobits per second) after reaching 22GB of data in that month.¹³⁴ Verizon does not offer an unlimited plan.¹³⁵ Overage fees are typically set at a standard rate of \$15 to \$20 per extra 1GB.¹³⁶

T-Mobile is unique in that they have data caps but rather than charging overage fees, they drop the customer down to a slower speed tier.¹³⁷ The drop in speed is pretty considerable, resulting in the customer being dropped from between

¹²⁹ See AT&T — <https://www.att.com/internet/index.html>; *see also*, Minne, Jacob Joseph Orion, Data Caps: How ISPs are Stunting the Growth of Online Video Distributors and What Regulators Can Do About it (May 1, 2012)

¹³⁰ Time Warner Cable — <http://www.xfinity.com/internet-service.html>

¹³¹ See Xfinity — <http://www.xfinity.com/internet-service.html>.

¹³² See Verizon — <http://www.verizonwireless.com/landingpages/verizon-plan/>; *see also*, AT&T Wireless — <https://www.att.com/shop/wireless/data-plans.html>; *see also*, Sprint — <https://www.sprint.com/shop/plan-wall/?INTNAV=NavStrip:ShopPlans#!/?plan=individual>.

¹³³ See Sprint — <https://www.sprint.com/shop/plan-wall/?INTNAV=NavStrip:ShopPlans#!/?plan=individual>

¹³⁴ AT&T Wireless — <https://www.att.com/shop/wireless/data-plans.html>

¹³⁵ See Verizon — <http://www.verizonwireless.com/landingpages/verizon-plan/>.

¹³⁶ *Id.*; *see also*, AT&T Wireless — <https://www.att.com/shop/wireless/data-plans.html>; *see also*, Sprint — <https://www.sprint.com/shop/plan-wall/?INTNAV=NavStrip:ShopPlans#!/?plan=individual>

¹³⁷ Lyons, Daniel A. "The Impact of Data Caps and Other Forms of Usage-Based Pricing for Broadband Access." Working Paper no. 12-27, Mercatus Center at George Mason University (2012)

5 and 12 megabits per second (Mbps) to roughly 128 kilobits per second (Kbps).¹³⁸ Thus, the customer is receiving between 1/50 and 1/120 the speed he was getting before he exceeded the cap.

As mentioned above, as consumers switch from traditional TV to video streaming service, their data consumption could exceed the standard data cap of 250GB regularly.¹³⁹ This amount concerns only one individual's television consumption—it does not even look at data consumption by a family.¹⁴⁰ Netflix has stated that streaming normal video consumes between 0.3 and 1.0GB per hour and HD video at 2.3GB per hour. Thus reaching the cap is realistic for the average individual and or family—it only takes between 100 and 300 hours of video a month, or 3 to 9 hours a day.¹⁴¹

If this number still seems unlikely for the average user to reach, note that this is only calculating data usage from streaming video and not from any other internet access, such as from normal browsing, downloading and uploading files and software, playing games (most of which both receive and send data, doubling the rate of data consumption), video chatting, and streaming music.¹⁴² Not to mention, computers may be infected with viruses that do nothing obvious to your computer

¹³⁸ Lyons, Daniel A. "The Impact of Data Caps and Other Forms of Usage-Based Pricing for Broadband Access." Working Paper no. 12-27, Mercatus Center at George Mason University (2012)

¹³⁹ Minne, Jacob Joseph Orion, Data Caps: How ISPs are Stunting the Growth of Online Video Distributors and What Regulators Can Do About it (May 1, 2012)

¹⁴⁰ *Id.*

¹⁴¹ Lyons, Daniel A. "The Impact of Data Caps and Other Forms of Usage-Based Pricing for Broadband Access." Working Paper no. 12-27, Mercatus Center at George Mason University (2012)

¹⁴² Vodafone New Zealand Ltd. What causes high broadband data use at home? http://help.vodafone.co.nz/app/answers/detail/a_id/21282/~/_what-causes-high-broadband-data-use-at-home%3F (last visited 2016, August 7).

(and so are undetectable by the average user) but do massive amounts of data computations and send them to some remote location.¹⁴³

B. Arguments

Though the FCC won a great victory for net neutrality, the present rules expressly don't protect data caps.¹⁴⁴ The FCC hesitated to proscribe data caps in the 2015 Order because of the "unresolved debate concerning the benefits and drawbacks of data allowances and usage-based pricing plans..."¹⁴⁵ Instead, any issues involving data caps will be addressed as part of the no unreasonable interference or disadvantage catch-all rule on a case-by-case basis.¹⁴⁶ The following arguments primarily focus on how data caps are unreasonable restrictions on content that are not for valid network management purposes. I also discuss how data caps—while not explicit—implicitly block, throttle, and giving paid-prioritization to certain types of content.

Regulating data caps is necessary to promote the virtuous circle that drives innovation and investment on the Internet.¹⁴⁷ The FCC argued that content providers' ability to block and throttle broadband or charge for increased paths to consumers threatened innovation by reducing demand for certain content

¹⁴³ Vodafone New Zealand Ltd. What causes high broadband data use at home? http://help.vodafone.co.nz/app/answers/detail/a_id/21282/~/%2Fwhat-causes-high-broadband-data-use-at-home%3F (last visited 2016, August 7).

¹⁴⁴ 2015 Open Internet Order, 30 FCC Rcd. at 68-69; *see also*, Brodtkin, J. (2015, February 26). FCC votes for net neutrality, a ban on paid fast lanes, and Title II. Retrieved from <http://arstechnica.com/business/2015/02/fcc-votes-for-net-neutrality-a-ban-on-paid-fast-lanes-and-title-ii/>

¹⁴⁵ 2015 Open Internet Order, 30 FCC Rcd. at 68-69.

¹⁴⁶ *Id.*

¹⁴⁷ *Id.*; *see also*, 2010 Open Internet Order, 25 FCC Rcd 17905 at 17911

providers' services.¹⁴⁸ As mentioned above, inhibiting innovation restricts development in efficiency and of applications.

When data caps are involved, content providers are aware that certain content demands more data than other types of content. And regardless whether they create content that is useful, they can predict that users may not consume it simply because it demands too much data. Indeed, research shows that consumers are having to make budgeting tradeoffs, thus resulting in less consumption of high-data services.¹⁴⁹ Even services that seemingly use small amounts of data (like social networking apps) are increasingly incorporating high-data content for their users and high-data advertisements for free apps and websites.

This goes one step further: Even apps and websites that have incorporate no high-data content are still harmed. This is because consumers with data caps still lack adequate knowledgeable about how data works and so are generally more cautious about their entire Internet use.¹⁵⁰

Because users are consuming less, content providers are pushed to creating content that does not involve video. Thus, data caps restrict innovation for high-data content. Broadband providers may argue that this incentivizes innovation for content providers to make their content more efficient and demand less data. Assuming that video can be compressed to a point that it demands only a small fraction of the data that it currently demands, data caps are still a disincentive to making non-efficiency based improvements to video. Additionally, data caps create

¹⁴⁸ 2015 Open Internet Order, 30 FCC Rcd. at 8-9.

¹⁴⁹ Kehl, D., Lucey, P. (2015, June 30). Artificial Scarcity - How Data Caps Harm Consumers and Innovation. Retrieved from <https://www.newamerica.org/oti/policy-papers/artificial-scarcity/>

¹⁵⁰ *Id.*

a disincentive to creating content that doesn't exist yet but is presumed to demand large amounts of data.

This stalls innovation of low-data content as well since many content providers rely on advertisement to generate revenue. However, some advertisements involve video, which might scare customers with data caps from visiting that site altogether. Thus many content providers will have to make the decision whether to incorporate less data-intensive advertisements and thus generate less revenue from the ad source or use the more effective video advertisements at the cost of user traffic. Either way, content providers who generate revenue through advertisements will generate less revenue.

Data caps facially appear to be content neutral; however, the nature of content causes any blanket restriction on data consumption discriminatory blocking or throttling of particular content. Because content differs substantially in data consumption, data caps specifically restrict high-data content. The FCC discussed in its 2015 Order that broadband providers may engage in gamesmanship that is “designed to avoid the no-blocking rule by, for example, rendering an application effectively, but not technically, unusable.”¹⁵¹ Because users who use high-data services (e.g., video, music, videogames, or video chatting) stand to reach and exceed their data limit regularly each month, data caps render these services technically unusable in one of two different ways.

The first way is specifically for mobile, where certain providers drop the user down to a lower speed tier (from 5-12 Mbps to 128 Kbps) once a data threshold is

¹⁵¹ 2015 Open Internet Order, 30 FCC Rcd. at 52

reached. As mentioned above, T-Mobile does this in lieu of overage fees, and AT&T does this on its unlimited plan once the user has consumed 22GB of data.¹⁵² This drop in speed renders video and many mobile apps effectively unusable. Speeds of 128Kbps are very similar to the pre-high-speed Internet era in the 1990s, and since then data requirements for almost everything on the Internet—even common browsing—has increased substantially. The user can still browse websites—though at a crawling speed—watching video is virtually impossible.

The second way, which is less in line with the FCC's reasoning since it does not technically render the content unusable, involves overage fees. Users are subject to overages of typically \$10 per 50GB they use each month for fixed or \$15 per 1GB they use each month for mobile. Depending on the content, these overage fees can add up very quickly, resulting in exorbitant costs to the user. The expense is most pronounced for mobile, where consuming a gigabyte of data is effortless with the amount and type of content available today.

This also ties into another that the FCC raised when discussing the no-blocking and no-throttling rules—which consumers should get what they paid for and should not be restricted based on how they use it.¹⁵³ Consumers pay for high-speed access to content. However, data caps restrict them from this content, especially high-data content. However, this shifts data caps to restriction implicates the catch-all rule against unreasonable restrictions to use.

¹⁵² Lyons, Daniel A. "The Impact of Data Caps and Other Forms of Usage-Based Pricing for Broadband Access." Working Paper no. 12-27, Mercatus Center at George Mason University (2012); *see also*, AT&T Wireless— <https://www.att.com/shop/wireless/data-plans.html>.

¹⁵³ 2015 Open Internet Order, 30 FCC Rcd. at 52.

Broadband providers argue that data caps, while affecting certain types of content more than others, reduce network congestion by changing user consumption behavior.¹⁵⁴ This, therefore, protects them by implicating the exception in the catch-all rule put forth by the FCC in the 2015 Order.¹⁵⁵

However, while data caps do alter consumer consumption behavior¹⁵⁶, they do not alter it in a way that reduces network congestion. First, congestion only occurs during peak demand.¹⁵⁷ Thus, implementing persistent data caps, even during non-peak hours, is overbroad. Second, let's set aside the fact they are overbroad. While data caps influence behavior generally, studies show that they do not actually influence behavior during peak demand.¹⁵⁸ Though data caps are implemented for reasonable management network purposes, they are overbroad and ineffective in that regard. Therefore, the exception to the catch-all rule should not protect broadband providers on the grounds of relieving congestion.

Broadband providers have argued that they need the additional revenue generated from data caps to reinvest in infrastructure, which would fall under the reasonable network management exception to the catch-all rule.¹⁵⁹ However,

¹⁵⁴ See Kehl, D., Lucey, P. (2015, June 30). Artificial Scarcity - How Data Caps Harm Consumers and Innovation. Retrieved from <https://www.newamerica.org/oti/policy-papers/artificial-scarcity/>

¹⁵⁵ See 2015 Open Internet Order, 30 FCC Rcd

¹⁵⁶ See Kehl, D., Lucey, P. (2015, June 30). Artificial Scarcity - How Data Caps Harm Consumers and Innovation. Retrieved from <https://www.newamerica.org/oti/policy-papers/artificial-scarcity/>

¹⁵⁷ *Id.*

¹⁵⁸ *Id.*

¹⁵⁹ Lyons, Daniel A. "The Impact of Data Caps and Other Forms of Usage-Based Pricing for Broadband Access." Working Paper no. 12-27, Mercatus Center at George Mason University (2012)

analysis of broadband investments since 2009 shows that broadband providers are not using data caps as a revenue source for expanding network infrastructure.¹⁶⁰

Some support for data caps rest on the fact that data caps allow broadband providers to shift the cost burden to more accurately associate with consumer use. This, then, opens up broadband access for users who could not previously afford it.

Though data caps may open up access to the lower income community, their surcharges have the effect of specifically targeting them, in addition to rural consumers and communities of color.¹⁶¹ These communities are more likely to rely on mobile as their only access to the Internet.¹⁶² This coupled with the fact that each additional gigabyte of mobile data costs \$15-20 presents a notable inequality created by these caps.

Even if data caps and their surcharges do not have the negative effects to lower income, rural, or minority groups, it is questionable whether extending access to these individuals justifies restricting use to existing users.

Additionally, data caps do not effectively reapportion the cost burden to account for the disproportionate use of data by high-end users. Thus, if the purpose of implementing data caps is to shift the cost burden so that broadband providers can extend access to low-income individuals, then the purpose is missed.

Providing data is cheap, most of the time. As a New York Times editorial stated, "moving an extra gigabyte of data at off-peak times costs virtually nothing."¹⁶³

¹⁶⁰ Kehl, D., Lucey, P. (2015, June 30). Artificial Scarcity - How Data Caps Harm Consumers and Innovation. Retrieved from <https://www.newamerica.org/oti/policy-papers/artificial-scarcity/>

¹⁶¹ 2015 Open Internet Order, 30 FCC Rcd. at 36

¹⁶² *Id.*

¹⁶³ Lyons, Daniel A. "The Impact of Data Caps and Other Forms of Usage-Based Pricing for Broadband Access." Working Paper no. 12-27, Mercatus Center at George Mason University (2012)

Netflix also states that “the marginal cost of providing an extra gigabyte of data...is less than one cent, and falling.” *The Impact of Data Caps and Other Forms of Usage-Based Pricing for Broadband Access*. Essentially, data is much cheaper than broadband providers are making it out to be. Taking Netflix’s claim, broadband plans that offer 300GB cost the providers \$3 to generate.

Broadband providers may argue that costs associated with peak hour data production make up for cheap data at other times. However, heavy data users typically don’t consume more data during peak hours than they do at other times. So if peak demand only occurs 4 hours out of the day, heavy users’ only contribute 1/6th of their entire data usage to costs associated with peak demand. The remaining large majority of their data consumption, as New York Times adequately stated, “costs virtually nothing.”¹⁶⁴ Moreover, peak demand typically means that more low and average data users are consuming data at this time, thus contributing a much larger portion of their total data consumption to consumption during peak demand. This thins the disparity of data usage between heavy and low to average users. Therefore, the argument that data caps reapportion the cost burden to better reflect data consumption is at the very least over stated and possibly more false than true.

The FCC included the catch-all rule to proscribe broadband providers’ practices that don’t amount to blocking, throttling, or paid-prioritization. This catch-all rule proscribes practices that “unreasonably interfere with or unreasonably disadvantage end users’ ability to select, access, [or] use...the lawful content,

¹⁶⁴ Lyons, Daniel A. "The Impact of Data Caps and Other Forms of Usage-Based Pricing for Broadband Access." Working Paper no. 12-27, Mercatus Center at George Mason University (2012)

applications, services or devices of their choice...” subject to reasonable network management.¹⁶⁵ The bright-line rules and the catch-all rule dramatically reduced the power and control broadband providers could exert over content providers and end users. However, because the catch-all rule is somewhat vague and not well explained in the Order, broadband providers may engage in some practices for a time until the FCC determines that these practices amount to unreasonable interference or unreasonable disadvantage to end users’ ability to select, access, or use the lawful content, applications, services, or devices of their choice.

As mentioned throughout this paper, although data caps appear facially neutral with regard to content, data caps have a discriminatory affect against high-data services like video, music, and video games.¹⁶⁶ This discriminatory treatment of content should be looked at under the justifications used and rules implemented by the FCC in the 2015 Order.

I argued that data caps impede innovation by placing broadband providers as the gatekeepers who decide which content wins or loses in the online marketplace. This control makes content providers cautious of engaging in non-safe content creation. I also argued that after a certain amount of data consumption, data caps amount to blocking and throttling, based on the type of data plan set by the broadband provider. These restrictions on content would likely be considered to unreasonably interfere with a consumer’s use of broadband by the FCC, thus implicating the catch-all rule if the bright-line rules don’t already apply.

¹⁶⁵ 2015 Open Internet Order, 30 FCC Rcd. at 10

¹⁶⁶ Vodafone New Zealand Ltd. What causes high broadband data use at home? http://help.vodafone.co.nz/app/answers/detail/a_id/21282/~/%7Bwhat-causes-high-broadband-data-use-at-home%3F (last visited 2016, August 7).

I then argue that the justifications that broadband providers give for implementing their restrictions do trigger the exception to the catch-all rule for reasonable network management practices. The justification that data caps relieve congestion are overbroad and are also incorrect. The justification that data caps generate revenue for broadband providers to reinvest in infrastructure may be true, but studies show that broadband providers are not reinvesting. The justification that data caps extend access to more users seem to have discriminatory effects. And the argument that data caps reapportion the costs in line with customer consumption is both inaccurate and also not primarily for network management.

In conclusion, the FCC should include data caps in their rules proscribing unreasonable practices by broadband providers.