

INTERNET PROTOCOL TELEVISION AND THE CHALLENGE OF “MISSION CRITICAL” BITS[♦]

ROB FRIEDEN*

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INTRODUCTION

The Internet increasingly offers a preferred medium for access to video and other types of high value, bandwidth intensive content. Internet Service Providers (“ISPs”) have made substantial investments in infrastructure upgrades to satisfy growing demand for higher

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* Pioneers Chair and Professor of Telecommunications and Law

Penn State University
102 Carnegie Building
University Park, Pennsylvania 16802
(814) 863-7996; rmf5@psu.edu
<http://www.personal.psu.edu/faculty/r/m/rmf5/>

transmission speed and more bandwidth. Additionally they work to accommodate consumer expectations of having content access anytime, anywhere, via any device and in any distribution or presentation format. Early adopters of new video delivery technologies expect both wireline and wireless alternatives to “legacy” media such as broadcast, cable and satellite television. Consumers have no tolerance for “appointment television”¹ that limits access to a specific time, on a particular channel and in a single presentation format.

Already some video content consumers have “cut the cord” and abandoned traditional video media options replacing them with online platforms offering access to live content as well as streaming of stored content. The terms Internet Protocol Television (“IPTV”)² and Over-the-Top Television (“OTT”)³ refer to the ability of content creators and new or existing content distributors to provide consumers with access to video content via broadband links, in lieu of, or in addition to traditional media. New distribution media have the ability to deliver “mission critical” bits requiring highly reliable conduits for the immediate (“real time”) transmission of video content and their instantaneous display. IPTV and OTT can offer new options for consumers to view high demand, “must see” television, such as live sporting events, along with the downloading of files containing less time-sensitive and cheaper content.

New media choices and the convergence of markets and technologies have the potential to disrupt the business plans of incumbents that rely on a sequence of “windows” for content display that ration access based on willingness to pay. For example, movie access traditionally has run a time sequence starting with theatrical presentation and followed by pay per view, DVD sale, premium cable

¹ “A secular trend toward narrowcasting has intensified on the web, as more individuals forsake appointment television for the ‘long tail’ of online content.” Frank Pasquale, *Beyond Innovation and Competition: The Need for Qualified Transparency in Internet Intermediaries*, 104 NW. U. L. REV. 105, 110 (2010).

² IPTV offers consumers with broadband connections options to download video files or view (streaming) video content on an immediate “real time” basis. In the Matter of Sky Angel U.S., LLC, 25 FCC Rcd. 3879 (2010). Some of the available content duplicates what cable television subscribers receive therein triggering disputes over whether cable operators can secure exclusive distribution agreements and prevent an IPTV service provider from distributing the same content. “Sky Angel has been providing its subscribers with certain Discovery networks for approximately two and a half years, including the Discovery Channel, Animal Planet, Discovery Kids Channel, Planet Green, and the Military Channel. Sky Angel submits that these channels are a significant part of its service offering.” *Id.* at 3879–80. For background on IPTV, see In-Sung Yoo, *The Regulatory Classification of Internet Protocol Television: How the Federal Communications Commission Should Abstain From Cable Service Regulation and Promote Broadband Deployment*, 18 COMM.LAW CONSP. 199 (2009).

³ “Over-the-top VoIP [and other] services require the end user to obtain broadband transmission from a third-party provider, and providers of over-the-top . . . [services] can vary in terms of the extent to which they rely on their own facilities.” In the Matter of Preserving the Open Internet, 25 FCC Rcd. 17905, 17916 n. 48 (2010) [hereinafter 2010 Open Internet Order].

and satellite channel access, DVD rental, broadband download, etc. Eventually content distributors accept compensation from broadcast, cable and satellite television advertisers in lieu of direct payments from end users, or in combination with monthly subscriptions.

Broadband networks have the potential to disrupt the video content distribution window regime, because consumers have new opportunities to access both lawful and pirated content via multiple screens soon after initial release. Computer monitors, smartphone screens and tablets offer much of the content previously made available exclusively via the movie screen and later via television sets from ventures classified by law as Multi-channel Video Program Distributors (“MVPDs”).⁴ These options have become more widely available thanks to new commercial video distribution options⁵ from ventures such as Amazon, Apple, Hulu, Netflix and YouTube as well as new, on-demand access to content offered by incumbent cable and satellite television operators.

On the technological front, content transmission speeds have substantially increased, making it possible for broadband networks to deliver full motion video content as a file download, the “streaming” of

⁴ The Communications Act of 1934, as amended, defines an MVPD as “[A] person such as, but not limited to, a cable operator, a multichannel multipoint distribution service, a direct broadcast satellite service, or a television receive-only satellite program distributor, who makes available for purchase, by subscribers or customers, multiple channels of video programming.” 47 U.S.C. § 522(13); *see also* 47 C.F.R. §§ 76.64(d), 76.71(a), 76.905(d), 76.1000(e), 76.1200(b), 76.1300(d).

⁵ The FCC has proposed to expand its definition of MVPD to include providers of on-line services. The Commission has identified five new categories:

- Subscription Linear. We use this term to refer to Internet-based distributors that make available continuous, linear streams of video programming on a subscription basis. This category includes Sky Angel’s service as it existed before 2014 and Aereo’s service as it existed before the Supreme Court decision.

- Subscription On-Demand. We use this term to refer to Internet-based distributors that make video programming available to view on-demand on a subscription basis, allowing subscribers to select and watch television programs, movies, and/or other video content whenever they request to view the content without having to pay an additional fee beyond their recurring subscription fee. This category includes Amazon Prime Instant Video, Hulu Plus, and Netflix.

- Transactional On-Demand. We use this term to refer to Internet-based distributors that make video programming available to view on-demand, with consumers charged on a per-episode, per-season, or per-movie basis to rent the content for a specific period of time or to download the content for storage on a hard drive for viewing at any time. This category includes Amazon Instant Video, CinemaNow (Best Buy), Google Play, iTunes Store (Apple), Sony Entertainment Network, Vudu (Walmart), and Xbox Video (Microsoft).

- Ad-based Linear and On-Demand. We use this term to refer to Internet-based distributors that make video programming available to view linearly or on demand, with consumers able to select and watch television programs, movies, and/or other video content whenever they request on a free, ad-supported basis. This category includes Crackle, FilmOn, Hulu, Yahoo! Screen, and YouTube as they exist today.

- Transactional Linear. We use this term to refer to non-continuous linear programming that is offered on a transactional basis. This category includes Ultimate Fighting Championship’s UFC.TV pay-per-view service. Promoting Innovation and Competition in the Provision of Multichannel Video Programming Distribution Services, Notice of Proposed Rulemaking, MB Docket No. 14-261, FCC 14-210, ¶13.

2014 WL 7331852 (rel. Dec. 19, 2014).

such files without storage, or the “simulcasting” of live content. As demand for broadband delivery of video content grows, ISPs need to upgrade their networks to accommodate ever increasing traffic volumes and required bit transmission speeds.⁶ ISPs have sought to recoup their investments by extracting higher payments from upstream ISPs, content distributors and content sources.⁷ Additionally ISPs providing retail broadband have raised their rates and have diversified their services into several tiers based primarily on network transmission speed and monthly allowance of content downloading.⁸

Such price and quality of service discrimination constitutes a fundamental deviation from a tradition of offering a “one size fits all,” “best efforts”⁹ routing of traffic. Tiering services, offering different price points and other forms of product differentiation, lead to a diversified marketplace reflecting different levels of consumer requirements.

However advocates for open and neutral Internet access have

⁶ For example, Netflix offers the following transmission bitstream recommendations:

Below are the Internet download speed recommendations per stream for playing movies and TV shows through Netflix.

- 0.5 Megabits per second - Required broadband connection speed
- 1.5 Megabits per second - Recommended broadband connection speed
- 3.0 Megabits per second - Recommended for SD quality
- 5.0 Megabits per second - Recommended for HD quality
- 25 Megabits per second - Recommended for Ultra HD quality.

Netflix, Internet Connection Speed Recommendations, *available at* <https://help.netflix.com/en/node/306>.

⁷ After its popular streaming video service endured months of declining performance on home internet connections provided by Comcast — the country’s largest cable TV and broadband internet provider — Netflix has agreed to pay a fee for more direct access to the Comcast network.

In the complex and politically charged world of high-speed internet access, this is a landmark agreement. Traditionally, content providers like Netflix — which streams TV shows and movies over the net — have not paid for direct access to consumers who use home internet connections from ISPs like Comcast, and the move has sparked countless questions about what the arrangement means for the future of the internet, with many asking whether Comcast and other big internet providers will have too much control over what travels across the networks.

Klint Finley, *Why the Comcast-Netflix Pact Threatens Our Internet Future*, WIRE (Feb. 24, 2014), *available at* <http://www.wired.com/2014/02/comcast-netflix/>.

⁸ For example, in State College, Pa. Comcast offers five tiers of broadband access ranging from 3 megabits per second (“mbps”) to 150 mbps at a monthly cost of between \$40-90. *See* Comcast, Xfinity Internet, *available at* <http://www.comcast.com/internet-service.html>.

⁹ The Internet developed initially as an academic curiosity, based on a commitment to the ‘end-to-end principle.’ This principle requires that all Internet traffic, whether an email, a Voice over Internet Protocol (VoIP) ‘call,’ or a video stream, be treated equally and managed through ‘best efforts’ connections. In such a network, data packets pass from one router to another without the prioritization of any particular packets. In practice, this means that Internet traffic reaches its destination at varying times, depending on the traffic levels of the relevant Internet communications links.

Philip J. Weiser, *The Next Frontier for Network Neutrality*, 60 ADMIN. L. REV. 273, 277–78 (2008).

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expressed concern that biased networks, managed by ISPs legally able to operate in a discriminatory manner, will harm consumers and competitors by using anticompetitive tactics to block, degrade, or raise the price of their traffic delivery service.¹⁰ For example, “Retail ISPs,” providing the first and last mile of service to broadband subscribers end users, might exploit their exclusive link to extract supracompetitive rates, i.e., compensation above what a competitive marketplace would permit. Arguably such ISP could create a new dichotomy between upstream ventures relying on traditional “best efforts”¹¹ traffic routing and new “better than best efforts” service for ventures seeking higher quality of service and “Most Favored Nation” treatment. This could result in a service dichotomy with high cost, fast lanes, available only for ventures able to afford and willing to pay surcharges, and slow lanes available to everyone else, including startup ventures offering bandwidth intensive¹² video content.¹³

Opponents counter that the Internet has thrived as a largely unregulated, commercial medium. They believe that mandated neutrality would trigger costly government oversight that would create disincentives for additional infrastructure investment and reduce overall

¹⁰ See, e.g., Amanda Leese, *Net Transparency: Post-Comcast FCC Authority to Enforce Disclosure Requirements Critical to “Preserving the Open Internet.”* 11 NW J. TECH. & INTELL. PROP. 81 (2013); Marvin Ammori, *Beyond Content Neutrality: Understanding Content-Based Promotion of Democratic Speech*, 61 FED. COMM. L.J. 273 (March 2009); Sascha D. Meinrath & Victor W. Pickard, *Transcending Net Neutrality: Ten Steps Toward an Open Internet*, 12 J. INTERNET L., 1 (2008); Tim Wu, *Network Neutrality, Broadband Discrimination*, 2 J. TELECOMM. & HIGH TECH. L. 141 (2003); Mark A. Lemley & Lawrence Lessig, *The End of End-to-End: Preserving the Architecture of the Internet in the Broadband Era*, 48 UCLA L. REV. 925 (2001).

¹¹ Weiser, *supra* note 9 at 277–78.

¹² Video has greater potential to cause disruptions in service in light of the substantial amount of content that ISPs must handle quickly so that frames of content arrive in time for immediate display. Video delivery standards call for the presentation of 30 discrete frames of content per second:

Video cameras, whether film or digital, take a series of still photographs at a rate determined by the frame-rate for the resulting movie. Thomas Edison is credited with discovering that a series of still images displayed at a sufficiently high frame rate produce the illusion of smooth motion. The typical frame rate is 24 frames/second for movies and 30 frames/second for U.S. television.

Henry H. Perritt, *Technologies of Storytelling: New Models for Movies*, 10 VA. SPORTS & ENT. L.J. 106, 132 (2010).

¹³ Once there is a split Internet, ISPs have the incentive to push every new innovation towards the fast lane. Innovation in the fast lane means extra revenue, while innovation in the slow lane gets them nothing. Investments that would have gone into the entire network before the split will now only go into the fast lane. That means that the forces that have traditionally increased speeds for everyone will now be reserved for those who can pay extra. All the while, the slow lane just keeps getting slower in comparison. After all, a slow lane makes the premium fast lane an even better value!

Michael Weinberg, *How The FCC’s Proposed Fast Lanes Would Actually Work*, PUBLIC KNOWLEDGE BLOG (May 16, 2014), available at <https://www.publicknowledge.org/news-blog/blogs/how-the-fccs-proposed-fast-lanes-would-actually-work>.

innovation in the Internet ecosystem.¹⁴ Additionally they assert that governments should not have the authority to interfere with commercially driven negotiations over the terms and conditions under which ventures agree to interconnect networks.¹⁵

The debate over network neutrality¹⁶ and an open Internet has become quite polarized with advocates unable to see a compromise that accommodates diversifying consumer wants as well as the need for ISPs and other stakeholders to create new revenue streams that can help underwrite necessary network upgrades and generate profits. The creators, distributors and consumers of Internet-mediated video may consider paying a surcharge for “better than best efforts” or “must see” video. To provide a higher degree of confidence that a video stream will arrive on time and with proper quality, ISPs may need to operate networks purposefully configured to prioritize video bits, or to provide specific content sources with dedicated pathways that reduce the potential for delay (latency) and other forms of traffic degradation. Arguably such preferential treatment would support an enhanced value proposition for video consumers particularly if ISPs refrain from deliberately devaluing and degrading the quality of service achieved for regular, non-priority traffic. A broad sense of network neutrality includes concerns about interconnection arrangements, because the availability of a premium delivery option might foreclose the standard and surcharge-free, best efforts option, or render that baseline service inadequate for most uses.

This paper assesses whether and how ISPs can offer quality of

¹⁴ See, e.g., Babette E.L. Boliek, *FCC Regulation vs. Antitrust: How Net Neutrality is Defining the Boundaries*, 52 B.C. L. REV. 1627 (2011); Shanika Chapman, *Hands Off My Internet! Why the FCC Should Refrain from Regulating the Internet*, 67 CONSUMER FIN. L.Q. REP. 375 (2013); Thomas W. Hazlett & Joshua D. Wright, *The Law and Economics of Network Neutrality*, 45 IND. L. REV. 767, 798 (2012); Daniel A. Lyons, *Net Neutrality and Nondiscrimination Norms in Telecommunications*, 54 ARIZ. L. REV. 1029 (2012); Maureen K. Ohlhausen, *Net Neutrality vs. Net Reality: Why an Evidence-Based Approach to Enforcement, and Not More Regulation, Could Protect Innovation on the Web*, 14 ENGAGE: J. FEDERALIST SOC’Y PRAC. GROUPS 81 (2013); Christopher S. Yoo, *Beyond Network Neutrality*, 19 HARV. J.L. & TECH. 1 (2005); Christopher S. Yoo, *Network Neutrality and the Economics of Congestion*, 94 GEO. L.J. 1847, 1901 (2006); Christopher S. Yoo, *Would Mandating Broadband Network Neutrality Help or Hurt Competition? A Comment on the End-to-End Debate*, 3 J. TELECOMM. & HIGH TECH. L. 23 (2004).

¹⁵ See, e.g., J. Gregory Sidak & David J. Teece, *Innovation Spillovers and the “Dirt Road” Fallacy: The Intellectual Bankruptcy of Banning Optional Transactions for Enhanced Delivery Over the Internet*, 6 J. COMP. L. & ECON. 521 (2010); Dennis L. Weisman & Robert B. Kulick, *Price Discrimination, Two-Sided Markets, and Net Neutrality Regulation*, 13 TUL. J. TECH. & INTELL. PROP. 81 (2010).

¹⁶ Network neutrality refers to government mandated nondiscrimination, transparency and other requirements on ISPs designed to foster a level competitive playing field among content providers and to establish consumer safeguards so that Internet users have unrestricted access limited only by legitimate concerns such as ISP network management and national security.

service enhancements for full motion video without disadvantaging competitors by punishing content creators, distributors and consumers who reject demands for new or more compensation. The paper explains that without the controversial classification of Internet access as a telecommunications service, the Federal Communications Commission (“FCC”) lacks jurisdiction to impose anti-discrimination rules and other types of rules that impose the functional equivalence of common carrier responsibilities on private carriers providing information services. The paper concludes that a decision to seek regulatory authority to apply some common carrier requirements on ISPs will extend a period of litigation and uncertainty possibly constraining ISPs from devising interconnection and compensation arrangements that benefit consumers and do not result in an uneven competitive playing field. On the other hand, the paper also acknowledges the need for the FCC to operate as a regulatory referee able to respond to complaints with timely, fair and lawful dispute resolution. The paper concludes that the FCC could have refrained from resorting to muscular and potentially heavy-handed common carrier oversight and instead use its sufficiently broad jurisdiction to oversee private carrier negotiation and ensure that they take place in a timely and good faith basis.

I. THE INTERNET COMES OF AGE

As the Internet has commercialized and diversified, interconnection terms and conditions have changed between ISPs as they pursue alternatives to conventional models for securing the global carriage of traffic. Because no single ISP owns or leases all the network facilities needed to link any source of content with any customer of the ISP, traffic interconnection and compensation arrangement provide necessary supplements capacity. ISPs traditionally classified interconnection as either peering,¹⁷ or transiting.¹⁸ The former involves interconnection between high capacity carriers whose transoceanic and transcontinental traffic volumes generally match thereby enabling the carriers to barter network access in lieu of a financial settlement. Historically smaller carriers have paid transit fees to larger ISPs for the opportunity to secure upstream links throughout the Internet cloud.¹⁹

¹⁷ Peering refers to a barter arrangement for traffic exchange where two Internet Service Providers agree to accept traffic from the other without the transfer of funds. The carriers agree to a settlement-free arrangement, because traffic volumes generally match.

¹⁸ Transiting refers to an exchange of traffic that triggers a financial settlement and transfer of funds. This arrangement typically results when a small carrier needs the services of a larger carrier to reach all Internet carriers and end users.

¹⁹ The Internet cloud refers to the vast array of interconnected networks that make up the Internet and provide users with seamless connectivity to these networks and the content available via these networks. “The increasing functionality of the Internet is decreasing the role of the personal computer. This shift is being led by the growth of “cloud computing”--the ability to run

In light of growing demand for bandwidth intensive, video content delivered via the Internet, traffic volume disparities have increased between ISPs. Because most consumers download more traffic than they upload, expanding demand for downstream delivery of video content broadens the differential. A new category of carrier, commonly referred to as a Content Delivery Network (“CDN”), targets the downstream video content delivery market, all but guaranteeing an asymmetrical traffic flow necessitating a financial settlement with Retail ISPs instead of a simple barter agreement. CDNs incur transit charges, or have to negotiate other compensation arrangements with Retail ISPs, because the downstream traffic requires flows to broadband subscribers from CDNs far exceeds the volume of traffic Retail ISPs have available to hand off for upstream carriage.

Such asymmetry in traffic flows can generate interconnection compensation disputes such as that which occurred between a major CDN for Netflix content, Level 3, and a major ISP, Comcast, which provides “last mile,” delivery of Internet content to broadband subscribers.²⁰ Content distributors, such as Netflix, also have pursued an alternative to using CDNs, by securing a paid peering arrangement directly with Comcast,²¹ and by installing servers containing the most popular content, closer to subscribers on the premises of a Retail ISP.²²

CDNs typically become transit payers even if previously they qualified for zero cost peering, but questions remain whether retail ISPs, such as Comcast, have an affirmative duty to try offsetting traffic imbalances. Likewise consumers wonder what service commitments they deserve to receive from their retail ISPs that accrue sizeable monthly Internet access subscription revenues. The carriers respond that they have had to increase available network capacity and thereby enhance the value proposition of service despite not receiving additional compensation from the ventures causing massive increases in download

applications and store data on a service provider’s computers over the Internet, rather than on a person’s desktop computer.” William Jeremy Robison, Note, *Free at What Cost?: Cloud Computing Privacy Under The Stored Communications Act*, 98 GEO. L.J. 1195, 1199 (2010).

²⁰ See, e.g., Daniel L. Brenner & Winston Maxwell, *The Network Neutrality and the Netflix Dispute: Upcoming Challenges for Content Providers in Europe and the United States*, 23 INTEL. PROP. & TECH. L.J. 3 (2011); Rob Frieden, *Rationales For and Against Regulatory Involvement in Resolving Internet Interconnection Disputes*, 14 YALE J. L. & TECH. 266 (2012).

²¹ Shalini Ramachandran, *Netflix to Pay Comcast for Smoother Streaming*, WALL ST. J. (Feb. 23, 2014), available at <http://online.wsj.com/news/articles/SB10001424052702304834704579401071892041790>.

²² Content providers and distributors can opt to negotiate directly with retail ISPs for the right to install (“co-locate”) equipment on site, or alternatively secure the services of a company, such as Akamai, to negotiate, install and maintain the equipment. Netflix has sought the direct negotiation option with ISPs. Ken Florence, *Announcing the Netflix Open Connect Network*, U.S. & CAN. BLOG (June 4, 2012), <http://blog.netflix.com/2012/06/announcing-netflix-open-connect-network.html>.

volume, i.e., ventures such as Netflix and YouTube.²³

On occasion retail broadband subscribers have experienced degraded service, particularly for bandwidth intensive applications such as full motion video streaming.²⁴ Identifying the actual cause of such congestion remains elusive. Content creators and distributors speculate whether retail ISPs have deliberately caused congestion, by refusing to make timely network capacity upgrades, or by allocating available capacity in ways that increase the probability of congestion for the traffic of specific content types and sources.²⁵ ISPs reject this scenario and cite to less nefarious circumstances such as weather, home-based holidays and the decision of content distributors, such as Netflix, to release an entire season’s worth of a program instead of the conventional weekly release of just one episode.²⁶ Consumers and regulators alike have no easy means for identifying the cause, because multiple carriers participate in the complete routing of traffic from source to end user. Sophisticated network tracking techniques are needed to identify the network operating the weakest link with the lowest available bandwidth and switching capacity that can cause end users to experience delays in downloads and even dropped packets of content. Parties will disagree on the cause of congestion as well as the required remedy.²⁷

²³ For example, Comcast has provided subscribers with increased bit transmission speeds, initially without a rate increase. See Comcast Corp., *Comcast Increases Internet Speeds for 13th Time in 12 Years*, Press Release (April 9, 2014), available at <http://corporate.comcast.com/news-information/news-feed/comcast-xfinity-internet-speed-increase>.

²⁴ Drew Fitzgerald & Shalini Ramachandran, *Netflix-Traffic Feud Leads to Video Slowdown*, WALL ST. J. (Feb. 18, 2014), available at <http://online.wsj.com/news/articles/SB10001424052702304899704579391223249896550>.

²⁵ Five major internet service providers in the US and one in Europe have been accused of abusing their market share to interfere with the flow of the internet for end users. The accusations come from Level 3, a communications company that helps connect large-scale ISPs like Comcast or AT&T to the rest of the internet. According to the company, these six unnamed ISPs are deliberately degrading the quality of internet services using the Level 3 network, in an attempt to get Level 3 to pay them a fee for additional traffic caused by services like Netflix, a process known as paid peering.

Andrew Webster, *Major ISPs accused of deliberately throttling traffic* (May 6, 2014), available at <http://www.theverge.com/2014/5/6/5686780/major-isps-accused-of-deliberately-throttling-traffic>.

²⁶ “The hit political drama series of Netflix kept about 60,000 subscribers glued onto their screens on Valentine’s Day to watch the whole 13-hour production. However, the shifting behavior of consumers to watch videos on demand over the Internet is causing some clogged pipes on the information highway.” Randell Suba, *Netflix-Verizon standoff: Only net neutrality can now stop video slowdown*, TECH, TIMES (Feb. 23, 2014), available at <http://www.techtimes.com/articles/3670/20140223/netflix-verizon-standoff-only-net-neutrality-can-now-stop-video-slowdown.htm>.

²⁷ If you are trying to get Netflix and use Verizon’s broadband, then there is a good chance that your video performance is less than optimal. Some Verizon customers might even go as far as calling it a crappy Netflix experience. The reason: a behind-the-scenes power play between Verizon and Cogent Communications, one of the largest bandwidth providers.

A. *The Paid Peering Option*

In lieu of, or in addition to the use of CDNs, content sources can opt for a direct routing option where they secure a peering arrangement for a price. Such paid peering²⁸ provides “better than best efforts” routing by assigning traffic to dedicated transmission capacity for most, if not all, of the complete routing. This arrangement provides higher quality service by reducing—if not eliminating—the use of other networks thereby expediting delivery of traffic even when congestion would degrade traffic over lines subject to traditional “best efforts” routing.²⁹ Under a paid peering arrangement, traffic can arrive via the most advantageous means, resulting in less latency, fewer circuitous routing arrangements, and the use of fewer routers and other switching equipment.

Companies such as Netflix have opted to pay for peering rather than risk the consequences of degraded network delivery of “mission critical” bandwidth intensive video.³⁰ The decision by Netflix to secure paid peering access to the Comcast network triggered extensive commentary and analysis.³¹ Some believe Netflix capitulated to

Om Malik & Stacey Higginbotham, *Having problems with your Netflix? You can blame Verizon*, GIGAOM (June 17, 2013), available at <https://gigaom.com/2013/06/17/having-problems-with-your-netflix-you-can-blame-verizon/>. See also Dan Rayburn, *Inside The Netflix/Comcast Deal and What The Media Is Getting Very Wrong*, StreamingMediaBlog.com (Feb. 23, 2014); <http://blog.streamingmedia.com/2014/02/media-botching-coverage-netflix-comcast-deal-getting-basics-wrong.html>.

²⁸ Paid peering involves all of the same aspects as conventional peering relationships. Peers announce to the rest of the Internet the addresses that their peering partners control, maintain a sufficient number of interconnection points across the country, and maintain the requisite total volume and traffic ratios. The key difference is that one peering partner pays the other partner for its services.

Christopher S. Yoo, *Innovations in the Internet’s Architecture that Challenge the Status Quo*, 8 J. ONTELECOMM. & HIGH TECH. L. 79, 95–96 (2010).

²⁹ Paid peering, for example, resembles normal peering in almost every respect, except that one network pays the other network even when the exchange of traffic is roughly the same. These more sophisticated agreements reflect the fact that while the traffic exchange may be equal, the cost of maintaining the networks’ respective infrastructures may be unequal. ISPs serving a smaller number of large internet content websites (known as ‘content networks’) have lower costs in maintaining their infrastructure than ISPs serving home users (‘eyeball networks’), since residential neighborhoods require more equipment investment (such as wiring) and maintenance than commercial areas. These interconnection agreements create the economic incentives for ISPs to route internet traffic along the lowest-cost paths, which can sometimes have a discriminatory effect on certain types of content, applications, and services.

Alexander Reicher, *Redefining Net Neutrality After Comcast v. FCC*, 26 BERKELEYTECH. L.J. 733, 752 (2011).

³⁰ See Netflix Media Center, *Comcast and Netflix Team Up to Provide Customers Excellent User Experience* (Feb. 23, 2014), available at <https://pr.netflix.com/WebClient/getNewsSummary.do?newsId=992>.

³¹ A collection of commentaries and critiques is available at Benton Foundation, *Headlines Newsletter* (Feb. 24-27, 2014), available at <http://benton.org/headlines/newsletter>.

extortion by succumbing to thinly veiled threats by retail ISPs like Comcast that absent surcharge payments, Netflix video file downloads would regularly trigger congestion and a degraded customer experience.³² These observers believe Comcast caused Netflix traffic to slow down as a way to extort a surcharge payment³³ from high volume sources of content to help underwrite needed network upgrades.³⁴ Others consider paid peering a pragmatic and commercially wise decision by Netflix to secure enhanced quality of service delivery guarantees to achieve greater certainty that subscribers would not experience degraded service³⁵ in light of the real possibility that Netflix traffic could trigger congestion.³⁶

The migration from peer to transit, or paid peering partner, represents one of many adjustments in interconnection compensation arrangements triggered by changes in traffic flows.³⁷ Heretofore commercially driven negotiations have managed the transition without resulting in many service disruptions. However, it appears increasingly

³² From what information is public, it appears that the largest ISPs are demanding payment from networks that deliver content and services that residential broadband consumers demand. Because the large residential ISPs themselves are the ones keeping the terms of their deals secret, it raises the question of whether they have something to hide. Public Knowledge Raises Concerns over Netflix/Comcast Agreement, Press Release (Feb. 23, 2014), <https://www.publicknowledge.org/press-release/public-knowledge-raises-concerns-over-netflixcomca>.

Alexis Ohanian, startup investor and co-founder of Reddit, lashed out at U.S. broadband policy on Thursday, calling on the FCC to reclassify internet broadband as ‘the utility we all know it to be.’ Ohanian aimed special vitriol at Comcast, affecting a mafia-style voice to accuse the cable giant of ‘legal extortion’ for fiddling with Netflix speeds until the video site paid it to restore proper service.

Jeff John Roberts, *Comcast “extortion” shows the need to treat broadband as a utility*, *Reddit’s Ohanian said*, GIGAOM (Oct. 16, 2014); <https://gigaom.com/2014/10/16/comcast-extortion-shows-the-need-to-treat-broadband-as-a-utility-reddits-ohanian-said/>.

³³ See, e.g., Tim Wu, *Comcast Versus the Open Internet*, THE NEW YORKER (Feb. 24, 2014), available at <http://www.newyorker.com/online/blogs/elements/2014/02/comcast-versus-the-free-internet.html>. See also, *USA ISP Speed Index Results Graph*, NETFLIX (Oct. 2013-Feb. 2014), available at <http://ispspeedindex.netflix.com/results/usa/graph>; See Fitzgerald & Ramachandran, *supra* note 24.

³⁴ See, e.g., Susan Crawford, *Introducing the Comcast Tax*, BLOOMBERGVIEW (Feb. 24, 2014), <http://www.bloombergview.com/articles/2014-02-24/introducing-the-comcast-tax>.

³⁵ See, e.g., Dan Rayburn, *Here’s How the Comcast & Netflix Deal Is Structured, With Data & Numbers*, STREAMINGMEDIABLOG.COM (Feb. 27, 2014), <http://blog.streamingmedia.com/2014/02/heres-comcast-netflix-deal-structured-numbers.html>.

³⁶ Netflix traffic constitutes as much as 35% of the total volume carried by retail ISPs during peak hours. Drew Fitzgerald, *Netflix Share of Internet Traffic Grows*, WALL ST. J. (May 14, 20014), <http://online.wsj.com/news/articles/SB20001424052702304908304579561802483718502>.

³⁷ For background on peering, transit and new interconnection arrangements, see Dennis Weller & Bill Woodcock, *Internet Traffic Exchange*, OECD Digital Economy Papers No. 207 (Jan. 29, 2013), available at http://www.oecd-ilibrary.org/science-and-technology/internet-traffic-exchange_5k918gpt130q-en; Ana-Maria Kovacs, *Internet Peering and Transit* (Apr. 4, 2012), available at <http://www.techpolicyinstitute.org/files/amkinternetpeeringandtransit.pdf>; Dr. Peering International, available at <http://drpeering.net/index.php>.

likely that interconnection negotiations will become more contentious and protracted,³⁸ particularly when retail ISPs demand compensation from sources of high volume, bandwidth intensive video content with which the ISPs do not interconnect directly. As the Internet becomes a more common medium for the delivery of video content, more compensation disputes will arise that have possibly greater potential for consumer inconvenience than carriage disputes between content providers and traditional media outlets such as satellite and cable television operators.

II. ACCESS TO, FROM AND WITHIN THE INTERNET CLOUD

The Internet is commonly referred to as a “network of networks,”³⁹ because many different carriers agree to interconnect so that users achieve fast and seamless access to content located throughout the world. Analogies to a cloud are also used to emphasize the apparent ease with which networks interconnect to form a complete, end-to-end link from content sources at the edge of the cloud, transmission through the cloud and onward delivery to consumers at another network edge. However, when one examines the actual means by which traffic arrives at its final destination, the Internet constitutes a diverse array of facilities operated by different carriers using many types of equipment manufactured by a variety of companies over several generations of innovation.⁴⁰

³⁸ By regulating the terms upon which content providers use their networks to reach consumers, broadband providers could manipulate the flow of information in society. For example, Comcast could conceivably block consumer access to websites like www.comcastsucks.org that criticize the company. Perhaps more realistically, Comcast could block or degrade content and applications like Netflix that compete against its other revenue-generating services. Unlike America Online and other first-generation dial-up Internet access providers, most broadband providers do not specialize in providing Internet access alone. Rather, the largest broadband providers are cable and telephone companies, which have incentives to prevent customers from using their broadband connections in ways that threaten their other revenue streams. For example, consumer groups have expressed concerns that broadband Internet providers that also offer on-demand movie rentals via cable might discriminate against other services (such as Netflix or BitTorrent) that make movies available over a broadband connection.

Daniel A. Lyons, *Net Neutrality and Nondiscrimination Norms in Telecommunications*, 54 ARIZ. L. REV. 1029, 1034 (2012).

³⁹ The Internet is a global network of networks that has been the platform for revolutionary innovation. The role of the Internet in enabling innovation is not accidental; rather it flows from the Internet’s architecture. The key innovation-enabling feature of Internet architecture is comprised of layers, narrowly understood as defined by code or broadly understood as functional components of a communications system.

Lawrence B. Solum and Minn Chung, *The Layers Principle: Internet Architecture and the Law*, 79 NOTRE DAME L. REV. 815, 816 (2004).

⁴⁰ As a “network of networks” the Internet requires many different carriers to interconnect their facilities so that users can access content wherever located. See Eli M. Noam, *Beyond*

The network of networks and cloud analogies also ignore the complex and potentially contentious matter of financial compensation when a cooperative carrier agrees to route traffic of another carrier onward to its final destination, or to another carrier. Internet carriers initially could ignore questions about traffic flow and financial responsibility because governments subsidized network rollouts. During the early phase⁴¹ of government incubation and anchor tenancy, Internet carriers did not need to meter traffic flows and determine whether compensation should flow from one carrier to another in light of traffic imbalances. The network of networks cooperative model started with interconnection based on a “rough justice” barter system called “peering,” where carriers agreed to eschew cash settlements on the assumption that a balance of traffic flows existed.⁴²

Interconnection based on assumed parity of traffic volume and the absence of a need to transfer funds deviates from models previously devised by telephone companies. These carriers typically metered traffic flows and used a “bill and keep,” “sender keep all” arrangement only when traffic volumes match.⁴³ From the onset of service, financial

Liberalization: From the Network of Networks to the System of Systems, 18 TELECOMM. POL’Y 286 (1994).

⁴¹ The industrial structure of the Internet has tracked four phases:

- 1) Incubation—government administration, first through the United States Defense Department and later through the United States National Science Foundation and universities and research institutes throughout the world (1980s-1995);
- 2) Privatization—governments eliminate financial subsidies obligating contractors to assess whether and how to operate commercially (1995-98);
- 3) Commercialization—private networks proliferate as do ventures creating software applications and content that traverse the Internet. The “dotcom boom” triggers irrational, excessive investment and overcapacity (1998-2001); and
- 4) Diversification—after the dotcom bust and market re-entrenchment, Internet survivors and market entrants expand the array of available services and ISPs offer diversified terms, conditions and rates, including price and quality of service discrimination needed by “mission critical” traffic having high bandwidth requirements, e.g., full motion video content. *See* Frieden, *supra* note 20 at, 276.

⁴² For background on peering, transit and new interconnection arrangements, *see* Dennis Weller and Bill Woodcock, *Internet Traffic Exchange*, OECD Digital Economy Papers No. 207 (Jan. 29, 2013), *available at* http://www.oecd-ilibrary.org/science-and-technology/internet-traffic-exchange_5k918gpt130q-en; Ana-Maria Kovacs, *Internet Peering and Transit* (April 4, 2012), *available at* <http://www.techpolicyinstitute.org/files/amkinternetpeeringandtransit.pdf>.

⁴³ In a bill-and-keep or sender-keep-all arrangement, each carrier bills its own customers for the origination of traffic and does not pay the other carrier for terminating this traffic. In a settlement arrangement, on the other hand, the carrier on which the traffic originates pays the other carrier to terminate the traffic. If traffic flows between the two networks are balanced, the net settlement that each pays is zero, and therefore a bill-and-keep arrangement may be preferred because the networks do not have to incur costs to measure and track traffic or to develop billing systems. As an example, the Telecommunications Act of 1996 allows for incumbent local exchange carriers to exchange traffic with competitors using a bill-and-keep arrangement. 47 U.S.C. § 252 (d)(2)(B)(i).

compensation models for telephone carrier interconnection have relied on a negotiated financial settlement based on metered traffic flows.⁴⁴

Over time, as governments have reduced or eliminated subsidies, Internet carriers have recognized the importance of measuring traffic and using financial settlements when traffic volumes lack symmetry.⁴⁵ However, the migration from peering to payment based transiting has not always occurred smoothly, particularly when commercially driven terms impose new financial obligations on some carriers that previously used the zero payment barter process.⁴⁶ In turn these carriers have sought to recoup these costs from end users, particularly the highest volume subscribers.

Internet carriers typically offered an unmetered, “all you can eat” subscription model in the early phases of development and promotion. Now they consider, or already have migrated to, service tiers that place caps on the volume of traffic a subscriber can consume, or slow down transmission delivery speed (“throttling”) after a downloading volume threshold has occurred within one month.⁴⁷ While arguably more efficient and fair, the new metered retail subscription models have triggered much consumer opposition and assertions that tiering discriminates and reduces the value of a subscription.⁴⁸

Michael Kende, *THE DIGITAL HANDSHAKE: CONNECTING INTERNET BACKBONES*, Federal Communications Commission, Office of Plans and Policy, Working Paper No. 32, 8 n.26 (Sep., 2000); http://transition.fcc.gov/Bureaus/OPP/working_papers/oppwp32.pdf.

⁴⁴ Geoff Huston, *Internet peering and settlements*, APNIC, http://www.apnic.net/community/ecosystem/i*orgs/number-misuse/internet-peering-and-settlements (last visited Nov. 4, 2014). For a critique of proposals to use telecommunications settlements for Internet interconnection see Michael Kende, *Internet global growth: lessons for the future*, ANALYSYSMASON (Sept. 2012), <http://www.analysismason.com/Research/Content/Reports/Internet-global-growth-lessons-for-the-future/Internet-global-growth-lessons-for-the-future/>.

⁴⁵ See Daniel A. Lyons, *Internet Policy's Next Frontier: Usage-Based Pricing*, 66 FED. COMM. L.J. 1 (2013).

⁴⁶ In 2008, Sprint and Cogent “de-peered” their networks, causing temporary service disruptions between their customers. See Om Malik, *Cogent, Sprint Disconnect Networks, May Cause Web Slowdown*, GIGAOM (Oct. 30, 2008), <http://gigaom.com/2008/10/30/cogent-sprint-un-peer-may-cause-web-slowdown>.

⁴⁷ See, e.g., *Acceptable Use Policy for XFINITY® Internet*, COMCAST, <http://www.comcast.com/Corporate/Customers/Policies/HighSpeedInternetAUP.html> (last modified Sept. 5, 2014) (reserving the right to throttle traffic, but imposing no downloading cap).

⁴⁸ Consumers scored a big win today when Time Warner Cable announced it would halt proposed trials of “metered” Internet broadband services, where users would pay extra for going over “caps” on the plans they subscribed to. “It is clear from the public response over the last two weeks that there is a great deal of misunderstanding about our plans to roll out additional tests on consumption-based billing,” said Time Warner Cable CEO Glenn Britt. “As a result, we will not proceed with implementation of additional tests until further consultation with our customers and other interested parties, ensuring that community needs are being met.”

Martin H. Bosworth, *Time Warner Cable Backs Down On Bandwith Caps, Company halts trials of “metered broadband” after negative publicity blitz*, CONSUMER AFFAIRS (April 16, 2009), <http://www.consumeraffairs.com/time-warner-metered-billing>.

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The need for Internet carriers to pay attention to traffic flows, and the cost of providing peering and transit services to other carriers, evidence the importance of network interconnection and the risks of disconnections and financial disputes. A carrier dissatisfied with the status quo will seek new and more favorable commercial terms to which other carriers may not readily agree. If negotiations reach an impasse, the carriers will at least temporarily no longer interconnect and accept traffic from each other. Such “de-peering” typically can occur without service disruption, because alternative routing arrangements exist with other carriers. However, the viability of the alternative carrier option depends on where in the cloud the network disconnection occurs.

The Internet ecosystem operates with highly varying degrees of competition and alternative routing options. Content providers and distributors generally have many options for securing the long-haul carriage of traffic. So-called Tier-1 ISPs offer redundant, duplicative and low cost options for transcontinental and transoceanic carriage.⁴⁹ Even if a major Tier-1 ISP decided not to carry the traffic of another ISP, whether on financial or other grounds, the ISP and its customers could readily find alternative routes and carriers.⁵⁰

First and last mile “retail” access presents a different picture. End users may have a limited number of ISP service options for content uploading and downloading.⁵¹

Typically, the incumbent telephone company provides a Digital

⁴⁹ While Level 3 has tens of thousands of customers, it only has 51 peers. That total set of interconnections enables our customers to “see” the whole Internet. And what is important here is the “distance” our customers see between themselves and any other part of the Internet. That is often referred to as the number of ‘hops’; or number of other networks a packet has to traverse to reach its destination. We strive to make that number as low as possible to offer our customers the best performance; more hops can introduce more delay and more potential for quality degradations when the other networks don’t invest enough in performance, redundancy and capacity.

Mark Taylor, *Observations of an Internet Middleman*, Level 3 Blog (May 5, 2014), <http://blog.level3.com/open-internet/observations-internet-middleman>.

⁵⁰ Since its inception, the Internet has been designed not as a single path from one site to another but as a collection of links with routing nodes to decide which link is used to reach a particular destination. As multiple providers built their own backbones, each destination has more and more paths or routes that can reach it and the routing decision is more complex.”

CoreXchange, *Multi-homing Internet Connectivity*, <https://www.corexchange.com/multi-homing-internet-connectivity>.

⁵¹ The FCC reported that “55 million Americans (17 percent) live in areas unserved by fixed 25 Mbps[downstream]/3 Mbps [upstream] broadband or higher service, and that gap closed only by three percentage points in the last year [2014].” 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, GN Docket No. 14-126, 2015 Broadband Progress Report and Notice of Inquiry on Immediate Action to Accelerate Deployment, FCC 15-10, ¶4 (rel. Feb. 4, 2015). The Commission concluded that “broadband is not being deployed to all Americans in a reasonable and timely fashion.” *Id.*

Subscriber Line (“DSL”) and possibly a faster fiber, or hybrid fiber/copper option,⁵² the cable television company provides a faster and more expensive broadband alternative,⁵³ and one or two satellite carriers provide a comparatively more expensive and slower speed delivery option possibly most attractive to rural users lacking other choices.⁵⁴ Terrestrial wireless carriers have begun to offer a competitive option, albeit one typically already imposing content downloading caps and raising questions about their ability to maintain advertised broadband speeds during peak demand conditions.⁵⁵

Most retail consumers select one and only one carrier to handle all of their Internet traffic requirements.⁵⁶ Should a service disruption occur upstream, almost all ISPs can activate or procure alternative interconnection arrangements quickly. But at the retail sector, even consumers with competitive options may not opt to migrate to another carrier in light of the expense and inconvenience.⁵⁷

In light of the possibly limited competitive options available for retail Internet access subscribers and their sole reliance on one carrier, the chosen ISP has significant negotiating power with both end users

⁵² See, e.g., Verizon, High Speed Internet, <http://www.verizon.com/home/highspeedinternet>.

⁵³ See, e.g., Comcast, High-Speed Internet Service: XFINITY® Internet from Comcast, <http://www.comcast.com/internet-service.html>.

⁵⁴ See, e.g., Wild Blue, Deals and Pricing, <http://www.wildblue.com/options/availability/results?availabilityZip=16802&availabilitySubmit=submit>.

⁵⁵ Hibah Hussain, Danielle Kehl, Benjamin Lennett & Patrick Lucey, *Capping the Nation’s Broadband Future? Dwindling competition is fueling the rise of increasingly costly and restrictive Internet usage caps*, NEW AMERICA FOUNDATION (Dec. 17, 2012), http://newamerica.net/publications/policy/capping_the_nation_s_broadband_future.

[D]ata usage is highly skewed: a small group of very intensive data users tie up the network and degrade service for moderate users, who paid the same price. The arrival of high-quality mobile video turbo-charges this: one high-def TV show is most of a gigabyte, while smartphone users who are voice and text-oriented (like me) are unlikely to consume more than 2-3 GB/month.

Todd Hixon, *Verizon Makes Wireless Pricing Rational*, FORBES (Aug. 28, 2012), <http://www.forbes.com/sites/toddhixon/2012/08/28/verizon-makes-wireless-pricing-rational/>.

⁵⁶ “The Commission also convincingly detailed how broadband providers’ position in the market gives them the economic power to restrict edge-provider traffic and charge for the services they furnish edge providers. Because all end users generally access the Internet through a single broadband provider, that provider functions as a ‘terminating monopolist,’” [citing 2010 Open Internet Order at 17919] with power to act as a “gatekeeper” with respect to edge providers that might seek to reach its end-user subscribers, [citing *id.* at 17919]. *Verizon v. FCC*, 740 F.3d 623, 464 (D.C. Cir. 2014).

⁵⁷ Overall, broadband users do not exhibit a high rate of churn (about 17% per year), nor do non-switchers indicate that they are likely switchers. . . . people who have considered switching, but have not switched, are generally more likely to perceive barriers to switching. For them, financial reasons loom large, as they are more likely than other respondents to worry about paying a termination fee and set-up or installation costs. Non-monetary factors also come into play, the hassles of dealing with installation and changing bundles are greater issues for them.

BROADBAND DECISIONS: WHAT DRIVES CONSUMERS TO SWITCH – OR STICK WITH – THEIR BROADBAND INTERNET PROVIDER, FCC Working Paper, 2010 WL 4968165, 6-8 (Dec. 2010).

and upstream ISPs. End users may balk at the inconvenience of changing carriers⁵⁸ and upstream ISPs will have no migration option at all if they want to secure access to all end users. Put another way, if a single ISP enjoys a dominant market share of the retail market, which occurs in many localities, a substantial portion of the market exclusively relies on that single ISP making it absolutely necessary for upstream ISPs to secure an agreement with that ISP for its delivery of content.⁵⁹ A single ISP has the potential to exert exclusive control, as a terminating monopoly,⁶⁰ over access to a majority of the end user market in many places. Content providers and distributors are captive to that ISP in the sense that they must secure delivery to the televisions, computer monitors, smartphones and tablets that access the Internet solely via a single ISP.⁶¹

III. EXPEDITING DELIVERY OF “MISSION CRITICAL,” “MUST SEE” VIDEO BITS

As the Internet becomes an increasingly important medium for the delivery of video, the volume of traffic downloaded increases and carriers must expand network capacity to handle the growth. The prospect for disputes over compensation increase when downstream retail ISPs must regularly upgrade capacity, but believe they are inadequately compensated by the ventures stimulating greater download demand. While retail ISPs receive compensation from both subscribers and upstream ISPs, they have not achieved the same remarkable commercial success achieved by ventures like Google and Netflix that use their networks to deliver content to consumers. Accordingly, disputes have arisen and may increase in number when retail ISPs and upstream content sources disagree on the value of the delivery service performed.

⁵⁸ “[M]any end users may have no option to switch, or at least face very limited options” *Verizon*, 740 F.3d at 647.

⁵⁹ FCC Chairman Thomas Wheeler has expressed concerns about the number of broadband carrier options available to consumers. In most locales fewer than four carriers offer service and a smaller number of carriers offer broadband service exceeding 10 megabits per second. *See* Chairman Remarks on The Facts and Future of Broadband Competition (Sep. 4, 2014), <http://www.fcc.gov/document/chairman-remarks-facts-and-future-broadband-competition>; FCC Chairman: More Competition Needed in High-Speed Broadband Market (Sep. 4, 2014), <http://www.fcc.gov/document/fcc-chairman-more-competition-needed-high-speed-broadband-market>. Bear in mind that broadband subscribers typically rely on only one carrier to provide all service. If a locality has only one DSL option and one cable modem option then regardless of the market share split, each ISP will exclusively serve a significant portion of the broadband market.

⁶⁰ *See* 2010 Open Internet Order at 17924–25 (2010) *aff’d in part, vacated and remanded in part sub nom. Verizon*, 740 F.3d 623.

⁶¹ For a summary of major peering disputes *see* Jon Brodtkin, *Why YouTube buffers: The secret deals that make—and break—online video*, ARS TECHNICA (Jul. 28, 2013), <http://arstechnica.com/information-technology/2013/07/why-youtube-buffers-the-secret-deals-that-make-and-break-online-video/>.

Most retail ISPs no longer consider their service as a single, undifferentiated commodity priced on an unmetered basis. As the diversity, value and volume of downloaded content increases, retail ISPs incur higher costs in delivering the content and accordingly seek ways to secure higher payments.⁶² For retail subscribers downloading much more content, ISPs can tier service and charge higher rates based on the volume of content downloaded in a month, rather than offer a single, “all you can eat” (“AYCE”) unmetered rate.

Rather than consider high volume consumers as pesky “bandwidth hogs,” retail ISPs have begun to consider them favored customers in light of the greater revenue and profit generated by the higher tiered services offering faster bit transmission rates and a higher monthly download allotment. The retail broadband access subscription increases in value when consumers can substitute on demand video access in lieu of “appointment television”⁶³ access to content at a time prescribed by content creators or distributors and available only on a single broadcast, satellite, or cable channel. With successful migration from unmetered, AYCE service for retail subscribers to a tiered and metered system, retail ISPs now have turned their attention upstream to CDNs and content sources such as Netflix⁶⁴ for higher payments.⁶⁵

A. Broadcast Television Retransmission Consent Disputes

The potential for Comcast to inconvenience its subscribers to discipline and demand additional compensation from another carrier has parallels to what happens when television broadcasters cannot reach closure with cable, satellite and other television operators, commonly referred as Multi Channel Video Programming Distributors

⁶² For example, in 2015 two major broadband providers, Comcast and Time Warner raised their cable modem rental rate by 25 and 33 percent respectively to \$120 and \$96 a year. Jose Pagliery, *Comcast and Time Warner Cable hike modem fees as much as 33%. Time to buy your own*, CNN MONEY, <http://money.cnn.com/2015/01/02/technology/comcast-time-warner-cable-modem/>.

⁶³ “Consumers are changing their viewing habits in favor of ‘TV Everywhere.’ They no longer make ‘appointments’ to sit down and view content, and are no longer limited by TV programming schedules. They want content whenever and wherever they are.” John Clancy, *Why the Future of TV Is All About Personalization*, MASHABLE (Aug. 25, 2011), <http://mashable.com/2011/08/25/tv-mobile-personalization/>.

⁶⁴ [I]n negotiations that almost never become public, the world’s biggest Internet providers and video services argue over how much one network should pay to connect to another. When these negotiations fail, users suffer. In other words, bad video performance is often caused not just by technology problems but also by business decisions made by the companies that control the Internet.

Brodkin, *supra* note 61.

⁶⁵ “Today, much Web content is not delivered to the ultimate recipient directly from the Web server belonging to the original creator, but via a content delivery network (CDN)-a collection of servers that cache the content and deliver it on demand.” David D. Clark and Marjory S. Blumenthal, *The End-To-End Argument and Application Design: The Role of Trust*, 63 FED. COMM. L.J. 357, 364–65 (2011).

(“MVPDs”),⁶⁶ on the terms and compensation for carriage of local broadcast signals. Such “retransmission consent” negotiations sometimes fail to reach closure before the MVPD has to stop carriage. Consumer anger at denied access to “must see” television, such as live sporting events, ultimately forces MVPDs to capitulate and pay more compensation.⁶⁷

However, even knowing that they eventually will secure greater compensation, some content providers, such as CBS and Fox, have identified and used new Internet access denial strategies to secure even greater negotiating leverage.⁶⁸ The companies used techniques to identify the Internet Protocol addresses used by broadband subscribers of the MVPD with which they had a retransmission dispute. By identifying these subscribers’ identities and locations, the companies succeeded in blocking cable broadband subscribers’ access to video content available at the CBS⁶⁹ and Hulu⁷⁰ web sites. These content creators had a perverse incentive to deny access to eager viewers despite a reduction in audience ratings and the commensurate impact on advertising revenues. The companies understood that they had more to gain from higher cable television operator retransmission fees and willingly used Internet access blocking techniques to secure even more negotiating leverage with cable operators that also provide broadband

⁶⁶ “As defined by statute, an MVPD is an entity that makes available for purchase multiple channels of video programming. Thus, the MVPD group includes cable operators, DBS operators, and telephone companies that offer multiple channels of video programming.” In the Matter of Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming, 28 FCC Rcd. 10496, 10503 (2013).

⁶⁷ A dispute typically gets resolved before consumers cannot receive major programming such as the regular NFL football season:

CBS Corp. confirmed Monday that it has reached a new broadcasting rights agreement with Time Warner Cable, ending a month-long blackout of the network’s shows at several key markets in the country. . . . While the blackout lasted longer than anticipated, analysts predicted that the urgency to strike a deal would grow as the NFL - whose games draw top ratings - launches its regular season on Sept. 5. Both sides stand to lose if they couldn’t reap the lucrative advertising revenues that NFL games generate and face the ire of football fans who were starting to campaign more aggressively for the end of the blackout.

Roget Yu, *CBS, Time Warner Cable reach agreement, end blackout*, USA TODSAY (Sep. 3, 2013), <http://www.usatoday.com/story/money/business/2013/09/02/cbs-time-warner-cable-agreement/2755953/>.

⁶⁸ See Brian Stelter, *Internet Is a Weapon in Cable Fight*, N.Y. TIMES (Oct. 19, 2010), http://www.nytimes.com/2010/10/20/business/media/20hulu.html?_r=0. See also Bill Carter, *After a Fee Dispute With Time Warner Cable, CBS Goes Dark for Three Million Viewers*, N.Y. TIMES (Aug. 2, 2013), <http://www.nytimes.com/2013/08/03/business/media/time-warner-cable-removes-cbs-in-3-big-markets.html>.

⁶⁹ Todd Spangler, *CBS Blocks Time Warner Cable Internet Users from Full Episodes Online*, VARIETY (Aug. 2, 2013), <http://variety.com/2013/digital/news/cbs-blocks-time-warner-cable-internet-users-from-full-episodes-online-1200573080/>.

⁷⁰ Ben Popken, *Fox Blacked Out Hulu For Cablevision Subscribers*, CONSUMERIST (Oct. 20, 2010), <http://consumerist.com/2010/10/20/fox-blacks-out-hulu-for-cablevision-customers/>.

Internet access.

The ability of CBS and Fox to block access to content far away from retail ISP facilities identifies a new location where carrier interconnection disputes can arise and frustrate consumers. Much of the debate about network neutrality has focused on the incentive and ability of retail ISPs to operate in discriminatory ways that could favor corporate affiliates and other content providers and distributors willing to pay a surcharge for preferential delivery services by retail ISPs. By blocking access to content far upstream at the source, or between the source and a content aggregator, such as Hulu, CBS and Fox have shown how selective blocking of another type of network interconnection in the Internet cloud can occur. Much to their dismay and displeasure, subscribers of broadband services experienced blocked access to Internet content based on a cable television carriage dispute involving their broadband Internet access provider.

IV. CHANGES IN CLOUD INTERCONNECTION ARRANGEMENTS

ISPs have responded to a maturing and diversifying Internet marketplace with new negotiation strategies and contractual agreements with downstream end users and with upstream ISPs, CDNs and content sources. Increasing diversity in the characteristics of interconnecting parties has prompted closer scrutiny of the causes for increases in ISPs' cost of doing business. In addition to the key variable of traffic volume, other relevant factors now include subscriber numbers, points of interconnection, available transmission capacity, portion of the total traffic carried constituting video, geographical scope of service, whether the interconnecting party has upstream capacity available for barter and the availability of alternative delivery options.

New interconnection and compensation arrangements have arisen as alternatives and adjustments to the traditional dichotomy of barter (peering) or payment (transiting)⁷¹ largely because a significant portion of parties seeking interconnection have more traffic requiring downstream delivery than the terminating carrier possibly could generate for upstream carriage. Examples of such asymmetrical traffic flows include content creators, distributors and CDNs, but also retail ISPs that operate in only a few metropolitan areas. The balance of power in commercial negotiations typically favor retail ISPs controlling access to "eyeballs," because only with successful final delivery will consumers consider a service complete and desirable.

Many carriers, which no longer qualify for peering with the largest multi-national, long haul Tier-1 ISPs, have opted to peer with other

⁷¹ See Christopher S. Yoo, *Innovations in the Internet's Architecture that Challenges the Status Quo*, 8 J. TELECOMM. & HIGH TECH. L. 79 (2010).

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similarly situated operators, often at mutually convenient Internet Exchange Points.⁷² However, even agreements to co-locate at the same facility do not necessarily resolve all possible compensation disputes.⁷³ ISPs also have increased the number of peering partners, a process commonly referred to as multihoming, to reflect diversity in the available traffic routing options.⁷⁴

Content creators, distributors, CDNs and ISPs also can acquire the benefits of peering by paying for the privilege. Paid peering⁷⁵ differs

⁷² For background on Internet Exchange Points, see Mike Jensen, *Promoting the Use of Internet Exchange Points: A Guide to Policy, Management, and Technical Issues*, INTERNET SOC'Y REPORTS, available at http://www.internetsociety.org/sites/default/files/promote-ixp-guide_0.pdf (last visited Oct. 24, 2014); March 2012 update see Mike Jensen, *Promoting the Use of Internet Exchange Points: A Guide to Policy, Management, and Technical Issues March 2012*, INTERNET SOC'Y REPORTS, available at <http://www.internetsociety.org/sites/default/files/Promoting%20the%20use%20of%20IXPs.pdf> (last visited Oct.24, 2014).

⁷³ Even interconnections at Internet Exchange facilities have the potential for dispute:

High-profile flare-ups between content providers and broadband providers over traffic exchange are becoming an annual or even semi-annual Internet tradition. The latest flare-up is between Cogent Communications, which provides backbone connectivity for Netflix, and Verizon. But this time there's a new issue embedded in an old issue.

The old issue is how to deal with traffic imbalances between broadband providers and content providers who tend to send more traffic to broadband providers than they receive from them. The new issue pertains to a new approach to solving those traffic exchange problems – allowing the content provider to put servers in key broadband provider connection points, thereby minimizing the distance content has to travel between the two companies. The goal is to minimize transport costs and enhance the quality of the end user experience. And the fight now seems to be over who controls those arrangements.

Joan Engebretson, *Verizon, Netflix Dispute Not Just over Peering; Servers are New Battlefield*, TELECOMPETITOR (June 20, 2013), <http://www.telecompetitor.com/verizon-netflix-dispute-not-just-over-peering-servers-are-new-battlefield/>.

⁷⁴ Today, there are still the three levels of service providers. However, these providers no longer connect exclusively through one-to-one relationships. This is because a hierarchical Internet consisting of one-to-one relationships among the three levels of service providers made each network participant completely dependent upon the level above them--providing internet backbones at the top of the hierarchy with the potential power to charge monopoly rents. As a result, service providers entered into new arrangements, through secondary peering and multihoming, in which lower-level ISPs could connect to more than just the ISP directly above them. Regional ISPs, for example, no longer needed to connect to an internet backbone through a transit agreement; they could also connect to another regional ISP for free on the basis of roughly equal exchange. This process is known as secondary peering.¹⁰⁴ Regional ISPs could also connect to more than one internet backbone, which is known as multihoming. As a result, while service providers still enter into peering and transit agreements, those arrangements now represent just two among a variety of contractual arrangements.

Alexander Reicher, *Redefining Net Neutrality After Comcast v. FCC*, 26 BERKELEY TECH L.J. 733, 751-52 (2011) (internal citations omitted).

⁷⁵ As the Internet has become more commercial, the traditional roles of various Internet entities have become less clear, researchers said. The roles of access ISPs, transit or backbone ISPs, content providers and content delivery networks used to be fairly distinct . . . Over the last few years, those distinctions have become more and more blurry, he said. 'Everybody's basically trying to play all of these roles all the time.' This increases the likelihood of disputes . . . 'I don't think settlement-free peering is

from transiting, because the paying party does not simply select, interconnect with, and pay one Tier-1 ISP for complete access to the entire Internet cloud. Instead the paying party might select several carriers, not limited to Tier-1 ISPs, to handle a portion of the total downstream access requirement. Parties opting for paid peering may operate a significant network of their own, but find it necessary to secure more transmission and switching capacity at locations where they do not operate, or where traffic flows lack parity with disproportionately higher downstream volumes. For example, both Netflix and, CDNs handling Netflix downstream traffic entered into a paid peering relationship with retail ISPs, such as Comcast, during the period before the company sought a paid peering option. Comcast was able to demand and receive payments, despite previously having executed peering agreements that did not trigger a transfer of funds.⁷⁶

Netflix, whether directly, or indirectly via CDNs, generates such a huge volume of downstream traffic that even Tier-1 ISPs could not offset with an equivalent upstream volume. Because of asymmetry in traffic flows, Netflix and its CDNs cannot qualify as zero cost peers and accordingly, they have had to renegotiate their peering arrangements with downstream ISPs for the use of their networks in delivering traffic to a large number of geographically dispersed recipients.

CDNs and their upstream content sources may object to a payment obligation in addition to the sizeable Internet access charges paid by the retail ISPs' subscribers. Nevertheless, retail ISPs have successfully framed their right of compensation as accruing from two sources in what economists have termed a two-sided market: 1) the retail, broadband service provided to end users and 2) the downstream delivery service provided to upstream CDNs, or to content sources agreeing to paid peering, or other compensation arrangements.⁷⁷

going away,' said a Tier 1 ISP executive. What's changing is that new charging agreements are becoming available, he said. Paid peering is one of them, but there are others that fall between the extremes of free peering and paying for transit, he said.

Paid Internet Peering on the Rise, Disputes Possible, COMM'N DAILY (July 1, 2013), <http://www.cs.columbia.edu/~misra/news/CD070113.pdf>.

⁷⁶ The parties resolved their differences, but did not disclose their settlement. See Drew Fitzgerald, *Level 3, Comcast Reach Accord on Internet Traffic Costs Deal to Share Costs of Data Flow Resolves Three-Year Dispute*, WALL ST. J. (July 16, 2013), <http://online.wsj.com/article/SB10001424127887323394504578609963298727892.html>.

⁷⁷ Informally, a two-sided market can be thought of as a meeting place that brings together two distinct user groups, each of which benefits from the presence of the other. Examples include auctions, credit cards, dating bars, newspapers, video game consoles, and the Yellow Pages. No car auction would be possible without the presence of buyers willing to purchase and sellers willing to sell vehicles; thus, auctioneers must set their commissions to make sure there are a sufficient numbers of buyers and sellers at a given auction. In the case of heterosexual 'singles' bars, bar owners must attract both men and women and often set different prices for men and women to attract each gender in the desired proportions. Newspapers derive their revenues from both

Retail ISPs can leverage access from the Internet cloud downstream to end users, but also upstream from their subscribers. ISPs serving end users appear to benefit from a superior bargaining position because they operate the first and last mile needed to originate and complete delivery of high value, “must see” video content. For end users, the retail ISP can demand compensation for broadband access to the Internet cloud where desirable content resides. For upstream ISPs, CDNs and content sources the retail ISP controls access to customers who have paid for such content and now await its timely delivery.⁷⁸

A. Do Paid Peering Agreements Violate Network Neutrality Commitments or Obligations?

Substantially increased volume of video downloading by retail broadband subscribers have made it possible for retail ISPs to demand and receive new, or increased compensation from upstream carriers and content sources.⁷⁹ Many network neutrality advocates consider this shift in negotiation clout evidence that retail ISPs can extort unfair surcharges absent regulatory safeguards. However, shifts in the balance of power in interconnection compensation negotiations does not necessarily mean that retail ISPs can target specific competitors with discriminatory terms and conditions simply to handicap them in the marketplace. For example, Netflix’s decision to secure direct interconnection with Comcast under a paid peering arrangement should reduce or eliminate payments to CDNs that previously had agreed to surcharges—if not paid peering—based on asymmetrical traffic flows.

The migration to paid peering does provide evidence that retail ISPs like Comcast have greater leverage with upstream carriers and content sources in light of the torrent of “must see,” “mission critical” bitstreams that reach end users exclusively via retail ISP networks. Retail broadband consumers typically subscribe to one ISP and while some competitive alternatives exist, nothing prevents all retail ISPs

subscribers and advertisers; thus, the prices that newspapers set for subscribers and the prices they set for advertising space must be calibrated due to the fact that advertisers’ willingness to pay will be determined by subscriber-ship.

Dennis L. Weisman & Robert B. Kulick, *Price Discrimination, Two-Sided Markets, and Net Neutrality Regulation*, 13 TUL. J. TECH. & INTELL. PROP. 81, 87–88 (2010). See also Marc Rysman, *The Economics of Two-Sided Markets*, 25 J. ECON. PERSP. 125 (2009).

⁷⁸ See Stacey Higginbotham, *Peering Pressure: The Secret Battle to Control the Future of the Internet*, GIGAOM (June 19, 2013), <http://gigaom.com/2013/06/19/peering-pressure-the-secret-battle-to-control-the-future-of-the-internet/>.

⁷⁹ For example, despite its substantial broadband subscriber revenues, Comcast successfully demanded and received additional compensation from Netflix ostensibly to recover the cost of handling ever increasing volume of Netflix downstream traffic. Edward Wyatt and Noam Cohenfeb, *Comcast and Netflix Reach Deal on Service*, N.Y. TIMES (Feb. 23, 2014), <http://www.nytimes.com/2014/02/24/business/media/comcast-and-netflix-reach-a-streaming-agreement.html>.

from demanding the same kind of surcharge payments. Additionally retail consumers may not quickly change ISPs in light of the real, or perceived, cost and inconvenience.

Without adequate regulatory oversight nothing prevents retail ISPs from making paid peering—and the surcharge it incorporates—standard operating procedure. In other words, ISPs might try to eliminate the plain vanilla “best efforts” routing option by making it so prone to congestion and high latency that even low volume upstream ISPs and content sources reluctantly conclude that they must migrate to a more expensive and higher quality of service arrangement. Retail ISPs can demand similar payments from other content providers and distributors backed up by a not-so-veiled threat that it simply will not have adequate downstream delivery capacity to accommodate traffic flows that it previously handled without congestion and a surcharge demand.

Such contrived congestion forces almost every upstream venture, with the financial resources available, onto some type of premium service provisioning. In other words retail ISPs might nudge or push upstream carriers and content sources onto a “Most Favored Nation” quality of service making it the default standard, even though retail ISPs previously accommodated increasing network demand without upstream carrier surcharges except for ventures, such as Netflix and YouTube, with the highest downstream volume. Retail ISPs previously accepted having to upgrade network capacity as a cost of doing business, but now they more likely can leverage improved service in exchange for higher interconnection fees.

Perhaps other content providers, generating less traffic, may continue to squeeze by with standard best efforts routing. But why would a competitor of Netflix risk the consequences, knowing that retail ISPs can operate biased networks with the readily available option of throttling, degrading and creating artificial congestion without regulatory agency sanction and largely without certain and immediate identification? Bear in mind that retail ISPs can create problem bitstream delivery problems without their broadband subscribers knowing the cause and the responsible party. Consumers can complain all they want about a reduced value proposition from their \$30-75 monthly subscription payments, but competitive carriers are scarce and unlikely to refrain completely from such higher rent extraction options themselves.

B. Consumer Impacts of a Net Biased Ecosystem

ISPs now want to offer alternatives to traditional “best efforts” neutrality with “better than best efforts” quality of service

enhancements at a higher price.⁸⁰ Such discrimination, referred to as paid prioritization,⁸¹ has an upside benefit for consumers, particularly ones seeking real time streaming of bandwidth intensive video content. Consumers, or more likely their content providers, seeking enhanced “shipping and handling” can now pay for it. ISPs, operating the first and last mile broadband link, should have the opportunity to offer enhanced quality of service options, provided they do not structure their networks to all but guarantee as unusable the previous standard “best efforts” option.

The possibility exists that retail ISPs will succeed in generating higher revenues from both downstream broadband subscribers and upstream ISPs, CDNs and content sources. The former already has occurred as retail ISPs have announced, without any significant consumer pushback, general rate increases and additional tiering on the basis of transmission bit rate and download allotments.⁸² Retail ISPs can also probably increase revenues by substantially narrowing in the gap of download caps between what they have allowed consumers and what wireless broadband carriers allow. Currently wireline options have informal, monthly caps in the 200–300 gigabyte range⁸³ while wireless carriers have hard caps with a much lower allowance and surcharges

⁸⁰ For example companies such as Akamai, Digital River, Limewire and Level3 offer services that reduce latency (delay), as well as the number of routers and networks used to deliver content. Retail ISPs, like Comcast, have offered paid peering options like that secured by Netflix.

⁸¹ Access fees are fees that the network provider imposes on application and content providers who are not its Internet service customers. Access fees come in two variants: In the first variant, a network provider charges application or content providers for the right to access the network provider’s Internet service customers. In the second variant, which is sometimes called ‘paid prioritization’ or ‘third-party-paid prioritization,’ a network provider charges application or content providers for prioritized or otherwise enhanced access (e.g., access that does not count towards the users’ monthly bandwidth cap) to these customers.

Barbara van Schewick, *Network Neutrality and Quality of Service: What a Nondiscrimination Rule Should Look Like*, 67 STAN L. REV. 1, n.62 (2015).

⁸² See, e.g., Sean Buckley, *AT&T U-verse Broadband, TV Users Face Price Hikes*, FIERCE TELECOM (Feb. 21, 2014), <http://www.fiercetelecom.com/story/att-u-verse-users-face-price-hikes/2014-02-21>.

⁸³ For example Comcast has a nominal monthly data cap of 250 Gigabytes in most markets: Effective immediately, we’ve decided to change our Data Usage Plan and replace our 250 GB monthly data usage allowance with a more flexible one. Our goal is to provide options that benefit consumers while also ensuring that all of our customers enjoy the best possible Internet experience over our high-speed data service. To accomplish this, we are going to trial improved data usage management approaches that are in step with plans that other Internet service providers in the market are using and will provide our customers with more choice and flexibility than our current plan.

Comcast, *Questions and Answers About Our Data Usage Plan* (May 17, 2012), <http://customer.comcast.com/help-and-support/internet/common-questions-datapolicy>. The company has a 300 gigabyte cap in trial markets coupled with a surcharge for higher consumption. See *What are the new data usage plans being trialed?*, <http://customer.comcast.com/help-and-support/internet/data-usage-trials-what-are-the-different-plans-launching>.

when subscribers exceed their allowance.⁸⁴ Additionally, some wireless carriers deliberately slow delivery speeds even for subscribers offered “unlimited” and “unmetered” service.⁸⁵

Wireline ISPs can squeeze out higher margins simply by forcing “bandwidth hogs” onto more expensive tiers. Less generous download allotments reduce the broadband subscription value proposition, but the competitive alternatives from terrestrial wireless and satellites typically have a far higher per-megabyte download cost.

We can expect retail ISPs to “soften the blow” of stingy download caps with expanded opportunities for content and service providers to pay in lieu of metering the download.⁸⁶ This might come across as “pay to play,” but heightened consumer sensitivity to a download cap means they are even less likely to respond to additional commercial pitches that debit their download allotment.

ISPs now have greater ability to leverage network upgrades in exchange for better interconnection terms with content providers and their downstream CDNs. The possibility exists that compensation disputes will increase as retail ISPs press their advantage and seek to modify zero cost peering agreements with a new payment scheme. Surges in broadband demand point to the potential for consumers to experience degraded service without an option to secure prioritization of specific bitstreams. Depending on who frames the issue, congestion, or at least slower bit transmission speeds, have become more frequent because of expanded video content availability, including the option of streaming an entire season rather than on a weekly installment basis.

C. Limited Regulatory Oversight

1. The FCC Lacks Statutory Authority to Regulate Carriers It Classified as Information Service Providers

On two separate occasions a reviewing court has largely rejected efforts by the FCC to assert jurisdiction to establish rules that anticipate,

⁸⁴ For example, Verizon Wireless has offered a 4 lines service with shared access to 8 GB data for \$145 monthly plus additional fees. See Verizon, The MORE Everything Plan, <http://www.verizonwireless.com/landingpages/more-everything/>.

⁸⁵ See Jon Brodtkin, *Verizon: We Throttle Unlimited Data to Provide an “incentive to limit usage,”* ARS TECHNICA (Aug. 5, 2014), <http://arstechnica.com/business/2014/08/verizon-we-throttle-unlimited-data-to-provide-an-incentive-to-limit-usage/>; Thomas Gryta, *FCC Chairman Dismisses Verizon’s Defense of Data Throttling*, WALL ST. J. (Aug. 8, 2014), <http://online.wsj.com/articles/fcc-chairman-wheeler-still-concerned-about-verizons-data-throttling-1407519063>.

⁸⁶ See, e.g., Ina Fried, *In Wireless First, AT&T Says it is Ready to Offer “Toll-Free” Data*, RE/CODE (Jan. 6, 2014), <http://recode.net/2014/01/06/in-wireless-first-att-says-it-is-ready-to-offer-toll-free-data/>.

sanction and remedy anticompetitive and discriminatory ISP practices.⁸⁷ The court decisions held that the FCC lacked statutory authority to establish rules prohibiting discrimination and content blocking by ISPs in light of the Commission’s determination that broadband Internet access constitutes a largely unregulated information service instead of regulated, common carrier telecommunications service.

The D.C. Circuit Court of Appeals first held that the FCC lacked jurisdiction to sanction Comcast for using software to disable peer-to-peer file sharing by subscribers even though the company did not need to remedy congestion and had financial incentives to prevent subscribers from sharing movies it might otherwise lease on a pay per view basis.⁸⁸ The court determined that the FCC had no direct statutory authority to impose network neutrality obligations on information service providers, nor could the Commission assert “ancillary jurisdiction”⁸⁹ based on its duty to ensure that new technologies do not adversely impact regulated services.

In its review of the FCC’s second attempt to establish jurisdiction over ISPs, the D.C. Circuit Court of Appeals again rejected common carrier rules requiring nondiscrimination and the prohibition of traffic

⁸⁷ Comcast Corp. v. FCC, 600 F.3d 642 (D.C. Cir. 2010); Verizon v. FCC, 740 F.3d 623 (D.C. Cir. 2014).

⁸⁸ Comcast Corp. v. FCC, 600 F.3d 642 (D.C. Cir. 2010).

⁸⁹ The FCC relies on a claim of ancillary jurisdiction when the Commission lacks explicit statutory authority. The FCC successfully invoked ancillary jurisdiction to regulate cable television even before the Commission received a statutory mandate to do so.

The FCC needed a hook to assert jurisdiction over cable. To reach that goal, it used a two-step process. First, the Commission found that cable was within its primary statutory grant of authority under section 152(a) of the [Communications] Act, which allows the FCC to regulate ‘all interstate and foreign communication by wire or radio.’ Second, the FCC invoked section 303(r) of the Act, which allows the Commission to issue ‘such rules and regulations and prescribe such restrictions and conditions, not inconsistent with law,’ as ‘public convenience, interest, or necessity requires.’ The FCC also referenced section 154(i), which provides that ‘the Commission may perform any and all acts, make such rules and regulations, and issue such orders, not inconsistent with [the Communications Act], as may be necessary in the execution of its functions.’

Kevin Werbach, *Off the Hook*, 95 CORNELL L. REV. 535, 572 (2010) (citations omitted); See also James B. Speta, *The Evolution of Regulatory Institutions: The Shaky Foundations of the Regulated Internet*, 8 J. TELECOMM. & HIGH TECH. L. 101 (2010); John Blevins, *Jurisdiction as Competition Promotion: A Unified Theory of the FCC’s Ancillary Jurisdiction*, 36 FLA. ST. U. L. REV. 585 (2009); Andrew Gioia, *FCC Jurisdiction Over ISPs in Protocol-Specific Bandwidth Throttling*, 15 MICH. TELECOMM. & TECH. L. REV. 517 (2009). On several occasions, the Supreme Court has affirmed the FCC’s claim of ancillary jurisdiction. See *United States v. Sw. Cable Co.*, 392 U.S. 157 (1968); *United States v. Midwest Video Corp. (Midwest Video I)*, 406 U.S. 649 (1972); see also *Chevron U.S.A. Inc. v. Natural Res. Def. Council, Inc.*, 467 U.S. 837 (1984). The Supreme Court supports deferral to the expertise of a regulating agency “if the intent of Congress is clear.” *Chevron*, 467 U.S. at 842–43. If “Congress has not directly addressed the precise question at issue,” and the agency has acted pursuant to an express or implied delegation of authority, the agency’s statutory interpretation is entitled to deference, as long as it is reasonable. *Id.* at 843–44. See also *United States v. Mead Corp.*, 533 U.S. 218, 226–27 (2001).

blocking.⁹⁰ However, the court agreed with the FCC that it could impose non-common carrier rules based on the FCC's reading of Section 706 of the Communications Act⁹¹ that authorizes the Commission to promote nationwide access to advanced services such as the Internet.

Some network neutrality advocates had expressed hope that the D.C. Circuit Court of Appeals would approve the FCC's nondiscrimination and anti-blocking rules based on a recent case in which the court approved as non-common carriage specific interconnection requirements on wireless carriers. In *Cellco Partnership v. FCC*,⁹² the court approved the FCC requirement that wireless carriers must negotiate commercial terms and conditions for data roaming and Internet access via smartphones used outside the customer's home service territory.⁹³ The court affirmed the FCC because the imposition of some duties to deal, for example, providing data roaming, does not rise to the level of compulsory carriage.⁹⁴ The court noted that the FCC only required commercial negotiations that could result in different terms and conditions, or even no required interconnection if technological factors precluded a workable arrangement.⁹⁵ The *Cellco* case supports some degree of government oversight and safeguards for carriers operating outside the reach of Title II. Wireless internet access constitutes an information service, but this classification does not entirely foreclose FCC oversight.

⁹⁰ “[E]ven though the Commission has general authority to regulate in this arena, it may not impose requirements that contravene express statutory mandates. Given that the Commission has chosen to classify broadband providers in a manner that exempts them from treatment as common carriers, the Communications Act expressly prohibits the Commission from nonetheless regulating them as such. Because the Commission has failed to establish that the anti-discrimination and anti-blocking rules do not impose *per se* common carrier obligations, we vacate those portions of the *Open Internet Order*.” *Verizon*, 740 F.3d at 628.

⁹¹ 47 U.S.C. §1302 (2012).

⁹² *Cellco P'ship v. FCC*, 700 F.3d 534, 541 (D.C. Cir. 2012).

⁹³ Title III of the Communications Act of 1934 plainly empowers the Commission to promulgate the data roaming rule. And although the rule bears some marks of common carriage, we defer to the Commission's determination that the rule imposes no common carrier obligations on mobile-internet providers. In response to Verizon's remaining arguments, we conclude that the rule does not effect an unconstitutional taking and is neither arbitrary nor capricious. We therefore reject Verizon's challenge to the data roaming rule.

Id. 700 F.3d at 537.

⁹⁴ “Like other rules that govern Title III services, the data roaming rule merely defines the form mobile-internet service must take for those who seek a license to offer it.” *Id.* 700 F.3d at 543.

⁹⁵ The Commission has thus built into the “commercially reasonable” standard considerable flexibility for providers to respond to the competitive forces at play in the mobile-data market. Although the rule obligates Verizon to come to the table and offer a roaming agreement where technically feasible, the “commercially reasonable” standard largely leaves the terms of that agreement up for negotiation.

Id. 700 F.3d at 548.

However, even with a quasi-common carrier option,⁹⁶ the FCC cannot expressly impose non-discrimination and anti-blocking duties. Section 706(a) of the Communications Act requires the FCC to “encourage the deployment on a reasonable and timely basis of advanced telecommunications capability to all Americans.”⁹⁷ Section 706(b) requires the Commission to conduct a regular inquiry “concerning the availability of advanced telecommunications capability,” and if it determines that access is not available on “a reasonable and timely fashion,” “to take immediate action to accelerate deployment of such capability by removing barriers to infrastructure investment and by promoting competition in the telecommunications market.”⁹⁸

The court determined that the FCC could reasonably interpret section 706 as providing statutory authority for some degree of private carrier oversight. This regulatory option exists even though the FCC previously determined that section 706 provided no such foundation when the Commission previously sought to classify ISPs as information service providers entitled to a largely deregulated status. The court deferred to the FCC and its subsequent decision to consider section 706(a) as the statutory basis for regulatory oversight: “Does the Commission’s current understanding of section 706(a) as a grant of regulatory authority represent a reasonable interpretation of an ambiguous statute? We believe it does.”⁹⁹

The court also accepted the FCC’s ability to change course and even change factual determinations, such as when the Commission determined that the Internet access market lacked sufficient competition after a previous determination that it did.¹⁰⁰ The court did not question the FCC’s finding that ISPs have the ability to engage in discriminatory practices: “there appears little dispute that broadband providers have the technological ability to distinguish between and discriminate against

⁹⁶ For discussion on successful and unsuccessful FCC efforts to impose quasi-common carrier duties, see Rob Frieden, *The Rise of Quasi-Common Carriers and Conduit Convergence*, 9 ISJLP, No. 3, 471 (2014).

⁹⁷ 47 U.S.C. §1302(a).

⁹⁸ 47 U.S.C. §1302(b).

⁹⁹ Verizon v. F.C.C., 740 F.3d 623, 637 (D.C. Cir. 2014).

¹⁰⁰ In July 2010, however, the Commission concluded that ‘broadband deployment to all Americans is not reasonable and timely. [quoting Sixth Broadband Deployment Report, 25 F.C.C.R. 9556, 9558 ¶ 2]. This conclusion, the Commission recognized, represented a deviation from its five prior assessments. [citing *Id.* at 9558 ¶ 2 & n. 8.] According to the Commission, the change was driven by its decision to raise the minimum speed threshold qualifying as broadband. . . . Contrary to Verizon’s arguments, we believe the Commission has reasonably interpreted section 706(b) to empower it to take steps to accelerate broadband deployment if and when it determines that such deployment is not ‘reasonable and timely.’

Verizon v. FCC, 740 F.3d 623, 640-41 (D.C. Cir. 2014).

certain types of Internet traffic.”¹⁰¹ Likewise, the court did not dispute that the Internet access subscribers cannot or will not quickly change providers if potentially harmful discrimination actually occurs:

For example, a broadband provider like Comcast would be unable to threaten Netflix that it would slow Netflix traffic if all Comcast subscribers would then immediately switch to a competing broadband provider. But we see no basis for questioning the Commission’s conclusion that end users are unlikely to react in this fashion.¹⁰²

However, the ability to discriminate does not automatically constitute illegal discrimination because the FCC has statutory authority to assess whether a common carrier has engaged in “unreasonable” discrimination.¹⁰³ The FCC may seize upon the approval of its reliance on section 706 to assert statutory authority to regulate ISPs.¹⁰⁴ However, the Commission may not have much latitude and may have even less deference to impose quasi-common carrier duties on ISPs. The Commission may not even be able to deem as unreasonable discrimination a commercially negotiated arrangement between ISPs.

2. The FCC Proposes New Rules and the Possibility of Reclassifying Internet Access as Title II Regulated Telecommunications Service

Notwithstanding two court reversals, the FCC has launched another proceeding in an attempt to establish lawful open Internet rules.¹⁰⁵ Opting to concentrate on language in *Verizon v. FCC*¹⁰⁶ where the D.C. Circuit Court of Appeals recognized some limited range of permissible regulatory oversight,¹⁰⁷ the FCC has proposed rules¹⁰⁸ that

¹⁰¹ *Id.* at 646.

¹⁰² *Id.*

¹⁰³ It shall be unlawful for any common carrier to make any unjust or unreasonable discrimination in charges, practices, classifications, regulations, facilities, or services for or in connection with like communication service, directly or indirectly, by any means or device, or to make or give any undue or unreasonable preference or advantage to any particular person, class of persons, or locality, or to subject any particular person, class of persons, or locality to any undue or unreasonable prejudice or disadvantage.

⁴⁷ U.S.C.A. § 202(a) (West 2012).

¹⁰⁴ *See, e.g.*, Statement by FCC Chairman Tom Wheeler on the FCC’s Open Internet Rules (Feb. 19, 2014), <http://www.fcc.gov/document/statement-fcc-chairman-tom-wheeler-fccs-open-internet-rules> (last visited Oct 24, 2014).

¹⁰⁵ Protecting and Promoting the Open Internet, GN Docket No. 14-28, FCC 14-61, Notice of Proposed Rulemaking (proposed May 15, 2014), *available at* <http://www.fcc.gov/document/protecting-and-promoting-open-internet-nprm> [hereinafter 2014 Open Internet NPRM].

¹⁰⁶ *Verizon*, 740 F.3d at 637.

¹⁰⁷ The FCC reads *Verizon* as upholding the FCC’s own interpretation that:

[S]ections 706(a) and (b) of the Telecommunications Act grant the Commission

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only the Democratic Commissioners¹⁰⁹ consider necessary¹¹⁰ and lawful.¹¹¹

The 2014 Open Internet NPRM proposes to apply much of the same definitions, policies, rules and complaint resolution procedures the FCC established in 2010.¹¹² The FCC seeks to create more extensive ISP reporting requirements. These are requirements that the Commission believes the *Verizon* court endorsed as lawful based on the FCC’s statutory authority to require that ISPs operate with transparency.¹¹³

affirmative authority to encourage and accelerate the deployment of broadband capability to all Americans through, among other things, measures that promote competition in the local telecommunications market or remove barriers to infrastructure investment. The court further held that the Commission could utilize that section 706 authority to regulate broadband Internet access service. It concluded that the Commission had adequately justified the adoption of open Internet rules by finding that such rules would preserve and facilitate the ‘virtuous circle’ of innovation, demand for Internet services, and deployment of broadband infrastructure and that, absent such rules, broadband providers would have the incentive and ability to inhibit that deployment.

2014 Open Internet NPRM, *supra* note 105, at ¶23.

108 An FCC Notice of Proposed Rulemaking typically offers specific regulatory outcomes that the Commission tentatively concludes are lawful and in the public interest. The Administrative Procedures Act, 5 U.S.C. §§ 551-559 (2013) requires the FCC to invite comments and to generate a complete evidentiary record to support its tentative conclusions. The proposed rules become enforceable only after the FCC issues an Order that finalizes or revises the proposed rules.

109 The FCC Commissioners split the vote to approve the 2014 Open Internet NPRM on party lines. The two Republican Commissioners issued dissents strongly asserting that the FCC continues to lack statutory authority to impose open Internet access rules, and that the Commission should not reclassify Internet access as a telecommunications service in order to acquire Title II statutory authority. *See* Dissenting Statement of Commissioner Ajit Pai., 2014 Open Internet NPRM at *89 [Westlaw pagination]; Dissenting Statement of Commissioner Michael O’Rielly, *Id.* at *94

110 Currently “there are no legally enforceable rules by which the Commission can stop broadband providers from limiting Internet openness.” 2014 Open Internet NPRM, *supra* note 105, at ¶ 3; “It is in the absence of these protections for the open Internet that the Commission must act to ensure that new legally enforceable rules are put in place. That is a gap that must be closed as quickly as possible.” *Id.* ¶ 9.

111 “Per the blueprint [for lawful regulatory oversight] offered by the D.C. Circuit in its decision in *Verizon v. FCC*, the Commission proposes to rely on section 706 of the Telecommunications Act of 1996.” *Id.* ¶ 4. The 2014 Open Internet NPRM also proposes to “seriously consider the use of Title II of the Communications Act as the basis for legal authority.” *Id.* ¶ 4.

112 [W]e generally propose to retain the definitions and scope of the 2010 rules. . . . [W]e tentatively conclude that the Commission should adopt the text of the no-blocking rule from the Open Internet Order with a revised rationale, in order to ensure that all end users and edge providers can enjoy the use of robust, fast and dynamic Internet access.

Id. ¶10.

We tentatively conclude that the same three means by which the Commission focused on potential open Internet violations after the adoption of the *Open Internet Order*, namely self-initiated investigation, informal complaints, and formal complaints, should be used as well to enforce any new open Internet rules.

Id. ¶172.

113 [W]e tentatively conclude that the Commission should enhance the transparency rule that was upheld by the D.C. Circuit so that the public and the Commission have the

The FCC also proposes to re-establish the rule prohibiting ISPs from blocking access to lawful content. The D.C. Circuit Court of Appeals rejected the rule as impermissibly imposing common carrier duties on information service providers.¹¹⁴ The Commission seeks to achieve the goal of prohibiting blocking, coupled with an implicit requirement that ISPs not engage in any discriminatory practices at least for a base level of performance for which all subscribers and upstream sources of content have a right to expect. The Commission tentatively concludes “that the revived no-blocking rule should be interpreted as requiring broadband providers to furnish edge providers with a minimum level of access to their end-user subscribers.”¹¹⁵ The Commission attempts to show that a rule prohibiting blocking and for broadband service to meet a threshold level of performance complies with the objectives contained in Section 706 of the Telecommunications Act of 1996¹¹⁶ and also Title II of the Communications Act, if the Commission opts to reclassify Internet access as a telecommunications service.¹¹⁷

For service exceeding the baseline threshold, which the Commission tentatively analogizes to conventional “best efforts” traffic

benefit of sunlight on broadband provider actions and to ensure that consumers and edge providers—indeed, the Internet community at large—have the information they need to understand the services they are receiving and to monitor practices that could undermine the open Internet.

Id. ¶10.

¹¹⁴ “[W]e tentatively conclude that the Commission should adopt the text of the no-blocking rule from the Open Internet Order with a revised rationale, in order to ensure that all end users and edge providers can enjoy the use of robust, fast and dynamic Internet access.” *Id.* ¶10.

¹¹⁵ *Id.* ¶97. The FCC also proposes to subject wireless broadband ISPs to a less restrictive anti-blocking policy consistent with its 2010 Order that prohibited blocking lawful web content as well as applications that compete with the mobile broadband providers’ own voice or video telephony services, subject to reasonable network management. *See Id.* ¶105.

¹¹⁶ Telecommunications Act of 1996, Pub. L. No. 104-104, § 706, 110 Stat. 56, 153 (1996), as amended in relevant part by the Broadband Data Improvement Act (BDIA), Pub. L. No. 110-385, 122 Stat. 4096 (2008), *codified* in Title 47, Chapter 12 of the U.S.C. *See* 47 U.S.C. §§ 1301-2.

¹¹⁷ The 2014 Open Internet NPRM invites comments about whether the FCC should reclassify Internet access from the largely unregulated information service to the telecommunications service subject to Title II regulation that the Commission can calibrate by streamlining and forbearing from applying all common carrier requirements:

We seek comment on whether the Commission should rely on its authority under Title II of the Communications Act, including both (1) whether we should revisit the Commission’s classification of broadband Internet access service as an information service and (2) whether we should separately identify and classify as a telecommunications service a service that ‘broadband providers . . . furnish to edge providers.’ For either of these possibilities, we seek comment on whether and how the Commission should exercise its authority under section 10 (or section 332(c)(1) for mobile services) to forbear from specific obligations under the Act and Commission rules that would flow from the classification of a service as telecommunications service.

2014 Open Internet NPRM, *supra* note 105 at ¶148.

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routing,¹¹⁸ the FCC shows flexibility and seeks comment on whether it should allow ISPs to categorize traffic streams so that some traffic can qualify for prioritization, provided ISPs do not degrade the performance of standard traffic delivery.¹¹⁹ Specifically, the FCC proposes to allow:

[B]roadband providers to engage in individualized practices, while prohibiting those broadband provider practices that threaten to harm Internet openness. Our proposed approach contains three essential elements: (1) an enforceable legal standard of conduct barring broadband provider practices that threaten to undermine Internet openness, providing certainty to network providers, end users, and edge providers alike, (2) clearly established factors that give additional guidance on the kind of conduct that is likely to violate the enforceable legal standard, and (3) encouragement of individualized negotiation and, if necessary, a mechanism to allow the Commission to evaluate challenged practices on a case-by-case basis, thereby providing flexibility in assessing whether a particular practice comports with the legal standard.¹²⁰

The prohibition on imposing common carrier requirements on ISPs, absent a reclassification of regulatory status, obligates the FCC to come up with language that imposes duties that fall below common carriage. The Commission proposed a nuanced approach:

It would prohibit as commercially unreasonable those broadband providers’ practices that, based on the totality of the circumstances, threaten to harm Internet openness and all that it protects. At the same time, it could permit broadband providers to serve customers and carry traffic on an individually negotiated basis, “without having to hold themselves out to serve all comers indiscriminately on the same or standardized terms,” so long as such conduct is commercially reasonable.¹²¹

The FCC’s approach requires great finesse. On one hand, it cannot

118 One way to define a minimum level of access is as a requirement that broadband providers apply no less than a “best effort” standard to deliver traffic to end users. For any particular type of Internet traffic, best-effort delivery would represent the ‘typical’ level of service for that type of traffic—in effect, routing traffic according to the ‘traditional’ architecture of the Internet.

Id. ¶102.

119 “[W]e propose to create a separate screen that requires broadband providers to adhere to an enforceable legal standard of commercially reasonable practices, asking how harm can best be identified and prohibited and whether certain practices, like paid prioritization, should be barred altogether.” *Id.*

120 *Id.* ¶111.

121 *Id.* ¶116, citing *Verizon v. FCC*, 740 F.3d at 652.

impose clear common carrier duties on ISPs, unless it reclassifies them as telecommunications service providers, a tactic guaranteed to trigger substantial opposition and litigation. On the other hand, the Commission has to create rules that achieve the desired outcome of allowing ISPs to engage in commercial negotiations that will provide specialized, arguably “better than best efforts” routing options for single ventures without balkanizing and dichotomizing the Internet into fast lanes available to ventures with deep pockets and slow lanes available to ventures, including most startups, lacking the financial resources to pay surcharges. The FCC believes it can satisfy the prohibition on common carriage while also preventing unreasonable blockage and discrimination by using the *Cellco* case as precedent.¹²² The D.C. Circuit Court of Appeals in *Cellco* agreed that even for private carriers, such as wireless information service providers, the FCC can impose reasonable, non-common carrier duties to the deal.

The FCC broadly justifies the need for regulatory intervention based on the incentive¹²³ and ability¹²⁴ of ISPs to limit Internet openness in ways that may enhance individual carrier profitability, but this comes at the expense of fully exploiting the Internet ecosystem to spur innovation, competition, free expression and infrastructure deployment.¹²⁵ The Commission reminds readers that the *Verizon* court did not question this conclusion. The “D.C. Circuit found that the Commission ‘adequately supported and explained’ that absent open Internet rules, ‘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.’”¹²⁶

¹²² *Cellco P’ship v. FCC*, 700 F.3d 534, 541 (D.C. Cir. 2012).

¹²³ [T]he Commission found that providers of broadband Internet access service had multiple incentives to limit Internet openness. The Order concluded that the threat of broadband provider interference with Internet openness would be exacerbated by—but did not depend on—such providers possessing market power over potential subscribers in their choice of broadband provider. However, the Commission found that most residential customers have only one or two options for wireline broadband Internet access service, increasing the risk of market power, and found the future of mobile Internet access service as a competing substitute remained unclear.

²⁰¹⁴ Open Internet NPRM, *supra* note 105 at ¶42.

¹²⁴ “[I]ncreasingly sophisticated network management tools enable providers to identify and differentiate the treatment of traffic on their own broadband Internet access service networks. The D.C. Circuit agreed, finding ‘little dispute that broadband providers have the technological ability to distinguish between and discriminate against certain types of Internet traffic.’” *Id.* ¶51 (quoting *Verizon*, 740 F.3d at 646).

¹²⁵ The FCC noted that the D.C. Circuit Court of Appeals “affirmed the Commission’s conclusions that vertically integrated broadband providers have incentives to interfere with competitive services and that broadband providers generally have incentives to accept fees from edge providers.” *Id.* ¶43 citing *Verizon*, 740 F.3d at 644-45.

¹²⁶ *Id.* ¶39 quoting *Verizon*, 740 F.3d at 645. “The D.C. Circuit found that the Commission’s assessment of broadband providers’ incentives and economic ability to threaten Internet openness

V. THE WAY FORWARD

As the Internet becomes an increasingly predominant medium for video content delivery interconnection and compensation, disputes will become more frequent. One can already draw parallels from disputes between television broadcasters and MVPDs on one hand, and disputes between content sources and downstream ISPs on the other hand. In the former, consumers are denied access to desirable video content, but the parties typically reach a settlement before consumers become too inconvenienced, or they miss access to “must see television” such as the regular season of the National Football League. In the latter, the stakes increased in light of ever growing consumer demand for their broadband service to deliver bandwidth intensive video content without any congestion, blockage or degradation.

Consumers have the right to expect that their significant monthly broadband subscription payments entitle them to reliable and high quality service that is not contingent on whether the retail ISP succeeds in its demands for surcharges from specific carriers and content sources. Without a regulatory safeguard, retail ISPs can immediately punish holdouts, and consequently, their consumers with network bias that translates into degraded service. Most consumers may not know how vulnerable their Internet access can be to service interruptions whether caused by real, or artificial congestion. Nothing currently prevents a retail ISP from retaliating when an upstream carrier, or content source, refuses to pay a surcharge or to migrate to paid peering. End users may quickly complain about service degradation, but they have limited recourse in terms of shifting carriers, or demand that their broadband provider solve the problem quickly.¹²⁷

Retail ISPs have a right to recoup higher costs, including the network upgrades made necessary by increased downloading of bandwidth intensive video content. The problem lies in the absence of safeguards that limit retail ISPs to reasonable types of price and quality of service discrimination, based on actual differences in the cost of service, versus exploiting their negotiating leverage and control of the last mile to achieve anticompetitive goals and to price gouge.

Commercial negotiations, unfettered by regulatory agency oversight, constitute the preferred arrangement for parties to anticipate

was not just supported by the record but also grounded in ‘common sense and economic reality.’” *Id.* ¶43 (quoting *Verizon*, 740 F.3d at 644).

127 [The] Commission found that most residential customers have only one or two options for wireline broadband Internet access service, increasing the risk of market power, and found the future of mobile Internet access service as a competing substitute remained unclear. Moreover, the Commission emphasized that customers may incur significant costs in switching from one provider to another, thus creating ‘terminating monopolies’ for content providers needing high-speed broadband service to reach end users.

Id. ¶42.

and resolve disputes. However, the likelihood of protracted negotiations and outages harmful to consumers appear increasingly likely, particularly now that substitutes for the traditional dichotomy of peering or transit have arisen. Consumers, upstream ISPs and content sources need a complaint resolution forum that can reach timely and fair resolution of predictable disputes.

The FCC now proposes to rethink its decision classifying Internet access as entirely an information service. A regulatory agency can change its statutory interpretations and the regulatory classifications it has made in implementing statutorily imposed duties. For example, the Commission changed the regulatory classification of Digital Subscriber Line service from a telecommunications service to an information service.¹²⁸ When making a reclassification that triggers less or no regulation, the FCC receives ample support from stakeholders that benefit from lowered or eliminated regulatory costs.

A reclassification from reduced or nonexistent regulation to one that imposes new regulatory oversight will generate substantial opposition, legal challenges and high political cost for the FCC.¹²⁹ In both types of reclassifications, the FCC must provide evidence, ideally supported with empirical data, to support conclusions that changed circumstances favor new regulatory requirements. Armed with the lawful authority to select from a larger set of oversight tools, the FCC must closely calibrate the application of new regulatory burdens so that only necessary market-countervailing rules apply.

Additionally, the FCC should recognize that having Title II regulatory authority does not empower it to prevent any and all forms of discriminatory practices. Title II regulated common carriers can offer services, on different terms and conditions, provided that any “similarly situated”¹³⁰ consumer can qualify to become a subscriber. This means

¹²⁸ See *Appropriate Framework for Broadband Access to the Internet over Wireline Facilities*, 20 F.C.C.R. 14853 (2005).

¹²⁹ [C]able is willing to embrace the core principles of network neutrality with the caveat that it will fight hard – very hard – against any pursuit of rules that attempt to change the definition of broadband from an information service, as it is today, to a common carrier service. If rule makers try to regulate broadband services as common carrier services under Title II of the Communications Act of 1934, ‘that’s World War III,’ [National Telecommunications and Cable Association CEO Michael] Powell said.

Jeff Baumgartner, *Powell On NCTA’s 2014 Priorities: ‘Broadband, Broadband and Broadband,’* MULTICHANNEL NEWS (Oct. 22, 2013), available at <http://www.multichannel.com/news/content/powell-ncta-s-2014-priorities-broadband-broadband-and-broadband/357180#sthash.hLQtjvZ.dpuf>.

¹³⁰ [T]he [Communications] Act defines the terms ‘common carrier’ and ‘carrier’ to include ‘any person engaged as a common carrier for hire, in interstate or foreign communication by wire or radio Various regulatory obligations and entitlements set forth in the Act - including a prohibition on unjust or unreasonable discrimination among similarly situated customers and the requirement that all charges, practices, classifications, and regulations applied to common carrier service be ‘just and

that even regulated telecommunications service providers can engage in certain types of price and quality of service differentiation. Arguably a “better than best efforts” offering, promising higher quality of service and faster delivery speeds, does not constitute “unreasonable” discrimination, the only type of discrimination Title II prohibits. Such “paid prioritization” can occur so long as the carrier does not degrade or otherwise impede standard service options with an eye toward forcing consumers and other carriers to migrate to more expensive options.

Even in the absence of a reclassification of Internet access, the FCC does have some statutory authority authorizing limited oversight of Internet access. Section 706 provides the Commission with some latitude to identify and resolve impediments to widespread and affordable broadband access. The D.C. Circuit Court of Appeals has acknowledged that the FCC can act to promote Internet access, provided such intervention does not constitute the imposition of common carrier responsibilities.¹³¹

For example, the FCC has sufficiently clear statutory authority under section 706 to require ISPs to satisfy transparency requirements. These transparency requirements include requiring ISPs to disclose network management practices, performance characteristics, and the terms and conditions of their broadband services, including special arrangements negotiated with one carrier or customer, an example of which is the paid peering agreement between Comcast and Netflix.¹³²

The Commission can and should require ISPs to disclose specialized network arrangements and pricing options as part of its authority to require transparency into the way ISPs do business. Likewise the FCC should use its conventional dispute resolution process in response to complaints submitted to it. The FCC should not impose broad sweeping, general rules of conduct on ISPs, but it should have the power to investigate and remedy instances of unfair competition and trade practices that harm consumers and frustrate the ability to achieve

reasonable’ - attach only to entities meeting this definition.

IP Enabled Services, WC Docket No. 04-36, Notice of Proposed Rulemaking, 19 F.C.C.R. 4863, 4879 (2004).

¹³¹ “The record amassed by the Commission contains many similar examples, and Verizon has given us no basis for questioning the Commission’s determination that the preservation of Internet openness is integral to achieving the statutory objectives set forth in Section 706.” *Verizon v. FCC*, 740 F.3d 623, 645 (D.C. Cir. 2014).

¹³² Comcast, the country’s largest cable and broadband provider, and Netflix, the giant television and movie streaming service, announced an agreement Sunday in which Netflix will pay Comcast for faster and more reliable access to Comcast’s subscribers. The deal is a milestone in the history of the Internet, where content providers like Netflix generally have not had to pay for access to the customers of a broadband provider.

Edward Wyatt & Noam Cohen, *Comcast and Netflix Reach Deal on Service*, NYTIMES.COM (Feb. 23, 2014), http://www.nytimes.com/2014/02/24/business/media/comcast-and-netflix-reach-a-streaming-agreement.html?_r=0.

the goals articulated in section 706.

A reactive dispute resolution process should abate concerns that the FCC still has unlimited and intrusive power to regulate the Internet and the commercial terms and conditions of interconnection and compensation. The D.C. Circuit Court of Appeals made it quite clear that the FCC cannot impose common carrier duties,¹³³ so ISPs can operate biased networks with diverse quality of service and price discrimination. The court devoted considerable attention to cable television case precedent to identify the permissible scope of FCC compelled duties.¹³⁴ The court concluded that the FCC can impose obligations to accommodate the needs of a select group of worthy stakeholders, such as broadcasters, but cannot impose requirements to accommodate a broader, undifferentiated group in the interest of openness and nondiscrimination.¹³⁵ Additionally, the FCC must first defer to commercial negotiations between broadcasters and cable operators.

The D.C. Circuit also identified a previous instance where the FCC overstepped its statutory authority in the area of compulsory carriage. In *Midwest Video II*¹³⁶ the court rejected as too much like common carriage the FCC mandated access not by a small group like local broadcasters, but by a far larger group of public access channel lessees. The court rejected the FCC rules because they usurped the right of cable operators to make their own decision on how to load their inventory of channel capacity.¹³⁷

133 “We think it obvious that the Commission would violate the Communications Act were it to regulate broadband providers as common carriers.” *Verizon v. FCC*, 740 F.3d at 650.

134 The court cited *United States v. Southwestern Cable Co.*, 392 U.S. 157 (1968) (affirming FCC jurisdiction to regulate cable television and to impose rules restricting what signal it can retransmit) and *United States v. Midwest Video Corp.*, 406 U.S. 649 (1972) (“*Midwest Video I*”)—(affirming FCC rules requiring certain cable companies to create their own programming and maintain facilities for local production). *See also*, *Turner Broad. v. FCC*, 512 U.S. 622 (1994) (affirming the duty of cable operators to carry significantly viewed local broadcast television signals); *Turner Broad. v. FCC*, 520 U.S. 180 (1997) (must carry obligations satisfy intermediate scrutiny of rule impacting cable operator’s First Amendment speech rights).

135 The *Midwest Video II* cable operators’ primary ‘customers’ were their subscribers, who paid to have programming delivered to them in their homes. There, as here, the Commission’s regulations required the regulated entities to carry the content of third parties to these customers—content the entities otherwise could have blocked at their discretion. Moreover, much like the rules at issue here, the *Midwest Video II* regulations compelled the operators to hold open certain channels for use at no cost—thus permitting specified programmers to ‘hire’ the cable operators’ services for free. Given that the cable operators in *Midwest Video II* were carriers with respect to these third-party programmers, we see no basis for concluding that broadband providers are not similarly carriers with respect to third-party edge providers.

Verizon v. FCC, 740 F.3d at 654.

136 *FCC v. Midwest Video Corp.*, 440 U.S. 689 (1979).

137 “The access rules plainly impose common-carrier obligations on cable operators. Under the rules, cable systems are required to hold out dedicated channels on a first-come,

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Retail ISPs have a similar right to determine how to load their bandwidth and what price to charge, subject to a regulatory dispute resolution process that assesses whether an ISP practice would have a harmful effect on consumer access to the Internet cloud. Section 706 provides the basis for the FCC to examine whether or not ISPs have used resource allocation decisions to promote public access to widespread and affordable broadband service.

Unfortunately, the FCC opted to reclassify broadband Internet access as common carriage, rather than devise remedies that require ISPs, as private carriers, to operate with greater transparency, to disclose service terms and conditions and to negotiate in good faith. While reclassification offers the opportunity for more muscular and clearcut regulatory oversight, it will reenergize ISPs to litigate whether the FCC has engaged in rational decision making based on a complete evidentiary record.

The FCC opted not to construct an order applying Section 706 of the Communications Act as the sole foundation for creating narrowly calibrated non-common carrier rules applicable to ISPs in their capacity as information service providers.¹³⁸ Despite a finding by the D.C. Circuit Court of Appeals that Section 706 grants the FCC an independent right of authority to examine broadband availability with an eye toward removing barriers—financial and regulatory--, the Commission decided to reclassify Internet access so that Title II applies, subject to a decision by the FCC to “forbear” from applying specific requirements.¹³⁹

The Order goes to extraordinary lengths to emphasize that it will

nondiscriminatory basis. Operators are prohibited from determining or influencing the content of access programming.” *Id.* 440 U.S. at 701-02 (citations omitted).

¹³⁸ Report and Order on Remand, Declaratory Ruling, and Order (FCC 15-24) (release pending). See *FCC Adopts Strong, Sustainable Rules to Protect the Open Internet*, Press Release (Feb. 26, 2015); available at: <http://www.fcc.gov/document/fcc-adopts-strong-sustainable-rules-protect-open-internet>.

¹³⁹ 47 U.S.C §160(a) authorizes the FCC to streamline the scope of its Title II oversight by forbearing from applying many common carrier requirements:

[T]he Commission shall forbear from applying any regulation or any provision of this chapter to a telecommunications carrier or telecommunications service, or class of telecommunications carriers or telecommunications services, in any or some of its or their geographic markets, if the Commission determines that—

- (1) enforcement of such regulation or provision is not necessary to ensure that the charges, practices, classifications, or regulations by, for, or in connection with that telecommunications carrier or telecommunications service are just and reasonable and are not unjustly or unreasonably discriminatory;
- (2) enforcement of such regulation or provision is not necessary for the protection of consumers; and
- (3) forbearance from applying such provision or regulation is consistent with the public interest.

forbear from applying most common carrier regulations,¹⁴⁰ but opponents have objected to the regulatory options the Commission now make available.¹⁴¹ The FCC voted on party lines to adopt the order that staff emphasized would provide necessary safeguards without imposing unnecessary public utility requirements, but which the Republican Commissioners consider micromanagement, including rate regulation.¹⁴²

The Order expresses the view that reclassifying Internet access as a telecommunications service provides the strongest legal foundation for the Open Internet regulations, coupled with a secondary reference to Section 706 of the Telecommunications Act of 1996. By using the more muscular Title II foundation, the FCC asserts that it can establish clear and unconditional statutory authority, but also use the flexibility contained in Title II to forbear from applying most common carrier requirements not relevant to modern broadband service just as occurs for wireless telephone service. However with a Title II regulatory foundation, the Order makes it possible for the FCC to create an Open Internet conduct standard that ISPs cannot harm consumers or edge providers with enforcement tools available to sanction violations.

The Order defines “broadband Internet access service” as a telecommunications service under Title II, with emphasis on the “retail” link between an ISP and broadband. However the FCC does apply the Title II classification to upstream ISPs and content providers, commonly referred to as “edge providers.” This means that the FCC will have jurisdiction to examine ISP carriage both downstream to broadband subscribers and upstream to edge providers, but the nature and type of such oversight and the applicable regulations may differ. Additionally the Commission will have direct statutory authority to consider complaints and to resolve disputes, including ones claiming that interconnection and compensation terms are unjust and unreasonable.

¹⁴⁰ The major provisions subject to forbearance include no rate regulation. The Order makes it clear that broadband providers shall not be subject to tariffs or other form of rate approval, unbundling, or other forms of utility regulation, no last-mile unbundling, no burdensome administrative filing requirements or accounting standards, no requirement to contribute to universal service funding under Section 254, and no new taxes or fees.

¹⁴¹ The major provisions of Title II that the Order will apply are: nondiscrimination and no unjust and unreasonable practices under Sections 201 and 202; authority to investigate complaints and resolve disputes under section 208 and related enforcement provisions, specifically sections 206, 207, 209, 216 and 217; protection of consumer privacy under Section 222; fair access to poles and conduits under Section 224, protection of people with disabilities under Sections 225 and 255; and providing universal funding for broadband service through partial application of Section 254.

¹⁴² The presentation of the order before the Commissioners noted that customary common carrier requirements would not apply to ISPs, nor would they have to tariff their services, unbundle offerings into separate elements and make financial contributions to universal service funding.

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The Order deviates from previous open Internet initiatives by opting to apply the same requirements on wireline and wireless broadband. Previously the Commission had imposed less burdensome requirements on wireless broadband based on its comparatively recent availability, as well as the potential for spectrum scarcity and other technological factors that might necessitate deviation from absolute access neutrality. The FCC also rebuts claims that Title III does not allow classification of mobile broadband as a telecommunications service, noting that the Commission has asserted Title II oversight of wireless telephone service, termed Commercial Mobile Radio Service by Congress in amendments to Title III.

While the debate over network neutrality has become quite contentious and hyperbolic, the three core requirements imposed by the Order have generated much popular support. With the common carrier reclassification, the FCC considers it lawful to impose explicit requirements that ISPs not: block, legal content, applications, services, or non-harmful devices; throttle, impair or degrade lawful Internet traffic on the basis of content, applications, services, or non-harmful devices; or offer paid prioritization that would favor some lawful Internet traffic over other lawful traffic in exchange for additional compensation, or based on corporate affiliation.

The Order addresses the need for ISPs to have the ability to manage their networks and to offer specialized services not available to all users. The FCC seeks to promote flexibility, these options providing a loophole for practices that violate network neutrality. Coupled with requirements that ISPs operate with transparency in terms of how they provide service, the FCC will permit deviations from absolute neutrality on a case-by-case basis taking into consideration the particular engineering attributes of the technology used as well as the rationale supporting the legitimacy of the practice.

The FCC will assert its legal right to reclassify services in light of changed circumstances. However it could have fine-tuned and recalibrated its regulatory inventory over private carriers without broadly expanding its wingspan with the promise of forbearance and limited appetite for more extensive oversight.