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# REACTIONS BY BROADBAND SERVICE PROVIDERS TO THE GROWTH OF VIDEO STREAMING

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## I. INTRODUCTION

Since the beginning of the broadband era, regulators have expressed concern that vertically integrated broadband service providers (“BSPs”)—those providers who control access to last mile connections as well as affiliated content—possess the ability and the incentive to discriminate against unaffiliated content and applications providers, such as online video content providers.<sup>1</sup> The focus of the concern has been to assure the neutral treatment of data traffic associated with the provision of basic Internet access service.<sup>2</sup> Over the last few years, the market for the home delivery of video-programming services has been in disequilibrium due, in part, to technological developments, one of the most important being the dramatic increase in wireline broadband Internet connection speeds in the last mile (also referred to as the local loop).<sup>3</sup> Two events accom-

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<sup>1</sup> See *In re* Preserving the Open Internet Broadband Industry Practices, *Report and Order*, 25 F.C.C.R. 17,905, 17,915 & n.46 (Dec. 23, 2010) [hereinafter *Broadband Report & Order*]. The FCC believes that broadband providers have at least three incentives for restricting the availability of content on the Internet: First, broadband providers might block access to content to benefit its own affiliated offerings or they might be paid by competitors to limit the content of other competitors. *Id.* at 17,915. Second, broadband providers might seek to charge content providers a premium for prioritizing access to end users. *Id.* at 17,919. Third, broadband providers, through prioritizing access for certain edge services, might degrade the quality of Internet service to other non-prioritized services. *See id.* at 17,922. The FCC was so concerned by these perverse incentives that it first promulgated a set of principles for the openness of the Internet. *See generally In re* Appropriate Framework for Broadband Access to the Internet over Wireline Facilities, *Policy Statement*, 20 F.C.C.R. 14,986 (2005).

<sup>2</sup> Dina R. Richman, *The Shot Heard Round the World Wide Web: Comcast Violates Net Neutrality*, 20 INTELL. PROP. & TECH. L.J. 17, 17 (2008) (providing examples of legislation intended to ensure net neutrality).

<sup>3</sup> *Broadband Report & Order*, *supra* note 1, at 17,911 & n.23 (noting that, for example, by “the late 1990s, a residential end user could download content at speeds not achievable

pany the increase in last-mile wireline speeds. First, there is an explosion of streaming video as the Internet's dominant form of traffic and, second, there is a reconfiguration of the links in how large applications and content providers transmit their data to the outer edges of broadband service providers' networks.<sup>4</sup>

These shocks to the existing equilibrium have invoked varied responses by incumbent BSPs. For instance, BSPs have sought additional remuneration for the increased streaming from those content providers (such as Netflix) whose data are increasingly in demand by end users.<sup>5</sup> The contrast between the large BSPs and the smaller BSPs in the perception of their responsibility to their end users for delivery of streaming video (from Internet video distributors such as Netflix, Hulu, or YouTube) is demonstrated by the conflict over the streaming of Netflix's videos. Time Warner Communications has demanded that Netflix pay to transmit its content to end users.<sup>6</sup> In contrast, the smaller BSPs, like RCN, have allowed Netflix to install its equipment into their data centers, which provides end users with a better viewing experience.<sup>7</sup> The differing approaches reveal a stark difference between the large and small BSPs. Large BSPs have the leverage and the incentives to demand increased compensation from heavily trafficked content providers. Smaller BSPs are more likely to agree to arrangements that enable the end user to access stream content from the heavily trafficked providers.

This article examines how large, vertically integrated BSPs (such as Comcast, Time Warner Cable, Verizon, AT&T, and Cablevision) are responding to the growth of online video distributors ("OVDs") as emerging substitute providers of video programming. The large BSPs also operate as cable and satellite companies that are known as multichannel video programming distributors ("MVPDs"). The OVDs compete with satellite and cable television companies. Therefore, the conflict arises from the dual roles played by large BSPs, who both distribute and produce video content. The conflict arises from the fact that the OVDs depend upon the bandwidth provided by their competitors—the sat-

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even on the Internet backbone during the 1980s").

<sup>4</sup> John Markoff, *Striving to Map the Shape-Shifting Net*, N.Y. TIMES, Mar. 2, 2010, at D1; see also *id.* at 17,911 & n.23.

<sup>5</sup> *Id.* at 17,913; see also Jon Brodtkin, *Verizon Seeks Payment for Carrying Netflix Traffic*, WSJ REPORTS, ARS TECHNICA (Feb. 19, 2014), <http://arstechnica.com/information-technology/2014/02/verizon-seeks-payment-for-carrying-netflix-traffic-wsj-reports/> (discussing the tensions between Netflix and BSPs over streaming Netflix's video content).

<sup>6</sup> Jon Brodtkin, *Why YouTube Buffers: The Secret Deals That Make—and Break—Online Video*, ARS TECHNICA (July 28, 2013), <http://arstechnica.com/information-technology/2013/07/why-youtube-buffers-the-secret-deals-that-make-and-break-online-video/4/>.

<sup>7</sup> *Id.*

ellite and, especially, cable companies.

BSPs' response to the OVDs is analyzed along two dimensions. In Part II, the changing power relationship between BSPs, Internet backbone providers, and content delivery networks ("CDNs") is examined. This shifting power dynamic stems from the proliferation of bandwidth-intensive content, applications, and services. To more fully understand the aspects of the competition between BSPs providing video distribution services and OVDs, it is important to incorporate into the analysis the entire communications link. The analysis should follow the content stream from the OVD's server to the end user. The analysis should not be limited to focusing only on the "last mile"—that is, the link from the BSP's router to the end user. In short, the growth of online video has caused a change in structure of Internet markets.

In Part III, the relationship between BSPs, end users, and OVDs over the last mile is investigated with a focus on the role of specialized services as an option to the provision of Internet services offered through the BSP's basic Internet access service ("BIAS"). This issue is examined in detail by considering two case studies: (1) Comcast's decision to exempt its Xfinity video on demand service from data caps for its end users, and (2) the impact of the Comcast-NBCU merger on the provision of online services over last mile facilities.

Part IV provides a brief conclusion. In short, it is concluded that the FCC must pay more attention in the formulation of openness rules to the linkages between interconnection issues, specialized services issues, and rules governing the treatment of traffic by BSPs.

## II. ISSUE 1—INTERCONNECTION DISPUTES AND THE BALANCE OF POWER

In 2010, the Federal Communications Commission ("FCC") adopted the Open Internet Order.<sup>8</sup> The Order mandated a limited set of openness rules that place legal responsibilities on BSPs, targeted to ensure the neutral treatment of all content, applications, or service providers' traffic in the last mile.<sup>9</sup> Specifically, BSPs are not allowed to block access to or to discriminate against content, applications, and service providers.<sup>10</sup> The ability to discriminate against traffic is subject to a "no unreasonable discrimination" standard.<sup>11</sup> To clarify

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<sup>8</sup> Broadband Report & Order, *supra* note 1, app. A; *see also* 47 C.F.R. § 8.1 (2011).

<sup>9</sup> 47 C.F.R. § 8.1 (2011); *see also* Broadband Report & Order, *supra* note 1, at 17,906, 17,931.

<sup>10</sup> 47 C.F.R. §§ 8.5, 8.7 (2011).

<sup>11</sup> 47 C.F.R. § 8.7.

that standard, the FCC states that “a commercial arrangement between a broadband provider and a third party to directly or indirectly favor some traffic over other traffic in the broadband Internet access service connection to a subscriber of the broadband provider (i.e. ‘pay for priority’) would raise significant cause for concern.”<sup>12</sup> The openness rules have important exceptions, such as not affecting existing networking-interconnection arrangements.<sup>13</sup> These exceptions could enable BSPs to evade the spirit of the FCC’s openness goals, as demonstrated in the Comcast-Level 3 dispute analyzed below, and effectively shift power to the BSPs in their relationships with other key stakeholders in the Internet ecosystem.<sup>14</sup> In short, BSPs can engage legally in discriminatory conduct that falls outside the reach of the Open Internet rules.

The regulatory focus on the public Internet and the last mile has caused BSPs to try different tactics to maintain their dominance.<sup>15</sup> An example of the reaction of BSPs to the growth of streaming video can be examined by considering the dispute in 2010 between Level 3, an Internet backbone provider and CDN provider, and Comcast, the largest MVPD in the US and the subsequent reactions to it.<sup>16</sup> Prior to the dispute, Level 3 and Comcast had a business relationship that consisted of two key components. As to the first component, Comcast was a transit customer of Level 3, that is, Comcast bought Internet capacity from Level 3.<sup>17</sup> As to the second component, because Level 3 also operated as a CDN, it directly exchanged traffic (“on-net” traffic) with Comcast on a settlement-free basis.<sup>18</sup> Comcast sought to renegotiate the business relationship with respect to Level 3’s CDN business in light of two significant, concurrent events. The demand for Internet video was growing (and continues to grow) at a phenomenal rate,<sup>19</sup> primarily as the result of Netflix’s booming online business.<sup>20</sup> Second, Level 3 contracted with Netflix, so Level 3 became

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<sup>12</sup> Broadband Report & Order, at 17,947.

<sup>13</sup> *Id.* at 17,944 n.209.

<sup>14</sup> *Id.* at 17,944 n.209, 17,965–66.

<sup>15</sup> Nate Anderson, *Peering Problems: Digging into the Comcast/Level 3 Grudgematch*, ARS TECHNICA (Dec. 9, 2010), <http://arstechnica.com/tech-policy/2010/12/comcastlevel3/> (discussing a new strategy used by Comcast).

<sup>16</sup> *In re Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming, Fifteenth Report*, 28 F.C.C.R. 10,496, 10,506 (2013) [hereinafter *Delivery of Video Programming Report*].

<sup>17</sup> Daniel Golding, *The Real Story Behind the Comcast-Level 3 Battle*, GIGAOM (Dec. 1, 2010), <http://gigaom.com/2010/12/01/comcast-level-3-battle/>.

<sup>18</sup> *Id.*

<sup>19</sup> See Jacob Minne, *Data Caps: How ISPs are Stunting the Growth of Online Video Distributors and What Regulators can do about it*, 65 FED COMM. L.J. 233, 242 (2012) (noting that Internet video traffic is expected to rise from 37% to 62% by 2015).

<sup>20</sup> *Delivery of Video Programming Report*, *supra* note 16, at 10,646.

Netflix's Internet carrier for traffic requested by Netflix's subscribers.<sup>21</sup> Given these two events, Comcast demanded that Level 3 now pay to deliver "on-net" traffic to Comcast's customers, a relationship referred to as "paid peering."<sup>22</sup> Level 3 would then become for Comcast both a vendor of transit services and a customer of paid peering services.<sup>23</sup> In summary, Comcast argued that it should be paid two times: once by its broadband subscribers and again by the Internet carrier delivering the video traffic directly to the local network.

Comcast's justification for the additional payment was based on the large imbalance of traffic it now directly exchanged with Level 3.<sup>24</sup> Comcast argued that the increased traffic from Level 3 increased Comcast's costs.<sup>25</sup> Level 3 complained that Comcast was violating the openness rules by raising the costs of online video delivery that can be considered as a substitute for aspects of Comcast's video delivery.<sup>26</sup> The parameters of the dispute can be understood by the answers to the two following questions. First, on what segment of cyberspace is the dispute located and how is the dispute related to the Open Internet rules? Second, does the dispute reflect a change in the economic structure of Internet markets?

Comcast portrayed the dispute as an ordinary peering dispute that only involves one segment of the Internet: the upstream business relationship between a BSP and a backbone/CDN provider.<sup>27</sup> Level 3 painted the dispute in broader terms, claiming that it demonstrated the "risk of a 'closed' Internet, where a retail [BSP] decides how their subscribers interact with content."<sup>28</sup> It is incorrect to focus only on one segment of the Internet, because the effects of decisions centered on one segment impact other segments of the Internet. In economic terms, a focus on the effects in one market is called a partial equilibrium

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<sup>21</sup> Golding, *supra* note 17.

<sup>22</sup> Minne, *supra* note 19, at 241–43.

<sup>23</sup> Anderson, *supra* note 15.

<sup>24</sup> *Id.* (noting Comcast's claim that it lacked the necessary infrastructure to meet Level 3's demands).

<sup>25</sup> *Id.*

<sup>26</sup> Press Release, Level 3, Level 3 Communications Issues Statement Concerning Comcast's Actions (Nov. 29, 2010), <http://level3.mediaroom.com/index.php?s=23600&item=65045> [hereinafter Level 3 Press Release].

<sup>27</sup> Letter from Joseph W. Was, Jr., Vice President, Comcast Corp., and Lynn R. Charytan, Vice President, Comcast Corp., to Sharon Gillett, Chief of Wireline Competition Bureau, F.C.C., at 1 (Nov. 30, 2010), available at <http://www.comcast.com/MediaLibrary/1/1/About/PressRoom/Documents/Comcastexparte1130.pdf> ("[D]espite Level 3's effort to portray its dispute with Comcast as being about an 'open Internet,' it is nothing but a good old-fashioned commercial peering dispute, the kind that Level 3 has found itself in before.").

<sup>28</sup> Level 3 Press Release, *supra* note 26.

analysis.<sup>29</sup> A more complete examination of economic effects of a decision would utilize a general equilibrium analysis, which traces the effects in one market and how those effects impact related markets.<sup>30</sup> Applying the general equilibrium analysis to the dispute indicates that a decision on one side of a BSP's business (in this case, upstream access to the backbone of the Internet) also impacts the other sides of its business (in this case, downstream access to end users).<sup>31</sup>

One purpose of the openness rules is to prevent vertically integrated BSPs from discriminating against unaffiliated content, applications, and service providers.<sup>32</sup> The FCC argued that BSPs have both the ability and incentive to engage in such discrimination.<sup>33</sup> The rules focused on ensuring nondiscriminatory treatment of traffic over the last mile.<sup>34</sup> This ignores how BSPs can outsource the discrimination upstream while still treating all packets neutrally in the last mile. As the FCC explains, "By interfering with the transmission of third parties' Internet-based services or *raising the cost of online delivery for particular edge providers*, telephone and cable companies can make those services less attractive to subscribers in comparison to their own offerings."<sup>35</sup> In economic terms, the basic concern is to prevent a BSP from leveraging its power over the last mile into adjacent markets. BSPs appear to have accomplished the "raising of rivals costs" by letting their interconnection ports fill up (meaning that there is insufficient capacity for the connections) in which they exchange traffic with backbone/CDN providers as video traffic has increased.<sup>36</sup> This causes end users to experience poor streaming video quality when watching videos from OVDs, such as Netflix and YouTube.<sup>37</sup> Large BSPs have responded to this traffic degradation by imposing an additional charge on the backbone/CDN provider (for example, Level 3); and, in turn, the backbone/CDN provider will pass on the increased costs of sending traffic to its customers (for example, Netflix).<sup>38</sup>

The FCC's position has been that because the backbone segment of the In-

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<sup>29</sup> The WTO explains that partial equilibrium analysis "focuses on one or multiple specific markets or products." WTO, A PRACTICAL GUIDE TO TRADE POLICY ANALYSIS 8 (2012), available at [http://www.wto.org/english/res\\_e/publications\\_e/wto\\_unctad12\\_e.pdf](http://www.wto.org/english/res_e/publications_e/wto_unctad12_e.pdf).

<sup>30</sup> *Id.*

<sup>31</sup> As the WTO notes, in the context of inter-market linkages, the general equilibrium analysis is preferred when the scope of the analysis is large and when the linkages are important. *Id.* at 181.

<sup>32</sup> Broadband Report & Order, at 17,906, 17,915.

<sup>33</sup> *Id.* at 17,915–18, 17,935.

<sup>34</sup> *Id.* at 17,915–27 (focusing on the BSPs' ability to degrade the streaming of content providers).

<sup>35</sup> *Id.* at 17,918 (emphasis added).

<sup>36</sup> *Id.* at 17,925–26.

<sup>37</sup> Brodtkin, *supra* note 6.

<sup>38</sup> Anderson, *supra* note 15.

ternet does not reach the end user and because backbone/CDN providers do not directly compete with edge providers, there is little need for regulation of that segment.<sup>39</sup> This has meant that interconnection arrangements for backbone traffic have been negotiated without governmental intervention.<sup>40</sup> Because video traffic has grown in importance and because there is a need for data-intensive video not to be subject to delay and interruption in delivery to end users, the economic leverage of BSPs has increased.

The structure of Internet markets varies, depending upon the segment of the market. The structure of the markets for content, applications, and services—the FCC refers to these as edge provider markets<sup>41</sup>—is highly competitive with limited barriers to entry.<sup>42</sup> There are a variety of ways to traffic across the Internet:<sup>43</sup> they can use transit services provided by backbone providers, procure the services of a CDN to transmit data directly to the BSP's network, or create their own CDN-like infrastructure.<sup>44</sup> In short, edge providers have a range of options to transmit data. Backbone providers also face competition for the provision of transit and peering services.<sup>45</sup>

The market for the provision of last mile broadband access is subject to a varying amount of competition, depending upon how the end user utilizes the broadband connection. For less data intensive uses, like accessing the web, wireless broadband complements the wireline broadband service; therefore, end users enjoy considerable choice among Internet last mile providers.<sup>46</sup> However, for highly data intensive uses, such as streaming online video, the choice among BSPs is much more limited. Table 1 demonstrates that if a residential end user is interested in purchasing a high-speed connection (for pur-

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<sup>39</sup> *Id.* at 17,948 n.236.

<sup>40</sup> Kevin Werbach, *The Network Utility*, 60 DUKE L.J. 1761, 1784 (2011) (“Eight years or more of intensive debate about network neutrality at the FCC have not even touched the proper treatment of network-to-network relationships in the Internet backbone.”); *see also* Randolph J. May, *Level 3's Retro Regulatory Advocacy: From Loopcos to Loopier*, FREE ST. FOUND. (Feb. 21, 2011), <http://freestatefoundation.blogspot.com/2011/02/level-3s-retro-regulatory-vision-from.html>.

<sup>41</sup> *Id.* at 17,907 n.2.

<sup>42</sup> *Id.* at 17,911.

<sup>43</sup> Level 3 Press Release, *supra* note 26.

<sup>44</sup> *See* Anna-Maria Kovacs, *Internet Peering and Transit*, TECH POL'Y INST. 1, 9–12 (2012), *available at* <https://www.techpolicyinstitute.org/files/amkinternetpeeringandtransit.pdf>. A few of the large content providers have created their own CDN-like networks. *Id.* at 12.

<sup>45</sup> *Id.* at 13 (quoting an executive officer of Level 3 as saying that backbone providers' services are only one choice of many that are available to edge providers).

<sup>46</sup> JOHN B. HARRIGAN, JOINT CTR. FOR POLITICAL & ECON. STUDIES, BROADBAND ADOPTION AND USAGE: WHAT HAS FOUR YEARS TAUGHT US? 3–4 (2013), *available at* <http://www.jointcenter.org/sites/default/files/MTI%20Remarks%20-%20Broadband%20Adoption%20-%202013.6.13.pdf>.

poses of this article that is defined as at least a downstream speed of 10 Mbps) cable modem is by far the most likely choice with fiber connections a distant second. From 2007 to June 2012, aDSL's percentage of residential use declined, where cable's residential use increased.<sup>47</sup> In the last several years, the overwhelming majority of new high-speed broadband subscribers are accounted for by cable operators.<sup>48</sup> It has been argued that "in many parts of the country a *de facto* monopoly on high-speed broadband service [has] resulted in slow innovation and poor customer service."<sup>49</sup>

**Table 1: Residential Connections by Downstream Speed Tier, Technology, and Date**

TECHNOLOGY	CONNECTION SPEED	
	Less Than 10 Mbps	At Least 10 Mbps
<b><i>June 30, 2012*</i></b>		
aDSL	28,556,000	2,630,000
Cable Modem	14,807,000	34,856,000
Satellite	1,123,000	0
Fiber	601,000	5,698,000
Mobile Wireless	149,792,000	0
<b><i>December 31, 2010**</i></b>		
aDSL	30,608,000	847,000
Cable Modem	17,719,000	27,592,000
Satellite	Data withheld	0
Fiber	537,000	4,451,000
Mobile Wireless	84,396,000	0

Sources:

\* INDUS. ANALYSIS & TECH. DIV., FED. COMM'NS COMM'N, INTERNET ACCESS SERVICES: STATUS AS OF JUNE 30, 2012, at 30 tbl. 10 (2013), *available at* [http://transition.fcc.gov/Daily\\_Releases/Daily\\_Business/2013/db1224/DOC-324884A1.pdf](http://transition.fcc.gov/Daily_Releases/Daily_Business/2013/db1224/DOC-324884A1.pdf) (providing the 2012 data).

<sup>47</sup> INDUS. ANALYSIS & TECH. DIV., FED. COMM'NS COMM'N, INTERNET ACCESS SERVICES: STATUS AS OF DECEMBER 31, 2012, at 27, chart 11 (2013), *available at* [http://transition.fcc.gov/Daily\\_Releases/Daily\\_Business/2013/db1224/DOC-324884A1.pdf](http://transition.fcc.gov/Daily_Releases/Daily_Business/2013/db1224/DOC-324884A1.pdf).

<sup>48</sup> *Id.*

<sup>49</sup> See Timothy B. Lee, *Five Things Neither Side of the Broadband Debate Wants to Admit*, WASH. POST (Sept. 17, 2013), <http://www.washingtonpost.com/blogs/the-switch/wp/2013/09/17/5-things-neither-side-of-the-broadband-debate-wants-to-admit/>.



\*\* INDUS. ANALYSIS & TECH. DIV., FED. COMM'NS COMM'N, INTERNET ACCESS SERVICES: STATUS AS OF DECEMBER 31, 2010, at 31 tbl. 12 (2011), *available* *at* [http://transition.fcc.gov/Daily\\_Releases/Daily\\_Business/2013/db1224/DOC-324884A1.pdf](http://transition.fcc.gov/Daily_Releases/Daily_Business/2013/db1224/DOC-324884A1.pdf) (providing the 2010 data).

Given the lack of effective competition in high-speed, last mile broadband connections, it is reasonable to argue that it made sense for the FCC to impose openness rules on BSPs to ensure that they do not leverage this power into adjacent markets. The economic concern should be to protect content, applications, and service providers that offer competing services to BSPs that are vertically integrated, especially with respect to voice and video services, the legacy services of the dominant BSPs. However, the exclusive focus on the last mile has caused the FCC to ignore how BSPs can exercise market power via discriminatory behavior in other segments of the Internet.

For example, the Open Internet Order states unequivocally that BSPs cannot impose termination fees on edge providers for delivering or carrying traffic to its end users.<sup>50</sup> Despite this categorical statement, the FCC explains that there is a large exception to the openness rules: the rules do not apply to existing network interconnection arrangements, an apparent reference to the Level 3-Comcast dispute.<sup>51</sup> The juxtaposition of these statements seems to indicate that the FCC accepts that the two segments, the last mile segment and the upstream segment to the backbone, are independent of each other. The FCC fails to recognize that the carve-out for existing network-interconnection arrangements provides a method by which BSPs can evade the no blocking rule, because, from the end user's perspective, there is no practical difference between blocking traffic and degrading interconnection ports. Degrading interconnection ports and blocking traffic are two activities that interfere with the end user's access to content. In fact, several paragraphs earlier in the same section of the FCC rules, the FCC agrees that "degrading traffic can have the same effects as outright blocking."<sup>52</sup> The FCC's exception for existing network-interconnection arrangements allows BSPs to exercise market power over unaffiliated content, applications, and service providers without violating the letter of the Open Internet Order.

Given this regulatory loophole, the growth of online video, and a trend to-

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<sup>50</sup> Broadband Report & Order, at 17,943–44.

<sup>51</sup> *Id.* at 17,944 n.209.

<sup>52</sup> *Id.* at 17,943 ("The Commission has recognized that in some circumstances the distinction between blocking and degrading (such as by delaying) traffic is merely 'semantic.'").

ward consolidation of the BSP market, the balance of power has shifted between BSPs and backbone/CDN providers in favor of BSPs.<sup>53</sup> The Level 3 and Comcast dispute is an early first sign of this change in the balance of power.<sup>54</sup> Given the Internet's architecture, backbone providers had acted as a buffer that prevented BSPs from exercising control over content, applications, and service providers. That buffer zone is beginning to disappear as large BSPs accumulate more subscribers and expand into the provision of backbone services.<sup>55</sup> For instance, the four largest providers of broadband Internet (Comcast, Time Warner, AT&T, and Verizon) account for almost 70% of all broadband subscribers.<sup>56</sup> The subscriber count as of the end of the second quarter 2013 is as follows: Comcast has 19,986,000; AT&T has 16,453,000; Time Warner has 11,559,000; and Verizon has 8,939,000.<sup>57</sup> Large BSPs, like Comcast, are likely to demand, on an increasing basis, payment from backbone/CDN providers to supply direct connections to their subscribers.<sup>58</sup>

Furthermore, large BSPs are reluctant to accept CDN-like equipment from edge providers to be placed inside the data centers of BSPs. For example, Netflix has created its own CDN and offers to place their storage equipment in or near the BSP's network; however, Comcast has not accepted Netflix's offer.<sup>59</sup> Many smaller BSPs found the offer very attractive, because it would enhance the viewing experience of its broadband subscribers.<sup>60</sup> For example, Sonic.net, a BSP located in California with 50,000 subscribers, embraced the offer since

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<sup>53</sup> See Timothy B. Lee, *Keeping the Internet Competitive*, Spring-2012 NAT'L AFF. 59, 74 (2012) (discussing the power of Comcast (a BSP) over Level 3 and other backbone providers, stating that "Comcast's leverage over backbone providers has grown with its share of the broadband market . . . It seems increasingly clear that the economic model of the [I]nternet is changing").

<sup>54</sup> See *id.*

<sup>55</sup> See *id.* at 70. In addition, backbone carriers are experiencing pressure from the other side of their market segment as major content providers are expanding facilities investments in the Internet backbone. See, e.g., Drew Fitzgerald & Spencer E. Ante, *Tech Firms Push to Control Web's Pipes*, Wall St. J. (Dec. 16, 2013), <http://online.wsj.com/news/articles/SB10001424052702304173704579262361885883936>.

<sup>56</sup> Press Release, Leichtman Research Grp., About 295,000 Add Broadband in the Second Quarter of 2013, at 2 (Aug. 20, 2013), available at <http://www.leichtmanresearch.com/press/082013release.pdf>.

<sup>57</sup> *Id.*

<sup>58</sup> See Lee, *supra* note 53, at 73 (discussing the regime envisioned by Comcast: backbone providers pay the BSPs for the increased traffic); see also Level 3 Press Release, *supra* note 26 (calling such tactics a "toll booth at the borders of [the BSP's] broadband Internet access network").

<sup>59</sup> *Overview: Netflix Open Connect Content Delivery Network*, NETFLIX, <https://signup.netflix.com/openconnect> (last visited Feb. 23, 2014) (omitting Comcast, Time Warner Cable, and Verizon from the list of ISPs that have connected to Netflix's CDN).

<sup>60</sup> Brodtkin, *supra* note 6 (citing RCN's—a smaller BSP—explanation as to why it accepts Netflix's equipment: to enhance their customers' viewing experience).

it would reduce the costs that Netflix traffic imposes on its operations.<sup>61</sup> RCN does experience a small increase in costs to house the equipment but the costs are outweighed by benefits in the form of a reduction in costs to the BSP for transit payments and the more reliable streaming experience for its customers.<sup>62</sup> On the other hand, Comcast and Time Warner rejected the offer since they expect payment from CDNs and Netflix. Instead, Netflix is offering a free service to the BSP.<sup>63</sup>

There are competing arguments for “who should pay who” in interconnection arrangements. First, one can try to identify who causes the traffic flow, end users or edge providers. Edge providers argue that it is end users who demand/pull the data and, thus, it is the responsibility of the BSP to ensure that its subscribers have the ability to access data with sufficient capacity and functionality to accommodate the requests both within the local network and at points of interconnection with other networks.<sup>64</sup> BSPs counter that it is the responsibility of edge providers to ensure that the data arrives in a reliable and usable form to end users.<sup>65</sup> To some extent, BSPs are falling back on a “sender pays” model rooted in telecommunications history,<sup>66</sup> which inappropriately imposes a telecommunications framework on the Internet. Second, and relatedly, BSPs argue that when traffic flows become unbalanced, the party responsible for sending more traffic should pay.<sup>67</sup> This tradition is also rooted in telecommunications history.<sup>68</sup> The question arises whether it is a legitimate business justification to impose a recurring charge on backbone/CDN providers to

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<sup>61</sup> *Id.*

<sup>62</sup> For discussion of the Sonic.net case, 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/>. For a discussion of the RCN case, see Brodtkin, *supra* note 6.

<sup>63</sup> For background, see Brodtkin, *supra* note 6. Netflix tried to induce large BSPs to accept its offer by tying access to its highest quality video formats to acceptance of its CDN equipment. Larry Downes, *The Strange Resurrection of Net Neutrality*, CNET NEWS (Jan. 24, 2013), [http://news.cnet.com/8301-13578\\_3-57565561-38/the-strange-resurrection-of-net-neutrality/](http://news.cnet.com/8301-13578_3-57565561-38/the-strange-resurrection-of-net-neutrality/). This may have been a strategic mistake since Netflix then was accused of denying its own subscribers access to content in these formats and subsequently Netflix removed the tie. For such an accusation, see *id.*

<sup>64</sup> Caleb Denison, *Mommy, Where Does 4K Content Come From? Ultra HD Streaming Explained*, DIGITAL TRENDS (Jan. 15, 2014), <http://www.digitaltrends.com/home-theater/everything-need-know-streaming-ultra-hd-2014/>.

<sup>65</sup> Brodtkin, *supra* note 6.

<sup>66</sup> *Verizon v. F.C.C.*, Nos. 11-1355, 11-1356 2014 WL 113946, at \*22, \*25 (D.C. Cir. 2014) (quoting *Interstate Commerce Comm'n v. Baltimore & Ohio Railroad Co.*, 145 U.S. 263, 275 (1892)) (holding that BSPs are private carriers rather than common carriers).

<sup>67</sup> Markoff, *supra* note 4.

<sup>68</sup> Rob Frieden, *Regulatory Arbitrage Strategies and Tactics in Telecommunications*, 5 N.C. J.L. & Tech. 227, 229-30 (2004).

account for out-of-balance traffic. However, it can be legitimately argued that this model is inapplicable given the architecture of last mile facilities that are designed in an asymmetric fashion. That is, Internet networks are designed by cable operators to provide much more capacity for end users to download traffic than to upload traffic.<sup>69</sup> Third, one of the most economically relevant determinations of 'who pays' is based on which party possesses the economic leverage in the negotiation. The more powerful party is likely to be the recipient of revenue.<sup>70</sup> This is what appears to be changing in the Internet as video traffic comes to dominate the data usage of networks.<sup>71</sup>

As demand for video streaming alters the economics of traffic exchanges on the Internet, it appears that (1) BSPs are likely to become gatekeepers to the last mile for which they face limited or no competition for data intensive activities, and (2) it will become more costly to build a business on the Internet and, thus, more likely to reduce the growth of innovation by edge providers. Based on first impressions, it is unlikely that the new administration at the FCC will object to this emerging change in the balance of power. In comments by the new FCC Chairman in his first formal public address, he indicated what appears to be an endorsement of payments from edge providers to BSPs, a contradiction with the prevailing norms of the Internet.<sup>72</sup>

### III. ISSUE 2—SPECIALIZED SERVICE VERSUS BASIC INTERNET ACCESS SERVICE

The focus of the second issue is on the last mile access network, which is the segment of the BSP's network that is closest to the end user, and most relevant to the provision of specialized services that utilize this shared local infrastructure. In the Open Internet Order, the FCC permitted BSPs to offer specialized services over last mile connections to end-users. Furthermore, and most importantly, such services are not subject to the Open Internet rules (i.e., transparency, no blocking, and no unreasonable discrimination).<sup>73</sup> In the Open Internet Order, specialized services are defined as:

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<sup>69</sup> JOHN A. C. BINGHAM, *ADSL, VDSL AND MULTICARRIER MODULATION 3* (John Wiley & Sons, 2000).

<sup>70</sup> Eric Kapf, *Appeals Court Nixes Net Neutrality*, NO JITTER (Jan. 14, 2014), <http://www.nojitter.com/post/240165351/appeals-court-nixes-net-neutrality>.

<sup>71</sup> Brodtkin, *supra* note 6.

<sup>72</sup> Michael Weinberg, *Did the FCC Chairman Just Endorse a Pay-for-Priority Fast Lane?*, PUBLIC KNOWLEDGE (Dec. 3, 2013), <http://publicknowledge.org/blog/did-fcc-chairman-just-endorse-pay-play-intern>.

<sup>73</sup> OPEN INTERNET ADVISORY COMMITTEE, *SPECIALIZED SERVICES: SUMMARY OF FINDINGS AND CONCLUSIONS 4* (Fed. Comm'n Comm'n 2013).

[S]ervices that share capacity with broadband Internet access services over providers' last-mile facilities, and may develop and offer other such services in the future. These "specialized services," such as some broadband providers' existing facilities-based VoIP and Internet Protocol-video offerings, differ from broadband Internet access service and drive additional private investment in broadband networks and provide end users valued services, supplementing the benefits of the open Internet.<sup>74</sup>

Thus, over the same last mile broadband connection, an end user can access three types of services: IP-based specialized services (not subject to the Open Internet rules), IP-based BIAS (subject to the Open Internet rules), and legacy services such as traditional cable television service and phone service (subject to pre-existing rules specific to the classification of the service).<sup>75</sup> This means that an end user can use the connection to purchase traditional pay-television or an IP-based pay television service (IPTV) from a cable or telephone operator and, over the same connection, purchase from an unaffiliated online distributor a competitive video service. As with the situation for the issue analyzed in Part II, multiple modes of content distribution over the same platform present the possibility of conflicting incentives on the part of vertically integrated BSPs.

The most important reason for permitting BSPs to offer specialized services is based on economic incentives with particular reference to stimulating investment and product innovation.<sup>76</sup> This means that an end user can use the connection to purchase traditional pay-television or an IP-based pay television service (IPTV) from a cable or telephone operator and, over the same connection, purchase from an unaffiliated online distributor a competitive video service. As with the situation for the issue analyzed in Part II, multiple modes of content distribution over the same platform present the possibility of conflicting incentives on the part of vertically integrated BSPs.

The most important reason for permitting BSPs to offer specialized services is based on economic incentives with particular reference to stimulating investment and product innovation. In order to entice BSPs to invest in advanced broadband capacity in last mile connections, the economic case is dependent on generating revenue from the provision of multiple and, in some cases, new IP-based services.<sup>77</sup> Therefore, the trade-off to enhance the provision of capac-

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<sup>74</sup> See 2013 OIAC ANN. REP. 15.

<sup>75</sup> It is expected that BSPs will migrate traditional television and phone services to a platform based on the Internet Protocol. At that time, all of the services provided by the BSP over the last mile will IP-based services.

<sup>76</sup> Jay Pil Choi & Byung-Cheol Kim, *Net Neutrality and Investment Incentives*, 41 RAND J. ECON. 446, 458 (2010).

<sup>77</sup> JONATHAN ZITTRAIN & DAVID CLARK, FED. COMMUNICATIONS COMM'N, OPEN INTER-

ity for BIAS meant that BSPs effectively could offer private broadband channels dedicated to innovative services (such as those requiring an enhanced quality of service compared to the level of service provided by BIAS).<sup>78</sup> Such services theoretically could not be provided over public broadband channels associated with BIAS. The ability to offer a service with an enhanced quality of service seems to confer a competitive advantage to the BSP compared to a somewhat similar service that relies on BIAS. Nevertheless, it is the expectation of the FCC that provision of specialized services will supplement (and not supplant) the benefits of the Open Internet.<sup>79</sup>

It is also recognized that these benefits from the provision of specialized services must be weighed against the potential costs of permitting private services.<sup>80</sup> First, one concern involves the incentive a BSP has to label a service as a specialized service that otherwise could be provided over a public, non-discriminatory channel in order to evade the consumer protections embodied in the Open Internet rules.<sup>81</sup> Second, a concern arises regarding incentives for the BSP in its decisions on how much total bandwidth to provision in the last mile and how to allocate the total bandwidth between public and private channels.<sup>82</sup> At one time, the investment and allocation decisions were determined, in large part, by technological considerations but, now, it has become mostly a business decision.<sup>83</sup> Third, a concern involves the incentive of BSPs to use specialized services to engage in anticompetitive conduct against unaffiliated online providers of close substitutes.<sup>84</sup>

The FCC's discussion of specialized services in the Open Internet Order was relatively brief.<sup>85</sup> Instead, the FCC created an Open Internet Advisory Committee (OIAC) to monitor, in part, the on-going development of specialized services by BSPs to ensure that they do not generate the types of concerns described above.<sup>86</sup> In August 2013, the Specialized Services Working Group of

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NET ADVISORY COMMITTEE 2013 ANNUAL REPORT 2 (Aug. 20, 2013).

<sup>78</sup> Markoff, *supra* note 4.

<sup>79</sup> ZITTRAIN & CLARK, *supra* note 77.

<sup>80</sup> James B. Speta, *Supervising Managed Services*, 60 DUKE L.J. 1715, 1720 (2011). Professor Speta provides an excellent analysis of issues surrounding the provision of specialized services in combination with the provision of BIAS by vertically integrated BSPs.

<sup>81</sup> *Id.* at 1728. This possibility is explored below in a case study of Comcast's treatment of its Xfinity TV video on-demand service when viewed on the Xbox video game console.

<sup>82</sup> *Id.* at 1720. This possibility is addressed in the conditions imposed in the Comcast-NBCU merger case discussed below.

<sup>83</sup> Adam Candeub & Daniel McCartney, *Law and Open Internet*, 64 FED. COMM. L.J. 493, 501-511 (2011).

<sup>84</sup> Speta, *supra* note 80. This possibility is also addressed below in the Xfinity case study.

<sup>85</sup> ZITTRAIN & CLARK, *supra* note 77.

<sup>86</sup> *Id.*

the OIAC issued its portion of the annual report.<sup>87</sup> The first issue the Working Group addressed involved identifying the parameters of exactly what types of services can be classified as specialized services and, thus, not subject to the Open Internet regulatory framework.<sup>88</sup> In this discussion, possible limits on the provision of and characteristics of specialized services are introduced.

The Working Group identified the following types of considerations to define and characterize a specialized service: (a) what is the reach of the service, (b) does the service utilize capacity on last mile facilities, (c) is the service's use of capacity isolated from public Internet channels, (d) is the service a general service or an application-level service, and (e) does the service require treatment (such as an enhanced level of quality) that otherwise would not be available over the "best efforts" level of service provided by BIAS.<sup>89</sup> In order to be classified as a specialized service and, thus, be set apart from other IP-based services that are subject to the Open Internet rules, the Working Group suggested the following answers: (a) the service is not able to reach large parts (endpoints) of the Internet, (b) the service does utilize capacity on the last mile facilities, (c) the service's use of capacity is isolated from (i.e., does not impact/interfere with) the capacity allocated to BIAS, (d) the service is a specific, application level service, and (e) the service requires a capability in order to provide the service that could not be provided over the public Internet.<sup>90</sup>

As a basis of comparison, if one considered the BIAS provided by BSPs that provide access to OVDs such as Netflix, the answers to the above considerations are as follows: (a) the service is intended to reach virtually all endpoints on the Internet, (b) the service does use capacity on the last mile facilities, (c) the service provides access to multiple applications and content providers that all utilize the same capacity allocated to public channels, (d) the service is a general service over the top of which multiple Internet services can be provisioned, and (e) the service is designed to utilize protocols associated with the treatment of packets in a "best efforts" manner.<sup>91</sup>

Consideration (e) is critical and is a limiting factor, because an underlying rationale for exempting specialized services from the Open Internet rules is to preserve and enhance the incentives for BSPs to engage in investment and innovation that will supplement the innovative opportunities using the public Internet.<sup>92</sup> Stated differently, the BSP should not use the specialized services

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<sup>87</sup> SPECIALIZED SERVICES: SUMMARY OF FINDINGS AND CONCLUSIONS, *supra* note 73.

<sup>88</sup> *Id.*

<sup>89</sup> *Id.*

<sup>90</sup> *Id.*

<sup>91</sup> *Id.*

<sup>92</sup> *Id.* at 67.

classification as a way to avoid regulation but, rather, as a way to enhance innovation. This concern about evading Internet regulations is explored by analyzing the case involving Comcast's decision in March 2012 to exempt its Xfinity TV video on-demand service from a consumer's data cap when viewed on the Xbox video game console, an Internet-enabled device.<sup>93</sup> This decision led to an outcry by Open Internet proponents that Comcast's streaming video on demand service was violating the openness rules.<sup>94</sup>

The Xfinity controversy seems to conflate two distinct issues. First, Comcast considered a customer's use of the Xfinity application when watched over the Xbox video game console to be exempt from the customer's monthly data cap.<sup>95</sup> Second, Comcast argued that the flow of Xfinity traffic is not provisioned over a public Internet channel but rather is provisioned differently, as an IP serving of cable TV service.<sup>96</sup> Each issue must be considered separately. Suppose Comcast decided to exempt the use of the Xfinity application from its data cap when its content is viewed through use of the Xbox video game console; the Xbox effectively then becomes a substitute receiver for the cable set top box. If, instead, the customer watched the same content by using the services of an OVD, then the data viewed counts against the customer's monthly data cap.<sup>97</sup> On the surface, this appears to be a discriminatory practice, not because of differential treatment of traffic on the last mile but in the economic consequences of the traffic.<sup>98</sup> In defense of the practice, it is argued that "[t]he Xbox exemption merely allows customers to watch traditional cable consumption on television using the Xbox rather than a traditional set-top box as the conduit."<sup>99</sup> However, if the data for the Comcast service and the OVD service are provided utilizing the customer's BIAS service, the difference in economic

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<sup>93</sup> Kyle Orland, *Comcast: Xbox 360 On Demand Streams Won't Count Against Data Caps*, ARSTECHNICA (Mar. 26, 2012, 2:54 PM), <http://arstechnica.com/gaming/2012/03/comcast-xbox-on-demand-streams-wont-count-against-data-caps/>.

<sup>94</sup> *In re Applications of Comcast Corp., General Electric Company and NBC Universal Inc. for Consent to Assign Licenses and Transfer Control of Licenses, Petition to Enforce Merger Conditions*, MB Docket No. 10-56, at 1 (Aug. 1, 2012) [hereinafter Comcast, GE & NBC Petition].

<sup>95</sup> *Id.* at 4.

<sup>96</sup> Tony Werner, *The Facts About Xfinity TV and Xbox 360: Comcast is Not Prioritizing*, COMCAST CORP. (May 5, 2012), <http://corporate.comcast.com/comcast-voices/the-facts-about-xfinity-tv-and-xbox-360-comcast-is-not-prioritizing>.

<sup>97</sup> Comcast, GE & NBC Petition, *supra* note 94, at 12.

<sup>98</sup> James B. Speta, Telecommunications Policy Research Conference: Payment Innovation at the Content/Carriage Interface 15 (2012).

<sup>99</sup> Daniel A. Lyons, *The Impact of Data Caps and other Forms of Usage-Based Pricing for Broadband Access* 44 (Mercatus Ctr. at Geo. Mason Univ., Working Paper no. 12-27, 2012).



treatment is arguably discriminatory.

A related issue arises if an unaffiliated content provider wished to pay a fee to the BSP to exempt the customer's use of that edge provider's content from the data cap applied to the BIAS.<sup>100</sup> Although at first glance such a proposal appears to have discriminatory effects, it is possible to posit legitimate business justifications for such a business practice.<sup>101</sup> A key consideration is whether the BSP makes such an offer available to similarly situated, unaffiliated content providers. In the Xfinity case, the exemption only applied to Comcast's video on demand service.<sup>102</sup>

The second issue implicated in the Comcast case is somewhat confusing. Comcast argues that the delivery of Xfinity content to the Xbox video game console is isolated from the bandwidth allocated to BIAS.<sup>103</sup> In this respect, it looks to possess one of the necessary conditions for a specialized service and, thus, not subject to a nondiscrimination rule. Based on how Comcast says it provisions the service,<sup>104</sup> it appears to meet the five characteristics described above. If so classified, then, making an argument that the data used by the service is not subject to the customer's monthly data cap associated with BIAS is irrelevant. The creation of the specialized service category means that such a service can provide an enhanced quality of service and need not be subject to other conditions imposed on BIAS. More confusing, Comcast says that use of the Xfinity application on other Internet-enabled devices such as computers and tablets is subject to the customer's monthly data cap.<sup>105</sup> It is only data sent to an Xbox video game console that is exempt.<sup>106</sup> This differential treatment raises several questions. Does the data sent to other devices use public Internet capacity and, thus, one reverts back to the first issue addressed. Why is only the data sent to an Xbox video game console utilizing a private channel? Does it make sense that the same application is classified differently depending on the Internet-enabled device utilized to receive the data? This case demands further examination by regulatory authorities to understand fully the reasons for the Xfinity exemption from data caps.<sup>107</sup>

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<sup>100</sup> Amol Sharma et al., *ESPN Explores Mobile Subsidy: Worried About Wireless-Data Limits, Network Considers Picking Up the Tab*, WALL ST. J., May 10, 2013, at B1 (It is reported that ESPN has made such a proposal so that use of its content would not count against the monthly data cap for a customer of its wireless provider. The hypothetical discussed in the text extends the offering to a wireline data cap plan.).

<sup>101</sup> *Id.*

<sup>102</sup> Comcast, GE & NBC Petition, *supra* note 94, at 4-5.

<sup>103</sup> Werner, *supra* note 96.

<sup>104</sup> *Id.*

<sup>105</sup> *Id.*

<sup>106</sup> *Id.*

<sup>107</sup> It may be that such an investigation is now in process, *see* Thomas Catan & Amy

As discussed above, specialized services were not subject to any specific limitations in the Open Internet Order but that soon changed when the FCC and the Department of Justice imposed conditions to permit the Comcast-NBCU merger in 2011.<sup>108</sup> In 2009, Comcast, the nation's largest BSP, proposed a joint venture with NBCU, one of the major providers of broadcast and cable programming.<sup>109</sup> The vertical merger was eventually approved in 2011 but there were restrictions imposed that affected the way in which Comcast would be able to deliver Internet services.<sup>110</sup> An emphasis of the merger conditions was to protect the growth of OVDs, potential competitors to Comcast's video programming delivery business.<sup>111</sup> First, with respect to services provided over the public Internet, Comcast must treat other OVD services just as it treats its own Internet-based video services.<sup>112</sup> This condition is justified based on the types of issues addressed in the Open Internet Order that examined the incentive and ability of a vertically integrated BSP to discriminate in its treatment of traffic utilizing BIAS.<sup>113</sup> Effectively, this means that Comcast will be subject to many of the provisions of the Open Internet Order until 2018 even if the judicial process overturns or remands all or parts of the Open Internet Order.<sup>114</sup> Furthermore, Comcast must also subject its traffic to any usage-based billing plans, such as data caps, that applies to OVD traffic.<sup>115</sup> This merger condition has led net neutrality proponents to argue that the Xfinity case, discussed above, is a violation of the merger agreement as well as an antitrust violation.<sup>116</sup>

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Schatz, *U.S. Probes Cable for Limits on Net Video*, WALL ST. J., June 13, 2012, available at <http://online.wsj.com/article/SB100014240527023034442045774629511663884624.html>.

<sup>108</sup> Competitive Impact Statement at 1-2, *United States v. Comcast Corp.*, No. 1:11-cv-00106 (D.C. Cir. 2011).

<sup>109</sup> *Id.* at 1.

<sup>110</sup> *Id.* at 2.

<sup>111</sup> *Id.* at 3.

<sup>112</sup> *Id.* at 38.

<sup>113</sup> SPECIALIZED SERVICES: SUMMARY OF FINDINGS AND CONCLUSIONS, *supra* note 73.

<sup>114</sup> Based on oral arguments presented at the D.C. Circuit Court in Fall 2013 regarding the Open Internet Order, many legal scholars and practitioners expected a legal setback for the FCC rules. *See, e.g.*, John Mansell, *Bye Bye Net Neutrality?*, LIGHT READING (Nov. 19, 2013), [www.lightreading.com/services-apps/broadband-services/bye-bye-net-neutrality/a/d-id706655](http://www.lightreading.com/services-apps/broadband-services/bye-bye-net-neutrality/a/d-id706655). In January 2014, the D.C. Circuit did vacate the no blocking and nondiscrimination rules while approving the transparency rule. Importantly, the FCC was found to have direct statutory authority to impose rules on the practices of broadband providers toward edge providers. The FCC is now in the process of rewriting the openness rules to conform to the directives of the D.C. Circuit. The revised openness rules must contain flexibility so that broadband providers are not treated as common carriers. *See Verizon v. FCC*, 740 F.3d 623 (D.C. Cir. 2014). Hopefully, the revised rules will incorporate the concerns of this article regarding interconnection and specialized services issues.

<sup>115</sup> Competitive Impact Statement, *supra* note 108, at 2.

<sup>116</sup> Melissa Lipman, *DOJ Needs Collusion, Dominance to Make Cable Antitrust Case*, LAW360 (June 13, 2012, 10:16 pm), [www.law360.com/articles/349639/doj-needs-collusion-](http://www.law360.com/articles/349639/doj-needs-collusion-)

Second, with respect to specialized services that are offered over the same last mile facilities as BIAS, Comcast must “ensure that OVDs will have access to any Specialized Service Comcast may offer that includes comparable services.”<sup>117</sup> In practicality, this applies an open access mandate for Comcast’s private Internet channels for rival OVDs. This could become a controversial issue, given the unrelenting growth in the demand for video services over the Internet.<sup>118</sup> Also, merger conditions narrowed the definition of specialized services compared to that offered in the Open Internet Order, thus, subjecting additional services to the Open Internet rules specifically for Comcast.<sup>119</sup> Broadband Internet access service, video services regulated under Title VI, and existing VoIP telephony services are not to be treated as specialized services.<sup>120</sup>

Lastly, in order to protect the public Internet from being starved for capacity, a merger condition instructs Comcast to “maintain its public Internet access service at a level that typically would allow any user on the network to download content from the public Internet at speeds of at least 12 megabits per second in markets where it has deployed DOCSIS 3.0.”<sup>121</sup> Again, this reflects the interest of governmental authorities in protecting the development of OVDs. One can see that the governmental authorities anticipated that a decision on the allocation of capacity between public and private channels could be used by BSPs to limit the growth and competitiveness of OVDs. Since such a similar adverse allocation decision could be made by any BSP, it seems reasonable to consider extending such a mandate to all BSPs.

#### IV. CONCLUSION

Just about everyone agrees that the Internet has been and should remain open. However, precisely what does open mean and whether the government should mandate such a feature is the subject of much debate. The Open Internet Order created rules to preserve the openness feature of the public Internet over the last mile. These rules are calibrated based on appropriate economic concerns that vertically integrated BSPs with market power are positioned to engage in anticompetitive behavior toward unaffiliated edge providers generating harmful effects on end users. The FCC response to address these concerns is confined to actions that BSPs can take in terms of blocking or engaging in

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dominance-to-make-cable-antitrust-case.

<sup>117</sup> Competitive Impact Statement, *supra* note 108, at 1.

<sup>118</sup> SPECIALIZED SERVICES: SUMMARY OF FINDINGS AND CONCLUSIONS, *supra* note 73.

<sup>119</sup> *Id.*

<sup>120</sup> *Id.*

<sup>121</sup> Competitive Impact Statement, *supra* note 108, at 1.

unreasonable discrimination in the public channels over the last mile. This limited focus fails to account for actions that BSPs can take with respect to interconnection agreements that can frustrate the objectives of the openness rules. To begin to address this concern, a first step would be to invoke a transparency requirement for interconnection agreements so governmental authorities and other interested parties can understand the economics underlying the specified terms and conditions of interconnection. In addition, the ability of vertically integrated BSPs to use specialized services to circumvent the openness rules still remains a viable option. Governmental authorities addressed this concern with specific conditions imposed on Comcast's Internet services during the Comcast-NBCU merger process. Extension of these types of conditions to all vertically integrated BSPs with market power should be considered as a logical next step for regulatory action.