

## ARTICLE

### AN ANTITRUST-INFORMED APPROACH TO REGULATING INTERNET INTERCONNECTION

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#### INTRODUCTION

For over a decade, net neutrality has dominated telecommunications policy. The debate regarding whether and how to regulate broadband network management practices has prompted numerous law review articles,<sup>1</sup> countless popular press pieces,<sup>2</sup> and several proceedings before the Federal Communications Commission (“FCC” or the “Commission”).<sup>3</sup> The latest proceeding, in December 2017, drew a record 23 million comments<sup>4</sup> and will send the agency to court for the fourth time in eight years.<sup>5</sup>

But net neutrality focuses on only one part of the larger Internet ecosystem. Advocates targeted broadband networks because of their strategic position as the gateway to consumers, which potentially positions them to shape the flow of information online. Yet as former Commission Chairman Julius Genachowski

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<sup>1</sup> See, e.g., *Keeping the Internet Neutral?: Tim Wu and Christopher Yoo Debate*, 59 Fed. Comm. L.J. 575 (2007).

<sup>2</sup> See, e.g., Franklin Foer, *It's Time to Regulate the Internet*, THE ATLANTIC (Mar. 21, 2018), <https://www.theatlantic.com/technology/archive/2018/03/its-time-to-regulate-the-internet/556097/> [<https://perma.cc/NDA3-6L37>].

<sup>3</sup> Restoring Internet Freedom, 33 FCC Rcd. 311 (2018); Protecting and Promoting the Open Internet, 30 FCC Rcd. 5601 (2015) [hereinafter 2015 Open Internet Order]; Preserving the Open Internet, 25 FCC Rcd. 17905 (2010); Formal Complaint of Free Press and Public Knowledge Against Comcast Corporation for Secretly Degrading Peer-to-Peer Applications, 23 FCC Rcd. 13028 (2008).

<sup>4</sup> See *id.* at 504 n.1182.

<sup>5</sup> See *U.S. Telecom Ass'n v. FCC*, 825 F.3d 674 (D.C. Cir. 2016); *Verizon v. FCC*, 740 F.3d 623 (D.C. Cir. 2014); *Comcast Corp. v. FCC*, 600 F.3d 642 (D.C. Cir. 2010); Petition for Review, *New York v. FCC*, No. 18-1013 (D.C. Cir. Jan. 16, 2018).

noted, these broadband providers are merely the “onramps” to the Internet<sup>6</sup>—the last mile of a system that brings over 35,000 networks together to move information packets from origin to destination.<sup>7</sup>

Interconnection agreements stitch these networks together. These arms’ length transactions define the terms by which networks exchange traffic with one another. Through transit agreements, peering relationships, and other commercial arrangements, networks large and small coordinate on a bilateral basis to deliver Internet content in ways that appear seamless to end user consumers.

But like all contracts, interconnection agreements can be subject to dispute. Two networks may argue about the terms on which they might enter or renew an interconnection agreement. The parties may also disagree about their duties under an existing agreement. If not resolved, these disputes can expose fault lines between networks that shatter the consumer’s illusion of a seamless Internet experience.

As the Internet has matured, some commentators have expressed concern that these interconnection disputes may similarly threaten the Open Internet. In his viral 2014 segment on net neutrality, comedian John Oliver highlighted a dispute during which Comcast allegedly slowed the delivery of Netflix traffic until Netflix paid a fee.<sup>8</sup> But the Comcast/Netflix dispute was not a net neutrality issue: Comcast was not blocking, throttling, or prioritizing content on its broadband network, which is the primary conduct prohibited by the now-defunct net neutrality rules.<sup>9</sup> Rather, Netflix (and by extension its customers) were trapped by an impasse in negotiations between Comcast and Cogent Communications, the company that delivered Netflix’s data, regarding the terms by which traffic would be exchanged and the connections upgraded between the two networks.<sup>10</sup> It was, in short, an interconnection dispute, which was resolved when Netflix elected to interconnect directly with Comcast instead of continuing to rely on Cogent.<sup>11</sup>

Interconnection disputes share some similarities with net neutrality concerns, but differ in many other ways. If, as some advocates suggest, net neutrality is analogous to preventing fast and slow lanes on a highway, the Comcast/Netflix dispute was more like a problem with narrow interchanges between highways.

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<sup>6</sup> See *FCC Republicans Question Need for Net Neutrality Rules*, COMM. DAILY (Oct. 23, 2009), <https://communicationsdaily.com/article/view?s=207886&id=308522>.

<sup>7</sup> See CHRISTOPHER S. YOO, *THE DYNAMIC INTERNET: HOW TECHNOLOGY, USERS, AND BUSINESSES ARE TRANSFORMING THE NETWORK* 55 (2012).

<sup>8</sup> *Last Week Tonight with John Oliver* (HBO television broadcast June 1, 2014). In this broadcast, Oliver described Comcast’s behavior as having “all the ingredients of a mob shake-down.” *Id.*

<sup>9</sup> Restoring Internet Freedom, *supra* note 3, at ¶ 17.

<sup>10</sup> Zachary M. Seward, *The Inside Story of How Netflix Came to Pay Comcast for Internet Traffic*, QUARTZ (Aug. 27, 2014), <https://qz.com/256586/the-inside-story-of-how-netflix-came-to-pay-comcast-for-internet-traffic/> [<https://perma.cc/H2XU-HGZ5>].

<sup>11</sup> *Id.*

Netflix's slowdown resulted not from how Comcast treated Netflix traffic on its network, but from difficulties with getting Netflix traffic to the Comcast network in the first place. Like blocking and prioritization, interconnection denial can be a tool that companies might deploy for anticompetitive purposes. But the magnitude of this threat, and therefore the appropriate regulatory response, turns upon market conditions: how competitive are interconnection markets and are there opportunities for companies to abuse market power in ways that harm consumers?

Of course, interconnection disputes are not a new phenomenon in telecommunications law. In the early 1900s, the Bell Telephone System refused to interconnect with rival local telephone companies as a way to maintain its market dominance, until the Justice Department brought an antitrust action against the company and forced an interconnection agreement, known as the Kingsbury Commitment.<sup>12</sup> Similarly, the landmark breakup of the Bell Empire in 1984 originated in part from AT&T's refusal to interconnect with rival long-distance telephone companies, such as MCI and Sprint.<sup>13</sup> And the 1996 Telecommunications Act imposed a complex interconnection regime upon telephone companies as part of its effort to stimulate competition for local service.<sup>14</sup>

But while the Internet evolved in part from twentieth-century telecommunications networks, the modern Internet ecosystem differs considerably from its telephone-based predecessor. Partly in recognition of its lack of familiarity with this market and partly to avoid allegations of "regulating the Internet," the Commission has waded slowly into these waters and has refrained from asserting plenary authority over interconnection agreements. The early interconnection scholarship largely reflects the network architecture of its period and does not take into account revolutionary changes in modern interconnection markets.

This Article attempts to close that gap and offer a model for interconnection regulation in the modern era. Part I provides an overview of the interconnection market and discusses in depth several recent high-profile interconnection disputes, placing these disputes into the broader context of a shifting interconnection ecosystem. Part II examines the case for regulatory intervention in the interconnection space. Although interconnection markets are robust and competitive, incentives exist for potentially anticompetitive conduct to occur. Part II argues that the Commission should act as a sector-specific antitrust authority to safeguard against this risk. Part III examines the mechanics of this authority: the Commission would intervene in disputes involving "unfair methods of competition," a standard borrowed from the Federal Trade Commission

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<sup>12</sup> See Daniel A. Lyons, *Technology Convergence and Federalism: Who Should Decide the Future of Telecommunications Regulation?* 43 MICH. J. L. REFORM 383, 388 n.16 (2010).

<sup>13</sup> *Id.* at 389-90 n.27.

<sup>14</sup> Telecommunications Act of 1996, Pub. L. No. 104-104, 110 Stat. 56 (1996) (codified as amended in scattered sections of 47 U.S.C.); see also Lyons, *supra* note 12, at 393.

Act, and would pursue remedies designed to remedy consumer harm from anti-competitive interconnection practices. Finally, Part IV explores the need for greater transparency in interconnection markets, and counsels against calls by some activists to make interconnection agreements publicly available, because of fear that this disclosure could lead to collusion.

## I. OVERVIEW OF THE INTERCONNECTION MARKET

### A. *Basic Contours*

When considering rules for the Internet, the Federal Communications Commission has focused primarily upon the residential broadband market, and to a lesser extent, the market for commercial end-user broadband access. For example, the 2010 Open Internet rules applied only to “broadband Internet access service,” which the Commission defined as “[a] mass-market retail service . . . that provides the capability to transmit data to and receive data from all or substantially all Internet endpoints” that is “marketed and sold on a standardized basis to residential customers, small businesses, and other end-user customers such as schools and libraries.”<sup>15</sup> Similarly, the 2010 National Broadband Plan announced six long-term goals largely aimed at connecting homes and communities to broadband networks, consistent with Congress’s directive that the agency “ensure that every American has ‘access to broadband capability.’”<sup>16</sup> For years, end-user broadband service has been sold primarily through a subscription-based model within which the consumer purchases a publicly-advertised monthly plan for Internet access. This plan includes either unlimited monthly service or unlimited service up to a monthly limit, with a per-unit overage charge for exceeding the customer’s allotted consumption.

But upstream into the Internet ecosystem, the interconnection market is much more complex and dynamic. Commentators often describe the Internet, accurately, as a “network of networks.”<sup>17</sup> Interconnection agreements stitch this network together. Professor Christopher Yoo describes the interconnection market as a “collection of 35 thousand autonomous systems bargaining with one another through arms-length transactions” to shuttle traffic among the Internet’s endpoints.<sup>18</sup> As one might expect, these agreements inevitably contain wide variations in the terms under which parties interconnect and exchange traffic with one another.<sup>19</sup> Interconnection agreements can run hundreds of pages, governing a

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<sup>15</sup> Preserving the Open Internet, *supra* note 3, at ¶¶ 44-45.

<sup>16</sup> FED. COMM’NS COMM’N, CONNECTING AMERICA: THE NATIONAL BROADBAND PLAN, at xi, xiv-xv (2010).

<sup>17</sup> See, e.g., YOO, *supra* note 7.

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

<sup>19</sup> *Id.*

wide range of conditions, and are typically covered by non-disclosure agreements that reflect the competitively sensitive nature of those terms.<sup>20</sup>

### 1. Transit Service

Much of the concern about interconnection agreements, including the Comcast/Netflix deal that John Oliver discussed, stems from a misconception that Internet content providers typically pay nothing to deliver their traffic to the Internet. In fact, these providers often purchase connectivity from one or more Internet transit providers.<sup>21</sup> In simplified form, Internet transit service is a business relationship whereby a network sells Internet access.<sup>22</sup> A content provider signs an agreement with a transit provider, which agrees to deliver the client's content to all Internet destinations. The transit provider then enters into interconnection agreements with other networks upstream to provide the pathways required to reach any Internet destination.

Internet transit is typically sold on a metered basis, using the 95th percentile measurement method.<sup>23</sup> Through this method, the transit provider measures the amount of traffic to or from the customer every five minutes for a month.<sup>24</sup> At the end of the month, each of these samples is converted to a megabit-per-second figure and the samples are rank-ordered from largest to smallest.<sup>25</sup> The 95th percentile figure is used to represent the customer's monthly volume, and is multiplied by the transit agreement's per-Mbps unit price to calculate the customer's monthly bill.<sup>26</sup> Many transit providers provide a unit-price discount if the customer agrees to a minimum guaranteed amount of monthly traffic, known as a "commit."<sup>27</sup>

### 2. Peering

As an alternative to purchasing transit service from an upstream network, a network may enter into a peering agreement with another. Peering is a business relationship in which two companies agree reciprocally to provide access to each other's customers.<sup>28</sup> Traditionally, peering was conducted on a settlement-free basis, meaning that the two partners agree to exchange traffic without billing one

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<sup>20</sup> See Michael Kende, *The Digital Handshake: Connecting Internet Backbones*, 11 *COMMLAW CONSPECTUS* 45, 58 n.129 (2003).

<sup>21</sup> 2015 Open Internet Order, *supra* note 3, at ¶ 196.

<sup>22</sup> WILLIAM B. NORTON, *THE INTERNET PEERING PLAYBOOK: CONNECTING TO THE CORE OF THE INTERNET* 28 (2013).

<sup>23</sup> See *id.* at 30-32.

<sup>24</sup> *Id.*

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

<sup>26</sup> *Id.*

<sup>27</sup> *Id.* at 32.

<sup>28</sup> *Id.*

another based on the traffic flow.<sup>29</sup> Many settlement-free peering agreements are between networks of comparable size, where the flow of traffic in each direction is roughly equal and therefore the transaction costs of metering would be greater than the net monthly payout.<sup>30</sup> As Professor Yoo has noted, settlement-free peering operates as a form of bartering, wherein each network receives an in-kind benefit of terminating traffic on the counterparty's network roughly equal to the cost it incurs to accept the counterparty's traffic.<sup>31</sup> When this condition does not hold, such as between networks where traffic is imbalanced, the parties may nonetheless sign a paid peering agreement, whereby one party pays the other as a condition of peering.<sup>32</sup>

Peering and transit are related but distinct products. Peering provides a company access only to the peering partner's end-user customers. It does not guarantee that the traffic exchanged will be forwarded on to Internet points that are not within the peering partner's network.<sup>33</sup> As Norton explains, "Internet Transit is a service that provides access to the global Internet, while Internet Peering simply provides a more direct path for a subset of the traffic."<sup>34</sup> Peering may be advantageous because it is cheaper than the equivalent service, or because direct access to the peering partner's customers reduces the number of "hops" between end-points and therefore improves the quality of the transmission by limiting the risk of congestion or packet loss.<sup>35</sup> Because transit exists as an alternative to peering, peering behavior is likely disciplined by transit markets as the next-best alternative.

### 3. Other Innovations: Content Delivery Networks and Server Farms

Content providers may also choose to rely upon a content delivery network (CDN) rather than transit or peering to deliver their traffic to the Internet. Like transit providers, CDNs sell content providers access to the Internet.<sup>36</sup> But rather than arrange transport across the Internet from the content provider's servers to consumers through a series of transit agreements, CDNs maintain a distributed network of servers around the country, and enter into transit or (typically paid)

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<sup>29</sup> See Rob Frieden, *Internet Protocol Television and the Challenge of "Mission Critical" Bits*, 33 CARDOZO ARTS & ENT. L.J. 47, 53 n.17 (2015); YOO, *supra* note 7, at 105.

<sup>30</sup> Frieden, *supra* note 29, at 53 n.17; YOO, *supra* note 7, at 105.

<sup>31</sup> YOO, *supra* note 7, at 105.

<sup>32</sup> Frieden, *supra* note 29, at 56; YOO, *supra* note 7, at 105-108.

<sup>33</sup> 2015 Open Internet Order, *supra* note 3, at ¶ 198.

<sup>34</sup> NORTON, *supra* note 22, at 66.

<sup>35</sup> 2015 Open Internet Order, *supra* note 3, at ¶ 198 & n.494 (citing William Norton, *The Evolution of the U.S. Internet Peering Ecosystem*, DR. PEERING, <http://drpeering.net/white-papers/Ecosystems/Evolution-of-the-U.S.-Peering-ecosystem.html> [<https://perma.cc/6T8L-4Q33>] (last visited May 7, 2018)) ("Peering has the benefit of lower latency, better control over routing, and may therefore lead to lower packet loss.").

<sup>36</sup> *Id.* at ¶ 197.

peering agreements directly with end-user broadband networks.<sup>37</sup> The CDN maintains a copy of the client's content on each server, and when requested, will deliver the content from a server close to the consumer, reducing the distance that it must travel.<sup>38</sup> Because the content is stored closer to its destination and traverses fewer interconnections, CDNs can be a high-quality, low-cost alternative to transit.<sup>39</sup>

Some content providers have also begun building server farms to cache and distribute their content locally.<sup>40</sup> These server farms act like company-owned CDNs, interconnecting directly with broadband providers and bypassing the public Internet completely.<sup>41</sup> Like CDNs, server farms shorten the pathway from server to consumer and thus reduce the possibility that congestion will reduce the quality of the transmission, and also may provide cost savings compared to traditional transit.<sup>42</sup> Professor Yoo notes that Google, Yahoo!, and Microsoft have used server farms to bypass the public Internet for roughly one-third of their total traffic.<sup>43</sup>

#### *B. Prices and Competition in Interconnection Markets*

As noted above, content providers have a wide range of options to choose from when deciding how to deliver their content to consumers. Some transit providers have a nearly global network footprint, while others operate more regionally and rely more heavily on interconnection agreements to route traffic to end-users.<sup>44</sup> Some providers offer only transit, while others provide a variety of complementary services as well.<sup>45</sup> And as noted above, some content providers may find peering or CDN delivery to be a competitive alternative to traditional transit service.

It is also worth noting that content providers and transit providers need not, and increasingly do not, rely upon a single interconnection agreement to process their traffic. Rather, many content and transit providers will maintain multiple pathways through which traffic can reach end users, a practice known as "multi-homing."<sup>46</sup> By securing multiple pathways to an end-user, multi-homing helps a

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<sup>37</sup> *Id.*

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

<sup>39</sup> *Id.*

<sup>40</sup> YOO, *supra* note 7, at 68.

<sup>41</sup> *See id.*

<sup>42</sup> *Id.*

<sup>43</sup> *Id.*

<sup>44</sup> *See* Dan Rayburn, *How Transit Works, What it Costs and Why It's So Important*, STREAMING MEDIA BLOG (Feb. 24, 2014), <https://www.streamingmedia-blog.com/2014/02/transit-works-costs-important.html> [<https://perma.cc/3DQR-M8D6>].

<sup>45</sup> *Id.*

<sup>46</sup> Christopher S. Yoo, *Innovations in the Internet's Architecture that Challenge the Status Quo*, 8 J. TELECOMM. & HIGH TECH. L. 79, 86 (2010).

provider offer greater reliability and reduces the market power that a single network may otherwise wield over the flow of Internet traffic.<sup>47</sup>

Price trends demonstrate the competitive nature of interconnection markets. Though pricing schedules are often protected by nondisclosure agreements, there is a general consensus among analysts that competition has driven down Internet transit prices precipitously and continuously each year since the Internet's inception.<sup>48</sup> Interconnection consultant William Norton calculates, based on informal surveys, that the average per-Mbps price for non-commit transit service has fallen from \$1,200 in 1998 to \$12.00 in 2008 and \$0.94 in 2014—an average decline of over 30% each year.<sup>49</sup> While Norton notes that the individual data points are only “rough indications” of price, the “trend is unmistakable, and no one would disagree.”<sup>50</sup> Similarly, research firm TeleGeography estimates that American transit prices have fallen 26% annually from 2007 to 2012, and the rate of decline is increasing.<sup>51</sup>

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<sup>47</sup> YOO, *supra* note 7, at 63.

<sup>48</sup> NORTON, *supra* note 22, at 33-34.

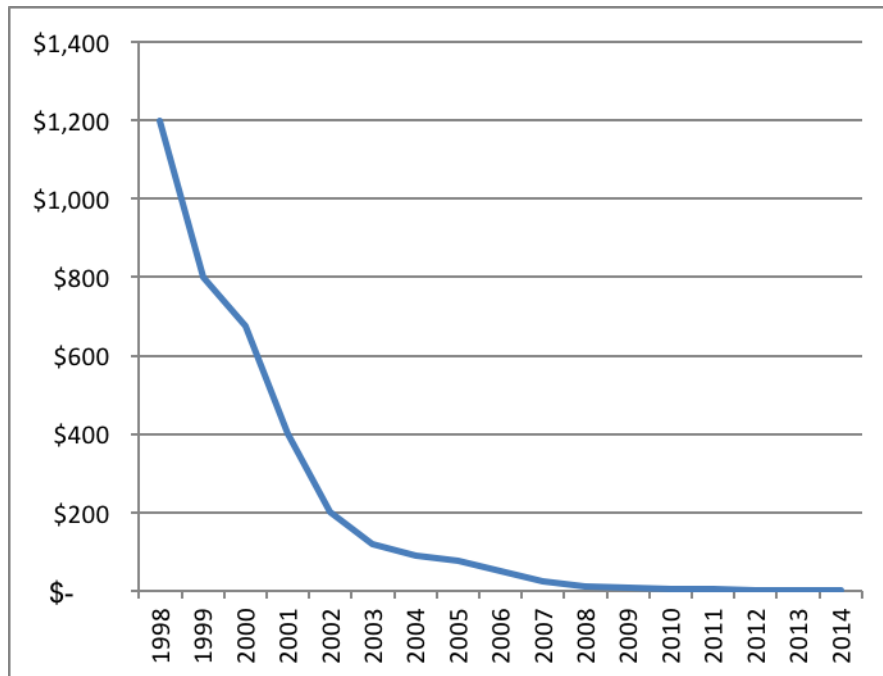
<sup>49</sup> *Id.* at 34.

<sup>50</sup> *Id.*

<sup>51</sup> See *IP Transit Price Declines Steepen*, TELEGEOGRAPHY (Aug. 2, 2012), <http://www.telegeography.com/products/commsupdate/articles/2012/08/02/ip-transit-price-declines-steepen/> [https://perma.cc/SF9J-PQWR].



FIGURE 1: Estimated Internet Transit Price<sup>52</sup>



Like the transit market, CDN prices are not generally made public, but studies suggest that these prices are falling at rates roughly comparable to transit prices.<sup>53</sup> Streaming Media Analyst Dan Rayburn estimates that CDN pricing fell 20-25% from 2012 to 2013, and he expected even greater declines in 2014 and 2015.<sup>54</sup> Given that transit and CDN services are quasi-substitutes, one should not be surprised to see similar pricing trends in both markets.

### C. The Dynamic and Evolving Nature of Interconnection Markets

Moreover, the array of available interconnection services has evolved over time in response to the growth in the volume and diversity of Internet users, content, and applications. As Professor Yoo has explained at length, when the Internet backbone was privatized in the 1990s, the Internet reflected a hierarchical structure similar to the traditional telephone network: last-mile networks

<sup>52</sup> NORTON, *supra* note 22, at Chapter 2.1.

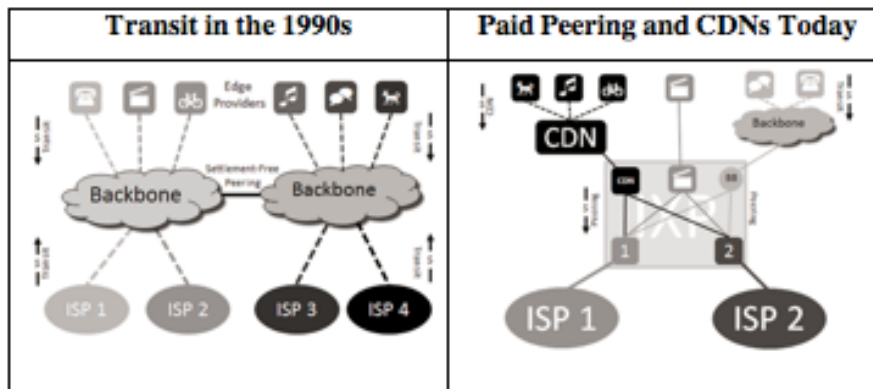
<sup>53</sup> Compare NORTON, *supra* note 22, at 34 (noting 30% annual decline in transit rates) with DAN RAYBURN, THE STATE OF THE CDN MARKET (2014), <http://conferences.infoday.com/documents/197/2014CDNSummit-Rayburn.pdf> [<https://perma.cc/SX7D-AMWH>] [hereinafter RAYBURN, CDN MARKET] (noting 25% or greater annual decline in CDN rates).

<sup>54</sup> See RAYBURN, CDN MARKET, *supra* note 53.

servicing end-users contracted with regional ISPs, each of which in turn contracted with a private backbone provider to carry traffic to the Internet.<sup>55</sup> These backbone providers interconnected at one of four public peering points to exchange traffic with one another and route it back down.<sup>56</sup> Traffic thus flowed from the sender’s last-mile provider up to a public peering point, over to another backbone provider, then back down again to the last-mile provider serving the recipient.<sup>57</sup>

But as these standard pathways became congested, network operators sought alternative agreements, such as private peering and secondary peering agreements to exchange traffic without having to traverse the path through a public peering point. Today, the old telephone-like hierarchy of the 1990s has been replaced by a lattice of interconnecting networks that provide multiple potential pathways for traffic to get from one point to another. The existence of multiple pathways for any given Internet transmission helps alleviate congestion and makes the marketplace more competitive, as “the presence of alternative paths to connect to the Internet naturally limits every market participant’s ability to raise price.”<sup>58</sup> In the 2015 Open Internet Order, the Federal Communications Commission described this evolution graphically:

FIGURE 2: Evolution in Transit Market<sup>59</sup>



Notably, these innovative new interconnection arrangements coincide with disruptive changes in interconnection markets or in adjacent content and application markets. Norton explains that private peering among cable providers be-

<sup>55</sup> YOO, *supra* note 7, at 58.

<sup>56</sup> *Id.*

<sup>57</sup> *Id.* at 58–59.

<sup>58</sup> *Id.* at 63.

<sup>59</sup> 2015 Open Internet Order, *supra* note 3, at 5689.

came necessary following the bankruptcy of the cable industry's primary Internet Service Provider, Excite@Home, in 2001.<sup>60</sup> Excite@Home was a joint venture by multiple cable companies that offered cable subscribers cable modem service over participating companies' cable networks, coupled long-haul fiber lines leased from AT&T to regional data storage centers.<sup>61</sup> In a sense, Excite@Home was a proto-CDN. But following a disastrous merger with search engine Excite and the bursting of the dot-com bubble, the combined Excite@Home company declared bankruptcy.<sup>62</sup> To preserve their cable subscribers' Internet access, the participating cable companies ultimately agreed to peer with one another, thus restoring the economies of scale and connectivity that were available during the Excite@Home era.<sup>63</sup> Peering among broadband providers grew in popularity in the mid-2000s as peer-to-peer networking began consuming an ever-greater share of total broadband traffic, because settlement-free peering was more cost-efficient than purchasing transit.<sup>64</sup>

Similarly, as the Commission noted, one can trace the rise of CDNs to the growth in Internet-based video as an increasing share of overall public Internet traffic.<sup>65</sup> Sandvine estimates that real-time entertainment comprises 2/3 of all peak time Internet traffic on North American fixed broadband networks.<sup>66</sup> Netflix alone is responsible for 35.2% of all peak-time fixed broadband traffic, with YouTube claiming another 17.5%.<sup>67</sup> As the Federal Communications Commission has noted, this content is unusually susceptible to congestion, which drove demand for alternatives to traditional public Internet transit services.<sup>68</sup> By off-loading this traffic from the public Internet and onto a CDN, an edge provider can reduce its transit costs and improve its quality of service (by reducing the hops between server and consumer).<sup>69</sup> It is not surprising to find that Netflix, Google, Amazon, and Apple are among the leading companies in the server farm

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<sup>60</sup> William Norton, *Evolution of the U.S. Peering Ecosystem*, DRPEERING INTERNATIONAL, <http://drpeering.net/white-papers/Ecosystems/Evolution-of-the-U.S.-Peering-Ecosystem.html> [<https://perma.cc/5839-LKLQ>] (last visited Mar. 20, 2018).

<sup>61</sup> See Frank Rose, *The \$7 Billion Delusion*, WIRED (Jan. 1, 2002, 12:00 PM), [www.wired.com/2002/01/excite/](http://www.wired.com/2002/01/excite/) [<https://perma.cc/5FYQ-PBPY>].

<sup>62</sup> *Id.*

<sup>63</sup> Norton, *Evolution of the U.S. Peering Ecosystem*, *supra* note 60.

<sup>64</sup> *Id.*

<sup>65</sup> 2015 Open Internet Order, *supra* note 3, ¶ 197.

<sup>66</sup> SANDVINE, 2016 GLOBAL INTERNET PHENOMENA, LATIN AMERICA AND NORTH AMERICA 4 (2016), <https://www.sandvine.com/hubfs/downloads/archive/2016-global-internet-phenomena-report-latin-america-and-north-america.pdf>. Real-time entertainment is comprised of streaming audio and video. *Id.* at 2.

<sup>67</sup> *Id.* at 2, 4.

<sup>68</sup> 2015 Open Internet Order, *supra* note 3, ¶ 197.

<sup>69</sup> *See id.*

space, and that other video content providers are among CDNs' largest customers.

#### *D. Interconnection Disputes: Three Recent Case Studies*

Unsurprisingly, given the numerous and myriad types of interconnection arrangements and the dynamic nature of both the interconnection market and the content markets that it serves, disputes sometimes arise between networks regarding the interpretation of existing interconnection agreements and the conditions upon which an agreement should be entered or renewed. Presumably, most such disputes are resolved privately without the public becoming aware. Below are a few noteworthy anecdotal case studies that played out in public, thus pulling back the curtain a bit on an otherwise opaque interconnection market.

##### 1. Cogent/Sprint, 2008

Transit provider Cogent Communications experienced several interconnection disputes in the early 2000s, though the first to garner significant public attention was its 2008 dispute with Sprint.<sup>70</sup> Sprint claimed that the parties had entered into a settlement-free peering agreement, but that Cogent did not meet the minimum traffic criteria of the agreement.<sup>71</sup> As a result, Sprint terminated its ten interconnection points over a span of three weeks between October 7 and October 30, 2008 and filed suit alleging breach of contract.<sup>72</sup> The action resulted in a two day period in which Cogent-hosted content was unavailable to Sprint consumers, before Sprint agreed to restore interconnection pending the outcome of the litigation.<sup>73</sup> The parties settled their dispute and entered a long-term agreement approximately seven weeks later.<sup>74</sup>

##### 2. Comcast/Level 3, 2010

While the causes of the Sprint/Cogent conflict are unclear, the Level 3 Communications dispute was unusually public, which allows a rare glimpse into the dynamics of such situations. Comcast had been a longtime transit customer of Level 3, one of the largest Internet backbone companies, to carry its traffic to

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<sup>70</sup> See Mark Hachman, *Sprint-Cogent 'Net Connections are Back, For Now*, PC MAGAZINE (Nov. 3, 2008, 1:20 AM), <https://www.pcmag.com/article2/0,2817,2333782,00.asp> [<https://perma.cc/S8V6-J3SG>].

<sup>71</sup> *Id.*

<sup>72</sup> *Id.*

<sup>73</sup> Dan O'Shea, *Sprint Disconnects, Re-Connects with Cogent*, FIERCETELECOM (Nov. 3, 2008, 8:49 AM), <https://www.fiercetelecom.com/telecom/sprint-disconnects-re-connects-cogent> [<https://perma.cc/PSG7-5S2W>].

<sup>74</sup> Press Release, Cogent, Sprint and Cogent Reach Agreement on Exchange of Internet Traffic (Dec. 22, 2008), <http://www.cogentco.com/en/news/press-releases/149-sprint-and-cogent-reach-agreement-on-exchange-of-internet-traffic> [<https://perma.cc/ECT4-CKQT>].

endpoints on networks that do not directly interconnect with Comcast.<sup>75</sup> Comcast also peered with Level 3 to exchange traffic bound to and from endpoints on the Level 3 network (largely business customers).<sup>76</sup> Traditionally, Level 3 was not a significant provider of CDN services, but this changed in 2010 when Netflix shifted its business to Level 3's CDN.<sup>77</sup> As noted above, Netflix has long been the single biggest source of peak-time Internet traffic: at this time, it was responsible for approximately 20% of all such traffic.<sup>78</sup> This disrupted the balance of traffic between networks, as Level 3 was now sending five times as much traffic to Comcast as it was receiving from Comcast.<sup>79</sup> Comcast argued that this violated the peering agreement, which required a general balance between outbound and inbound traffic, and instead billed Level 3 the fee that it charged CDNs to send traffic to Comcast consumers.<sup>80</sup>

Level 3 took the dispute public, issuing a press release decrying Comcast for "putting up a toll booth at the borders of its broadband Internet access network . . ." <sup>81</sup> Level 3 paid the fee to avoid disruption to customer service,<sup>82</sup> but sought unsuccessfully to convince the FCC to investigate the issue as part of its review of the Comcast-NBC Universal merger.<sup>83</sup> The company claimed that Comcast

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<sup>75</sup> See Nate Anderson, *Peering Problems: Digging into the Comcast/Level 3 Grudgematch*, ARS TECHNICA (Dec. 9, 2010, 12:20 PM), <https://arstechnica.com/tech-policy/2010/12/comcastlevel3/> [<https://perma.cc/JQV7-93EE>].

<sup>76</sup> *Id.*

<sup>77</sup> Kevin Werbach, *The Network Utility*, 60 DUKE L.J. 1761, 1781 (2011); see Anderson, *supra* note 75.

<sup>78</sup> Werbach, *supra* note 77, at 1780.

<sup>79</sup> *Id.*

<sup>80</sup> *Id.*; see also Anderson, *supra* note 75. Notably, because the terms of the peering agreement are confidential, it is impossible to determine whether Comcast's claim was true. Anderson notes, however, that Comcast's public peering policy at the time stated that "[a]pplicant must maintain a traffic scale between its network and Comcast that enables a general balance of inbound versus outbound traffic." *Id.*

<sup>81</sup> Press Release, Thomas Stortz, Chief Legal Officer, Level 3 Communications, Level 3 Communications Issues Statement Concerning Comcast's Actions, [http://news.level3.com/news-archive?item=65045&year=2010&keywords=comcast&Form\\_URL=http%3A%2F%2Fnews.level3.com%2Fnews-archive](http://news.level3.com/news-archive?item=65045&year=2010&keywords=comcast&Form_URL=http%3A%2F%2Fnews.level3.com%2Fnews-archive) [<https://perma.cc/QY6C-VLLQ>].

<sup>82</sup> *Id.*

<sup>83</sup> See, e.g., Jon Brodtkin, *How Comcast Became a Powerful—and Controversial—Part of the Internet Backbone*, ARS TECHNICA (July 17, 2014, 9:00 AM), <https://arstechnica.com/information-technology/2014/07/how-comcast-became-a-powerful-and-controversial-part-of-the-internet-backbone/3/> [<https://perma.cc/4QKR-96EC>] (noting that Level 3 and Cogent asked FCC to intervene in interconnection disputes in 2014 as well); Geoff Duncan, *Level 3 Wants Limits on Comcast/NBC Merger*, DIGITAL TRENDS (Dec. 17, 2010, 10:02 AM), <https://www.digitaltrends.com/computing/level-3-wants-limits-on-comcastnbc-merger/> [<https://perma.cc/GL53-3UTH>]; Paul Thomasch & Jasmin Melvin, *Comcast wins approval*

was blocking Level 3 traffic unless it received a fee for delivery, and that it targeted Level 3 because its primary customer, Netflix, competed directly against Comcast's own video service.<sup>84</sup> These are, of course, reminiscent of the types of anticompetitive concerns raised in the net neutrality debate.<sup>85</sup> Comcast responded that the issue was not the content of the traffic but its volume, and that charging for traffic imbalances was consistent with well-established industry standards (including Level 3's own position in a previous dispute).<sup>86</sup> Comcast also noted that as long as transit was available, Level 3 (and its customers) always have a path available to reach Comcast consumers.<sup>87</sup> The conflict apparently continued behind the scenes for years, until on July 16, 2013, the companies issued a short press release announcing that they "have resolved their prior interconnect dispute on mutually satisfactory terms. Details will not be released."<sup>88</sup>

### 3. Comcast/Netflix, 2014

Netflix also lay at the center of perhaps the most public interconnection dispute to date. In February 2014, Netflix announced that it entered a direct interconnection agreement with Comcast Corporation.<sup>89</sup> Though the terms of the agreement remained confidential, two aspects of the agreement were clear and unambiguous: Netflix was paying for interconnection and it was unsatisfied with the terms. In the months following the announcement, Netflix publicly reiterated the claims that Level 3 had made four years earlier, that Comcast had abused its

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for *NBC Universal combination*, REUTERS (Jan. 17, 2011, 8:25 PM), <https://www.reuters.com/article/us-nbc-comcast/comcast-wins-approval-for-nbc-universal-combination-idUSTRE70G66F20110118> [<https://perma.cc/SN7E-LLDV>].

<sup>84</sup> See Duncan, *supra* note 83.

<sup>85</sup> See, e.g., Formal Complaint of Free Press and Public Knowledge Against Comcast Corp., 23 FCC Rcd. 13028, ¶¶ 5, 27, 47 (2008) (memorandum opinion and order) (sanctioning Comcast's throttling of BitTorrent traffic because of fear of anticompetitive abuse), *vacated*, Comcast v. F.C.C., 600 F.3d 642 (D.C. Cir. 2010).

<sup>86</sup> Press Release, J.T. Ramsay, Comcast, Comcast and Level 3: Internet Experts Bring Perspective (Dec. 1, 2010), <https://corporate.comcast.com/comcast-voices/industry-analysts-weigh-in-on-comcast-and-level-3> [<https://perma.cc/8BDT-EZKC>]; Press Release, Joe Waz, Comcast, Comcast Comments on Level 3 (Nov. 29, 2010), <https://corporate.comcast.com/comcast-voices/comcast-comments-on-level-3> [<https://perma.cc/KZL5-PZL7>].

<sup>87</sup> See Anderson, *supra* note 75.

<sup>88</sup> Press Release, Level 3 Communications, Level 3 and Comcast Issue Statement (July 16, 2013), <http://news.level3.com/news-archive?item=136853> [<https://perma.cc/U4B2-UFA6>].

<sup>89</sup> Zachary Seward, *The Inside Story of How Netflix Came to Pay Comcast for Internet Traffic*, QUARTZ (Aug. 27, 2014), <https://qz.com/256586/the-inside-story-of-how-netflix-came-to-pay-comcast-for-internet-traffic/> [<https://perma.cc/AG83-NRS6>].

position to erect a toll on Internet traffic.<sup>90</sup> Netflix released charts purporting to show that Comcast slowed delivery of Netflix traffic to Comcast consumers during the months leading to the agreement, thereby degrading the Netflix experience as a negotiating tactic.<sup>91</sup>

Coming just as the FCC opened a new debate on net neutrality rules, Netflix's charges were incendiary. Advocates, most notably John Oliver, seized on the dispute as evidence supporting the need to enact net neutrality rules<sup>92</sup>—although, as noted above, the interconnection agreement did not implicate the blocking, throttling, and paid prioritization bans that lay at the core of the proposed rule.<sup>93</sup> Moreover, Comcast was already subject to net neutrality restrictions as a condition of the NBC Universal merger back in 2010.<sup>94</sup> Netflix lobbied the Commission repeatedly to regulate interconnection as part of the Open Internet order—a quest that was ultimately successful, at least in part—and net neutrality advocates used this issue to call for greater transparency in interconnection markets, and specifically the public disclosure of interconnection agreements.<sup>95</sup>

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<sup>90</sup> Sam Hollister, *Netflix Accuses Comcast of Charging Twice for the Same Internet Content*, THE VERGE (Apr. 14, 2014, 4:40 PM), <https://www.theverge.com/2014/4/24/5650406/netflix-accuses-comcast-of-double-dipping-with-isp-toll> [<https://perma.cc/F353-FXGU>].

<sup>91</sup> Juliana Reyes, *This Graph Shows How Netflix Speeds Changed After Comcast Deal*, TECHNICALLY PHILLY (May 9, 2014, 7:30 AM), <https://technical.ly/philly/2014/05/09/graph-shows-netflix-speeds-changed-comcast-deal-comcast-roundup/> [<https://perma.cc/NWJ5-ZWWS>].

<sup>92</sup> *Last Week Tonight with John Oliver*, *supra* note 8.

<sup>93</sup> See *supra* text accompanying notes 9-11.

<sup>94</sup> Georg Szalai, *Regulators Approve Comcast-NBC Universal Deal with Conditions*, THE HOLLYWOOD REPORTER (Jan. 18, 2011, 10:59 AM), <https://www.hollywoodreporter.com/news/regulators-approve-comcast-nbc-universal-72809> [<https://perma.cc/9PBR-XZR2>]. Netflix never brought a complaint that Comcast's conduct violated the merger conditions, nor did it publicly allege facts that would have suggested Comcast had done so.

<sup>95</sup> See, e.g., Public Knowledge, Benton Foundation, & Access Sonoma Broadband, Comment Letter on 2015 Open Internet Order, at 114 (July 15, 2014) <https://ecfsapi.fcc.gov/file/7521480282.pdf> [<https://perma.cc/9N49-PVD6>] (“The Commission must push for further public transparency surrounding interconnection agreements.”); Public Knowledge & Common Cause, Comment Letter on Remand of 2015 Open Internet Order, at 10 (Mar. 21, 2014), <https://ecfsapi.fcc.gov/file/7521094713.pdf> [<https://perma.cc/6WFE-L6MQ>]; Brian Fung, *The FCC is Going to Scrutinize Netflix's Deals with Comcast, Verizon—and Others Too*, WASH. POST: SWITCH BLOG (June 13, 2014), [https://www.washingtonpost.com/news/the-switch/wp/2014/06/13/the-fcc-is-going-to-scrutinize-netflixs-deals-with-comcast-verizon-and-others-too/?utm\\_term=.a580fea7279a](https://www.washingtonpost.com/news/the-switch/wp/2014/06/13/the-fcc-is-going-to-scrutinize-netflixs-deals-with-comcast-verizon-and-others-too/?utm_term=.a580fea7279a) [<https://perma.cc/53ZN-NZXW>] (“Netflix's continued dispute with Internet providers underscores that we can't declare a winner in the debate without more information about what Netflix is paying Comcast and Verizon to boost customers' streaming speeds, whether that's causing people's bills to rise, and who actually has the leverage in these relationships.”); Stacey Higginbotham, *The*

But the complete story is perhaps more nuanced than Netflix's advocacy suggested. Streaming media expert Dan Rayburn suggested that the decline in Netflix speeds on Comcast's network was not a deliberate negotiation tactic, but instead the byproduct of an earlier interconnection dispute between Comcast and Netflix's primary CDN at the time, Cogent.<sup>96</sup> For over a year, Cogent had been locked in a very public peering dispute with Verizon.<sup>97</sup> Like the Level 3 dispute four years earlier, the driver appeared to be Cogent's decision to host Netflix content, which dramatically increased the volume of traffic flowing from Cogent to broadband networks.<sup>98</sup> In Verizon's case, the increased volume of Verizon-bound traffic exceeded the capacity of the existing connections between the Cogent and Verizon networks.<sup>99</sup> Cogent and Verizon reached an impasse over the cost of upgrading these connections and the transit fees, if any, that Cogent should pay for the increased volume.<sup>100</sup> In the meantime, Cogent's customers, including Netflix, began suffering delays due to the dispute, as congested interconnection nodes slowed the rate of delivery of Netflix traffic to consumers.<sup>101</sup> Rayburn suggested that a similar dispute is likely responsible for the decline in the quality of Netflix quality to some Comcast customers.<sup>102</sup> Cogent's CEO later confirmed this was the case, noting that the additional traffic overwhelmed the

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*Netflix-Comcast Agreement Isn't a Network Neutrality Violation, But It is a Problem*, GIGAOM (Feb. 24, 2014, 5:37 PM), <https://gigaom.com/2014/02/23/the-netflix-comcast-agreement-isnt-a-network-neutrality-violation-but-it-is-a-problem/> [<https://perma.cc/L65U-YNAF>] ("Just open these contracts up to industry and public scrutiny."). See also NICK RUSSO ET. AL., OPEN TECH. INST., *THE COST OF CONNECTIVITY 2014* 34 (Oct. 2014), <https://www.newamerica.org/documents/940/the-cost-of-connectivity-2014.pdf> (noting with approval that "In Seoul, SK Telecom lists its interconnection agreements on its website, a practice which increases transparency about the network.").

<sup>96</sup> See Dan Rayburn, *Here's How the Comcast & Netflix Deal is Structured, With Data & Numbers*, SEEKING ALPHA (Feb. 27, 2014), <https://seekingalpha.com/article/2059363-heres-how-the-comcast-and-netflix-deal-is-structured-with-data-and-numbers> [<https://perma.cc/SN29-BHEH>] [hereinafter Rayburn, *Comcast & Netflix*].

<sup>97</sup> See Jon Brodtkin, *Verizon and Cogent Settle Differences, Agree to Boost Internet Quality*, ARS TECHNICA (May 1, 2015, 1:30 PM), <https://arstechnica.com/information-technology/2015/05/verizon-and-cogent-settle-differences-agree-to-boost-internet-quality/> [<https://perma.cc/SJ92-RGYN>].

<sup>98</sup> See *id.*

<sup>99</sup> See David Young, *Unbalanced Peering, and the Real Story Behind the Verizon/Cogent Dispute*, VERIZON (June 19, 2013), <http://publicpolicy.verizon.com/blog/entry/unbalanced-peering-and-the-real-story-behind-the-verizon-cogent-dispute> [<https://perma.cc/525M-FTNQ>].

<sup>100</sup> *Id.*; Brodtkin, *supra* note 97.

<sup>101</sup> Brodtkin, *supra* note 97.

<sup>102</sup> See Rayburn, *Comcast & Netflix*, *supra* note 96.



existing interconnection points and that Comcast refused to add capacity to adjust for the increased volume.<sup>103</sup> In a 254-page filing with the FCC, Netflix admitted that it had purchased all available transit capacity from providers that did not pay a fee to Comcast.<sup>104</sup> Its traffic was simply too great to fit the existing interconnection paradigms.

Faced with this reality, Netflix's decision to interconnect directly with Comcast seems like a rational business decision. Rather than suffer collateral damage from Cogent's ongoing dispute with Comcast, Netflix cut out the middleman and reduced the number of "hops" between its servers and its customers. Moreover, it is an arrangement the company anticipated: over the preceding two years, Netflix had invested over \$100 million to build OpenConnect, a proprietary network to deliver Netflix content as an alternative to the public Internet.<sup>105</sup> In essence, OpenConnect is a single-purpose CDN, designed exclusively to deliver Netflix content to broadband networks.<sup>106</sup> The Comcast agreement was not the first direct interconnection agreement Netflix signed, although it was likely the first to require payment. Netflix appears to have hoped to negotiate settlement-free peering agreements with broadband providers. It succeeded with some networks, though Comcast (and soon thereafter Verizon, AT&T, and others) negotiated a paid peering arrangement instead.<sup>107</sup> But notably, this fee did not represent an additional cost on Netflix's balance sheet; rather, the company merely shifted transit costs from one network to another.

## II. THE CASE FOR (LIMITED) REGULATORY INTERVENTION

One takeaway from the House Committee on Energy and Commerce's 2014 #CommActUpdate project is that numerous scholars agree the Commission should assume some oversight of the interconnection market.<sup>108</sup> Interconnection

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<sup>103</sup> See Seward, *supra* note 89.

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

<sup>105</sup> Kevin Werbach, *Reflections on Network Transitions and Social Contracts for the Broadband World*, 13 COLO. TECH. L.J. 45, 68-69 (2015); Seward, *supra* note 10.

<sup>106</sup> *How Netflix Works With ISPs Around the Globe to Deliver a Great Viewing Experience*, NETFLIX MEDIA CTR. (Mar. 17, 2016), <https://media.netflix.com/en/company-blog/how-netflix-works-with-isps-around-the-globe-to-deliver-a-great-viewing-experience> [<https://perma.cc/R6CN-QFPM>].

<sup>107</sup> Seward, *supra* note 10.

<sup>108</sup> See, e.g., FREE STATE FOUNDATION, RESPONSE TO QUESTIONS IN THE HOUSE COMMERCE COMMITTEE'S FOURTH WHITE PAPER 2-3 (2014) (explaining that "there is still a useful role for a government regulator to play in overseeing the interconnection of the various privately-operated networks that comprise the nation's communications infrastructure"). Both that response and this article acknowledge a debt to the substantial work previously done on this topic by the Digital Age Communications Act Working Group. See RANDOLPH J. MAY ET AL., PROGRESS & FREEDOM FOUNDATION, DIGITAL AGE COMMUNICATIONS ACT, PROPOSAL OF THE REGULATORY FRAMEWORK WORKING GROUP 4, 18-19, 25 (2005), <http://www.pff.org/issues-pubs/other/050617regframework.pdf> [<https://perma.cc/L8D8-NUSG>].

is central to the Internet's very existence.<sup>109</sup> Kevin Werbach states that “the core threat to the internet is the potential erosion of robust interconnection, creating a balkanized environment in which innovation opportunities are circumscribed.”<sup>110</sup> Denser, more interconnected networks help promote the Internet as a tool for expression, news, education, and communication—all socially valuable activities that public policy should facilitate.

Moreover, as in many areas of the economy, interconnection markets contain some incentives for anticompetitive abuse. There are many benign reasons why one network may refuse to interconnect with another—perhaps most obviously, to pressure a sending network into assuming the direct or indirect costs of off-loading its traffic onto a receiving network. But some networks may also be tempted to deny interconnection as a strategy to restrict competition in ways that harm consumers. For example, large network A may deny interconnection to smaller network B as a way to prevent network B's customers from reaching endpoints on A's network, with the ultimate goal of luring B's customers to A's network instead. Indeed, this is one way the Bell Telephone System monopolized local telephone service in the early twentieth century.<sup>111</sup> As discussed below, networking innovations have reduced the opportunities for such behavior in Internet interconnection markets. Nonetheless, the potential for this abuse suggests the need for some regulatory oversight.

But unlike other areas of the economy, it is unclear whether the traditional antitrust approach is sufficient to remedy interconnection concerns. Historically, antitrust law effectively policed interconnection abuses in telephone markets—arguably more effectively than Commission oversight.<sup>112</sup> But the Supreme

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<sup>109</sup> See, e.g., James Speta, *An Appropriate Interconnection Backstop*, 12 J. ON TELECOMM. & HIGH TECH. L. 113, 114 (2014).

<sup>110</sup> Kevin Werbach, *Only Connect*, 22 BERKELEY TECH. L.J. 1233, 1236 (2007).

<sup>111</sup> When Alexander Graham Bell's patent on the telephone expired in 1894, his company (AT&T) faced competition from new, independent telephone companies. To maintain dominance, AT&T refused interconnection with these new companies when their networks overlapped areas AT&T served. See Steve G. Parsons & James Bixby, *Universal Service in the United States: A Focus on Mobile Communications*, 62 FED. COMM. L.J. 119, 123-24 (2010). Notably, AT&T “was aggressive” in pursuing interconnection agreements with networks that did not overlap AT&T service areas. *Id.* at 124 n.21. The company's behavior prompted an antitrust suit which was settled by the 1914 Kingsbury Commitment, under which AT&T agreed to interconnect its state-of-the-art long distance network with independent local telephone companies. *Id.* at 124; Lyons, *supra* note 12, at 388 n.16. But the Kingsbury Commitment was only partially successful, as it did not require AT&T to interconnect its local networks with independent rivals, which allowed AT&T to continue using interconnection to disadvantage—and ultimately acquire—local rivals. See Geoffrey M. Peters, *Is the Third Time the Charm? A Comparison of the Government's Major Antitrust Settlements with AT&T This Century*, 15 SETON HALL. L. REV. 252, 255-56 & n.23 (1985).

<sup>112</sup> See Jon Sallet, *A Brief History of Competition Policies and Networks*, FEDERAL COMMUNICATIONS COMMISSION (Sep. 5, 2014, 1:13 PM), <https://www.fcc.gov/news->

Court's landmark *Trinko* decision<sup>113</sup> has cast some doubt upon antitrust law's usefulness going forward as a tool to police interconnection disputes.<sup>114</sup> In *Trinko*, the plaintiff alleged that Verizon Communications denied interconnection to plaintiff's local telephone company, a Verizon rival, as a way to limit entry to the telephone market.<sup>115</sup> The Court recognized, and affirmed, its earlier cases<sup>116</sup> establishing a refusal-to-deal claim under certain circumstances.<sup>117</sup> But it noted these cases were narrow exceptions to the general right of a company to determine with whom it will deal, and on what terms, and rejected *Trinko*'s claim that Verizon had a duty here.<sup>118</sup> The decision neither affirmed nor rejected the essential facilities doctrine, which imposes on monopolists liability for denying a competitor access to a resource necessary to compete in a market,<sup>119</sup> but it suggested that "forced access" — that is, granting a competitor access to the defendant's facilities — was not an appropriate remedy, at least in this case, where the Telecommunications Act provided a complex regulatory scheme that governs interconnection between local telephone companies.<sup>120</sup>

Giving the Commission explicit oversight of interconnection markets can address any potential ambiguity that arises under *Trinko*. As *Trinko* itself notes, "[a]ntitrust analysis must always be attuned to the particular structure and circumstances of the industry at issue."<sup>121</sup> As a sector-specific antitrust authority, the Commission can develop expertise with regard to interconnection markets and can outline the contours of how a refusal-to-deal doctrine might operate in the unique context of a networked industry, without risking erosion of the general right to contract that *Trinko* sought to protect. It also would allow the Commission to wield a forced access remedy as a solution to an interconnection dispute, even if, as *Trinko* suggests, this remedy would not be available under traditional antitrust law.

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events/blog/2014/09/05/brief-history-competition-policies-and-networks  
[<https://perma.cc/QHN3-DLLR>].

<sup>113</sup> *Verizon Commc'ns, Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398 (2004).

<sup>114</sup> *Id.* at 415; *see also* Speta, *supra* note 109, at 119-22.

<sup>115</sup> *Trinko*, 540 U.S. at 407.

<sup>116</sup> *Aspen Skiing Co. v. Aspen Highlands Skiing Corp.*, 472 U.S. 585 (1985); *Otter Tail Power Co. v. United States*, 410 U.S. 366 (1973).

<sup>117</sup> *Trinko*, 540 U.S. at 407-10.

<sup>118</sup> *Id.* at 408 ("Thus, as a general matter, the Sherman Act 'does not restrict the long recognized right of [a] trader or manufacturer engaged in an entirely private business, freely to exercise his own independent discretion as to parties with whom he will deal.") (quoting *United States v. Colgate & Co.*, 250 U.S. 300, 307 (1919)).

<sup>119</sup> *See, e.g.*, John T. Soma et al, *The Essential Facilities Doctrine in the Deregulated Telecommunications Industry*, 13 BERKELEY TECH. L.J. 565, 580 (1998).

<sup>120</sup> *See generally* 47 U.S.C. § 251 (2012); *Trinko*, 540 U.S. at 411; Frank X. Schoen, *Exclusionary Conduct After Trinko*, 80 N.Y.U.L. REV. 1625, 1643 & n.105 (2005).

<sup>121</sup> *Id.* at 399.

While the Commission has a role to play, it should approach intervention with caution. When the Commission first sought to regulate in this area, as part of the 2015 Open Internet Order, it admitted that the Commission does not yet have a firm understanding of the complexities of interconnection markets.<sup>122</sup> But based on the discussion thus far, one can identify three broad themes with certainty.

First, interconnection markets are complex. As noted above, there are over 35,000 networks that comprise the Internet.<sup>123</sup> Some have a global footprint, while others operate only locally. Some offer only transit service, while others bundle delivery with other products and services. Thus, the universe of potential interconnection agreement terms is vast, providing a steep learning curve for regulators and a high potential for error.

Second, interconnection markets are competitive. Content providers have a wide variety of transit and other providers to choose from when determining how to get content to the Internet, and transit networks have myriad options to deliver their traffic to its final destinations. The significant, consistent declines in Internet transit<sup>124</sup> and CDN prices<sup>125</sup> evince the competitiveness of these markets: even at razor-thin margins, the downward pressure on prices shows no sign of abating.

Finally, interconnection markets are evolving, largely in response to evolutionary trends elsewhere in the Internet ecosystem. The Open Internet order recognized this phenomenon.<sup>126</sup> The rise of streaming video as the dominant form of Internet traffic has disrupted traditional transit and peering arrangements. The asymmetric flow of video traffic and rise of CDNs as an alternative to traditional transit has put pressure on network providers to adapt interconnection arrangements to meet these new realities. Sometimes this adaptation requires abandoning traditional interconnection patterns to meet the challenges presented by new and different traffic patterns.

This is the challenge for the Commission as an interconnection regulator: it should intervene when there is credible evidence of anticompetitive threats, but without distorting the natural evolution of interconnection markets or retarding the ability of networks to adapt to stimuli elsewhere in the Internet ecosystem. The challenge is compounded by the fact that market evolution is often messy and has adverse interim consequences for consumers. But the Commission must resist the urge to label each consumer disruption a market failure in need of regulatory intervention.

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<sup>122</sup> 2015 Open Internet Order, *supra* note 3, ¶ 31.

<sup>123</sup> See YOO, *supra* note 7.

<sup>124</sup> NORTON, *supra* note 22, at 34.

<sup>125</sup> RAYBURN, CDN MARKET, *supra* note 53.

<sup>126</sup> 2015 Open Internet Order, *supra* note 3, ¶ 196.

### III. TOWARD A MORE CONCRETE INTERCONNECTION GOVERNANCE REGIME

This section sketches the outline of a regime within which the Commission may assess interconnection disputes. It examines the Commission's first, fitful attempt pursuant to the 2015 Open Internet Order. Using that flawed model as a jumping-off point, it discusses a better approach nestled within the broader transition of telecommunications markets away from the heavily regulated common carriage regime of the twentieth century and toward an antitrust-based approach more commensurate with today's competitive market structure.

#### A. *Interconnection and the Open Internet Order*

In the 2015 Open Internet Order, the Commission claimed authority to regulate broadband providers' interconnection agreements based upon its decision to reclassify broadband as a Title II telecommunications service.<sup>127</sup> During this reclassification period, broadband providers were prohibited by Sections 201 and 202 from engaging in unjust or unreasonable practices when providing broadband service to consumers.<sup>128</sup> The order interpreted this duty to extend to the exchange of Internet traffic by an edge provider or an intermediary with the broadband provider's network.<sup>129</sup> These exchanges of traffic, governed by interconnection agreements, are provided "for and in connection with" broadband service and therefore fell within the Commission's purview.<sup>130</sup>

Interestingly, the order did not explicitly rely upon the portions of Title II that specifically govern interconnection (the statutes implicated in the *Trinko* case). The Commission forebore from applying Sections 251(a)(1) and 251(c)(2),<sup>131</sup> which requires telecommunications carriers to interconnect directly or indirectly with one another and foists additional obligations on incumbent local exchange carriers.<sup>132</sup> The Commission did not forbear from applying Section 201(a),<sup>133</sup> which on its face gives the Commission authority to order interconnection if the

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<sup>127</sup> *Id.* ¶ 196.

<sup>128</sup> 47 U.S.C. §§ 201-202 (2012).

<sup>129</sup> 2015 Open Internet Order, *supra* note 3, ¶ 195.

<sup>130</sup> *Id.* ¶ 204 (quoting § 201(b)).

<sup>131</sup> *See* 47 U.S.C. § 251 (2012).

<sup>132</sup> 2015 Open Internet Order, *supra* note 3, ¶¶ 513-14. It is also not clear how much authority these statutes would give the Commission to regulate the *terms* of interconnection. Section 251 imposes a duty to interconnect, but it generally leaves the parties discretion to negotiate the terms of that agreement, subject to mediation and compulsory arbitration conducted upon request by state public utility commissions in accordance with Section 252. Section 251(c)(3) imposes on incumbent local exchange carriers (those offering local telephone service before the 1996 Telecommunications Act) a duty to interconnect on just, reasonable, and nondiscriminatory terms.

<sup>133</sup> *Id.* ¶ 449.

public interest so demands.<sup>134</sup> In light of its explicit statement that Section 201 applied to broadband providers, the order at least implicitly suggested that this interconnection authority was available to the Commission. But throughout the discussion of interconnection, the order relied primarily upon the Section 201(b) duty to avoid unjust and unreasonable practices rather than Section 201(a)'s more general duty to interconnect in the public interest.<sup>135</sup>

But the order took a self-consciously slow approach to interconnection regulation. The Commission explicitly declined to impose the full panoply of net neutrality provisions to a broadband provider's interconnection practices, such as the prohibitions on blocking, throttling, and paid prioritization.<sup>136</sup> Nor did it apply the catch-all no unreasonable interference/disadvantage standard to interconnection agreements.<sup>137</sup> As noted above, the Commission recognized that it lacked the experience and background necessary to craft specific rules governing Internet traffic exchange.<sup>138</sup> Instead, it planned to develop its interconnection jurisprudence on a case-by-case basis in response to claims filed with the Commission under Section 208 alleging that broadband providers are engaged in unjust or unreasonable practices.<sup>139</sup>

There were two potential problems with this approach. First, it was incomplete. As noted above, the Commission grounded its authority on broadband providers to provide just, reasonable, and nondiscriminatory service to consumers.<sup>140</sup> This meant that the Commission's authority extended only to complaints by other networks against broadband providers. But it did not allow broadband providers to bring complaints against other networks, nor did it include disputes between intermediate networks that did not provide broadband access to end-user consumers.<sup>141</sup> As the Commission noted, the imposition of a "one-sided interconnection duty upon last-mile ISPs" could adversely impact interconnection negotiations, as it "unjustifiably provided edge providers, many of whom

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<sup>134</sup> § 201(a) ("It shall be the duty of every common carrier engaged in interstate or foreign communication by wire or radio to furnish such communications service upon reasonable request therefor; and in accordance with the orders of the Commission, in cases where the Commission, after opportunity for hearing, finds such action necessary or desirable in the public interest, to establish physical connections with other carriers, to establish through routes and charges applicable thereto and the divisions of such charges, and to establish and provide facilities and regulations for operating such through routes.").

<sup>135</sup> See, e.g., 2015 Open Internet Order, *supra* note 3, ¶¶ 203-04.

<sup>136</sup> *Id.* ¶¶ 30, 195.

<sup>137</sup> *Id.* ¶ 195.

<sup>138</sup> *Id.* ¶ 202.

<sup>139</sup> *Id.* ¶ 203.

<sup>140</sup> *Id.* ¶ 202.

<sup>141</sup> Restoring Internet Freedom Order, *supra* note 3, ¶ 169 ("Returning to the pre-Title II Order light-touch framework will also eliminate the asymmetrical regulatory treatment of parties to Internet traffic exchange arrangements. As NTCA explains, the Title II Order imposed a one-sided interconnection duty upon last-mile ISPs...").

are sophisticated entities with significant market power due to high demand for their content, with additional leverage in negotiating interconnection.”<sup>142</sup> This was especially problematic in rural areas, where “many ISPs are a tiny fraction of the size of upstream middle mile and transit networks or content and edge providers.”<sup>143</sup>

Second, the requirement that any interconnection practices be just and reasonable was vague and provided little guidance to networks seeking to interconnect. The Commission’s prior telephone interconnection decisions are largely inapposite, as they involve different market conditions and a more comprehensive regulatory regime that does not apply to broadband providers.<sup>144</sup> Understandably, the agency sought to flesh out its standard over time on a case-by-case basis. But the Commission noted that during the two years that the Open Internet order was in effect, “the new case-by-case dispute process has gone unused” even as Internet-based video distributors, “which ISPs presumably might view as competitors to affiliated video programming products or services[,] have proliferated.”<sup>145</sup> In fact, the Commission did process one complaint brought under the interconnection rule. In June 2015, Commercial Network Services brought an informal complaint after Time Warner Cable refused its request to peer on a settlement-free basis.<sup>146</sup> Oddly, the company alleged that the refusal violated the prohibition on throttling and paid prioritization, rather than invoking the “just

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<sup>142</sup> *Id.* (“We anticipate that eliminating one-sided regulation of Internet traffic exchange and restoring regulatory parity among sophisticated commercial entities will allow the parties to more efficiently negotiate mutually-acceptable arrangements to meet end user demands for network usage.”).

<sup>143</sup> *Id.*

<sup>144</sup> Section 251 imposes a general duty on telecommunications carriers to interconnect with one another to exchange voice telephone traffic, as part of the 1996 Telecommunications Act’s attempt to infuse competition into monopoly local telephone markets. 47 U.S.C. § 251; see *supra* note 132 and accompanying text. It imposes further obligations on incumbent local exchange carriers regarding how to interconnect and on what terms. § 251. The Act contains detailed procedures under which telecommunications carriers would contract for interconnection, including providing for mediation by state public utility commissions, and mandatory arbitration of outstanding disputes by those commissions if invoked between the 135th and 160th day following commencement of negotiations. 47 U.S.C. § 252 (2012).

<sup>145</sup> Restoring Internet Freedom, *supra* note 3, ¶ 168. (“Indeed, the new case-by-case dispute process has gone unused, even as OVDs—which ISPs presumably might view as competitors to affiliated video programming products or services—have proliferated.”).

<sup>146</sup> See Letter from Barry Bahrami, CEO, Commercial Network Services, to Federal Communications Commission (June 22, 2015), <https://regmedia.co.uk/2015/06/22/cns.pdf> [<https://perma.cc/RXC6-GLYT>]. Time Warner Cable refused settlement-free peering because CNS did not meet the company’s peering policy, presumably because its webcam service created a traffic imbalance. TWC offered to enter a transit agreement instead but CNS found this financially unfeasible. *Id.*

and reasonable” interconnection standard, and perhaps for this reason, the Enforcement Bureau closed the complaint without taking action, leaving no case law with which to interpret what actions might be unjust or unreasonable.<sup>147</sup>

The Commission’s brief experiment with interconnection regulation ended in 2018, when the Restoring Internet Freedom Order repealed the 2015 Open Internet Order and restored broadband providers’ classification as a Title I information service.<sup>148</sup> The 2018 Order explicitly refuted the agency’s justification for regulating interconnection markets under Title II and instead returned to the pre-2015 status quo.<sup>149</sup> Instead the Commission found that competitive pressures in the interconnection market are sufficient to mitigate the risk of anticompetitive abuse,<sup>150</sup> and that antitrust and consumer protection laws provide sufficient redress for potential misconduct.<sup>151</sup>

### B. Standard for Intervention

The current Commission has thus placed its faith in traditional antitrust law to remedy potential abuses in the interconnection market. In doing so, the agency recognized the potential difficulties noted earlier that *Trinko* might pose for refusal-to-deal claims.<sup>152</sup> The Order reasoned that while antitrust law may provide incomplete protection, retention of the Commission’s Title II authority as a remedy would do more harm than good.<sup>153</sup> The Commission also noted that the Federal Trade Commission’s Section 5 authority may reach beyond traditional antitrust and may thus serve as a backstop despite *Trinko*.<sup>154</sup>

But the public would be better served by a Commission that retained authority over interconnection disputes, albeit in a more limited capacity than the Open Internet order provided. First, the Commission’s binary choice between no regulation and Title II common carriage is a function of the existing statute, which was last updated in 1996 and is woefully out-of-date (which explains why issues such as net neutrality have become so fluid and politicized).<sup>155</sup> A Communications Act update could, and should, give the Commission an explicit, narrow

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<sup>147</sup> See Alan Galloway, *FCC Appears to Decline Action on Edge Provider’s Informal Complaint*, DAVIS WRIGHT TREMAINE LLP: OPEN INTERNET LAW ADVISOR (Oct. 15, 2015), <https://www.openinternetlaw.com/2015/10/fcc-appears-to-decline-action-on-edge-providers-informal-complaint/> [https://perma.cc/ERS5-BSZ3].

<sup>148</sup> Restoring Internet Freedom, *supra* note 3, ¶ 54.

<sup>149</sup> *Id.* ¶ 166.

<sup>150</sup> *Id.* ¶ 170.

<sup>151</sup> *Id.* ¶ 172.

<sup>152</sup> *Id.* ¶ 166 n.556.

<sup>153</sup> *Id.*

<sup>154</sup> *Id.*

<sup>155</sup> It is also, to an extent, a function of the Commission’s interpretation of that statute. The Commission could assert jurisdiction under Title I of the Communications Act to regulate interconnection agreements if it found that regulation was ancillary to some grant of authority



grant of authority over interconnection disputes as part of a revision to clarify the Commission's jurisdiction over IP network management practices. Moreover, while the Restoring Internet Freedom Order is correct that the FTC's Section 5 authority could serve as a backstop, an FCC approach would be preferable. If, as *Trinko* suggests, "[a]ntitrust analysis must always be attuned to the particular structure and circumstances of the industry at issue,"<sup>156</sup> the public interest would be better served by a body well-versed in the unique characteristics of telecommunications markets.

Having acknowledged the desirability of giving the Commission authority, the next question becomes when the Commission should intervene in an interconnection dispute. The law should adopt an intervention standard informed by competition law principles, commensurate with the notion that anticompetitive concerns comprise the primary justification for regulating in this space. This Article proposes that the Commission be given statutory authority to intervene to prevent "unfair methods of competition" in interconnection markets. This standard, borrowed from Section 5 of the Federal Trade Commission Act, accords with the Restoring Internet Freedom Order's faith in Section 5 as an appropriate backstop to govern interconnection disputes.<sup>157</sup>

Importantly, an "unfair methods of competition" standard reaches somewhat further than a traditional antitrust claim.<sup>158</sup> In a typical anticompetitive foreclosure case, the government must prove that the defendant has market power and that the conduct in question has an anticompetitive effect.<sup>159</sup> One would expect many meritorious interconnection claims to fall into this category. But by reaching further than a traditional Sherman or Clayton Act claim, the unfair method of competition standard alleviates the concern that *Trinko* would otherwise foreclose those claims. And it leaves room for the Commission to investigate refusal

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elsewhere in the statute. One such candidate would be Section 706, which requires the Commission to encourage the timely deployment of advanced telecommunications capability to all Americans. Telecommunications Act of 1996 § 706(a), 47 U.S.C. § 1302(a) (2012); see also *Verizon v. FCC*, 740 F.3d 623, 635 (D.C. Cir. 2014); Philip J. Weiser, *Toward a Next Generation Regulatory Strategy*, 35 LOYOLA U. CHI. L.J. 41, 47 n.24 (2003). But the Commission has interpreted Section 706 as merely a statement of Congressional policy rather than an affirmative grant of authority. See Restoring Internet Freedom, *supra* note 3, ¶ 500.

<sup>156</sup> *Verizon Commc'ns, Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398, 399 (2004).

<sup>157</sup> Restoring Internet Freedom, *supra* note 3, ¶¶ 139-41.

<sup>158</sup> PHILLIP E. AREEDA & HERBERT HOVENKAMP, ANTITRUST LAW: AN ANALYSIS OF ANTITRUST PRINCIPLES AND THEIR APPLICATION ¶ 302h, at 21-27 (2d ed. 2000) (explaining FTC Act Section 5 is not limited to the violation of the Sherman and Clayton Acts).

<sup>159</sup> See, e.g., *Trinko*, 540 U.S. at 407 ("To safeguard the incentive to innovate, the possession of monopoly power will not be found unlawful unless it is accompanied by an element of anticompetitive *conduct*." (emphasis in original)).

to interconnect claims by networks that lack market power but might nonetheless impede competition.<sup>160</sup>

Of course, importing the “unfair methods of competition” standard raises the question of *how much* further the standard reaches—a question that courts, regulators, and scholars have debated with regard to the FTC Act for decades.<sup>161</sup> In the 1972 *FTC v. Sperry and Hutchinson Company* decision,<sup>162</sup> the Supreme Court suggested that Section 5 could reach conduct that violated “either the letter or the spirit of the antitrust laws,”<sup>163</sup> conduct that could be an “incipient” violation,<sup>164</sup> or perhaps even conduct that violates “public values beyond simply those enshrined in the letter or encompassed in the spirit of the antitrust laws.”<sup>165</sup> But by the 1980s, consistent with the influence of the Chicago School on antitrust doctrine, courts and the Federal Trade Commission curtailed Section 5 to reach only conduct with an actual adverse effect on competition.<sup>166</sup> More recent FTC actions have cautiously asserted a more expansive Section 5 authority,<sup>167</sup> though leading scholars recognize that there remains “a fundamental difficulty in distinguishing an antitrust offense under FTC Act [section] 5 from that under the Sherman or Clayton Acts.”<sup>168</sup>

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<sup>160</sup> Cf. Alfred Kahn, *Telecommunications: The Transition from Regulation to Antitrust*, 5 J. TELECOMM. & HIGH TECH. L. 159, 166-67 (2006) (criticizing the Digital Age Communications Act’s restriction of “unfair competition” to instances of abuse of market power). As Kahn notes, the Digital Age Communications Act would have generally tethered the FCC’s regulatory authority to a market power analysis, but softened this standard with regard to interconnection claims. *See id.* at 165 n.17.

<sup>161</sup> *See, e.g.*, Justin (Gus) Hurwitz, *Chevron and the Limits of Administrative Antitrust*, 76 U. PITT. L. REV. 209, 247 (2014) (“The extent of Section 5—in particular, whether it is broader than or bounded by the antitrust laws—has been a topic of intense debate in recent years.”).

<sup>162</sup> 405 U.S. 233 (1972).

<sup>163</sup> *Id.* at 239.

<sup>164</sup> *Id.* at 243.

<sup>165</sup> *Id.* at 244. Importantly, the Court did not clarify whether it was interpreting the “unfair methods of competition” or the “unfair or deceptive acts or practices” prong, as the FTC charged the case under both prongs. *Id.* at 235.

<sup>166</sup> *See, e.g.*, *Boise Cascade Corp. v. FTC*, 637 F.2d 573 (9th Cir. 1980); *E.I. DuPont de Nemours & Co. v. FTC*, 729 F.2d 128 (2d Cir. 1984).

<sup>167</sup> *See, e.g.*, The Vons Companies [FTC Complaints & Orders 1987-1993 Transfer Binder] Trade Reg. Rep. (CCH) ¶23, 200 (FTC Aug. 7, 1992) (consent decree) (asserting Section 5 violation through two transactions, neither one of which violated Clayton Act on a standalone basis); *In Re Motorola Mobility LLC and Google Inc.*, FTC File No. 121-0120, 2013 WL 124100 (Jan. 3, 2013) (consent decree) (finding interference with standard-setting organization constituted unfair method of competition); *but see id.* (Dissenting Statement of Commissioner Maureen K. Ohlhausen) (“I question whether such conduct, standing alone, violates Section 5... I decline to join in another undisciplined expansion of Section 5.”). *See generally*, Thomas Dahdouh, *Section 5, The FTC and Its Critics: Just Who Are the Radicals Here? 20 COMPETITION: J.ANTI. & UNFAIR COMP. L. SEC. ST. B. CAL. 1* (2011) (collecting cases).

<sup>168</sup> AREEDA & HOVENKAMP, *supra* note 156, at 22.

Fortunately, the Federal Trade Commission recently enacted several principles to guide the exercise of its Section 5 powers, which provides some useful guideposts.<sup>169</sup> The FTC explained that when deciding to challenge an action under its Section 5 authority:

- the Commission will be guided by the public policy underlying the antitrust laws, namely, the promotion of consumer welfare;
- the act or practice will be evaluated under a framework similar to the rule of reason, that is, an act or practice challenged by the Commission must cause, or be likely to cause, harm to competition or the competitive process, taking into account any associated cognizable efficiencies and business justifications; and
- the Commission is less likely to challenge an act or practice as an unfair method of competition on a standalone basis if enforcement of the Sherman or Clayton Act is sufficient to address the competitive harm arising from the act or practice.<sup>170</sup>

Consistent with this statement, the FCC’s intervention in interconnection markets should focus on consumer welfare, and should involve conduct that causes or is likely to cause harm to the competitive process when examined under the rule of reason. The focus on consumer harm as the touchstone of regulatory intervention helps the Commission distinguish between disputes that harm competition and those that merely harm a competitor. Partly for this reason, the focus on consumer harm ripples through the interconnection literature. The Digital Age Communications Act Proposal, for example, would have conditioned intervention on “practices that pose a substantial and non-transitory risk to consumer welfare . . . .”<sup>171</sup> Similarly, Professor James Speta would distinguish between interconnection disputes like the Sprint/Cogent dispute that resulted in loss of connectivity for consumers, from those such as the Comcast/Level 3 dispute that simply involved disputes over the terms on which traffic is delivered.<sup>172</sup> Moreover, the Commission should limit itself to conduct creating *sustained* consumer harm. This modifier recognizes that, particularly in dynamic markets like the

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<sup>169</sup> See Statement of Enforcement Principles Regarding “Unfair Methods of Competition” Under Section 5 of the FTC Act, 80 Fed. Reg. 57055, 57056 (Sept. 21, 2015). These standards reflect the work of antitrust professor and former FTC Commissioner, Joshua Wright, who stated one of his goals as Commissioner was to bring more guidance to the agency’s Section 5 enforcement authority. See Bona Law PC, *Section 5 of the FTC Act and Commissioner Joshua Wright: Mission Accomplished?*, THE ANTITRUST ATT’Y BLOG (Sept. 16, 2015), <https://www.theantitrustattorney.com/2015/09/16/section-5-of-the-ftc-act-and-commissioner-joshua-wright-mission-accomplished/> [<https://perma.cc/RL9S-C6CB>].

<sup>170</sup> Statement of Enforcement Principles Regarding “Unfair Methods of Competition” Under Section 5 of the FTC Act, 80 Fed. Reg. at 57056.

<sup>171</sup> MAY ET AL., *supra* note 109, at 36.

<sup>172</sup> See Speta, *supra* note 109, at 128.

Internet ecosystem, market evolution can be messy and cause some transient interruption to consumer service. Such disruptions may be regrettable but should not alone rise to the level justifying regulatory intervention.

Moreover, when intervening the Commission should assess claims under a framework similar to the rule of reason analysis that governs antitrust claims. This would require the Commission to determine the potential harm to competition resulting from the interconnection dispute, and to consider any offsetting efficiencies or business justifications arising from the conduct in question. This approach allows the regulator to develop a complete record to determine whether a dispute rises to the level of an unfair method of competition, rather than merely sharp practices within an evolving market.

These modest guideposts fit the regulatory humility that the Commission has rightly shown when discussing Internet interconnection markets. Given the robust competition in this space and the speed with which interconnection agreements respond to fluid market conditions, regulatory intervention should be the exception rather than the rule. For the Internet to grow and develop in response to changing consumer demand, network providers must be given significant flexibility to draft appropriate interconnection agreements, even if dynamic new terms differ substantially from existing practices. An antitrust-like standard preserves the space for that evolution to occur while still providing sufficient authority for the Commission to block practices that harm consumers and competition.

Congress faces some difficulty with assuring that the Commission stays within this consumer-welfare-oriented antitrust mandate. As Gus Hurwitz has noted in the Federal Trade Commission context,<sup>173</sup> a statutory grant of authority to regulate “unfair methods of competition” is ambiguous, meaning that courts are likely to defer under the *Chevron* doctrine<sup>174</sup> to the agency’s interpretation of its meaning. Hurwitz is correct that this open-ended language is “precisely the sort of statute to which *Chevron* deference is meant to apply.”<sup>175</sup> The phrase is inherently ambiguous, deliberately granting the agency flexibility to reach conduct that, in its opinion, poses a threat to competition.<sup>176</sup>

This poses two difficulties. First, such an open-ended regulatory mandate could allow the agency too much discretion, which can have a chilling effect on regulated entities, as some have argued with respect to the similarly broad “public interest” standard that governs the Commission’s regulation of broadcast and

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<sup>173</sup> Justin (Gus) Hurwitz, *Administrative Antitrust*, 21 GEO. MASON L. REV. 1191, 1211 (2014); Hurwitz, *supra* note 161, at 247-249.

<sup>174</sup> See generally *Chevron U.S.A. Inc. v. Natural Res. Def. Council, Inc.*, 467 U.S. 837 (1984). *Chevron* and its progeny require courts to defer to reasonable agency interpretations of ambiguities in statutes that the agency administers. *Id.*

<sup>175</sup> Hurwitz, *supra* note 161, at 248.

<sup>176</sup> *Id.* at 248-249.

spectrum.<sup>177</sup> Second, it risks conflict with the Federal Trade Commission, which interprets the same phrase under Section 5. To avoid these potential pitfalls, Congress should clarify that the Commission has authority to regulate “unfair methods of competition” within interconnection markets as that term is defined by the FTC. This caveat would clarify Congress’s intent that the statute operate as an antitrust-based standard focused on consumer welfare and applying the rule of reason rather than an open-ended grant of regulatory authority, while still assuring the requisite flexibility to adapt in response to changing market conditions as guided by the FTC, the nation’s primary antitrust authority.

*C. Assessing the Comcast/Netflix Dispute*

To demonstrate how the unfair method of competition standard works in practice, one could apply it to the 2014 Comcast/Netflix dispute, which is arguably the most public interconnection dispute to date and therefore the one with the most information available. Recall that the addition of Netflix traffic to the Cogent network upset the balance of traffic between the Cogent and Comcast networks and exceeded the capacity of the existing connections between the networks.<sup>178</sup> The companies disputed how to allocate the cost of upgrading these connections and what transit fees, if any, should be paid for the additional traffic delivered to the Comcast network.<sup>179</sup> Netflix suffered slower speeds until it agreed to enter a paid peering agreement directly with Comcast.<sup>180</sup>

Cogent could complain that Comcast’s refusal to upgrade its facilities and accept the additional traffic under the parties’ existing peering agreement constituted an unfair method of competition. Similarly, Netflix could argue that Comcast’s unwillingness to enter a settlement-free peering relationship with its OpenConnect network constituted unfair competition. Netflix’s complaint would resemble the informal complaint that CNS filed against Time Warner Cable in 2015, alleging that broadband providers’ paid peering demands are anti-competitive.<sup>181</sup>

As a threshold matter, the parties are likely to show consumer harm. The dispute caused a reduction in the speed at which Netflix streams were transmitted to end-user consumers. Because streaming video is congestion-sensitive, this meant that consumers experienced greater buffering and lower resolution

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<sup>177</sup> See, e.g., Lili Levi, *The Four Eras of FCC Public Interest Regulation*, 60 ADMIN. L. REV. 813, 845 (“Critics challenge public interest regulation as such because of the breadth and vagueness of the concept; the wide discretion it grants the FCC; its fundamentally political character; its prior failures; and the constitutional tension it implicates.”).

<sup>178</sup> See discussion *supra* Section I.D.3.

<sup>179</sup> *Id.*

<sup>180</sup> *Id.*

<sup>181</sup> See Commercial Network Services, Informal Internet Neutrality Complaint (Commercial Network Services v. Time Warner Cable) (June 22, 2015), <https://www.scribd.com/document/269402621/Cns-Twc-Fcc-Complaint-Signed> [<https://perma.cc/BU7A-6WKJ>].

streams than they would if the dispute had resolved. Admittedly, this degradation-of-service claim is not as significant as the Cogent/Sprint dispute, during which consumers lost access to Cogent-hosted edge services altogether.<sup>182</sup> But the reduced quality was likely perceptible to consumers and therefore would meet the standard for Commission investigation.

Because the parties can show consumer harm, the Commission would then use a rule of reason analysis to determine whether Comcast's conduct caused, or was likely to cause, harm to competition or the competitive process, taking into account any associated cognizable efficiencies and business justifications. In this case, both companies could argue that by failing to add capacity unless Cogent agreed to a paid peering agreement with regard to the increased traffic flows from the Cogent network, Comcast was exploiting its unique position in the Internet's ecosystem to extract an anticompetitive advantage. Telecommunications law has long been concerned with the control that last-mile network providers maintain over so-called "bottleneck" facilities to consumers, because ownership of access networks can give rise to concerns about market power.<sup>183</sup> Although consumers may have a choice between broadband providers, once a consumer has selected a service provider, that provider controls the only path to that consumer for the duration of their business relationship together.<sup>184</sup> This is sometimes referred to as a "terminating access monopoly" problem.<sup>185</sup>

But however valid the terminating access monopoly problem may be in traditional telephone markets, it is less applicable to Internet interconnection markets. Although Comcast controls the network leading to its end-user customers, there are multiple pathways by which Cogent and Netflix can deliver traffic onto that network. As Christopher Yoo notes, "Comcast maintains 40 settlement-free peering relationships and over 8,000 paid transit relationships," which provide Cogent and Netflix with a variety of alternatives to direct interconnection.<sup>186</sup> Even if denied the opportunity to interconnect directly, the companies retain the fallback of purchasing transit service from a third party to deliver traffic indirectly to Comcast consumers. As long as transit markets remain open, it would be difficult for Cogent and Netflix to show that Comcast's negotiating position constituted harm to competition.

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<sup>182</sup> See discussion *supra* Section I.D.1.

<sup>183</sup> See, e.g., *United States Telecom. Ass'n v. FCC*, 855 F.3d 381, 431 (Kavanaugh, J. dissenting from denial of rehearing en banc) (discussing the connection between "bottleneck" networks and market power in *Turner Broadcasting System v. FCC*, 512 US 622, which the *Turner* court relied upon to find that must-carry laws did not violate carriers' First Amendment rights).

<sup>184</sup> Jonathan E. Nuechterlein & Christopher S. Yoo, *A Market Oriented Analysis of the "Terminating Access Monopoly" Concept*, 14 COLO. TECH. L.J. 21, 21 (2015).

<sup>185</sup> *Id.*

<sup>186</sup> See Christopher S. Yoo, *Wickard For the Internet? Network Neutrality After Verizon v. FCC*, 66 FED. COMM. L.J. 415, 455 (2014).

It is also worth noting that in this instance, both parties to an interconnection agreement occupy a strategically important position: while Comcast owns the final path to the end-user, Netflix controls the initial path from the company's servers. With 55 million American subscribers<sup>187</sup> who are responsible for up to one-third of all North American Internet traffic during peak hours,<sup>188</sup> Netflix's bargaining position is far from ephemeral. When negotiating the terms of their interconnection agreement, both companies have leverage, because a holdout on either side could preclude a deal. In fact, as the Commission noted in the Restoring Internet Freedom order,<sup>189</sup> Cogent admitted that it deprioritized certain traffic on its network during the interconnection dispute, exacerbating the effect on Netflix users.<sup>190</sup> One could also argue that Netflix deliberately routed excessive data to under-provisioned Cogent connections and then publicly advertised the deleterious effect this had on delivery to Comcast customers. If true, these practices could constitute unfair methods of competition by Cogent and Netflix.

Ultimately, Comcast would likely argue that the increase in Netflix-related traffic warranted a new, paid peering agreement, both to fund upgrades to the connections between networks and to compensate for the new traffic imbalance. While Netflix argued that settlement-free peering is better than paid peering, economically, there is no reason to prefer one type of payment over another. As Kevin Werbach has noted, Internet transport is a classic two-sided market: Comcast generates revenue from providing its customers connectivity to Internet content, while Cogent profits from connecting Netflix to end-users (who, in turn pay Netflix for its video content).<sup>191</sup> The advent of streaming video providers like Netflix dramatically increased traffic volumes flowing to Comcast and other broadband networks, which increases costs. A paid peering relationship shifts those costs onto Cogent and Netflix, which can ultimately recover them from Netflix subscribers. On the other hand, a settlement-free peering relationship would shift those costs to Comcast, which would spread them across its customer base through broadband fees. From a policy perspective, a paid peering

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<sup>187</sup> Rani Molla, *Netflix Now Has Nearly 118 Million Streaming Subscribers Globally*, RECODE (Jan. 22, 2018, 4:52 PM), <https://www.recode.net/2018/1/22/16920150/netflix-q4-2017-earnings-subscribers> [<https://perma.cc/4QCS-XJAM>].

<sup>188</sup> SANDVINE, 2016 GLOBAL INTERNET PHENOMENA: LATIN AMERICA AND NORTH AMERICA 4 (2016), <https://www.sandvine.com/hubfs/downloads/archive/2016-global-internet-phenomena-report-latin-america-and-north-america.pdf> [<https://perma.cc/F2L8-ATHY>] (noting that Netflix is responsible for 10.33% of upload, 35.15% of download, and 32.72% of aggregate traffic during peak-time on fixed networks in North America).

<sup>189</sup> Restoring Internet Freedom, *supra* note 3, at ¶ 171.

<sup>190</sup> Dan Rayburn, *Cogent Now Admits They Slowed Down Netflix's Traffic, Creating A Fast Lane & Slow Lane*, STREAMING MEDIA BLOG (Nov. 5, 2014, 12:55 PM), <https://www.streamingmediablog.com/2014/11/cogent-now-admits-slowed-netflixs-traffic-creating-fast-lane-slow-lane.html> [<https://perma.cc/G7C7-Y7XP>].

<sup>191</sup> Werbach, *supra* note 77, at 1783.

arrangement would force Netflix to internalize its costs and keep overall broadband rates lower, while settlement-free peering would subsidize innovative new edge services by spreading those costs across all broadband users.<sup>192</sup>

Although the exact terms of the agreement remain confidential, and therefore it is impossible to determine for certain how a complaint would have been resolved, it is unlikely that the Commission would find that seeking a paid peering relationship, alone, constitutes an unfair method of competition. Netflix's decision to interconnect directly with Comcast and other broadband providers reflects one way that the competitive interconnection marketplace can adapt to meet the challenges presented by innovative new services. Although we cannot determine the overall effect of paid peering on Netflix, agreements that eliminate a middleman are typically efficient and welfare-enhancing. Netflix is now paying a fee to Comcast, but it is no longer paying Cogent to deliver that traffic to the Comcast network.<sup>193</sup> The fact that Netflix chose direct interconnection rather than continuing to rely on Cogent or pursuing an agreement with another third-party service suggests that it found this to be the best alternative, either because the price was better or the quality of the service is worth any price premium.<sup>194</sup> Unsurprisingly, since the agreement was signed, Comcast customers have seen improved performance from Netflix, because the data travels a more direct route to the customer's house and is no longer dependent upon potentially overloaded

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<sup>192</sup> *Id.* As the Supreme Court recently noted, two-sided platforms differ from traditional markets in important ways, most notably by exhibiting indirect network effects. *See* *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2280-81 (2018). Therefore when determining the propriety of practices setting price on one side, it is important to consider the potential effect on prices on the other side of the platform as well. *Id.*

<sup>193</sup> Moreover, Netflix is not the first company to enter into a direct, paid peering agreement. As noted above, several prominent Internet content providers have built server farms to bypass parts of the public Internet, relying at least in part on direct interconnection with broadband providers to do so. In fact, Comcast has an entire business unit dedicated to selling interconnection services. *See* Lance Ulanoff, *The Comcast-Netflix Deal: Fact vs. Fiction*, MASHABLE (Feb. 26, 2014), <http://mashable.com/2014/02/26/comcast-netflix-net-neutrality/> [<https://perma.cc/MY66-W9LR>]. Amazon, Google, and Facebook are among the content providers who have "eliminated the middleman" and signed direct interconnection agreements with Comcast. *See* Jon Brodtkin, *See Which ISPs Google, Microsoft, and Netflix Trade Internet Traffic With*, ARS TECHNICA, (May 21, 2014, 12:00 PM), <https://arstechnica.com/information-technology/2014/05/see-which-isps-google-microsoft-and-netflix-trade-internet-traffic-with/> [<https://perma.cc/KD9S-9S79>].

<sup>194</sup> Notably, many interconnection agreements contain a Service Level Agreement whereby the network guarantees a minimum level of quality. *See, e.g.*, Yoo, *supra* note 184, at 454 ("The Comcast-Netflix interconnection agreement appears to be nothing more than a typical case of such bargaining. One advantage is that because it now is a direct customer of Comcast, it gains the benefit of the guaranteed service levels in Comcast's standard service-level agreement."). Streaming media providers like Netflix, whose services are latency-dependent, may find SLAs more valuable than intermediate transit providers. *See id.* ("Indeed, media reports indicate that Comcast customers are experiencing a quality enhancement in their Netflix experience.").



interconnection bottlenecks.<sup>195</sup> And other content providers who rely upon Cogent and other CDNs will likely see an improvement as well, as Netflix traffic no longer places such a significant burden on transit network links.

Far from signaling a problem, Netflix's direct interconnection agreements demonstrate the robustness of the interconnection market. When the company's quality suffered as the result of an interconnection dispute, it selected a more efficient agreement from among myriad options to mitigate its exposure. Like multi-homing, secondary peering, and CDNs, this direct interconnection agreement shows how a fluid interconnection market can adapt in response to changes in external stimuli. As Professor Yoo explains, these innovations stem from network providers' experiments with new ways to reduce costs and improve the quality of transmission of Internet content.<sup>196</sup> Of course, specific behavior in specific interconnection negotiations can rise to the level of unfair methods of competition. But consistent with a rule of reason analysis, the Commission should be reluctant to label paid peering generally as an unfair method of competition, for fear of ossifying the current environment and disrupt this virtuous cycle of innovation.

#### *D. Remedy*

Assuming that the Commission finds that a particular practice constitutes unfair competition, the final question is what the remedy should be. One's first response may be to allow the Commission to order interconnection to remedy the problematic conduct. And perhaps the agency should have this power as a last resort, as a way to encourage the parties to negotiate. But given the complexity and dynamism of interconnection markets, the Commission should focus primarily upon facilitating further negotiation between the parties to arrive at a negotiated solution.<sup>197</sup> Interconnection agreements can involve several different practices, and can themselves represent only one facet of the full relationship between the two parties. Once a problem is laid bare, the parties have a wide range of tools with which to find consensus, especially when prompted by an effective dispute resolution specialist. This means that a privately negotiated solution is likely to be more efficient than one imposed by the regulator from a more limited set of options.

The Commission's prior experience with cable retransmission disputes provides one model of successful facilitating of privately ordered solutions to interconnection-like debates. Under the Cable Television Consumer Protection and Competition Act of 1992, cable companies were prohibited from retransmitting a broadcaster's over-the-air signal to cable subscribers without the broadcaster's

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<sup>195</sup> Sam Gustin, *This is Why Netflix Just Got So Blazingly Fast*, TIME (Apr. 15, 2014), <http://time.com/62903/netflix-comcast-speed-boost/> [<https://perma.cc/828Y-DCRK>].

<sup>196</sup> YOO, *supra* note 7, at 69.

<sup>197</sup> *Cf.* Werbach, *supra* note 110, at 1299 ("An effective set of interconnection rules would be designed to maximize the likelihood of voluntary private agreement.").

consent.<sup>198</sup> The purpose of this provision, known as “retransmission consent,” was to protect free over-the-air broadcast from cable competition. As the FCC has explained, broadcast programming was historically the most popular content on cable systems, meaning that a “substantial portion of the benefits for which consumers pay cable systems is derived from carriage” of broadcast systems.<sup>199</sup> Through the retransmission consent regime, Congress sought to provide a mechanism by which broadcasters could negotiate to receive compensation for the value of their signals, and thereby share in the profits to be gained by the pay television revolution.<sup>200</sup>

As the FCC noted, Congress intended the agency’s role in retransmission consent negotiations to be limited.<sup>201</sup> Congress considered and rejected a comprehensive regulatory scheme that would have required the Commission “to prohibit broadcasters from engaging in discriminatory practices, understandings, arrangements, and activities, including exclusive contracts for carriage, that prevent a multichannel video programming distributor from obtaining retransmission consent from such stations.”<sup>202</sup> Instead, since 1999 the Commission has been given the more modest task of enforcing the statutory mandate that broadcasters negotiate “in good faith” with cable and satellite operators.<sup>203</sup>

Drawing upon the analogous “good faith” negotiating standard of Section 8(d) of the Taft-Hartley Act,<sup>204</sup> the agency developed a two-part test for good faith negotiation.<sup>205</sup> The first is a list of negotiation standards that broadcasters must meet:

- (1) a broadcaster cannot refuse to negotiate with a MVPD operator;
- (2) it must appoint a negotiating representative with authority to sign a retransmission consent agreement;

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<sup>198</sup> Cable Television Consumer Protection and Competition Act of 1992 § 6, 47 U.S.C. § 325(b) (2012).

<sup>199</sup> Amendment of the Commission’s Rules Related to Retransmission Consent, 26 FCC Rcd. 2718, ¶ 4 (2011) [hereinafter “Retransmission Rules Amendment”].

<sup>200</sup> While the retransmission consent regime offers a useful model, it is important to recognize the differences between retransmission consent and interconnection markets. As noted above, Internet content providers have multiple alternatives to reach broadband customers via transit markets in the event of an interconnection impasse. *See supra* note 186, at 454-55 and accompanying text. Broadcasters have a similar ability to reach consumers directly over-the-air in the event of a retransmission consent blackout, but this is more burdensome for consumers, as it requires them to maintain an over-the-air antenna and to switch away from a cable box, which limits the value of this fallback bargaining position.

<sup>201</sup> Retransmission Rules Amendment, 26 FCC Rcd. at 2766.

<sup>202</sup> H.R. 1554, 106th Cong., 1st Sess. (1999) (unenacted Section 325(b)(2)(C)(ii)).

<sup>203</sup> 47 U.S.C. § 325(b)(3)(C) (2014); *see* Implementation of the Satellite Home Viewer Improvement Act of 1999, 15 FCC Rcd. 5445, ¶¶ 1-2 (2000).

<sup>204</sup> *Id.* ¶¶ 19-22.

<sup>205</sup> *Id.* ¶¶ 28-32.

- (3) it must meet at reasonable times and places and cannot unduly delay the negotiations;
- (4) it cannot put forth a single, unilateral proposal;
- (5) in responding to a cable operator's offer, it must give considered reasons for rejecting proposed terms;
- (6) it cannot enter into an agreement conditioned upon denying retransmission consent to another operator;<sup>206</sup> and
- (7) the top four broadcast stations in a market cannot jointly negotiate with the cable operator for broadcast rights.<sup>207</sup>

Secondly, "even if these specific standards are met, the Commission may consider whether, based on the totality of the circumstances, a party failed to negotiate retransmission consent in good faith."<sup>208</sup> "The Commission has stated that, where 'a broadcaster is determined to have failed to negotiate in good faith, the Commission will instruct the parties to renegotiate the agreement in accordance with the Commission's rules and Section 325(b)(3)(C).'"<sup>209</sup>

Since the Commission promulgated rules to enforce the good faith standard, it has seen very few complaints brought by providers regarding retransmission consent disputes. In 2001, the agency rejected a complaint by EchoStar alleging that Young Broadcasting failed to negotiate in good faith.<sup>210</sup> Similarly, the cable bureau rejected a complaint in 2009 brought against Gray Television Licensee.<sup>211</sup> An earlier 2007 complaint, against Sinclair Broadcasting, settled following an agreed-upon extension by the parties before the Commission had to rule.<sup>212</sup> In fact, only once has the Commission found a party failed to negotiate in good faith: in 2007, finding against a cable operator.<sup>213</sup> In that instance, the

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<sup>206</sup> 47 C.F.R. § 76.65(b)(1) (2015).

<sup>207</sup> See Amendment of the Comm'n's Rules Related to Retransmission Consent, 29 FCC Rcd. 3351, ¶ 1 (2014).

<sup>208</sup> Amendment of the Comm'n's Rules Related to Retransmission Consent, *Notice of Proposed Rulemaking*, 26 FCC Rcd. 2718, ¶ 10 (2011).

<sup>209</sup> *Id.* (quoting Implementation of the Satellite Home Viewer Improvement Act of 1999, 15 FCC Rcd. 5445, ¶ 81 (2000)).

<sup>210</sup> *EchoStar Satellite Corp. v. Young Broad., Inc.*, 16 FCC Rcd. 15070 (2001).

<sup>211</sup> See *ATC Broadband LLC and Dixie Cable TV, Inc. v. Gray Television Licensee, Inc.*, 24 FCC Rcd. 1645 (2009).

<sup>212</sup> See *Mediacom Commc'ns Corp. v. Sinclair Broad. Grp., Inc.*, 22 FCC Rcd. 11093, 11093 (2007). Although Mediacom filed an application for review of the Media Bureau's order, Mediacom and Sinclair subsequently announced the completion of a retransmission consent agreement, and the Media Bureau thus granted Mediacom's motion to dismiss the case with prejudice. *Id.*

<sup>213</sup> See *Letter to Jorge L. Bauermeister*, 22 FCC Rcd. 4933 (2007).

agency ordered the parties to resume negotiations and provide status updates every thirty days.<sup>214</sup>

It is important to consider what remedies the Commission might seek in the event a counterparty fails to negotiate in good faith. While the Commission did not find any statutory authority to impose damages, it noted that, as with all violations of the Communications Act or the Commission's rules, it has the authority to impose forfeitures for violations of Section 325(b)(3)(C).<sup>215</sup> When discussing remedies for a violation of the good faith negotiation requirement, the Commission did not reference continued carriage as a potential remedy, and stated that it could not adopt regulations permitting retransmission during good faith negotiation or while a good faith complaint is pending before the Commission, absent broadcaster consent to such retransmission.<sup>216</sup>

The Commission may rightfully claim that its retransmission consent rules are relatively successful, given the paucity of filed complaints and the identification of only one failure to meet the statutory standard in a fifteen-year period. But this does not mean the public has been free of retransmission consent disputes. As cable revenues have stagnated and broadcasters have grown increasingly reliant on retransmission consent revenue to deliver top-line growth to shareholders, renewal agreements have grown increasingly contentious and the American public has been increasingly aware of the effects. As a result of a 2010 retransmission consent dispute between Cablevision and Walt Disney Corporation, New York viewers lost the ABC network for twenty-one hours, including the first fourteen minutes of the Academy Awards.<sup>217</sup> Later that year, Cablevision viewers lost Fox stations for fifteen days, resulting in a blackout of the Major League Baseball's National League Championship Series and the first two games of the World Series.<sup>218</sup> More recently, CBS Corporation leveraged its widespread holdings during a retransmission consent dispute with Time Warner Cable to black out not only the CBS owned-and-operator stations in several major markets, but also several cable channels including Showtime, and blocked visitors to the CBS.com website from Time Warner Cable IP addresses.<sup>219</sup> In response, Time Warner Cable offered to install rooftop antennas for affected customers to draw in the CBS signal for free.<sup>220</sup>

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<sup>214</sup> *Id.*

<sup>215</sup> Amendment of the Commission's Rules Related to Retransmission Consent, *supra* note 208, ¶ 10.

<sup>216</sup> *Id.* (quoting Implementation of the Satellite Home Viewer Improvement Act of 1999, *supra* note 208, ¶ 81).

<sup>217</sup> *Id.* ¶ 15.

<sup>218</sup> *Id.*

<sup>219</sup> Hillary Lewis & Alex Ben Block, *Time Warner Cable Loses 306,000 TV Subscribers Amid CBS Dispute*, THE HOLLYWOOD REPORTER (Oct. 31, 2013, 6:17 AM), <https://www.hollywoodreporter.com/news/time-warner-cable-loses-306000-652131> [<https://perma.cc/3VEP-95XP>].

<sup>220</sup> *Id.*

These disputes raise the question what the optimal blackout rate should be. Congress was aware that some blackouts would occur in retransmission consent disputes.<sup>221</sup> Given that the purpose of retransmission consent was to force cable operators to “compensate the broadcaster for the value its product creates for the cable operator,”<sup>222</sup> one could argue that the power to blackout a signal is a feature, not a bug, of the regime. Blackouts create inconvenience for consumers, who are likely to direct their ire not toward the broadcaster but the cable operator, whom they pay to receive a channel that is not being delivered. This consumer dissatisfaction gives the broadcaster additional leverage by putting pressure on the cable operator to resolve the dispute quickly. And ultimately, a non-zero blackout rate does not appear to have measurably affected consumer welfare: as noted above, most blackouts last a few hours or, at most, a few days, with only one case where the Commission needed to get involved to resolve the dispute.<sup>223</sup>

The Commission can draw from this model to remedy interconnection disputes. The finding that an interconnection dispute stems from an unfair method of competition could trigger a good faith duty to negotiate by the offending party. This would require the offending party to enter negotiations without undue delay, to refrain from making a single take-it-or-leave-it offer, and to provide a written rationale for refusing to accept the counterparty’s offer. In the event of a complete breakdown, the Commission could order mandatory baseball-style arbitration where each side gives its best and final offer and the arbitrator chooses one offer, which binds both parties.<sup>224</sup>

#### IV. TRANSPARENCY AND DISCLOSURE OF INTERCONNECTION AGREEMENTS

Thus far, this Article has focused on the narrow question of identifying and remedying problematic interconnection disputes. But the Comcast/Netflix dispute highlighted a broader difficulty, namely that the Commission and the public has limited visibility into interconnection markets. To fulfill its obligations as a

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<sup>221</sup> See 38 Cong. Rec. S639-40 (daily ed. Jan. 30, 1992) (statement of Sen. Seymour) (“For example, what happens if a cable operator refuses to pay a broadcaster even 1 cent for his signal? Is every cable subscriber in the entire community going to be denied access to the affiliate’s signal? Some have answered that a cable consumer can simply disconnect his or her cable unit, or install an ‘A/B’ switch, and pick up the over-the-air signal. That sounds simple. Again, it is even logical. However, it is not that simple. Many consumers who live in rural, or mountainous areas with poor over-the-air reception do not have the ability to receive network programming beyond the cable wire . . . others may not have the know-how to switch from antenna to cable and back again.”).

<sup>222</sup> 121. S. Rep. No. 102-92 (1991), at 35, *reprinted in* 1992 U.S.C.C.A.N. 1133, 1168.

<sup>223</sup> See *supra* text accompanying note 213.

<sup>224</sup> See RANDOLPH J. MAY ET AL., FREE STATE FOUNDATION, RESPONSE TO QUESTIONS IN THE FOURTH WHITE PAPER “NETWORK INTERCONNECTION” 11 (Aug. 8, 2014), [http://www.free-statefoundation.org/images/Response\\_to\\_Questions\\_in\\_the\\_Fourth\\_White\\_Paper\\_080814.pdf](http://www.free-statefoundation.org/images/Response_to_Questions_in_the_Fourth_White_Paper_080814.pdf) [<https://perma.cc/C67E-4L3D>]; Werbach, *supra* note 110, at 1299.

sector-specific regulator, the agency must take regular steps to inform itself (and the public) about the state of the market. But it should reject calls by some advocates to mandate interconnection agreements be made public,<sup>225</sup> as this could chill the efficient negotiation of interconnection agreements and risks facilitating collusion among providers.

#### A. *Transparency and Market Analysis*

The Commission should begin by attempting to gather more information to understand how interconnection markets work. When faced with Netflix's complaints in early 2014 that paid peering posed a threat to the Open Internet, the Commission appropriately responded by asking for copies of the interconnection agreements in question, to develop a better understanding of how these markets work.<sup>226</sup> The Open Internet order suggested that the learning curve is steep, and the agency had not yet satisfied itself that it understood the complex dynamics at work in this market.<sup>227</sup> Before undertaking a comprehensive law of interconnection, the Commission should gather additional facts to understand better the dynamic nature of this market and where the potential for anticompetitive abuse may lie.

Section 706(b) of the 1996 Telecommunications Act provides the Commission a potential jurisdictional hook. Under this provision the Commission must regularly inquire into "the availability of advanced telecommunications capability to all Americans" and to determine "whether advanced telecommunications capability is being deployed to all Americans in a reasonable and timely fashion."<sup>228</sup> Under this authority, the Commission currently conducts an annual inquiry into the state of broadband competition.<sup>229</sup> By extending the definition of "advanced telecommunications capability" under this statute to encompass interconnection markets as well, the Commission can fold a study of interconnection into its existing 706(b) reporting framework, which would allow it both to inform itself each year about the nature of interconnection markets and to report its findings, on an aggregated basis, to the public.

#### B. *Disclosure of Interconnection Agreements*

But the Commission should be reluctant to adopt rules that require public disclosure of private interconnection agreements between networks. At first glance,

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<sup>225</sup> See *supra* note 95.

<sup>226</sup> See Jon Brodtkin, *FCC Gets Comcast, Verizon to Reveal Netflix's Paid Peering Deals*, ARS TECHNICA, (Jun. 13, 2014, 1:15 PM), <https://arstechnica.com/tech-policy/2014/06/fcc-gets-comcast-verizon-to-reveal-netflixs-paid-peering-deals/> [<https://perma.cc/GW7K-QXNS>].

<sup>227</sup> Preserving the Open Internet, *supra* note 3, at ¶ 202.

<sup>228</sup> Telecommunications Act of 1996 § 706(b), 47 U.S.C. § 1302(b) (2012).

<sup>229</sup> *Id.*; *Broadband Progress Reports*, FED. COMM'N. COMM'N, <https://www.fcc.gov/reports-research/reports/broadband-progress-reports> [<https://perma.cc/4BHV-WPEP>] (last visited Feb. 25, 2018).

this proposal (offered by numerous advocates in the wake of the Comcast/Netflix controversy) appears to improve transparency in a market that the Commission has not yet investigated at length. But it may have the unintended consequence of harming competition among peering and transit providers by reducing barriers to collusion by larger networks. Even absent collusion, disclosure is likely to adversely affect prices by reducing companies' incentives to discount. Numerous well-documented examples illustrate the negative effect that disclosure regimes can have on prices and competition.

1. Disclosure of Private Interconnection Agreements Can Facilitate Tacit Collusion

a. *Antitrust Law Recognizes the Risks of Price Transparency*

At first glance, the benefits of a price disclosure regime can seem enticing. The model of perfect competition assumes that buyers have perfect information as to firm prices and predicts that markets will move toward uniform, competitive prices for comparable goods.<sup>230</sup> Increased access to firm pricing can reduce search costs for consumers hunting for the best deal.<sup>231</sup> It also may reduce a seller's ability to price discriminate,<sup>232</sup> although one might note that price discrimination itself has ambiguous effects on competition.<sup>233</sup>

But increased price transparency can also have anticompetitive effects by facilitating the negotiation and enforcement of supracompetitive prices.<sup>234</sup> It is a "basic tenet in the economics and industrial organization literature" that "sharing information about cost, transaction prices, and other competitively sensitive information among rivals makes tacit collusion more likely."<sup>235</sup> For almost one hundred years, the United States Supreme Court has consistently recognized that "the exchange of price information among competitors carries with it the added potential for the development of concerted price-fixing arrangements which lie at the core of the Sherman Act's prohibitions."<sup>236</sup> "Regardless of its putative

<sup>230</sup> See Maurice E. Stucke, *Evaluating the Risks of Increased Price Transparency*, 19 ANTITRUST 81, 81 (2005).

<sup>231</sup> *Id.*

<sup>232</sup> *Id.*

<sup>233</sup> See 14 HERBERT HOVENKAMP, ANTITRUST LAW ¶ 2340c (3d ed. 2012).

<sup>234</sup> Stucke, *supra* note 230.

<sup>235</sup> Joanna Shepherd, *Is More Information Always Better? Mandatory Disclosure Regulations in the Prescription Drug Market*, 99 CORNELL L. REV. ONLINE 1, 19-20 (2013); see also George J. Stigler, *A Theory of Oligopoly*, 72 J. POL. ECON. 44, 45-46 (1964).

<sup>236</sup> *United States v. U.S. Gypsum Co.*, 438 U.S. 422, 457 (1978); see also *Maple Flooring Mfg. Assn. v. United States*, 268 U.S. 563 (1925); *Cement Mfrs. Protective Assn. v. United States*, 268 U.S. 588 (1925); *United States v. Am. Linseed Oil Co.*, 262 U.S. 371 (1923); *Am. Column & Lumber Co. v. United States*, 257 U.S. 377 (1921).

purpose,” said the Court, “the most likely consequence of any such agreement to exchange price information would be the stabilization of industry prices.”<sup>237</sup>

Federal antitrust authorities have also long warned about the potential anti-competitive risks of transparency among competitors. “A market typically is more vulnerable to coordinated conduct if each competitively important firm’s significant competitive initiatives can be promptly and confidently observed by that firm’s rivals. This is more likely to be the case if the terms offered to customers are relatively transparent.”<sup>238</sup> While the sharing of information among competitors can be procompetitive, “in some cases, the sharing of information related to a market in which the collaboration operates or in which the participants are actual or potential competitors may increase the likelihood of collusion on matters such as price.”<sup>239</sup>

The FTC/DOJ Antitrust Guidelines for Collaborations Among Competitors offers three red flags to help identify when information disclosure may facilitate collusion.

- **Information about price:** “Other things being equal, the sharing of information relating to price, output, costs, or strategic planning is more likely to raise competitive concern than the sharing of information relating to less competitively sensitive variables.”<sup>240</sup>
- **Current information:** “Similarly, other things being equal, the sharing of information on current operating and future business plans is more likely to raise concerns than the sharing of historical information.”<sup>241</sup>
- **Individual Company Data:** “Finally, other things being equal, the sharing of individual company data is more likely to raise concern than the sharing of aggregated data that does not permit recipients to identify individual firm data.”<sup>242</sup>

Of course, the proposal to mandate disclosure of individual interconnection agreements raises all three red flags: it would reveal real-time information about prices and costs of transit on a company-by-company basis.

*b. The Mechanics of Tacit Collusion*

Price transparency helps overcome the two primary barriers to collusion. First, the open communication of prices reduces the uncertainty of negotiating a

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<sup>237</sup> *U.S. Gypsum Co.*, 257 U.S. at 457.

<sup>238</sup> FED. TRADE COMM’N & U.S. DEP’T OF JUSTICE, HORIZONTAL MERGER GUIDELINES § 7.2 (2010).

<sup>239</sup> FED. TRADE COMM’N & U.S. DEP’T OF JUSTICE, ANTITRUST GUIDELINES FOR COLLABORATIONS AMONG COMPETITORS § 3.31(b) (2000).

<sup>240</sup> *Id.*

<sup>241</sup> *Id.*

<sup>242</sup> *Id.*



supracompetitive price.<sup>243</sup> Because overt communication about price collusion is prohibited by the Sherman Act, firms seeking to collude must overcome the difficulty of communicating indirectly to establish their target price. But as the *Container Corp.* Court explained, sharing current price data can solve this problem by signaling a target toward which others can move. In that case, suppliers of corrugated containers shared current price information upon request about the most recent price charged for a good.<sup>244</sup> The Court explained that “[t]he exchange of price information seemed to have the effect of keeping prices within a fairly narrow ambit[,]” because “[k]nowledge of a competitor’s price usually meant matching that price.”<sup>245</sup> The result was a movement toward a stable, uniform price in violation of the Sherman Act.<sup>246</sup>

Once firms have established a collusive price, transparency also helps enforce the collusive agreement.<sup>247</sup> Here, as the Supreme Court has said, “[u]ncertainty is an oligopoly’s greatest enemy,”<sup>248</sup> because of the difficulty of identifying and punishing cheaters. But price transparency eliminates that uncertainty and therefore facilitates enforcement:

If . . . every transaction is publicized immediately, all members of the industry will know when one has made a price cut, and each can retaliate on the next transaction. Knowledge that retaliation will be swift serves as a powerful deterrent to price cutting and therefore facilitates the maintenance of tacitly collusive prices.<sup>249</sup>

Because market players know that any attempt at cheating will bring a swift response, they are less inclined to defect from the collusive price in the first place.

The general risk of tacit collusion is magnified by several structural factors inherent in the interconnection market. The first is concentration of competitively important players. Collusion is easier when fewer firms need to cooperate.<sup>250</sup> Though there are roughly 35,000 networks in the interconnection market,<sup>251</sup> disclosure proponents argue that only a handful of them need to cooperate to control interconnection rates to end-user broadband networks. If they are correct, transparency would ease efforts by those broadband network providers to

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<sup>243</sup> See Stucke, *supra* note 230 at 81.

<sup>244</sup> *United States v. Container Corp.*, 393 U.S. 333, 334-35 (1969).

<sup>245</sup> *Id.* at 336-37.

<sup>246</sup> *Id.* at 334.

<sup>247</sup> Stucke, *supra* note 230.

<sup>248</sup> *Brook Grp. Ltd. v. Brown & Williamson Tobacco Corp.*, 509 U.S. 209, 238 (1993).

<sup>249</sup> F.M. SCHERER & DAVID ROSS, *INDUSTRIAL MARKET STRUCTURE AND ECONOMIC PERFORMANCE* 348 (3d ed. 1990).

<sup>250</sup> See, e.g., John M. Kuhlman, *Nature and the Significance of Price Fixing Rings*, 2 *ANTITRUST L. & ECON. REV.* 69, 71 (1969) (noting that “[e]nforcement obviously becomes more difficult as more and more firms are added to the agreement”).

<sup>251</sup> See YOO, *supra* note 7.

collude on a market price for interconnecting to last-mile networks. Second, there are significant barriers to entry.<sup>252</sup> Building and operating a broadband network requires significant upfront capital, which helps insulate the collusive scheme from the threat of competitive entry. Third, providers enter into regular and frequent interconnection agreements, most of which govern only a small portion of total traffic carried over a network. This makes cheating less likely because there is little benefit from departing from the collusive price in a single transaction, and competitors can move quickly to punish any defector.<sup>253</sup> Finally, players in the interconnection market are customers as well as competitors; these multimarket contacts provide multiple pressure points with which to punish a cheater, which makes cheating less likely.<sup>254</sup>

Though interconnection markets differ somewhat from a typical wholesale transaction, the principles play out similarly. A broadband provider could attempt to communicate a collusive industry-wide interconnection rate to its rivals by insisting on that rate in a negotiation with a single content provider, and publicly disclosing the resulting agreement. Its likelihood of success would increase if the broadband provider is sufficiently large to command leverage in the negotiation, particularly if the negotiation is with a relatively small content provider. Once the interconnection price is publicized, rival broadband providers can use that price as an anchor or target to guide their own negotiations with content providers. As other interconnection agreements are made public, the would-be colluders could monitor the success of their efforts in real-time and adjust their proposed price targets if necessary through successive interconnection agreements in an attempt to achieve their shared objective. The multitude of potential content providers with which to partner allows the process to be highly iterative and eases the ability to use individual transactions to determine initial success and monitor ongoing compliance. Enforcement of the collusive price can be done in myriad ways, including by changing the terms of peering agreements between broadband networks to ensure cooperation with the collusive market for interconnection with upstream content.

Moreover, the complexity of interconnection agreements can mask tacit collusion. Interconnection agreements can run hundreds of pages and contain thousands of terms. It is unclear to what extent disclosure will increase transparency of the market to members of the public who lack detailed familiarity with such deals. But this complexity can mask attempts by firms to communicate with one another in violation of the Sherman Act, through fine print and price quotes that lay deep within the text of these lengthy, complex agreements. Similar allegations lay at the core of the *Airline Tariff Publishing* case. The Federal Trade

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<sup>252</sup> Kuhlman, *supra* note 250, at 72.

<sup>253</sup> See James E. Hartley, *Market Definition in a Monopoly Case*, C695 ALI-ABA 99, 143 (1991).

<sup>254</sup> See generally Amalia R. Miller, *Did the Airline Tariff Publishing Case Reduce Collusion?*, 53 J.L. & ECON. 569 (2010).

Commission alleged that certain airlines used an automated fare reporting system to coordinate fare increases by communicating via footnotes, start dates, and end dates that were publicly disclosed but were of little relevance to consumers or travel agents.<sup>255</sup>

## 2. Even Absent Collusion, Disclosure Can Negatively Impact Prices

Disclosure can also lead to rising prices without collusive action that would violate antitrust law. Even absent tacit collusion, transparency can have an anticompetitive effect based simply on the unilateral rational actions of market players. As the Court noted in *Brooke Group Ltd. v. Brown & Williamson Tobacco Corp.*, firms may set prices at “a profit-maximizing, supracompetitive level by recognizing their shared economic interests and their interdependence with respect to price and output decisions.”<sup>256</sup> Particularly in concentrated markets, it is unsurprising to find that firms may set their prices based partly on strategic considerations about their competitors’ behavior.<sup>257</sup> Absent some agreement among competitors, supracompetitive pricing that emerges from the unilateral actions of multiple market players does not violate the Sherman Act—though it has an adverse effect on customers and competition.<sup>258</sup>

Price transparency undermines the likelihood that a particular firm will discount to gain a competitive advantage. As the Federal Trade Commission has explained, coordinated information sharing “can blunt a firm’s incentive to offer customers better deals by undercutting the extent to which such a move would win business away from rivals.”<sup>259</sup> Market participants typically offer discounts in an attempt to gain market share away from rivals. But a company is less likely to offer such a discount if competitors can quickly learn the details of the agreement and move to match.<sup>260</sup> Because it would be unlikely that discounting would gain share, firms would be less likely to do so.

Transparency also decreases the incentives for companies to price goods aggressively. When a firm lacks knowledge about its competitor’s prices, it has incentives to offer low prices in an attempt to beat the “unknown” deal.<sup>261</sup> But when rival pricing is no longer unknown, “the incentive to outbid unknown price terms disappears.”<sup>262</sup>

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<sup>255</sup> *United States v. Airline Tariff Publ’g Co.*, 836 F. Supp. 9, 12 (D.D.C. 1993).

<sup>256</sup> *Brook Grp. Ltd. v. Brown & Williamson Tobacco Corp.*, 509 U.S. 209, 227 (1993).

<sup>257</sup> Stucke, *supra* note 230.

<sup>258</sup> *Id.*

<sup>259</sup> Horizontal Merger Guidelines § 7.2, *supra* note 238.

<sup>260</sup> See Letter from Fed. Trade Comm’n, to Mark Formby, Rep., Miss. H.R., at 6 (Mar. 22, 2011), <http://www.ftc.gov/os/2011/03/110322mississippiibm.pdf> [<https://perma.cc/8NHD-9LGA>] (discussing anticompetitive effects of proposed state law mandating disclosure of price terms in pharmaceutical industry).

<sup>261</sup> Shepherd, *supra* note 235, at 19.

<sup>262</sup> *Id.* at 20.

In broadband markets, the planes of competition among broadband providers includes both interconnection price and quality of service. One could argue that because consumption of Internet content is somewhat non-rivalrous, broadband providers lack some of the incentives to price aggressively in response to their rivals like typical wholesalers do. If AT&T offers a low interconnection rate to Netflix, for example, it is unlikely that Netflix will shift some of its volume away from Verizon as a result. But transparency could affect Netflix's likelihood of securing non-price features that affect the quality of the product as delivered to end-user consumers, such as the capacity and location of interconnection ports. AT&T could bid aggressively by taking technical measures to assure that Netflix traffic is delivered with fewer interruptions over its network, which allows it to tout superior network quality to both content providers and end-user consumers. But those incentives would be retarded if public disclosure allowed rivals to move quickly to counter, because AT&T would secure no demonstrable long-term advantage as a result of these efforts.

Notably, disclosure of interconnection agreements may also have anticompetitive effects on adjacent markets for content and applications. First, disclosure may make it easier for networks to price discriminate against particular content, because they could more easily identify the transit networks that targeted content providers use to deliver their traffic to the Internet, and can press for higher transit fees from those networks. Second, the disclosure of interconnection agreements will allow content and application providers access to competitively sensitive data about their rivals' transit costs, which can raise risks of tacit collusion in content and application markets. Third, content and application providers who are concerned about protecting this information may contract with networks that are not subject to disclosure rules, such as CDNs, or they may attempt to self-provision transit service to avoid disclosing cost information to competitors, even in situations where it would otherwise be uneconomical to do so.

### 3. Case Studies

Several empirical studies have established that mandatory disclosure of competitively sensitive information can be associated with higher prices.

#### *a. Railroad Grain Contracting*

The Staggers Rail Act of 1980 deregulated much of the railroad industry and allowed railroads to enter into privately-negotiated contracts with shippers and receivers.<sup>263</sup> Concerned that the railroads were price discriminating against small shippers, in 1986 Congress mandated the railroads disclose publicly the "essential terms" of any agricultural contracts.<sup>264</sup> These terms included price, the identity of the customer, the origin and destination of the shipment, the length

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<sup>263</sup> See Staggers Rail Act of 1980, Pub. L. No. 96-448, 94 Stat. 1895.

<sup>264</sup> See Omnibus Budget Reconciliation Act of 1986, Pub. L. No. 99-509 § 4051, 100 Stat. 1874, 1910.

of the contract, volume requirements, prior contracts between the parties, and effective date.<sup>265</sup>

An empirical study showed that this disclosure obligation had a significant and adverse effect on the price for railroad shipping.<sup>266</sup> Prior to the 1986 disclosure obligation, rates for railroad transportation of wheat in the Plains states was declining, a finding consistent with other studies testing the effect of deregulation on railroad rates.<sup>267</sup> But this trend reversed sharply after the disclosure obligations took effect in January 1987. After controlling for exogenous forces, the study found that rates rose between 10 and 13.7 percent.<sup>268</sup> The authors concluded that “contract disclosure and the increased reliance on posted tariffs facilitated rate coordination by the oligopolistic railroad industry, thereby leading to an increase in rail rates.”<sup>269</sup> They note that this finding is consistent with earlier findings about rate disclosure in the inland barge industry.<sup>270</sup>

*b. Ready-Mixed Concrete*

In 1993, the Competition Council, Denmark’s antitrust authority, gathered and published statistics on the transaction prices of individual firms for two grades of ready-mixed concrete in three regions within Denmark.<sup>271</sup> The Council took this action under authority granted to it by the Competition Act of 1990, which instructed the Council to combat suspected oligopoly collusion through measures designed to increase market transparency.<sup>272</sup> From October 1993 until December 1996, the Council sampled actual invoice prices from eighteen production sites in three regions, and published this firm-specific price data quarterly in the hope of improving information for buyers (primarily building contractors).<sup>273</sup>

As in the railroad example, the unintended consequence of this disclosure regime was to facilitate collusion and raise prices.<sup>274</sup> According to one study, average prices of reported grades rose between fifteen and twenty percent in the first year following publication.<sup>275</sup> Prices also converged significantly across

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<sup>265</sup> *Id.*

<sup>266</sup> See Stephen W. Fuller et al., *Effect of Contract Disclosure on Price: Railroad Grain Contracting in the Plains*, 15 WEST. J. OF AGRIC. ECON. 265, 265-66 (1990).

<sup>267</sup> *Id.* at 270.

<sup>268</sup> *Id.*

<sup>269</sup> *Id.* at 271.

<sup>270</sup> *Id.* (citing J.T. Hong and C.R. Plott, *Rate Fixing Policies for Inland Water Transportation: An Experimental Approach*, 13 BELL J. ECON. 1 (1982)).

<sup>271</sup> See Svend Albaek et al., *Government-Assisted Oligopoly Coordination? A Concrete Case*, 45 J. INDUS. ECON. 429, 429 (1997).

<sup>272</sup> *Id.* at 429-30.

<sup>273</sup> *Id.* at 432.

<sup>274</sup> Fuller, *supra* note 266, at 271.

<sup>275</sup> Svend Albaek et al., *supra* note 271, at 429.

firms serving the same market.<sup>276</sup> The authors considered, but rejected, several alternative explanations for this dramatic increase, including business upturn, capacity constraints, and input prices.<sup>277</sup> Ultimately, the authors conclude, “the evidence presented in this paper indicates that the Danish Competition Council, by providing reliable price reporting services, has unwittingly assisted firms in reducing the intensity of competition and thereby allowed them to increase prices.”<sup>278</sup>

*c. Telecommunications*

The Federal Communications Commission has also previously considered acknowledged that “[o]ne of the basic prerequisites for [] anticompetitive behavior is knowledge of a competitor’s prices.”<sup>279</sup> Beginning in 1983, the Commission discussed whether tariffing of nondominant telephone companies “im-pair[ed] competitive pricing, and facilitate[d] collusive conduct.”<sup>280</sup> It noted that “[f]orbearance involves less disclosure to competitors of carriers’ rates and tariff conditions than streamlined regulation” and consequently would “eliminate[] a potential vehicle for collusive conduct and facilitate[] price discounting.”<sup>281</sup>

The Commission expanded on these thoughts in 1985, explaining that:

The continuation of tariffs for forborne carriers [] presents an opportunity for collusive pricing by competing carriers. Since carriers can ascertain their competitors’ existing rates and keep track of any changes in those rates by reviewing the filed tariffs, carriers may be encouraged to maintain rates at an artificially high level. Without forborne carrier tariffs on file, carriers may initiate price cutting or generally institute rates at a lower level to meet directly customer demand.<sup>282</sup>

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<sup>276</sup> *Id.* at 430.

<sup>277</sup> *Id.* at 429, 440.

<sup>278</sup> *Id.* at 441.

<sup>279</sup> *See* Competition in the Interstate Interexchange Marketplace, 5 FCC Rcd. 2627, ¶ 143 (1990).

<sup>280</sup> *See* Policy & Rules Concerning Rates for Competitive Common Carrier Servs. and Facils. Authorizations Therefor, *Fourth Report and Order*, 95 F.C.C.2d 554, 583 n.1 (1983).

<sup>281</sup> *Id.* at 583 n.3.

<sup>282</sup> *See* Policy & Rules Concerning Rates for Competitive Common Carrier Servs. and Facils. Authorizations Therefor, *Sixth Report and Order*, 99 F.C.C.2d 1020, ¶ 13 (1985).

Although it ultimately concluded that the evidence was “inconclusive as to the issue of tacit price coordination among AT&T, MCI and Sprint,” it concluded that to the extent that such coordination existed, it was “better addressed by removing regulatory requirements that may facilitate such conduct.”<sup>283</sup>

#### 4. The Possibility of Tacit Collusion Could Invite Costly Antitrust Scrutiny

Even if the disclosure regime ultimately has no actual anticompetitive effects, the proposed rule would impose substantial compliance obligations on the industry. Network providers must scrutinize interconnection agreements to assure that there are no antitrust concerns with disclosure, and that the agreements do not otherwise contain proprietary or competitively sensitive information. The disclosure obligation may also limit parties’ flexibility when negotiating an interconnection agreement, because of concerns that any terms in the final agreement would be made public.<sup>284</sup>

Moreover, assuming the burden of these compliance costs provides no guarantee that the firm will avoid a costly antitrust investigation. As noted above, federal antitrust officials look skeptically at arrangements to share prices, particularly given the structural factors that mark interconnection markets.<sup>285</sup> The routine exchange of such competitively sensitive information is likely to attract regular antitrust oversight and could trigger investigations of firms that are in fact innocent of wrongdoing. The fact that the Commission has mandated disclosure is not a complete defense if antitrust authorities suspect that parties are misusing the disclosure regime to illegally collude. Even a defendant cleared of any wrongdoing will incur substantial defense costs to clear its name.

Finally, given how unsettled the law is in this area, even a firm with no malicious intent may unwittingly incur liability. Claims that a particular exchange of competitively sensitive information violates antitrust law are decided under the rule of reason, which requires the court to consider a “number of factors” to “divin[e] procompetitive or anticompetitive effects.”<sup>286</sup> Canvassing the history of such claims, the Second Circuit noted that “[t]he state of the law on this issue

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<sup>283</sup> See Motion of AT&T to be Reclassified as a Non-Dominant Carrier, 11 FCC Rcd. 3271, ¶¶ 82-83 (1995); see, e.g., Peter K. Pitsch & Arthur W. Bresnahan, *Common Carrier Regulation of Telecommunications Contracts and the Private Carrier Alternative*, 48 FED. COMM. L.J. 447, 484 (1996) (proposing private contracts as alternative to public tariff, to avoid potential price coordination).

<sup>284</sup> See, e.g., Geoffrey Manne, *The Hydraulic Theory of Disclosure Regulation and Other Costs of Disclosure*, 58 ALA. L. REV. 473, 482-484 (2007) (explaining that “forced disclosure deters the creation or collection of information that is valuable when kept secret, but that loses its value when disclosed”).

<sup>285</sup> See discussion *supra* Section IV.B.1.a.

<sup>286</sup> *Todd v. Exxon Corp.*, 275 F.3d 191, 199 (2d Cir. 2001) (citation omitted).

was not always so clear.”<sup>287</sup> Numerous commentators have noted that it is not much clearer today.<sup>288</sup> Given the risk that innocuous disclosures may give rise to antitrust liability, it seems unwise policy to invite the proceeding and suffer the attendant compliance costs and judgment risks associated with exchanging competitively sensitive information.

#### V. CONCLUSION

Interconnection is a robust, competitive marketplace that has demonstrated a continuous ability to adapt in response to consumers’ growing appetites for Internet-based products and services. Netflix’s recent direct interconnection agreements with Comcast and Verizon reflect a broader trend toward alternatives to traditional transit service for delivery of significant volumes of Internet-based traffic, and should not, alone, raise public policy concerns. Of course, even in competitive markets, incentives for anticompetitive conduct exist, and following *Trinko*, it is unclear whether traditional antitrust law is sufficient to prevent such conduct in interconnection markets. To close this potential gap, the Commission should assume a role as sector-specific competition authority, with the ability to identify unfair interconnection business practices by networks and to remedy those by compelling private negotiation between the parties.

To fulfill these new duties and increase transparency in interconnection markets, the Commission should take steps to study and report on interconnection as part of its existing Section 706 reporting requirements. But it should reject calls to mandate public disclosure of interconnection agreements, by broadband providers or other networks. Economic literature and almost a century of anti-trust jurisprudence warn of the potential unintended consequences of such a rule. Disclosure of competitively sensitive information can create opportunities for tacit price collusion and even unilateral activity that raises prices to supracompetitive levels. Even without any actual anticompetitive effects, disclosure rules entail compliance costs and can lead to significant defense costs and potential liability.

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<sup>287</sup> *Id.* at 198.

<sup>288</sup> *See, e.g.,* Stucke, *supra* note 230.