

# AN APPROPRIATE INTERCONNECTION BACKSTOP

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*The term "Internet" means the combination of computer facilities and electromagnetic transmission media, and related equipment and software, comprising the interconnected worldwide network of computer networks that employ the Transmission Control Protocol/Internet Protocol or any successor protocol to transmit the information.*

— 47 U.S.C. § 231(e)(3)

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## INTRODUCTION

Nearly any definition of the Internet, whether technical, legal, or colloquial, includes the notion of interconnection. As is well known, the development of TCP/IP had as its principal object a technique for sending traffic between disparate networks, effectively interconnecting the networks.<sup>1</sup> The U.S. Code, Federal Communications Commission ("FCC") Reports, and case law are littered with definitions that equate the Internet and interconnection.<sup>2</sup> And, as a matter of usage, many

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1. See e.g., Robert E. Kahn, Keynote Address at the University of Colorado Silicon Flatirons Center Symposium on Digital Broadband Migration: Confronting New Regulatory Frontiers (Feb. 20, 2006) ("The Internet really was a logical architecture that allowed you to connect virtually any kind of networking machine together.").

2. 47 U.S.C. § 230(f)(1) (2013) ("The term 'Internet' means the international network of both Federal and non-Federal interoperable packet switched data networks"); *Reno v. Am. Civil Liberties Union*, 521 U.S. 844, 849-50 (1997) ("The Internet is an international network of interconnected computers.").

Internet services connote not only interconnection but universality: we have the "world wide web," the Universal Resource Locator ("URL"),<sup>3</sup> and the notion, borrowed from the telephone space, of "universal service," a stated if yet unrealized goal of Internet policy.<sup>4</sup>

The fundamental regulatory question is whether there ought to be a legal rule to enforce this widespread understanding of interconnection. Some commentators have argued for such a legal requirement—indeed, more than ten years ago, I made a case for such a rule of interconnection.<sup>5</sup> However, the past decade has seen few interconnection denials. Not zero, of course, and at least one of those interconnection denials caused many consumers to lose Internet service.<sup>6</sup> And some of the most informed and influential technical authorities suggest that market conditions may be changing such that threats to interconnection may increase.<sup>7</sup>

This paper does not re-state the case for an interconnection rule, although I think that case has largely been made. Considering the fundamental importance of the Internet—and of interconnectivity to the Internet—I believe that the law ought to provide some background rule to address serious denials of Internet interconnection, in appropriate, important cases. Private institutions have a role to play as well, such as the consensus-developing role of the Broadband Internet Technical Advisory Group ("BITAG").<sup>8</sup> But many private institutions depend on some legal backstop to address cases that cannot be resolved, or to enforce previously-agreed to decisions that are privately made.

This paper addresses the possible content of such a background rule.

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3. Now renamed "uniform resource locator." See Connie L. Fulmer, *Comparing Portals and Web Pages*, in *ENCYCLOPEDIA OF PORTAL TECHNOLOGIES AND APPLICATIONS* 162, 165 (Arthur Tatnall ed., 2007).

4. See *Availability*, FED. COMM'N COMM'N, *CONNECTING AMERICA: THE NATIONAL BROADBAND PLAN*, <http://www.broadband.gov/plan/8-availability> ("The FCC's long-range goal should be . . . [to preserve] the connectivity that Americans have today and [advance] universal broadband in the 21<sup>st</sup> century.").

5. James B. Speta, *A Common Carrier Approach To Internet Interconnection*, 54 *FED. COMM. L.J.* 225 (2002); see also Thomas B. Nachbar, *The Public Network*, 17 *COMMLAW CONSPECTUS* 67 (2008); Kevin D. Werbach, *Only Connect*, 22 *BERKELEY TECH. L.J.* 1233 (2007).

6. See Adam Candeub & Daniel McCartney, *Law and the Open Internet*, 64 *FED. COMM. L.J.* 493, 536-37 (2012); Shane Greenstein, *Glimmers and Signs of Innovative Health in the Commercial Internet*, 8 *J. ON TELECOMM. & HIGH TECH. L. J.* 25, 66-67 (2010); Philip J. Weiser, *The Future of Internet Regulation*, 43 *U.C. DAVIS L. REV.* 529, 536-37 (2009).

7. DAVID CLARK ET AL., *INTERCONNECTION IN THE INTERNET: THE POLICY CHALLENGE*, *TELECOMM. POLICY RESEARCH CONFERENCE* 22 (2011), available at [http://groups.csail.mit.edu/ana/Publications/Interconnection\\_in\\_the\\_Internet\\_the\\_policy\\_challenge\\_tprc-2011.pdf](http://groups.csail.mit.edu/ana/Publications/Interconnection_in_the_Internet_the_policy_challenge_tprc-2011.pdf) ("Interconnection policy is going to become the battleground for the new telecom regulatory debates.").

8. See Joe Waz & Phil Weiser, *Internet Governance: The Role of Multistakeholder Organizations*, 10 *J. ON TELECOMM. & HIGH TECH. L.* 331, 339 (2012).

Designing the rule is easier said than done, of course, for once one moves beyond the general notion that the Internet should be interconnected and that the law should intervene to correct "serious denials" in "important cases," any consensus begins to break down. What Internet networks or traffic must be interconnected? What is an interconnection dispute as opposed to a pricing or discrimination dispute—and is there a difference? What are "serious denials" and "important cases"? Moreover, the difficulty of design increases when recognizing—as already noted—that outright denials of interconnection have been relatively rare in recent years.

The substance of Internet regulation, as with other forms of regulation, has an intimate relationship with the forms and institutions of dispute resolution. Much in the literature on interconnection disputes has focused on the institutional questions such as the use of co-regulation, the use of *ex post* complaints instead of *ex ante* rules, the use of cease-and-desist orders instead of fines and damages.<sup>9</sup> The institutions are, in fact, quite important, and institutional design can relieve some of the difficulties of regulations' substance: over- and under-inclusiveness of rules may be addressed by opting for adjudications; uncertainty may be reduced by creating clear, *ex ante* safe harbors; and fear of government error may be addressed by relying on expert, outside bodies. But, at the end of the day, even if substance and procedure overlap, substance matters—both because it determines in what cases government intervention may occur and because it can determine permissible and impermissible commercial practices.<sup>10</sup> Even a tentative first step, such as a call for more transparency in current interconnection practices, must make the substantive decision of what practices matter, what must be disclosed, and to whom.<sup>11</sup>

As I will argue, current law has no clear background rule that governs Internet interconnection disputes. So, it is into the substantive breach that this essay (carefully) treads, to see if a workable outcome can be reached. I first choose two, somewhat current Internet traffic disputes to be used to discuss the scope of the legal backstop, for discussing such standards in the abstract seems less fruitful. Second, I canvas what might be existing backdrop rules and discuss some of their merits and demerits.

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9. *E.g.*, Weiser, *supra* note 6.

10. I only say "can determine" because the substantive rule may, initially, be stated at a high level of generality, which specific adjudications determining the actual practices that either conform with or offend the substantive rule.

11. *But see* CLARK ET AL., *supra* note 7, at 21 ("Our policy recommendations focus on enhancing transparency because we are not convinced by the evidence we have seen to date that more activist policies (e.g., direct regulation of Internet interconnection) is warranted; and equally importantly, even if we were to see a need for such regulation, we are concerned any such regulation might cause more harm than good.").

Finally, I suggest that Internet interconnection might be addressed principally through rules that forbid the abrupt termination of transit connections, for those terminations are the most likely to disrupt legitimate consumer expectations. Other interconnection disputes can be dealt with on a slower track, with opportunities for more fulsome development of any claims of anticompetitive effect.

#### I. TWO INTERNET TRAFFIC DISPUTES – THOUGHTS ON SCOPE

I choose two types of Internet traffic disputes as examples around which to frame the discussion of a legal rule. Many commentators have noted the growing complexity of Internet interconnection, but these same commentators often focus on a similar, simplifying taxonomy.<sup>12</sup> The two examples differ principally in their potential effect on an access provider's customers. In the first—the termination of a peering or transit relationship—an access provider's customers may lose access to all or a portion of the Internet. In the second—the termination of a peering relationship (or even an interconnection) with a content distribution network ("CDN")—an access provider's customers may experience a change in quality of service, but typically the action will not result in the loss of customers' access to content or applications.

One denial of interconnection has already drawn some attention in legal literature—a temporary termination of interconnection between Sprint and Cogent that led to many Internet customers losing some part of their Internet service. Cogent and Sprint were in heated negotiations concerning whether the two companies would interconnect based upon a settlement-free peering relationship.<sup>13</sup> Most such peering relationships are based upon relatively equal traffic flows between the carriers, although there are other important factors, some of which can be managed through negotiations over points of interconnection and routing protocols. Sprint and Cogent had different views of the traffic needed to sustain the peering relationship, with Sprint seeming to seek payment and Cogent insisting on a settlement-free arrangement.<sup>14</sup> When the parties could not agree, Sprint terminated its relationship with and its interconnection to Cogent, although both sides appear to bear some

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12. *E.g.*, CLARK ET AL., *supra* note 7.

13. Weiser, *supra* note 6, at 531-32; *see also* Adam Candeub & Daniel McCartney, *Law and the Open Internet*, 64 FED. COMM. L.J. 493, 536-37 (2012); Shane Greenstein, *Glimmers and Signs of Innovative Health in the Commercial Internet*, 8 J. ON TELECOMM. & HIGH TECH. L. 25, 66-67 (2010) (warning “bargaining breakdowns are, by themselves, insufficient to conclude definitively there is a problem” in the market. But, interconnection breakdowns do affect Internet users. The regulatory suggestion below is, in truth, quite modest, in no small part because the level of demonstrated market concern is itself modest).

14. Weiser, *supra* note 6, at 531.

responsibility for the ultimate loss of interconnection.<sup>15</sup> Customers of Internet Service Providers ("ISPs") who relied upon Cogent for transit lost connectivity with many customers of Sprint, and many Sprint customers lost access to websites that purchased Internet access from Cogent.<sup>16</sup> Some estimate that "millions of Internet users" were affected and, for the weeklong duration of the interruption, lost part of the universal interconnectivity usually associated with the Internet—they "lost the ability to send e-mails to or access the websites" of users of the other carrier.<sup>17</sup>

Fortunately, such denials of interconnection have been relatively rare, or, to be precise, we are not aware of many other interconnection disputes that have resulted in the loss of connectivity by retail Internet customers. Net neutrality debates have identified some more selective controversies, such as Madison River Telephone Company's blocking of VOIP access to its DSL customers<sup>18</sup> and Comcast's partial blocking of peer-to-peer traffic using spoofed reset packets.<sup>19</sup> These are real controversies, but they do not arise from the denial of a physical connection between two carriers—by which I mean companies that each provide physical transport infrastructure. Below, I discuss potentially different regulatory treatment for these disputes, which I would put more in the realm of discrimination than interconnection.

Nevertheless, an interconnection denial such as Sprint/Cogent may reoccur, and it may affect many Internet users' access to sites and services. The effect may also be unpredictable, for the Sprint/Cogent dispute had only an indirect effect on at least some retail Internet users' access. Cogent's principal business was providing transit services to access providers such as ISPs.<sup>20</sup> Cogent's termination of access to Sprint meant that those ISPs' customers lost access to Sprint-connected sites and customers, but their recourse was against their own ISP, which did not have any direct relationship with Sprint.<sup>21</sup> To be sure, the affected ISPs could switch their transit relationship to another provider, and so Cogent did have an incentive to internalize the costs that it was imposing on these customers, but such a switch presumably could not be accomplished instantaneously.<sup>22</sup> Nevertheless, here, and with some

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15. *Id.* at 532; Greenstein, *supra* note 13, at 65-66.

16. Weiser, *supra* note 6, at 532.

17. *Id.*

18. *See, e.g.,* Candeub & McCartney, *supra* note 13, at 537.

19. *See* Comcast Corp. v. Fed. Comm'n Comm'n, 600 F.3d 642 (D.C. Cir. 2010) (discussing allegations against Comcast, but holding that the FCC had not justified its jurisdiction over the matter).

20. *See* Greenstein, *supra* note 13, at 65.

21. *See* Weiser, *supra* note 6, at 532.

22. No commentator has suggested that Cogent had a monopoly over transit offerings in any of the affected areas, at least so far as I have been able to discern.

denials of interconnection, the significant effects will fall indirectly on the customers of the customers of the carriers engaged in the interconnection dispute.<sup>23</sup>

The second example, which has been in the news more recently, arises between an access provider and a CDN, typically when the CDN seeks to negotiate a peering relationship—or other discounted traffic delivery relationship—with the access provider. Netflix has been at the center of some of these controversies, in part because some estimates have suggested that upwards of 25% of access-carrier traffic during peak evening periods is Netflix traffic.<sup>24</sup> The biggest growth area of access-provider traffic is streaming video from all sources, including Google, Amazon, Vudu, Hulu, and other providers in addition to Netflix.<sup>25</sup>

In the case of Netflix, the controversy began when Netflix transferred its content to Level 3.<sup>26</sup> Level 3 is a leading Internet backbone that also has a significant CDN business.<sup>27</sup> Level 3 had in place peering agreements with many leading access providers, including Comcast, the largest cable Internet access provider—and likely therefore the largest residential Internet access provider.<sup>28</sup> Comcast took the position that the addition of Netflix traffic over the Level 3/Comcast interconnection meant that the traffic flows would become substantially unequal, in the direction of Level 3 to Comcast, and that Level 3 should therefore compensate Comcast for the termination of that traffic.<sup>29</sup> That the traffic was caused by Comcast's customers requesting Netflix content and Comcast charged those customers was not part of the dispute, for Comcast does not charge its customers either specifically for video-streaming content or more generally based on bandwidth, except at the very-highest usage levels.<sup>30</sup>

Comcast appears to have at least partially prevailed in the first phase of this dispute, with the parties announcing that they are sharing the costs of traffic termination in some unknown amount.<sup>31</sup> Some have questioned this result, because in general, an access provider may benefit

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23. Weiser, *supra* note 6, at 531-32 (using this complexity of contracting to justify interconnection regulation, even apart from more classic market failures such as monopoly power).

24. CLARK ET AL., *supra* note 7, at 4.

25. *Id.* at 4-5.

26. See generally Rob Frieden, *Rationales For and Against Regulatory Involvement in Resolving Internet Interconnection Disputes*, 14 YALE J.L. & TECH. 266, 275 (2012).

27. Marguerite Reardon, *Understanding the Level 3 Comcast Spat (FAQ)*, CNET (Nov. 30, 2010 3:28 PM), [http://news.cnet.com/8301-30686\\_3-20024197-266.html](http://news.cnet.com/8301-30686_3-20024197-266.html).

28. Frieden, *supra* note 26, at 271.

29. *Id.* at 283-85.

30. See CLARK ET AL., *supra* note 7, at 5; Frieden, *supra* note 26, at 272.

31. Drew FitzGerald, *Level 3, Comcast Resolve Dispute over Internet Traffic Costs*, WALL ST. J., July 16, 2013, available at <http://online.wsj.com/article/BT-CO-20130716-708697.html>.

from peering with a CDN by gaining enhanced quality of service for its subscribers and also reducing its transit costs.<sup>32</sup> Comcast may have been able to rely on its size for bargaining leverage. Moreover, Comcast may have had the incentive to resist peering with Level 3 in order to increase Netflix's costs. Both the Department of Justice ("DOJ") and the FCC in considering the NBC/Comcast merger embraced the notion that Netflix and other online video providers competed with Comcast as to both linear video and video on demand.<sup>33</sup> Nevertheless, as noted, the parties reached a commercial resolution.

In sum, disputes over interconnection can be divided based on whether the issue involves the interruption of access to services or individuals, even though interconnection disputes can take many different forms that depend on both technical and economic issues. And, in fact, both types of disputes have happened, even if outright denials of connectivity are relatively rare.

## II. CURRENT (POSSIBLE) LEGAL BACKGROUND RULES

The spectrum of possible legal background rules to address Internet interconnection runs from the very general remedy of antitrust to sector specific, mandatory interconnection requirements. Here, I describe those extremes, and several potential stopping points in between the poles, as well as how they might apply to disputes in this area. None of these current rules, in my view, satisfactorily addresses Internet interconnection.

Antitrust has been used to resolve some of the most significant interconnection disputes in traditional telephony, but as a background rule for modern Internet interconnection it probably does not provide an adequate substantive scope to resolve many cases of interest. In particular, after *Trinko*, antitrust may not resolve those direct interconnection cases that would most comfortably fit within an essential facilities construct.<sup>34</sup>

Monopolization and essential facilities theories have been important in resolving major interconnection controversies in the developing telephone network. The 1913 Kingsbury Commitment, which required AT&T to interconnect with noncompeting, independent local telephone companies, resolved a monopolization case.<sup>35</sup> The 1956 AT&T Consent

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32. See CLARK ET AL., *supra* note 7, at 5.

33. See James B. Speta, *Supervising Managed Services*, 60 DUKE L.J. 1715, 1721 (2011) (discussing the FCC and DOJ orders in the merger).

34. *Verizon Commc'ns Inc. v. Law Offices of Curtis V. Trinko*, 540 U.S. 398 (2004).

35. See Joseph D. Kearney, *From the Fall of the Bell System to the Telecommunications Act: Regulation of Telecommunications Under Judge Greene*, 50 HASTINGS L.J. 1395, 1404 (1999).

Decree,<sup>36</sup> which limited AT&T to common carrier communications services, had the effect of ensuring computer services' interconnection with the network.<sup>37</sup> And the 1974 case, resulting in the break-up decree, was based in large part on AT&T's allegedly improper denial of interconnection to MCI for that company's local origination and termination of switched long-distance traffic.<sup>38</sup> That 1982 Consent Decree created a monitored antitrust regime of local/long-distance interconnection, called the "equal access" obligations,<sup>39</sup> which were later embedded in a second antitrust decree vis *GTE*<sup>40</sup> and then placed in FCC regulations.<sup>41</sup>

Modern antitrust law, however, may not stretch to encompass the interconnection theories put forward in these historic telephone cases. The *Trinko* case emphasized that 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."<sup>42</sup> The case says that it neither recognizes nor repudiates the essential facilities doctrine,<sup>43</sup> but the tenor of the case is strongly against mandatory sharing remedies. Indeed, both I and others have previously written that *Trinko* would strongly suggest that an interconnection claim might have difficulty under current antitrust law.<sup>44</sup>

The specific question of how post-*Trinko* antitrust may resolve interconnection disputes depends to a significant extent on the breadth of the *Trinko* opinion. A termination of continuing interconnection, such as occurred between Sprint and Cogent, could fall within an *Aspen Skiing* theory.<sup>45</sup> That case emphasized that the termination of the four-mountain pass was "a decision by a monopolist to make an important change in the

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36. See *United States v. W. Electric Co.*, Civil Action No. 17-49 (D.N.J. 1956).

37. See Steve Bickerstaff, *Shackles on the Giant: How the Federal Government Created Microsoft, Personal Computers, and the Internet*, 78 TEX. L. REV. 1, 16-20 (1999).

38. *United States v. Am. Tel. & Tel. Co.*, 552 F. Supp. 131, 139 (D.D.C. 1982).

39. *Id.* app. B at 233.

40. *United States v. GTE Corp.*, 603 F. Supp. 730, 743 (D.D.C. 1984).

41. MTS and WATS Market Structure Phase III, *Report and Order*, 100 F.C.C. 2d 860 (1985).

42. *Verizon Commc'ns Inc. v. Law Offices of Curtis V. Trinko*, 540 U.S. at 408 (2004) (quoting *United States v. Colgate & Co.*, 250 U.S. 300, 307 (1919) (internal quotation marks omitted)).

43. *Id.* at 411.

44. See James B. Speta, *Antitrust and Local Competition under the Telecommunications Act*, 71 ANTITRUST L.J. 99 (2003); Daniel F. Spulber & Christopher S. Yoo, *Mandating Access to Telecom and the Internet: The Hidden Side of Trinko*, 107 COLUM. L. REV. 1822, 1872-74 (2007); Howard A. Shelanski, *The Case for Rebalancing Antitrust and Regulation*, 109 MICH. L. REV. 683 (2011). But see Adam Candeub, *Trinko and Re-grounding the Refusal to Deal Doctrine*, 66 U. PITT. L. REV. 821 (2005) (arguing that *Trinko* should not be read so broadly, while conceding that the opinion contains much that suggests such a reading).

45. *Aspen Skiing Co. v. Aspen Highlands Skiing Corp.*, 472 U.S. 585, 604 (1985).

character of the market," and the Court treated the termination of the cooperative relationship as evidence of anticompetitive effect.<sup>46</sup> Several scholars have characterized this as a key to the case—with some also noting that such an interpretation would create powerful incentives to refuse to cooperate in the first instance, and that loss of business model experimentation is likely harmful to consumers.<sup>47</sup> And the Court broadly held that the denial of access to the four-mountain pass fell within antitrust.<sup>48</sup> Similarly, MCI prevailed by showing that "it was technically and economically feasible for AT&T to have provided the requested interconnections, and that AT&T's refusal to do so constituted an act of monopolization."<sup>49</sup> For its part, *Trinko* might be distinguished by pointing to the role that the FCC's supervision of the Telecommunications Act of 1996's<sup>50</sup> unbundling obligations played in the Court's decision. Although the Court noted that the Act itself prevented a holding of implied preemption,<sup>51</sup> the Court nevertheless said that "[a]ntitrust analysis must always be attuned to the particular structure and circumstances of the industry at issue. Part of that attention to economic context is an awareness of the significance of regulation."<sup>52</sup> The Court found that the FCC's regulatory supervision, both generally and of the specific unbundling dispute in the case, meant there were only "slight benefits of antitrust intervention."<sup>53</sup> In an Internet interconnection dispute (where FCC jurisdiction is either lacking or unexercised, on which more just below), an antitrust court would not have a regulatory scheme in place.

This is the most optimistic characterization of antitrust's ability to address the termination of a peering arrangement (or a transit arrangement), but even on these terms an antitrust action would face challenging substantive hurdles. Primary is the issue of monopoly power, for both *Aspen Skiing* and *MCI* were sustained under a monopolization theory. And proof of monopoly power might be difficult in peering and transit markets, where much evidence exists of multiple players.<sup>54</sup> Moreover, any antitrust theory that could apply to the denial of interconnection would fall within the rule of reason and therefore depend

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46. *Id.*

47. *E.g.*, Eleanor M. Fox, *Is There Life in Aspen After Trinko? The Silent Revolution in Section 2 of the Sherman Act*, 73 ANTITRUST L.J. 153 (2005).

48. *Aspen Skiing*, 472 U.S. at 155.

49. *MCI Commc'ns Corp. v. Am. Tel. & Tel. Co.*, 708 F.2d 1081, 1133 (7th Cir. 1983).

50. Telecommunications Act of 1996, Pub. L. No. 104–104, 110 Stat 56 (codified as amended in scattered sections of 15 and 47 U.S.C. (1996)).

51. *Verizon Commc'ns v. Law Offices of Curtis v. Trinko, LLP*, 540 U.S. 398, 406 (2004).

52. *Id.* at 411.

53. *Id.* at 414.

54. *See, e.g.*, CLARK ET AL., *supra* note 7.

on proof of foreclosure. Given that a carrier that denied interconnection would likely argue that the commercial terms that it sought were reasonable compensation for the receipt and delivery of traffic, a full-blown rule of reason analysis would be indeterminate at the time interconnection was terminated or refused. In all events, proof is time-consuming. As others have noted, a general problem of antitrust institutions is the time it takes to resolve a controversy.<sup>55</sup>

As to any access network's refusal to grant a CDN the form of access that it desires, the second type of interconnection dispute I have described, the antitrust claim would also have to proceed under a classic foreclosure approach, which would require both proof of market power and proof of anticompetitive effect. One could imagine the anticompetitive effect prong as either a claim asserted by the CDN itself or a claim asserted by the content provider that sought to take advantage of the CDN's interconnection with an access provider. The CDN could assert that the access network worked an anticompetitive effect in the market for distribution—especially if the access network provided caching or similar services directly to content providers. The content provider could assert that any access network that was vertically integrated with content (as in the Netflix disputes) was denying the CDN interconnection to advantage its own content. In some regards, such a claim would recall the anticompetitive concerns that prompted the DOJ and the FCC to insist on certain nondiscrimination obligations in the NBC/Comcast merger.<sup>56</sup> But, such a claim would also run into the difficulty that, as David Clark and Bill Lehr have written, transit markets both seem reasonably competitive and cap any access providers' ability to deny CDN interconnection.<sup>57</sup> An access network cannot do without a transit arrangement, for its users demand access to the whole Internet, and the transit market seems relatively robust.

One might respond to the relatively strict requirements of an antitrust claim by pointing to the Federal Trade Commission Act's ("FTC Act") prohibition of "unfair methods of competition."<sup>58</sup> This standard extends, at least to some degree, beyond the antitrust laws, to encompass practices that are anticompetitive "in their incipiency."<sup>59</sup> But the degree to which the FTC Act can and should be read to reach practices not expressly forbidden by the Sherman and Clayton Acts remains highly contentious, and the Federal Trade Commission ("FTC") has remained cautious in expanding its enforcement.<sup>60</sup> More particularly, the authority

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55. Weiser, *supra* note 6, at 551.

56. See Speta, *supra* note 33, at 1756.

57. See CLARK ET AL., *supra* note 7.

58. 15 U.S.C. § 45(a)(1) (2006).

59. Fed. Trade Comm'n v. Brown Shoe Co., 384 U.S. 316, 322 (1966).

60. See generally Herbert Hovenkamp, *The Federal Trade Commission and the Sherman*

for using section 5 as a restriction on the non-collusive behavior of oligopolists, and so even if the backbone and transit markets are somewhat less than fully competitive and opportunities for strategic behavior remain, section 5 of the FTC Act is an unlikely substantive ally.<sup>61</sup>

The Communications Act<sup>62</sup> itself contains a sector-specific interconnection requirement. Actually, it contains three: the 1934 Act required that common carriers interconnect, in language borrowed from the Interstate Commerce Act ("ICA"),<sup>63</sup> and such interconnection requirements exist in other children of the ICA, such as the electricity regulation.<sup>64</sup> The 1996 Act included its own interconnection requirements, one for all "telecommunication carriers"<sup>65</sup> and one specifically for incumbent local exchange carriers;<sup>66</sup> these additions were necessary to ensure that interconnection obligations applied to local carriers as the 1996 Act sought to enable entry into the local markets.<sup>67</sup>

The section 201 requirement of interconnection was stated explicitly in terms of a "public interest" requirement, that is, the FCC could order interconnection if it found that interconnection was in the public interest.<sup>68</sup> The public interest was a broad, but not unlimited notion, requiring the FCC to consider competition issues but also the health of the carrier that was ordered to provide interconnection.<sup>69</sup> Although it is often said that *Carterfone*<sup>70</sup> and *Hush-a-Phone*<sup>71</sup> established broad

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*Act*, 62 FLA. L. REV. 871 (2010) (discussing the debate).

61. See Spencer Weber Waller, *Prosecution by Regulation: The Changing Nature of Antitrust Enforcement*, 77 ORE. L. REV. 1383, 1390 & n.31 (1998).

62. Communications Act of 1934, Pub. L. No. 73-416, 48 Stat. 1064 (codified as amended in scattered sections of 47 U.S.C.).

63. 47 U.S.C. § 201(a) (2013) ("It shall be the duty of every common carrier engaged in interstate or foreign communication by wire or radio to furnish such communication service upon reasonable request therefor; and, in accordance with the orders of the [FCC], in cases where the [FCC], 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.").

64. 16 U.S.C. § 824(d) (1978).

65. 47 U.S.C. § 251(a)(1) (1999) ("Each telecommunications carrier has the duty . . . to interconnect directly or indirectly with the facilities and equipment of other telecommunications carriers.").

66. See *id.* § 251(c)(2).

67. The 1934 Act left much in local telephony outside the reach of the FCC. See 47 U.S.C. § 152(b) (1993). Section 251 applied to local telephone companies and services, as well as interstate, and the FCC then had power to make rules governing local interconnection as well. See *AT&T Corp. v. Iowa Utils. Bd.*, 525 U.S. 366, 380-82 (1999).

68. 47 U.S.C. § 201(a).

69. See, e.g., *S. Pac. Commc'ns Co. v. Am. Tel. & Tel. Co.*, 556 F. Supp. 825, 972-78 (D.D.C. 1982) (summarizing open-ended nature of traditional interconnection decisions).

70. Use of the Carterfone Device in Message Toll Telephone Service, 13 F.C.C. 2d 420 (1968).

71. *Hush-A-Phone v. United States*, 238 F.2d 266 (D.C. Cir. 1956).

interconnection requirements, those cases stand only for the proposition that a carrier that refused interconnection had to demonstrate that the interconnection "would result in damage to [the] telephone system or would otherwise be contrary to the public interest."<sup>72</sup> As to the 1996 Act additions, those were interpreted "as referring 'solely to the physical linking of two networks, and *not* to the exchange of traffic between networks.'"<sup>73</sup> The rationale was that section 251 required physical interconnection—the "facilities and equipment" for interconnection—while section 252 governed the terms of traffic exchange.<sup>74</sup>

The problem with the Communications Act's interconnection requirements is not that they are necessarily insufficiently powerful to cover Internet disputes, although we are still in a situation in which the FCC's power to use the 1996 Act over Internet traffic is in substantial dispute.<sup>75</sup> The problem with the 1934 Act's "public interest" version is in the vagueness and unpredictability of the standard. As the long-distance entry saga showed, it took years under FCC proceedings (prodded by the courts) for interconnection to make progress, and only an antitrust suit really did the trick.<sup>76</sup> The 1996 Act's versions are more certain, but perhaps too mandatory.

The FCC has recently suggested an interconnection duty that rings of the Act's indeterminate "public interest" standard. In particular, in the *Connect America Fund* order, the FCC said that all carriers were under a duty to negotiate in "good faith" for Internet Protocol ("IP") interconnection with the PSTN—and perhaps for IP-to-IP interconnection in certain circumstances.<sup>77</sup> Even apart from the vagueness of this standard, the FCC's ability to maintain such a regulatory stance towards Internet interconnection remains uncertain.

A background interconnection rule could draw on both antitrust and sector-specific regulation to occupy some middle ground. It seems worthwhile to pause on two such models: the 2002 European Regulatory

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72. *Lincoln Tel. & Tel. Co. v. Fed. Comm'n Comm'n*, 659 F.2d 1092, 1105 (D.C. Cir. 1981) (internal quotation marks omitted) (footnote omitted).

73. *AT&T Corp. v. Fed. Comm'n Comm'n*, 317 F.3d 227, 234 (D.C. Cir. 2003) (emphasis in original) (quoting *Total Telecomm. Servs., Inc.*, 16 FCC Rcd. 5726 at ¶ 23).

74. *AT&T Corp.*, 317 F.3d at 234; see also *Competitive Telecomm. Ass'n v. Fed. Comm'n Comm'n*, 117 F.3d 1068, 1071-72 (8th Cir. 1997) (same under 251(c)(2)); *Verizon Tel. Cos. v. Fed. Comm'n Comm'n*, 292 F.3d 903, 905 (D.C. Cir. 2002) (same under 251(c)(6) (facilities for collocation)).

75. See *Comcast Corp. v. Fed. Comm'n Comm'n*, 600 F.3d 642 (D.C. Cir. 2010). The case challenging the FCC's attempt to re-assert its 1996 Act powers over the Internet was heard in the D.C. Circuit in September 2013. Edward Wyatt, *Verizon-FCC Court Fight Takes on Regulating Net*, N.Y. TIMES, Sept. 8, 2013, at B1.

76. Glen O. Robinson, *The Titanic Remembered: AT&T and the Changing World of Telecommunications*, 5 YALE J. ON REG. 517, 521 (1988).

77. See *Connect America Fund*, 26 FCC Rcd. 17,663, 17,678 (2011).

Framework<sup>78</sup> and the proposed 2005 Digital Age Communications Act ("DACA").<sup>79</sup> Each of these was a sector-specific approach to telecommunications—including Internet communications—that borrowed heavily from competition economics but also created some *ex ante* interconnection obligations.

Under the 2002 European Regulatory Framework, all "electronic communications networks,"<sup>80</sup> which essentially means all communications networks providing two-way services, must interconnect and provide access.<sup>81</sup> Further regulatory obligations depended on a showing of "significant market power" in a specific market segment, and those additional obligations could range from nondiscrimination requirements to universal service obligations to price controls.<sup>82</sup> The framework described an iterative process, in which European Union ("EU") competition authorities defined relevant communications markets, the national regulatory authorities conducted market analysis and made findings of significant market power, and the EU authorities confirmed those particular findings.<sup>83</sup> This original framework has been updated by additional EU institutions, including a regulators coordinating body and several statements on appropriate remedies,<sup>84</sup> but the original framework marked an innovation in the use of competition law to determine the extent of regulation—after the initial interconnection requirement.

The DACA proposal took a somewhat different approach. It emphasized *ex post* remedies under an antitrust standard, requiring proof of injury to consumers from any challenged practice in communications markets.<sup>85</sup> DACA explicitly borrowed language from the FTC Act, requiring for most regulation an express finding of consumer injury

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78. Directive 2002/21/EC of the European Parliament and of the Council of 7 March 2002 on a Common Regulatory Framework for Electronic Communications Networks and Services, 2002 O.J. (L108) 33 [hereinafter Directive 2002/21/EC], available at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2002:108:0033:0050:EN:PDF>.

79. Digital Age Communications Act, S. 2113, 109th Cong. § 2(a)(10)(A)(ii) (2005).

80. Directive 2002/21/EC, *supra* note 78, at L108/38.

81. See generally James B. Speta, *Rewriting U.S. Telecommunications Law with an Eye on Europe*, in GOVERNANCE OF COMMUNICATIONS NETWORKS: CONNECTING SOCIETIES AND MARKETS WITH IT 1, 13-14 (Brigitte Preissl & Jürgen Muller eds., 2006); J. Scott Marcus, *The Potential Relevance to the United States of the European Union's Newly Adopted Regulatory Framework for Telecommunications*, in RETHINKING RIGHTS AND REGULATIONS (Lori Cranor & Steven Wildman eds., 2003).

82. See *id.*

83. Directive 2002/21/EC, *supra* note 78, at arts. 5 & 6.

84. See generally William H. Melody, *Moving Beyond Liberalisation: Stumbling Towards a New European ICT Policy Framework*, 15 INFO. 25 (2013) (discussing more recent regulatory developments in European telecommunications framework).

85. Digital Age Communications Act, *supra* note 79, at § 2(10) (defining specific type of unfair practice involving denial of interconnection).

flowing from market power.<sup>86</sup> But DACA also included an interconnection requirement that did not quite require an antitrust showing: rather, it limited the agency to interconnection orders in circumstances in which it could find "with respect to interconnection, practices that pose a substantial and non-transitory risk to consumer welfare by materially and substantially impeding the interconnection of public communications facilities and services in circumstances in which the [FCC] determines that marketplace competition is not sufficient adequately to protect consumer welfare."<sup>87</sup>

### III. TENTATIVE STEPS FORWARD

Internet service—as provided and, more importantly, as experienced—involves interconnection. An interconnected Internet generates economic and social benefits, and for many regulation-minded folks, that creates a sufficient basis for interconnection regulation. The case I made in 2002 was somewhat more elaborate, relying on economic arguments—the possible exclusionary strategies created by network effects, fed by oligopoly concerns—and noneconomic arguments of the benefits of interconnectivity.<sup>88</sup> What we have seen in the more than ten years since, however, is a very well-functioning market, with relatively few true interconnection disputes. The strategic concerns remain, and a few examples show that they are more than theory. Moreover, the macro-economic and social importance of the Internet has continued to grow unabated. A substantial portion of the economy lives online; other businesses cannot operate their physical businesses without Internet access. It is increasingly difficult to investigate and apply for jobs except online. Modern education, beginning in grade school, now frequently depends on Internet access.

A sector-specific interconnection requirement for Internet carriers seems justified, but the substantively appropriate requirement should specify three vectors: the scope of the requirement, the parties to whom it applies, and the remedies available for its enforcement.

#### *a. What An Interconnection Requirement Might Provide*

We can begin by saying that an interconnection requirement requires Internet carriers to interconnect and to accept and deliver traffic originating from other carriers, but perhaps the easiest starting point is to distinguish an interconnection requirement from its alternatives. For example, one can say that an interconnection requirement is more

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86. *Id.* at § 2(10)(A)(i).

87. *Id.*

88. *See* Speta, *supra* note 5.

regulatory—or more mandatory—than antitrust, but less so than an unbundling requirement or a broad nondiscrimination rule. That is not to say that interconnection is hermetically sealed from those other tests, for both competition issues and discrimination will probably be a part of many interconnection disputes. But interconnection can be distinguished from each of these other regimes—as already indirectly shown by the foregoing survey.

Antitrust occupies the least regulatory end of the spectrum, due to its substantive requirements, its applying to all industries generally, and its institutional features requiring private litigation. An interconnection requirement differs from an antitrust rule because it does not require proof of anticompetitive foreclosure as a predicate to its development or enforcement. Carriers must interconnect, or provide for interconnection. In the 1996 Act, the requirement is phrased in terms of interconnection "directly or indirectly" meaning that a carrier need not build physical interconnection points to all requesting carriers.<sup>89</sup> I would propose to maintain this requirement, at least from a remedial perspective, and remit challenges to denials of direct interconnection—when indirect connections were maintained—to the realm of nondiscrimination challenges.

At the most regulatory end of the spectrum is unbundling rules, where carriers are required to wholesale their services or their capacity to others who would then offer their own retail services entirely or partially over the infrastructure of the regulated carrier.<sup>90</sup> In fact, I wrote the 2002 article as a response to the "cable open access" movement, which proposed that wholesaling or unbundling rules be applied in the Internet access space,<sup>91</sup> and the point was to show that an interconnection requirement could maintain much of the "open" nature of the Internet without the much more heavy-handed aspects of unbundling regulation. Unbundling regulation—which includes wholesaling regulation—requires regulatory price-setting. There is simply no alternative. And, where the third-party business model is based on pure wholesaling or uses unbundled elements as a substantial fraction of its inputs, then the amount of retail competition—and the benefits thereof, such as through lower prices—will be significantly due to the vigor of price regulation

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89. Telecommunications Act of 1996, *supra* note 50, at § 251(a)(1).

90. See *AT&T Corp. U.S. v. Iowa Utils. Bd.*, 525 U.S. 366, 380-82 (1999). I recognize that the 1996 Act draws a distinction between wholesaling and unbundling, although that distinction was lost when the Supreme Court approved the FCC's short-lived rules permitting the assemblage of unbundled network elements into a complete retail offering. See *id.* For these purposes, the difference can be elided.

91. See, e.g., Mark A. Lemley & Lawrence Lessig, *Open Access to Cable Modems*, 22 WHITTIER L. REV. 3 (2000); Mark A. Lemley & Lawrence Lessig, *End of End-to-End: Preserving the Architecture of the Internet in the Broadband Era*, 48 U.C.L.A. L. REV. 925 (2001).

and not due to the entry of additional parties.<sup>92</sup>

In the middle, and most similar to an interconnection requirement, is a nondiscrimination rule such as those advanced by network neutrality advocates. Kevin Werbach has argued that an interconnection rule is different from a nondiscrimination rule,<sup>93</sup> but it is difficult to see how to completely remove the overlap. Just as with an unbundling rule, interconnection does not happen in a vacuum as the parties must negotiate the terms of the interconnection and some of those terms involve the cost of completing the interconnection (at a minimum, the cost of constructing facilities to a meet point). Moreover, even if one takes the view of the 1996 Act, that interconnection is only a "physical" requirement, that will not meet the needs of interconnection in the Internet era, for most of the action is on the exchange of data and the pricing and quality of service agreements that the parties exchanging traffic reach.<sup>94</sup> Sprint and Cogent did not have an issue with the physical connection of their networks; the issue was price, settlement-free peering versus paid transit. Level 3 and Comcast are not having a dispute over the actual delivery of Netflix traffic—again, the question is compensation. Even the examples which Werbach uses to try to demonstrate the difference between interconnection and nondiscrimination seem to cross the line into claims of unequal treatment.<sup>95</sup>

I do not think that one can avoid the issues of nondiscrimination that surround an interconnection requirement, but I do think that one can apply a different standard based on the nature of the claim—that is, whether the claim is of a denial of any interconnection or whether it is a claim of discriminatory interconnection. I return to this question just below in discussing remedies, but briefly I would treat a denial of interconnection—direct or indirect—as akin to a *per se* violation, justifying regulatory intervention, while a claim that interconnection was provided on a discriminatory basis would require proof that the terms of the denial were anticompetitive.

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92. Entry can result in competitive benefits as to those parts of the service not provided by the incumbents. The 1996 Act's pure wholesaling rules contemplated competitive provision of customer service and billing, and new entrants might provide those services more cheaply. Additionally, entrants who provide services or infrastructure in addition to those leased from incumbents can provide innovative services. The point is not to deny the possibility of some benefits from wholesaling or unbundling, but to note the central role of price regulation and the frequent confusion of multiple retailers with competitive markets.

93. See Werbach, *supra* note 5, at 1241-42.

94. 47 U.S.C. § 201(a).

95. See Werbach, *supra* note 5, at 1294-95.

*b. Who Must Provide Interconnection?*

Interconnection requirements should apply to all Internet carriers, which should be defined as companies offering Internet transport service to the public. This definition mirrors the 1996 Act's interconnection requirement, without falling into the trap of whether Internet providers are providing "telecommunications services." "Internet carriers" would encompass companies offering retail services to consumers, such as access providers, as well as companies offering carriage to businesses, websites, and other carriers.<sup>96</sup> As under the Communications Act's definition of "common carriage," which defines the scope of the Act's duties, purely private enterprises—businesses running private networks for example—would be excluded. But it is also clear that offering service to the public need not be the whole public.<sup>97</sup> Thus, a CDN that offered transport to certain types of content providers would be an Internet carrier, even if it did not offer such services to consumers or even to businesses generally.<sup>98</sup>

This definition does not include companies solely offering applications, services, or content, or even to these higher-layer offerings by companies that also offer transport. In this regard, my proposal in 2002 to apply an interconnection requirement to the names-and-presence database of instant messaging seems at this distance to have been wrong.<sup>99</sup> The question of whether the Internet will have a universal addressing space for individuals remains an interesting and difficult question, but interoperable instant messaging simply has not been the competitive issue once imagined. I can only take comfort in saying that not only I got it wrong.

*c. What Are The Remedies In Interconnection Disputes*

As suggested above, I think that the interconnection requirement ought to have a bifurcated remedial scheme: one that imports different substantive requirements, and one that helps separate interconnection disputes from nondiscrimination disputes.

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96. An "Internet transport service" is not meant to limit the requirement to networks that provide IP-based transport services, for (it is part of the point of the IP) that the networks might themselves use myriad transport technologies internally. However, the point is that a network is offering transport in service of what we colloquially understand to be Internet service or Internet traffic.

97. *See Sw. Bell Tel. Co. v. Fed. Comm'n Comm'n*, 19 F.3d 1475, 1480 (D.C. Cir. 1994).

98. An interconnection requirement would not obligate a CDN (or any Internet carrier) to redefine its customer base. The interconnection requirement is not the duty to serve the entire public, which was traditionally the first duty of common carriers. *See* 47 U.S.C. § 201(a) (describing a duty to "furnish communications services upon request").

99. *See Speta, supra* note 5, at 235-38.

First, an outright denial of direct or indirect interconnection ought to be redressable on its own terms—that is, the denial of direct or indirect interconnection would violate the law without any additional proof—such as proof of foreclosure. The FCC would have the authority to order interconnection if traffic were not being delivered, this interconnection requirement being about traffic interconnection and not just physical meetups. And so a party seeking an interconnection order from the FCC would have to prove that a carrier was not delivering relevant traffic—that there was neither direct nor indirect interconnection.<sup>100</sup> This awkward phrasing—"not delivering relevant traffic"—is meant to capture the underlying notion of universal Internet connectivity. A CDN would not be able to protest an interconnection denial on the ground that "its" traffic—that is the traffic of the CDN—was not being delivered, if the CDN's traffic or its customers' traffic was accessible indirectly through transit agreements. The rule as stated is designed to reach cases such as the Sprint/Cogent dispute, where access to content and customers was lost, and in such cases the rule would empower the FCC to order a standstill—a nontermination agreement. There might, as in the case of preliminary injunctions in civil litigation, be a requirement that the party seeking an interconnection order post an appropriate security to cover any charges that should be applied to the connection of traffic. In fact, in at least some circumstances, the FCC applied this sort of interim solution in the telephone era, by ordering a local telephone company to interconnect with MCI for MCI's offering of Execunet service, subject to an interim compensation structure.<sup>101</sup>

In service of this requirement, the FCC should adopt rules that require carriers to provide adequate notice to counterparties of the termination of existing interconnection arrangements—notice adequate to either find alternative commercial arrangements or to seek an interconnection order from the agency. Most current peering and transit agreements appear to be relatively short term, requiring by their terms only thirty days' notice. That is some indication that the market believes that alternatives can be sought relatively quickly, and any FCC rules would hopefully not need to be significantly longer.

Second, denials of interconnection that do not involve the outright nondelivery of traffic would be dealt with under a nondiscrimination rubric, and this nondiscrimination obligation would require a showing that the discrimination was anticompetitive, in the sense that it injured consumers through foreclosure of competition. This is different from

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100. To be absolutely clear, this rule would not be violated by a refusal to provide direct interconnection if the carrier were willing to indirectly exchange traffic, for example through a transit arrangement from a third party.

101. See generally *Lincoln Tel. & Tel. Co. v. Fed. Comm'n Comm'n*, 659 F.2d 1092 (D.C. Cir. 1981) (upholding the FCC's actions).

pure network neutrality, because network neutrality treats discrimination as the relevant legal standard, not foreclosure. This second interconnection tier would cover disputes such as the Level 3/Comcast dispute and similar disputes between CDNs and access providers.<sup>102</sup> In such circumstances, the essence of the dispute is about the terms of the interconnection agreement—or the terms of traffic delivery—and not about whether two parties will be able to reach each other on the Internet.

To be sure, the line suggested above is not necessarily clean. A CDN could conceivably attempt to place itself in the first category by securing exclusive carriage agreements from content and applications providers and then denying indirect interconnections to access providers. Some economics suggests that the CDN might, by assembling a portfolio of content providers, create the opportunity for greater power in the market.<sup>103</sup> Similarly, one could object to the hypothetical order in the Sprint/Cogent dispute on the grounds that all concerned could have sought different traffic arrangements that did not require a direct connection between Sprint and Cogent at all. But if the real ambit of the above is to slow down terminations of traffic in situations in which commercial negotiations reach a boiling point, that is more than we have in place now, and probably resolves most of what needs government resolution.

#### CONCLUSION

Does the foregoing walk too far away from the common carrier requirements that proved so valuable before the Internet era? For two reasons, I suggest that it does not. First, interconnection preserves the essential universality of the Internet, which is its most valuable characteristic, and prevents the most damaging strategic behavior—the termination of connections that counterparties have relied upon and that customers need to experience true Internet service. Even if interconnection does not necessarily include a full-blown nondiscrimination requirement, it does work.

Second, communications law simply has never included a full-blown nondiscrimination requirement. Even the text of the 1934 Act outlaws only "unreasonable" discrimination, which, if it did not necessarily mirror competition law concepts, imported a more fulsome public interest requirement.<sup>104</sup> From the ICA through the Communications Act, regulators often mandated discrimination, to assist with universal service, to give smaller carriers an advantage against

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102. See CLARK ET AL. *supra* note 7.

103. See Yanos Bakos & Erik Brynjolfsson, *Bundling Information Goods: Pricing, Profits, and Efficiency*, 45 MGMT. SCI. 1613 (1999).

104. See 47 U.S.C. § 202(a).

larger companies, or simply to cover the costs of the network through value-pricing.<sup>105</sup> As competition developed, the nondiscrimination requirement was increasingly a dead letter, through moves such as, first, contract tariffs and, later, detariffing. We are not at the point that undoing that evolution seems necessary. Indeed, we are seeking a way to preserve against strategic behavior the most important part of the Internet ecosystem while limiting the scope of unnecessary government intervention. This backup interconnection rule is an attempt to walk this fine line.

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105. See e.g., James B. Speta, *Supervising Discrimination: Reflections of the Interstate Commerce Act in the Broadband Debate*, 95 MARQ. L. REV. 1195 (2012).