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2016]

TRUCKS, TRAINS, AND TRANSFORMATION: NET NEUTRALITY  
LESSONS FROM THE FIRST CYBERLAW SYMPOSIUM\*

MICHAEL RISCH\*\* & CHRISTIE L. LAROCHELLE\*\*\*

“The illusion that we understand the past fosters overconfidence in our ability to predict the future.”<sup>1</sup>  
- Daniel Kahneman

IN 1992, three years before the University of Chicago symposium that made the “Law of the Horse” famous, Villanova Law School held what was likely the first “cyberlaw” symposium.<sup>2</sup> One of the questions underlying the conference was “Who has a duty to provide access to communications channels and computing facilities, and who owns the corresponding rights to access?”<sup>3</sup> At that conference, David Johnson and his then-student co-author, Kevin Marks, wrote about a basic question that still plagues us: what duty should providers carrying network traffic have to deliver that traffic?<sup>4</sup> This was an early foray into the issue, before the catchy moniker, “net neutrality,” was a glimmer in anyone’s eye. The article was published a few years before Johnson co-authored the most-cited cyberlaw article ever and more than twenty years before net neutrality would become perhaps the most pressing Internet law question of our time.<sup>5</sup>

Johnson’s position today appears, at least on the surface, to be in stark contrast to his views in 1992. He could not have been clearer in his symposium paper: “[W]e argue that electronic data communications should for

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1. DANIEL KAHNEMAN, *THINKING, FAST & SLOW* 218 (2011).

2. See generally Frank H. Easterbrook, *Cyberspace and the Law of the Horse*, 1996 U. CHI. LEGAL F. 207 (1996); Symposium, *The Congress, the Courts, and Computer Based Communications Networks: Answering Questions About Access and Control*, 38 VILL. L. REV. 319 (1993). The symposium was held November 7, 1992. Henry “Hank” Perritt, then a professor at Villanova, had attended a conference on the Internet at Harvard’s Kennedy School and sensed that legal issues would be important as the Internet became commercialized. See E-mail from Henry H. Perritt, Jr., to Michael Risch (July 6, 2014, 21:51 EST) (on file with author).

3. See *id.* at 322.

4. See generally David R. Johnson & Kevin A. Marks, *Mapping Electronic Data Communications onto Existing Legal Metaphors: Should We Let Our Conscience (and Our Contracts) Be Our Guide?*, 38 VILL. L. REV. 487 (1993).

5. See generally David R. Johnson & David Post, *Law and Borders—The Rise of Law in Cyberspace*, 48 STAN. L. REV. 1367 (1995). Both HeinOnline and Westlaw Next show nearly 700 citations of the article.

now be ruled by contracts, not governed by extraneously imposed regulations.”<sup>6</sup> But today, he has become at once a defender of network neutrality—a regulatory principle that carriers must deliver all traffic in a non-discriminatory manner—even while he still argues for contract-based governance of online interactions in other venues.<sup>7</sup> Here, we explore reasons for this contrast.

Rather than finding that Johnson simply changed his mind, we find that the original essay was written for a different time and different world of network connectivity. This launched the essay off-kilter: where Johnson and Marks analogized networks to the trucking industry, they probably should have considered railroads instead. Even so—and of more importance—the authors were careful enough to telegraph the limitations of their trucking analogy. We apply the original article’s caveats to today’s network providers to show how the assumptions of 1992<sup>8</sup> did not hold true, which changed the regulatory landscape.

This Essay proceeds in three parts. Part I introduces the Villanova Cyberlaw Symposium (though it wasn’t called that) and its varied participants and contributions. Part II jumps back to the future, discussing today’s network neutrality debate, as well as David Johnson’s views on that debate. With this recent history in mind, Part III examines how Johnson and Marks approached the issue more than twenty years ago and examines how the assumptions and arguments of their work might apply in today’s world.

#### I. THE VILLANOVA CYBERLAW SYMPOSIUM

In 1992, Villanova University School of Law held what may have been the first cyberlaw symposium.<sup>9</sup> The symposium included a variety of contributions from some of the brightest network-minded thinkers of the time. Hank Perritt, then a Villanova Law professor, organized and led the symposium, which was organized around three questions:

1. Does the First Amendment to the United States Constitution protect access to the channels practically necessary to get a message to its

6. Johnson & Marks, *supra* note 4, at 490.

7. See, e.g., David R. Johnson, *Democracy in Cyberspace: Self-Governing Netizens & A New, Global Form of Civic Virtue, Online*, in *THE NEXT DIGITAL DECADE: ESSAYS ON THE FUTURE OF THE INTERNET* 315, 317 (Berin Szoka & Adam Marcus eds., 2010) [hereinafter Johnson, *Democracy in Cyberspace*], available at <http://www.nyu.edu/projects/nissenbaum/papers/The-Next-Digital-Decade-Essays-on-the-Future-of-the-Internet.pdf> [<https://perma.cc/82HH-DM2X>] (noting governments may regulate access providers, but online social interactions should be governed by individuals); David R. Johnson, Susan P. Crawford & John G. Palfrey, Jr., *The Accountable Internet: Peer Production of Internet Governance*, 9 VA. J.L. & TECH. 9, Summer 2004, at 1, 3–4 (noting government’s role in regulating aspects of Internet access while arguing for decentralized self-governance by Internet users).

8. Though the article was published in 1993, we refer to the presentation at the symposium in 1992 throughout.

9. See generally Symposium, *supra* note 2.

intended audience, and conversely, does the First Amendment entitle a channel owner to control what messages his channel will carry?

2. Who, among originators and intermediaries, is liable for harmful messages, like those injuring reputation, invading privacy, or infringing intellectual property rights?

3. Who has a duty to provide access to communications channels and computing facilities, and who owns the corresponding rights to access?<sup>10</sup>

Several of the contributors discussed issues that would soon become prominent in the debate over regulation of the Internet. John Stevens, for example, considered open access issues from an antitrust perspective.<sup>11</sup> Perritt looked at disputes related to denial of access.<sup>12</sup> While Perritt favored contract-based resolution of disputes related to access, he conceded the “possibility of bottlenecks,” situations where the party desiring access “has no realistic alternatives” and suggested that “the law must impose duties on the supplier with bottleneck power to provide access on reasonably equal terms.”<sup>13</sup>

David Johnson, by then a prominent lawyer, also participated in the symposium. At that time, he was the CEO of Counsel Connect—an online network offering services to lawyers and allowing them to communicate.<sup>14</sup> Johnson had been very active in online privacy issues and helped write the Electronic Communications Privacy Act of 1986.<sup>15</sup> Just a year after the symposium, Johnson became a director of the Electronic Frontier Foundation and ultimately served as the Foundation’s chairman.

As part of the symposium, Johnson co-authored an article with one of the law review students involved with the symposium, Kevin Marks. The article, called *Mapping Electronic Data Communications onto Existing Legal Metaphors: Should We Let Our Conscience (and Our Contracts) Be Our Guide?*, was published in the symposium issue of the *Villanova Law Review*.<sup>16</sup> In the article, Johnson and Marks advocated for contract-based governance of transactions and interactions in cyberspace. They also suggested that employing any of the three metaphors discussed at the symposium—publisher, distributor, or common carrier—could be detrimental to the growth and development of electronic networks. The authors advocated strongly against government regulation and analogized electronic communications with the trucking industry, arguing that the same reasons for the

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10. *See id.* at 321–22.

11. *See* John M. Stevens, *Antitrust Law and Open Access to the NREN*, 38 VILL. L. REV. 571, 575 (1993).

12. *See generally* Henry H. Perritt, Jr., *Dispute Resolution in Electronic Network Communities*, 38 VILL. L. REV. 349 (1993).

13. *See id.* at 350, 350–51.

14. Counsel Connect quickly grew in popularity among network-savvy lawyers. One of the authors (Michael Risch) worked at a firm that used the system in 1993.

15. *See* David R. Johnson, *The Life of the Law Online*, 51 N.Y. L. SCH. REV. 957 (2006).

16. *See generally* Johnson & Marks, *supra* note 4.

trend in deregulation of that industry supported their argument that the government should take a hands-off policy toward the Internet: “Now, a similar call is being made for the regulation of the electronic data communications field. Officials, however, should examine the history of the trucking industry and its current trend toward deregulation closely before making this drastic choice. There is no need to make the same mistake twice.”<sup>17</sup>

## II. NETWORK NEUTRALITY TODAY

Regulation of network traffic continues to be a concern today. Broadband Internet service was first introduced in the 1990s, and the FCC initially took a hands-off approach to broadband regulation, concluding in 1999 that regulation would slow deployment of broadband technology.<sup>18</sup> Access to broadband Internet exploded over the next few years; where there were only a few households with broadband at the end of 1998, over eight million households had broadband access by the end of the year 2000.<sup>19</sup> The term network neutrality (or net neutrality for short) was coined by Tim Wu in 2002 to describe the notion that all network traffic should be treated equally—that is, neutrally.<sup>20</sup>

### A. *The Perceived Need for Government Regulation*

At least as early as 2002, cable Internet Service Providers (ISPs) were actively discriminating among different types of network traffic by implementing subscriber policies, such as prohibiting the use of virtual private networks (VPNs), prohibiting the hosting of file or network servers, and charging additional fees to access specific sites or to use certain services.<sup>21</sup>

17. *See id.* at 505–06 (footnote omitted).

18. *See* Jason Oxman, *The FCC and the Unregulation of the Internet* (Fed. Commc’ns Comm’n, OPP Working Paper No. 31, 1999), available at [https://transition.fcc.gov/Bureaus/OPP/working\\_papers/oppwp31.pdf](https://transition.fcc.gov/Bureaus/OPP/working_papers/oppwp31.pdf) [<https://perma.cc/H5VF-RPBA>].

19. *See* NAT’L RESEARCH COUNCIL, *THE INTERNET’S COMING OF AGE* 53 (2001).

20. *See* Tim Wu, *A Proposal for Network Neutrality* (June 2002), available at <http://www.timwu.org/OriginalNNProposal.pdf> [<https://perma.cc/W5YM-UZCH>]. Though Wu coined the term in 2002, the issues involved dated back to the first commercial uses of the Internet, as the Johnson and Marks article shows. *See* Tim Wu, *Network Neutrality, Broadband Discrimination*, 2 J. TELECOMM. & HIGH TECH. L. 141, 142 (2003) [hereinafter Wu, *Network Neutrality, Broadband Discrimination*] (“Proponents of open access see it as a structural remedy to guard against an erosion of the ‘neutrality’ of the network as between competing content and applications.”). Wu expressed his vision for network neutrality in terms of non-discrimination, arguing that “absent evidence of harm to the local network or the interests of other users, broadband carriers should not discriminate in how they treat traffic on their broadband network on the basis of inter-network criteria.” *Id.* at 168.

21. *See, e.g.*, Comments of the High Tech Broadband Coalition at 11–13, Appropriate Regulatory Treatment for Broadband Access to the Internet over Cable Facilities, CC Docket No. 96–95 (filed June 17, 2002), available at [https://web.archive.org/web/20021026024835/http://www.itic.org/policy/fcc\\_020618.pdf](https://web.archive.org/web/20021026024835/http://www.itic.org/policy/fcc_020618.pdf)

A sympathetic view of these policies might be that the providers adopted them as bandwidth control measures during a period of significant expansion of high bandwidth activities such as online gaming and video streaming. However, Wu and other supporters of government regulation to ensure net neutrality argued that ISP behavior in these first few years of broadband service availability indicated that self-regulation was unlikely to be effective.<sup>22</sup>

Despite the Federal Communication Commission's (FCC) initial decision not to regulate broadband Internet services, it continued to monitor developments and hear consumer complaints related to the ISPs' behavior. In 2005, the FCC adopted an Internet Policy Statement, which presented four principles related to preservation of the open Internet.<sup>23</sup> These principles appeared to target the very practices consumers were complaining about: "[C]onsumers are entitled to access the lawful Internet content of their choice. . . . run applications and use services of their choice . . . . connect their choice of legal devices that do not harm the network . . . [and] competition among network providers."<sup>24</sup> The Internet Policy Statement, however, was not a regulation, and ISPs continued to interfere, albeit more discreetly, with subscribers' access to certain sites and applications. For example, in 2007, the FCC received complaints alleging that Comcast had interfered with some of its customers' use of peer-to-peer networking applications.<sup>25</sup>

In 2009, the FCC proposed regulations embodying the principles of the Internet Policy Statement, along with nondiscrimination and transparency provisions.<sup>26</sup> These proposed regulations were divisive and garnered more than 100,000 comments.<sup>27</sup> Predictably, ISPs such as Verizon were strongly opposed to regulation, while application and streaming con-

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[<https://perma.cc/A8S3-9GFW>] (providing excerpts from cable ISP subscriber agreements).

22. See Wu, *Network Neutrality, Broadband Discrimination*, *supra* note 20, at 143; see also Mark A. Lemley & Lawrence Lessig, *The End of End-to-End: Preserving the Architecture of the Internet in the Broadband Era*, 48 *UCLA L. REV.* 925, 927–28 (2001) (discussing conditions imposed by cable broadband providers).

23. See *Appropriate Framework for Broadband Access to the Internet over Wireline Facilities*, Policy Statement, 20 *FCC Rcd.* 14,986, 14,987–88 (Aug. 5, 2005), available at <https://www.publicknowledge.org/pdf/FCC-05-151A1.pdf> [<https://perma.cc/FX2C-4HXP>].

24. See *id.*

25. See *Formal Complaint of Free Press & Pub. Knowledge Against Comcast Corp. for Secretly Degrading Peer-to-Peer Applications*, 23 *FCC Rcd.* 13,028, 13,032 (Aug. 20, 2008) (describing how Comcast sent spoofed data to terminate connections and requiring Comcast to develop and disclose new network management practices), *vacated*, 600 F.3d 642 (D.C. Cir. 2010).

26. See *Preserving the Open Internet, Broadband Industry Practices*, 74 *Fed. Reg.* 62,638 (Nov. 30, 2009) (codified at 47 C.F.R. pt. 8).

27. See *id.*; *Preserving the Open Internet*, 25 *FCC Rcd.* 17,905, 17,906 (Dec. 23, 2010), available at [https://apps.fcc.gov/edocs\\_public/attachmatch/FCC-10-201A1.pdf](https://apps.fcc.gov/edocs_public/attachmatch/FCC-10-201A1.pdf) [<https://perma.cc/CX2W-BRF6>], *vacated*, 740 F.3d 623 (D.C. Cir. 2014).

tent providers such as Skype and Netflix expressed support.<sup>28</sup> The service providers' primary opposition to the regulations was that regulation would decrease infrastructure investment and innovation.<sup>29</sup>

These regulations were adopted in final form in late 2011, essentially providing just three rules: transparency, no blocking, and no unreasonable discrimination.<sup>30</sup> Verizon successfully challenged the regulations, and the regulations were vacated in January 2014 on the basis that the FCC lacks the authority to regulate broadband providers because the Commission had previously classified broadband providers as information service providers, which are exempt from common carrier regulation.<sup>31</sup>

Following the *Verizon* decision, the FCC proposed new rules.<sup>32</sup> In an attempt to craft enforceable rules without reclassifying ISPs as common carriers, the FCC proposed "permit[ing] broadband providers to serve customers and carry traffic on an individually negotiated basis, 'without having to hold themselves out to serve all comers indiscriminately on the same or standardized terms,' so long as such conduct is commercially reasonable."<sup>33</sup> In other words, the rules would allow ISPs to prioritize content from content providers who pay more for a so-called fast lane.<sup>34</sup> The FCC received close to four million comments on this proposed rule. Many of these comments came from members of the public responding to reports in the news and other media outlets, including a John Oliver piece credited with generating as many as 45,000 comments in a single day.<sup>35</sup>

28. See Preserving the Open Internet, 25 FCC Rcd. at 17,961–84.

29. See, e.g., Comments of Comcast Corporation, Preserving the Open Internet Broadband Industry Practices, GN Docket No. 09-191 & WC Docket No. 07-52 (Jan. 14, 2010), available at <http://www.globalmediapolicy.net/sites/default/files/Notice%20of%20proposed%20rulemaking%20FCC-09-93A1.pdf> [<https://perma.cc/A6WH-PSAF>].

30. See *id.*; Preserving the Open Internet, 76 Fed. Reg. 59,192 (Sept. 23, 2011) (codified at 47 C.F.R. pts. 0, 8).

31. See *Verizon v. FCC*, 740 F.3d 623 (D.C. Cir. 2014).

32. See generally Protecting and Promoting the Open Internet, 79 Fed. Reg. 37,448 (proposed July 1, 2014) (codified at 47 C.F.R. pt. 8).

33. See *id.* at 37,464.

34. A deal between Netflix and Comcast for priority treatment received significant coverage in the news in 2014. See, e.g., Steven Musil, *Netflix Reaches Streaming Agreement with Comcast*, CNET (Feb. 23, 2014), <http://www.cnet.com/news/netflix-reaches-streaming-traffic-agreement-with-comcast> [<https://perma.cc/X78W-K8JH>]. Shortly after the previous rules were vacated, Netflix agreed to the deal in part in response to customers' complaints that Comcast was degrading their Netflix connections.

35. See Ben Brody, *How John Oliver Transformed the Net Neutrality Debate Once and for All*, BLOOMBERG (Feb. 26, 2015), <http://www.bloomberg.com/politics/articles/2015-02-26/how-john-oliver-transformed-the-net-neutrality-debate-once-and-for-all> [<https://perma.cc/83UH-Y2TB>]. In the fourteen-minute piece, which is linked in the article, Oliver not only explained the proposed rules, he urged viewers to comment on the proposed rules: "'Seize your moment, my lovely trolls,' Oliver implored at the segment's climax as music swelled. 'Turn on caps lock, and fly, my pretties!'" *Id.*

In response to this overwhelmingly negative public outcry over the proposed rules, the FCC rejected the “commercially reasonable” approach; in 2015, the FCC issued new rules reclassifying broadband providers as common carriers.<sup>36</sup> In addition to prohibiting blocking and throttling, the new rules prohibit “paid prioritization” of Internet traffic as well as unreasonable interference with a user’s choice of content.<sup>37</sup> A new court challenge to the regulations was mounted with the petitioner, United States Telecom Association, asking the court to find that the FCC did not have the authority to reclassify ISPs as common carriers and, even if the reclassification is permissible, the regulations are arbitrary and capricious.<sup>38</sup> While the Court of Appeals has rejected this challenge, this debate will continue for some time.

### B. *Johnson’s Current Position on Regulation*

Over the past two decades, Johnson has consistently argued for contract-based governance of online interactions.<sup>39</sup> In the early days of the Internet, Johnson opposed external regulation of individual users’ access rights, instead favoring contracts between users and sysops in which the sysops held the power to enforce any law of cyberspace.<sup>40</sup>

However, Johnson’s more recent writings seem to support at least some forms of government regulation. In 2012, he joined an amicus brief in support of the FCC’s position during the Verizon litigation challenging the Open Internet rules.<sup>41</sup> While at first glance this position seems to contradict his earlier views on contract-based governance, the two positions can be reconciled by considering the issue of access to the Internet as

36. See Protecting and Promoting the Open Internet, 80 Fed. Reg. 19,737 (Apr. 13, 2015) (codified at 47 C.F.R. pts. 1, 8, 20).

37. See *id.* at 19,847–48.

38. See generally Protective Petition for Review, U.S. Telecom Assoc. v. FCC, No. 15-1063 (2015), 2015 WL 1476449. The petition was denied. See U.S. Telecom Assoc. v. FCC, \_\_\_ F.3d \_\_\_ (D.C. Cir. 2016).

39. See generally Johnson & Marks, *supra* note 4.

40. See David R. Johnson, *Access Rights—All Power to the Sysop?*, ELEC. FRONTIER FOUND. (Jan. 12, 1994) [hereinafter Johnson, *Access Rights*], [https://w2.eff.org/Misc/Publications/David\\_Johnson/access\\_rights\\_johnson.article](https://w2.eff.org/Misc/Publications/David_Johnson/access_rights_johnson.article) [<https://perma.cc/CF84-6X7L>]. Johnson argued that no one really can or should have an absolute right to be a part of a community—not, at least, when there are a large number of alternative communities to choose from. We can hope that competition and diversity, fostered by the lack of any stronger external regulation of the exercise of arbitrary sysop judgments, will in fact create lots of different places and, therefore, that almost all of us will find somewhere to belong online. *Id.*

41. See, e.g., Brief Amicus Curiae of Internet Engineers and Technologists Urging That the FCC’s Order Be Affirmed, *Verizon v. FCC*, 740 F.3d 623 (D.C. Cir. 2014), available at [https://apps.fcc.gov/edocs\\_public/attachmatch/DOC-317408A1.pdf](https://apps.fcc.gov/edocs_public/attachmatch/DOC-317408A1.pdf) [<https://perma.cc/GP2U-FWP2>]; see also Johnson et al., *supra* note 7, at 3 (acknowledging “traditional sovereigns can and should play an important role in regulating many actions and actors that affect the Internet”). *But see id.* at 7 (arguing for netizens to “collectively hold those with whom we interact online accountable for their antisocial actions”).



separate and distinct from the issue of interactions between parties in cyberspace, as well as changes in how end users connect to the Internet.

It appears that Johnson now concedes that government regulation is appropriate in determining who can provide access to the Internet and what protocols will be used, and he even embraces the current common carrier rules.<sup>42</sup> However, when it comes to interactions in cyberspace, Johnson sees the Internet as “inherently democratic” and argues that “the ‘governance’ of the Internet is fundamentally a question about how we all constrain the manner in which we do whatever it is we do in groups online . . . .”<sup>43</sup> In other words, it is the social interactions online that should be subject to democratic self-governance, as with, for example, the terms of service we enter into with information-content providers such as Facebook.<sup>44</sup>

### III. DECONSTRUCTING A TWENTY-YEAR-OLD ARGUMENT

At first glance, the Johnson and Marks article seems to counsel directly against government regulation of network neutrality and especially against common carrier regulation. The article suggests that contracts should govern the relationship between ISPs and their users, so that users who want neutrality can ask for it and users who want preference for (or against) streaming video can ask for that. Fair enough—not everyone agrees with net neutrality as an organizing principle.<sup>45</sup> But the shocking part is that David Johnson now *supports* network neutrality regulations and especially common carrier. That is, Johnson now seems to favor the very thing he decries in his article. This is why the original article is so intriguing and the focus of this Essay. What changed between 1992 and now? Did Johnson change his mind? Did the world change? Or was the article simply written using a different set of assumptions?

This Section deconstructs the Johnson and Marks article, seeking answers. First, it examines the article’s central metaphor and considers whether interstate trucking was the best analogy. Second, it considers the types of providers at the time. Third, it considers whether a better metaphor—railroads—would have been helpful.

#### A. *In Search of a Metaphor*

The article begins by arguing that cyberspace is like no other place and that metaphors should therefore be avoided. But then the article de-

42. See E-mail from David R. Johnson to Michael Risch (Oct. 19, 2015, 17:28 EST) (on file with authors).

43. Johnson, *Democracy in Cyberspace*, *supra* note 7, at 317.

44. See *id.* at 318. Johnson believes that “Netizens” have the power to “rise up together in protest when a site like Facebook changes its ‘terms of service’ and ‘privacy policy’ in ways we don’t like.” *Id.*

45. See, e.g., Letter from Babbette Boliek et al., Economists, to Tom Wheeler et al., Chairman & Comm’rs, FCC (Dec. 9, 2014), *available at* [http://www.gcbpp.org/files/economists\\_letter\\_FCC\\_12-9-14.pdf](http://www.gcbpp.org/files/economists_letter_FCC_12-9-14.pdf) [<https://perma.cc/XDQ6-V735>].

scribes a metaphor to show why no regulation is warranted. Stylistically, this leaves the article a bit wanting. A skeptical reader may already be discounting a metaphor given the relatively persuasive arguments against them earlier in the paper.

Or, readers who agreed with the metaphor and thought it apt are left wondering why the article discounted metaphors in the first place. What circumstances should not be analogized? We get some hint in the article—that certain sites should not be publishers or distributors of content created by their users. This, of course, is a precursor to our current rules that do exactly that—limit liability of websites for content posted by others.<sup>46</sup> But that doesn't mean the publisher or distributor analogy was inapt; it only means that we are unwilling to live with the logical consequences of it. Indeed, the article says as much about analogies—that we should care about results, not about how closely the fact patterns match: “In general, as noted, we should apply the available metaphors in light of overarching goals and principles of justice, while also keeping in mind the implications of selecting any given metaphor—the transaction costs of regulation and potential preservation of the virtues of private ordering.”<sup>47</sup>

The article discards the common carrier analogy for the same reasons: an undesirable policy outcome. In perhaps the most relevant but surprising pronouncement of the article, the authors suggest that networks should not be treated as common carriers. To do so would open them to rate regulation, and it may also cause new providers to not enter the market, thus limiting competition. These are the very same concerns leveled at common carrier regulation today.<sup>48</sup>

The pronouncement is surprising because it is contrary to Johnson's recent support for network neutrality. It is relevant because common carrier is now the FCC's preferred way to regulate network neutrality.<sup>49</sup> Part IV, below, considers some of the assumptions behind the rejection of the common carrier analogy and considers what Johnson and Marks might have written given today's landscape.

### B. *Shipping Data by Truck?*

This disconnect between criticism of metaphors on one hand and endorsement of a metaphor on the other is no matter in the end. The article presents a metaphor, and we must consider it on its own terms. The

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46. See 47 U.S.C. § 230 (2012).

47. See Johnson & Marks, *supra* note 4, at 497.

48. See Ajit Pai & Joshua Wright, *The Internet Isn't Broken. Obama Doesn't Need to "Fix" It.*, CHI. TRIB. (Feb. 18, 2015), <http://www.chicagotribune.com/news/opinion/commentary/ct-internet-regulations-fcc-ftc-obama-broadband-perspec-0219-20150218-story.html> [<https://perma.cc/DLB5-R2U6>].

49. See Jon Brodtkin, *FCC Votes for Net Neutrality, a Ban on Paid Fast Lanes, and Title II*, ARS TECHNICA (Feb. 26, 2015), <http://arstechnica.com/business/2015/02/fcc-votes-for-net-neutrality-a-ban-on-paid-fast-lanes-and-title-ii/> [<https://perma.cc/S8H6-CY72>].

article posits that, rather than viewing networks as electronic publishers, they should be considered “shippers of information.” Thus, networks are like interstate freight carriage.

The article then describes the history of regulation of the trucking industry. Trucking grew substantially between 1914 and 1930 because of free entry into the market.<sup>50</sup> But pressure for federal regulation grew. States could not regulate due to the dormant Commerce Clause, but many trucks had entered the market that were unfunded and otherwise unreliable, which was harming the market.

Congress stepped in to regulate in 1935. It established two types of carriers: common and contract. Common carriers in trucking were like any other common carrier of the time. Their shipping rates, called tariffs, were heavily regulated, and common carriers were required to accept shipment from anyone willing to pay the price. But entry into the market was limited in order to increase rates. Contract carriers, on the other hand, could set their own rates by contract, but had to limit the number of shippers they contracted with, lest they grow too large and become common carriers. There were many more contract carriers, and it was a competitive market.

Trucks were deregulated in large part in 1980, allowing easier entry into common carrier status. More and more trucks were granted common carrier status (and had been since the 1970s). Further, contract carriers could serve as many customers as they wanted. As this deregulation occurred, the article posits that the end of common carriage was near. And it was. Virtually all regulation of entry ceased in 1995.<sup>51</sup>

The article uses this analogy to make its anti-regulation, anti-common carrier point. In a world with competition, the move to regulation was met with limited entry, higher rates, and eventual deregulation in favor of more entry. Given this experience with trucking, why would the common carrier model be an appropriate way to haul network data? Instead, contracts are the solution—the parties can bargain for what they want and use whatever data shipment means they desire.

This insight, it seems, is the heart of the article. Government regulation will only serve to limit providers and raise rates, and contracts better allow users to seek out the providers they want—low cost providers that block significant traffic versus high cost providers that do not.<sup>52</sup> Reliance

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50. See Johnson & Marks, *supra* note 4, at 498.

51. See VEIKO PAUL PARMING, TRANSPORTATION @ MIT, COMPETITION AND PRODUCTIVITY IN THE US TRUCKING INDUSTRY SINCE DEREGULATION 3–4 (2013), available at [http://transportation.mit.edu/sites/default/files/documents/MIT\\_Trucking\\_Productivity\\_Report\\_2013.pdf](http://transportation.mit.edu/sites/default/files/documents/MIT_Trucking_Productivity_Report_2013.pdf) [<https://perma.cc/BQ95-9JVV>].

52. Not everyone agrees with these types of choices, even if they are transparent. AT&T has offered reduced rates to users who allow it to gather private information and higher rates to those who use the network without such data-gathering. See Stacey Higginbotham, *AT&T's GigaPower Plans Turn Privacy into a Luxury That Few Would Choose*, GIGOAM (May 13, 2014), <https://gigaom.com/2014/05/13/atts-gigapower-plans-turn-privacy-into-a-luxury-that-few-would-choose/>

on contract in a perfect world is a reasonable pursuit.<sup>53</sup> The question, of course, is the world's current level of perfection. Are we facing the trucking industry of 1935, of 1980, or an entirely different metaphor?

### C. *From Sysops to ISPs*

The trucking analogy did not end in 1992, however. Deregulation was just beginning at that time, and nearly twenty-five years have passed since Johnson and Marks wrote their article. It turns out that the abandonment of common carrier regulations had mixed results. There was, to be sure, significant new entry. But that new entry was composed almost entirely of small operations that needed little fixed investment. Larger trucking firms that required more investment grew in size, but through substantial consolidation.<sup>54</sup>

Thus, it makes sense to consider how the world has changed since 1992. The trucking analogy that worked at the time might be better suited to a world in which there are many small ISPs that require little infrastructure investment. Indeed, that turns out to be the case. Network access envisioned by Johnson and Marks was filled with smaller, indirect access providers, including dial-up ISPs and bulletin board systems. Their system operators, more colloquially called sysops, exerted complete control over access to their network hardware:

If we are to have law in cyberspace, surely the sysops (the System Operators—those who control the on/off switch or exercise wizardly powers to grant or revoke passwords) will be the ones who enforce it. Whatever rules exist in any particular online venue, the easiest means of enforcement will be banishment of the offending user, seizure of the unlawful file, zapping of the offending message. Sysops are the Sheriffs of the modern electronic communications domain.

Sensing the power of sysops, and uneasy about it, some mere users have raised the question whether, under some circumstances at least, they might have something in the nature of a right to access their favorite online area. Not a privilege, granted by the almighty sysop. A right. Not even a contract right, defeatable by the small print reservation of power. A right to be treated reasonably. And they have some good examples to put forward in defense of such a right. Surely, they note, a sysop should not be entitled to disconnect someone who has come to depend

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[<https://perma.cc/8RF9-LX77>]. While the Johnson and Marks article might approve of this arrangement as a triumph of contractual freedom, others do not. *See id.*

53. *See, e.g.,* Michael Risch, *Virtual Rule of Law*, 112 W. VA. L. REV. 1, 52 (2009) (arguing that given alternatives, service contracts have potential to provide most stable set of rules to users of virtual worlds).

54. *See* PARMING, *supra* note 51, at 6–9.

heavily on a particular e-mail address, or who has established a commercially or personally valuable presence in a particular on-line discussion group, on the basis of nothing more than a whim or merely in response to some trivial offense.<sup>55</sup>

A broad reading of this quote might imply a broad meaning of sysop, but the same essay makes narrowing assumptions:

Then again, no one really can or should have an absolute right to be a part of a community—not, at least, when there are a large number of alternative communities to choose from. We can hope that competition and diversity, fostered by the lack of any stronger external regulation of the exercise of arbitrary sysop judgments, will in fact create lots of different places and, therefore, that almost all of us will find somewhere to belong online.<sup>56</sup>

Johnson's essay continues the no-regulation theme of the Johnson and Marks article and makes clear that—in an unregulated environment—users will find a wealth of network connectivity options and will have the ability to reject those with which they disagree. Thus, Johnson and Marks posit that sysops are the trucks that send data over federally funded roads: "The present NSFNET and the proposed NREN provide users with the opportunity to transport large amounts of electronic information quickly and easily."<sup>57</sup> The term *Internet Service Provider* does not appear in their paper. The term *Internet* appears in the paper, twice, in all caps.<sup>58</sup> Neither the common carrier nor the trucking metaphor was applied to the article's discussion of direct access to the Internet or NREN, as opposed to smaller sysop communities.<sup>59</sup>

In other words, this paper was written at the birth of the commercialization of the Internet as we know it and the providers—ISPs—who bring connectivity directly to users. Since that time there has been a rise and fall in competition in the ISP market. Content-based providers like BBS systems grew—indeed grew very large, like America Online, which at one point was so large that it purchased Time Warner.<sup>60</sup>

55. Johnson, *Access Rights*, *supra* note 40.

56. *Id.*

57. See Johnson & Marks, *supra* note 4, at 504–05 (footnotes omitted).

58. See *id.*; see also Adam Nathaniel Peck, *Stop Capitalizing the Word Internet*, NEW REPUBLIC (July 28, 2015), <http://www.newrepublic.com/article/122384/stop-capitalizing-word-internet> [<https://perma.cc/EY26-9VUY>]. But see David Post, *It's "the Internet." Please.*, VOLOKH CONSPIRACY (Aug. 11, 2011, 10:30 AM), <http://volokh.com/2011/08/11/its-the-internet-please/> [<https://perma.cc/JRZ2-MVMN>].

59. See *Research and Education Networking FAQ—General*, GEANT, <https://www.terena.org/activities/development-support/r-e-faq/general.html> [<https://perma.cc/6TYQ-4YLR>] (last visited Apr. 2, 2016).

60. See Jim Hu, *AOL to Buy Time Warner in Historic Merger*, CNET (Aug. 10, 2005), <http://www.cnet.com/news/aol-to-buy-time-warner-in-historic-merger/> [<https://perma.cc/9P2N-7KQV>].

Those services eventually waned as users connected directly to the Internet by dial-up modem rather than relying on an intermediary information provider. Competition grew here, too, as anyone with a bank of phones and a high-speed connection to the primary data channels, the backbone, could offer connectivity.<sup>61</sup>

But things changed as speeds grew. Modems only go so fast, and they were not fast enough for the growing needs of users who demanded information delivery from remote servers. As such, providers began to offer higher speeds. But as these speeds grew, the number of providers shrank. At some point, one had to either connect using phone company resources, or pay a service that had laid its own cabling capable of high speeds.<sup>62</sup>

And while providers did and do exist for such connections to this day, the number of companies willing to connect sufficient cabling to homes—the so-called last mile—grew few and far between.<sup>63</sup> Most markets have no more than two companies offering such service, and many only have one or even none in rural areas even though bandwidth usage continues to grow. This is at best oligopolistic competition, and at worst a natural monopoly with high entrance costs.<sup>64</sup>

This evolution was not only natural, it was entirely predictable. In fact, one of the authors at Villanova's symposium in 1992 predicted this very outcome: "First, high entry barriers will exist in the NREN. These barriers will cause the local segments of the network to develop as natural monopolies. This will prevent information providers from integrating into, and competing in, the carrier sector."<sup>65</sup>

In the meantime, more and more backbone companies were established to carry traffic from place to place. Providers offering connectivity to those users had to connect to the backbone providers somehow, whether directly or through third parties. But the key point is that the users did not contract with the backbone providers. In many cases, they do not even contract with the companies that contract with backbone

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61. See *Internet Service Provider (ISP)*, GALE ENCYCLOPEDIA E-COMM. (2002), available at [http://www.encyclopedia.com/topic/Internet\\_service\\_provider.aspx](http://www.encyclopedia.com/topic/Internet_service_provider.aspx) [<https://perma.cc/F6QE-NZA2>] (describing 160 Internet service providers in 1995 growing to more than 7000 in 2001).

62. See Craig Labovitz, Internet Traffic and Content Consolidation: Talk at the Seventy-Seventh Internet Engineering Task Force Meeting 6, 8, 9 (Mar. 25, 2010), outline available at <https://www.ietf.org/proceedings/77/slides/plenary4.pdf> [<https://perma.cc/K3PS-L96K>].

63. See Berin Szoka, Matthew Starr & John Henke, *Don't Blame Big Cable. It's Local Governments That Choke Broadband Competition*, WIRED (July 16, 2013), <http://www.wired.com/2013/07/we-need-to-stop-focusing-on-just-cable-companies-and-blame-local-government-for-dismal-broadband-competition/> [<https://perma.cc/R8ZS-4JX9>] (describing high costs of bringing high speed cable to homes).

64. See Gerald R. Faulhaber & Christiaan Hogendorn, *The Market Structure of Broadband Telecommunications*, 48 J. INDUS. ECON. 305 (2000). Wireless networks may expand competition in the future as wireless speed and bandwidth improve.

65. Stevens, *supra* note 11, at 575.

providers. Their only contract is with the end-point (or edge) ISP that provides last-mile access.<sup>66</sup>

There are a few complications. As noted above, due to consolidation some edge providers are *also* providers of other services, like telephone and television. Furthermore, users might actually want to contract with their providers to limit delivery of certain types of data, just as Johnson and Marks predicted. For example, they might want spam filtering. Or users who do not use streaming video may want a provider that blocks or slows streaming video so that other communications are delivered more quickly. Indeed, it may even be that users who *do* use streaming video would still prefer that such data not crowd telephone call data packets that make voice over IP phone calls choppy.

#### D. *Changing Assumptions and Changing Analogies*

Consolidation and growth of ISPs shows that the trucking analogy is a victim of its time. Trucks were regulated because there was so much entry that profits were driven below zero. It is unclear that this was true of network access in 1992, but it is surely not true now. The truck metaphor is based on a mode of connectivity that no longer applies, as this quote from the article makes clear: “However, there are those who advocate governmental regulation to require access to data communications systems . . . .”<sup>67</sup> Today, that phrase would be, “millions of people advocate governmental regulation to require access.”<sup>68</sup> Even the trucking analogy shows that entry is not uniform. Though deregulation encouraged more entry, it did not encourage entry into services requiring significant fixed investment, and large companies that required such investment consolidated to grow larger and restrict competition.

In a perfect world, users could pick between ten broadband ISPs and decide whether service is sufficient. Streaming video users might prefer the streaming fast lane. Non-streaming users might prefer streaming blockers. Bulletin board operators might want to limit who could access the network, and users might also want that. Their contracts would govern, and attempts to regulate those contracts might raise prices.

The assumption of perfect—or even decent, or maybe even *some*—competition goes beyond simply choice of contract terms; it assumes transparency in contract terms and performance. Imagine if the trucking law allowed the carrier to put every third parcel on a later arriving truck, but the shipper didn’t know which trucker’s parcels would arrive late and wouldn’t know of the delay until it had already signed a long-term contract

66. See Labovitz, *supra* note 62; see also I. Robert Chiang & Jhih-Hua Jhang-Li, *Delivery Consolidation and Service Competition Among Internet Service Providers*, 31 J. MGMT. INFO. SYS. 254, 260–61 (2014).

67. See Johnson & Marks, *supra* note 4, at 497.

68. See Kevin Werbach, *No Dialtone: The End of the Public Switched Telephone Network*, 66 FED. COMM. L.J. 203, 258 (2013) (arguing that ISPs be subject to universal service obligations in same way that public switch telephone networks were).

for a regular service. This is the reality of throttled bandwidth, and it is unclear that many shippers would agree to it beforehand if they knew and had a choice.<sup>69</sup>

But in a world with little or no competition, the analogy looks different because even if there is transparency, there is no choice. Perhaps it is time to reconsider the telephone metaphor. In fact, this is a live issue, because telephone service provided over the Internet does not function like standard, old-fashioned telephone service. This leads to a number of concerns, such as lack of traditional telephone line functionality like faxing and burglar alarm monitoring.<sup>70</sup>

It seems reasonable to think that plain old telephone service is a good metaphor for telephone over the Internet. Perhaps, then, telephone service should be a metaphor for Internet service in general. After all, both are about carrying signal from one location to another and about the wires that do so. There may be downsides to this analogy, of course, but the natural monopoly on telephones seems like a better comparison for last-mile Internet service—at least in cases where there appears to be a natural monopoly.<sup>71</sup>

Further, there may be an even better analogy: railroad access. We are not the first to recognize this, of course,<sup>72</sup> though most discussion focuses on how regulation of railroads has led to our current regulation of communications.<sup>73</sup> We focus here more on the underlying metaphor than the regulatory lineage, partly because this is an essay about metaphors and partly because the regulatory rules are somewhat different.

There are many striking parallels between the railroads of the late 1800s and the broadband providers of today. For example, as with broad-

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69. See Formal Complaint of Free Press & Pub. Knowledge Against Comcast Corp. for Secretly Degrading Peer-to-Peer Applications, 23 FCC Rcd. 13,028, 13,032 (Aug. 20, 2008) (finding that lack of transparency about blocked packets is part of wrongful activity), *vacated*, 600 F.3d 642 (D.C. Cir. 2010).

70. See Werbach, *supra* note 68, at 216.

71. See Gerald R. Faulhaber, *No Dialtone: Second Thoughts on the PSTN's Demise*, 66 FED. COMM. L.J. 525, 535 (2013) (arguing net neutrality regulation leads to rent seeking).

72. See, e.g., Bob Frankston, *VON Visions: a fine way to run a railroad but not an internet*, VON MAGAZINE (Sept. 7, 2007), [http://www.frankston.com/public/?name=VONRailroads\[https://perma.cc/FKH6-W68H\]](http://www.frankston.com/public/?name=VONRailroads[https://perma.cc/FKH6-W68H]).

73. Indeed, Professor Tim Wu notes in his comment on the proposed rules in 2010 that the Communications Act, which provides the authority for regulating telephone, telegraph, and radio communications, was based on the Interstate Commerce Act, which provided the authority for regulating the railroads. Comments of Professor Tim Wu, *Preserving the Open Internet Broadband Industry Practices*, GN Docket No. 09-191 & WC Docket No. 07-52, (Jan. 14, 2010), *available at* [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1555917](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1555917) [<https://perma.cc/6U4Y-X84R>]; see also, e.g., James B. Speta, *Supervising Discrimination: Reflections on the Interstate Commerce Act in the Broadband Debate*, 95 MARQ. L. REV. 1195 (2011); Daniel F. Spulber & Christopher S. Yoo, *Toward a Unified Theory of Access to Local Telephone Systems*, 61 FED. COMM. L.J. 43 (2008); Christopher S. Yoo, *Is There a Role for Common Carriage in an Internet-Based World?*, 51 Hous. L. REV. 545 (2013).



band access, infrastructure costs were substantial—railroad tracks had to be laid and maintained and stations built and staffed. Initially, there was a boom in railroad construction, spurred by government subsidies, which led to overbuilding and overinvestment.<sup>74</sup> This high cost of entry into the market, coupled with the natural pressure to consolidate, led to the development of monopolies.<sup>75</sup> The same thing has happened in the market for broadband Internet service—many customers have only one option in service providers.

Furthermore, price discrimination has developed into a significant concern in the debate over regulating the broadband industry—this was also one of the primary reasons for regulating the railroad industry. During the initial period of expansion in the mid-1800s, railroads engaged in what some felt was predatory price discrimination. Passengers were often charged more to travel a shorter distance in less favored markets than others traveling longer distances in more popular markets.<sup>76</sup> In addition, certain customers, most notably Standard Oil, received favorable pricing.<sup>77</sup> Farmers in particular felt the railroads' pricing practices were predatory, and public pressure built in support of regulation.<sup>78</sup> Finally, railroads could allow access to other railways, but weren't required to, and could charge differing rates. This is similar to the discrimination in the broadband market, where some content providers were forced to pay premiums to the service providers in order to ensure their content reached customers without signal degradation.

These practices, among others, led Congress to pass the Interstate Commerce Act (ICA), which prohibited price discrimination and preferential treatment of certain favored customers.<sup>79</sup> The first iteration of the ICA admittedly had little bite, and the prohibition on price discrimination was skirted by charging all customers the same rate, but providing pre-

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74. See ASS'N AM. R.R.S., A SHORT HISTORY OF U.S. FREIGHT RAILROADS (2015), available at <https://www.aar.org/BackgroundPapers/Railroad%20History%20Dec%202015.pdf> [<https://perma.cc/L9XM-AHUV>]. Track mileage grew from 9,000 miles in 1850 to over 150,000 miles in 1890 and over 250,000 miles in 1917. See *id.* at 1.

75. See Clyde B. Aitchison, *The Evolution of the Interstate Commerce Act: 1887–1937*, 5 GEO. WASH. L. REV. 289, 293 (1937) (“The railways became the means which made monopolies possible, and in turn were used by the monopolies as instruments for crushing all opposition.”).

76. See Herbert Hovenkamp, *Regulatory Conflict in the Gilded Age: Federalism and the Railroad Problem*, 97 YALE L.J. 1017, 1050 (1988) (“[A] shipment from Denver to Peoria, Illinois, might cost more than a shipment from San Francisco to New York, even though the cargo bound from San Francisco to New York passed through both Denver and Peoria on the way.”). Though there was great public outcry over this practice at the time, some modern observers note that such rate discrimination is simply the result of competition. See *id.* Airlines currently price some routes the same way.

77. See *id.* at 1046–48.

78. See *id.* at 1022.

79. See Interstate Commerce Act of 1887, ch. 104, 24 Stat. 379.

ferred customers (Standard Oil) with rebates.<sup>80</sup> However, through a series of amendments, the ICA was strengthened to prohibit these rebates, as well as to authorize the Interstate Commerce Commission (ICC) to set maximum rates and to provide for stronger provisions on long versus short haul price discrimination.<sup>81</sup>

In addition, the Act required common carriers to provide “reasonable, proper, and equal facilities for the interchange of traffic” between carriers.<sup>82</sup> However, the Act also specified that this provision “shall not be construed as requiring any such common carrier to give the use of its tracks or terminal facilities to another carrier engaged in like business.”<sup>83</sup> In other words, carriers were not required to grant trackage rights to other carriers. In a series of decisions upholding the ICC’s authority to prohibit discrimination, however, the Supreme Court held that preferential grants of trackage rights that caused undue prejudice could be prohibited as discriminatory.<sup>84</sup>

In the decades following the institution of these regulations, railroads suffered significantly decreased returns on investment.<sup>85</sup> By the 1970s, many railroads had filed for bankruptcy.<sup>86</sup> Railroads responded to reduced profits by delaying maintenance and foregoing infrastructure improvements.<sup>87</sup> Deteriorating infrastructure led to a significant increase in rail accidents caused by deficient tracks.<sup>88</sup>

Some argue that the maximum rates and prohibitions on preferential treatment led directly to the railroads’ decline.<sup>89</sup> In addition, decreased investment and deteriorating infrastructure were the direct result of regulation and rate caps according to many.<sup>90</sup> On the other hand, the railroads’ decline may be attributable to other factors. Nearly one-third of railroad mileage was forced into bankruptcy during the Great Depression, for example.<sup>91</sup> Furthermore, growing competition from non-regulated in-

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80. See Hovenkamp, *supra* note 76, at 1047.

81. See Aitchison, *supra* note 75, at 323–25.

82. 24 Stat. at 380.

83. See *id.*

84. See *United States v. Pa. R.R. Co.*, 266 U.S. 191, 199 (1924).

85. See, e.g., Frank N. Wilner, *Railroads and the Marketplace*, 16 TRANSP. L.J. 291 (1988).

86. See *id.* at 295.

87. See *id.* at 296.

88. See *id.*

89. See *id.* at 300. This was a common view at the time of deregulation. See Paul Stephen Dempsey, *The Rise and Fall of the Interstate Commerce Commission: The Tortuous Path from Regulation to Deregulation of America’s Infrastructure*, 95 MARQ. L. REV. 1151, 1173 (2012) (“Regulatory failure took much of the blame for the anemic state of the rail industry.”).

90. See *id.*

91. See Daniel A. Schiffman, *Shattered Rails, Ruined Credit: Financial Fragility and Railroad Operations in the Great Depression*, 63.03 J. ECON. HIST. J. 802, 804 (2003).

dustries such as trucking significantly cut into railroad revenues.<sup>92</sup> That competition continued even after the trucking industry was regulated, and the introduction of air shipment added further competition. Additionally it is unclear why it took so long to deregulate the industry if regulation was killing it rather than propping it up.<sup>93</sup> The fact is that scholars can't agree on the effects of railroad regulation over one hundred years after the railroads were first regulated. This urges caution in too quickly dismissing common carrier regulation as the death knell for broadband service providers, and there may be no agreement for another 100 years.<sup>94</sup>

#### IV. IMPLICATIONS AND CONCLUSION

Did Johnson and Marks just miss the inevitable consolidation of ISPs? As noted above, this was not just a possible outcome, but one that was predicted in the very symposium they attended. While we cannot know what was in their minds, we can say that their analysis was careful enough to leave open the possibility of limited competition and changing network access in the future. For example, the article includes exceptions: times when the trucking metaphor should not apply and when the common carrier metaphor might. While they do not squarely address the issue, hints are sprinkled throughout the paper.

First, the article mentions sysops only. It spends almost no time discussing other connectivity. It does use the sysop as an example of a broader service provider, but the paper never completes that thought. Second, the paper emphasizes ease of entry, so much so that it is a core theme. In a world without easy entry, the assumptions of their analogy may not hold. Third, and related, the article has a strong theme of vigorous competition, which would allow customers to choose their appropriate level of access.<sup>95</sup> This competition did not come to fruition. Even if it

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92. See Sam Peltzman, *The Economic Theory of Regulation After a Decade of Deregulation*, BROOKINGS PAPERS: MICROECONOMICS 22 (1989). The trucking industry was not regulated until 1935. See *id.*

93. See *id.* at 55 (comment of Roger G. Noll: "If economic scholars figured out that railroads were the long-term net losers from regulation fifteen years before deregulation began, cannot we invoke rational expectations to postulate deregulation at least that early, if not earlier?").

94. There is evidence that regulation is not having the detrimental effect on infrastructure investment predicted by opponents of regulation. In the third quarter of 2015, the first three months since the regulations took effect, Comcast's "capital expenditures increased 11.0 percent to \$2.2 billion' over the same period the previous year." See Jon Brodtkin, *Title II Kills Investment? Comcast and Other ISPs Are Now Spending More*, ARS TECHNICA (Oct. 29, 2015), <http://arstechnica.com/business/2015/10/comcast-and-other-isps-boost-network-investment-despite-net-neutrality/> [<https://perma.cc/X947-NRYJ>]. Of course, we do not know what the investment would have been without regulation, nor what it will look like long term.

95. See Johnson & Marks, *supra* note 4, at 489 ("While [customers] are unable to dictate or, often, even to negotiate the specific rules, they do have the power to voice their approval or disapproval of these rules by deciding whether or not to

had, it is unclear that there is sufficient transparency for customers to rationally choose among providers. Fourth, and similarly, the article's concern about common carrier regulation is that rates will be inflated and market entry limited. This is an assumption based on a move away from free competition. But if there is limited competition, then rate regulation may well lower prices, and it seems unlikely that any willing provider would be barred. That said, the suggestion was not off the wall in 1992; one reason for a lack of competition in the cable market was local regulation that barred it.<sup>96</sup> Such local monopolies were outlawed in 1992.<sup>97</sup> Furthermore, the FCC's new common carrier rules do not include regulations about entry and rate.<sup>98</sup> Furthermore, some have argued that cheaper local access (for example, through wi-fi) will allow for a return to the world of trucking where there is competition in both the market to gain access and the market for the roadways.<sup>99</sup>

The analysis here is ultimately not about whether network neutrality generally, and common carrier specifically, are good policies; others will have that debate for years to come. Instead, this Essay is about how well we predict the future based on the past. On one hand, Johnson and Marks predicted the future with ease, noting that access to networks would continue to be important and debated. On the other hand, their predicted outcome missed the mark. Their choice of metaphor from the past led them astray. By focusing on an industry with low entry costs, they posited that common carrier regulation was not just debatable—it was a non-starter. But the past did not predict the future—at least not the trucking past.

Instead, a better analogy might have been the railroad, where rail entry was expensive and various constituents wanted nondiscriminatory access rights. Like today's debates, debates about common carrier rules applied to these rights. Also like today's debates, there were arguments on each side. On one hand, common carrier rules may have harmed the in-

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subscribe to a particular system. This de facto voting power gives the users as a group substantial strength in this arrangement.”).

96. See Thomas W. Hazlett, *Cable TV Franchises as Barriers to Video Competition*, 12 VA. J.L. & TECH. 2, Winter 2007, at 1, 7 (describing franchising regulations, rate setting, and barriers to entry in early 1990s).

97. See *id.*

98. See Brodtkin, *supra* note 49 (“The order makes clear that broadband providers will not be subject to utility-style regulation. This means no unbundling, tariffs, or other forms of rate regulation, and the order does not require broadband providers to contribute to the Universal Service Fund, nor does it impose, suggest, or authorize any new taxes or fees.” (internal quotation marks omitted)).

99. See Doc Searls, *Beyond Telecom: Bob Frankston on the Future We Make for Ourselves*, LINUX J. (May 1, 2008), <http://www.linuxjournal.com/magazine/beyond-telecom-bob-frankston-future-we-make-ourselves> (interview with Bob Frankston: “Why not give away 100,000,000 open access points instead of spending billions on the 700MHz spectrum auction? It would cost less and benefit us all. . . . The physical infrastructure needs to be owned and operated locally, like roads and sidewalks.”).

centive of railroads to further deploy new tracks. On the other hand, increased competition from trucks and planes may have harmed railroads. Railroads may be a better metaphor not just because railroads are more like data conduits, but also because almost 100 years later we still can't agree about how common carriers affected them. Time will tell how similar considerations will apply to today's ISPs.