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# **THE LAW AND ECONOMICS OF NETWORK NEUTRALITY**

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# THE LAW AND ECONOMICS OF NETWORK NEUTRALITY

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## Abstract

The Federal Communications Commission's Network Neutrality Order regulates how broadband networks explain their services to customers, mandates that subscribers be permitted to deploy whatever computers, mobile devices, or applications they like for use with the network access service they purchase, imposes a prohibition upon unreasonable discrimination in network management such that Internet Service Provider efforts to maintain service quality (e.g. mitigation congestion) or to price and package their services do not burden rival applications.

This paper offers legal and economic critique of the new Network Neutrality policy and particularly the no blocking and no discrimination rules. While we argue the FCC's rules are likely to be declared beyond the scope of the agency's charter, we focus upon the economic impact of net neutrality regulations. It is beyond paradoxical that the FCC argues that it is imposing new regulations so as to preserve the Internet's current economic structure; that structure has developed in an unregulated environment where firms are free to experiment with business models – and vertical integration – at will. We demonstrate that Network Neutrality goes far further than existing law, categorically prohibiting various forms of economic integration in a manner equivalent to antitrust's per se rule, properly reserved for conduct that is so likely to cause competitive harm that the marginal benefit of a fact-intensive analysis cannot be justified. Economic analysis demonstrates that Network Neutrality cannot be justified upon consumer welfare grounds. Further, the Commission's attempt to justify its new policy simply ignores compelling evidence that “open access” regulations have distorted broadband build-out in the United States, visibly reducing subscriber growth when imposed and visibly increasing subscriber growth when repealed. On the other, the FCC manages to cite just one study – not of the broadband market – to support its claims of widespread foreclosure threats. This empirical study, upon closer scrutiny than the Commission appears to have given it, actually shows *no evidence* of anticompetitive foreclosure. This fatal analytical flaw constitutes a smoking gun in the FCC's economic analysis of net neutrality.

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## I. INTRODUCTION

The Federal Communications Commission released an Order on December 23, 2010<sup>1</sup> (NN Order) that regulates broadband Internet Service Providers (ISPs). This is done via regulations concerning *transparency*, governing how broadband networks explain their services to customers; a *no blocking* provision, mandating that subscribers be permitted to deploy whatever computers, mobile devices, or applications they like for use with the network access service they purchase; and a *no unreasonable discrimination* rule for network management actions, such that ISP efforts to maintain service quality (e.g., mitigating congestion) or to price and package their services do not burden rival applications.<sup>2</sup> The policy is deemed *network neutrality* (NN), and the NN Order passed on a three-to-two vote (both Republican commissioners dissenting).

The first item in this regulatory trio generates only modest controversy; indeed, opponents of NN often suggest that full and frank disclosure of ISP practices are all that are needed for a well-functioning market.<sup>3</sup> Moreover, the NN Order mitigated potential opposition to such rules by declining to mandate any specific disclosure format, noting that “the best approach is to allow flexibility in implementation of the transparency rule, while providing guidance regarding effective disclosure models.”<sup>4</sup> The second and third provisions, however, are intensely controversial both with respect to the agency’s legal jurisdiction and to their ultimate economic effect. If the regulations are found to fall under the Commission’s statutory charter, the rules will ostensibly reduce the discretion of broadband ISPs in how they price and bundle their services. Operators will generally not be allowed to impose “vertical restrictions” on their customers, which include, not only the outright blocking of certain legally available Internet content, but

- subscriptions that include services or applications delivered at lower prices and/or better quality than competing applications;
- provision of different levels of transport speed or reliability to differing applications; and

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<sup>1</sup> Preserving the Open Internet, 25 FCC Rcd. 17,905 (2010) [hereinafter FCC NN Order].

<sup>2</sup> *Id.* at 17,905 ¶ 1.

<sup>3</sup> Economic Issues in Broadband Competition A National Broadband Plan for Our Future, 2010 WL 45550, at \*11-12 [hereinafter DOJ 2010] (ex parte submission of Dep’t of Justice).

<sup>4</sup> FCC NN Order, *supra* note 1, at 17,928 ¶ 56.

- charging of fees to content providers accessing end users on their broadband network.

NN restrictions are imposed on both fixed and mobile (wireless) broadband networks, although rules for the latter are stated in narrower terms.<sup>5</sup> How tightly the regulations will be enforced is unclear, as the FCC has given itself wide latitude in enforcement. “Network management” is barred only if it is “unreasonable,” for instance.

Enforcement complications are nicely illustrated in the first complaint filed under the rules, received by the FCC on January 10, 2011. The petition<sup>6</sup> alleges that MetroPCS, the country’s fifth largest mobile telephone network, violated NN by discriminatorily favoring one video site over another. This stems from the pricing schedule set by MetroPCS:

- a \$60 per month “all you can eat” plan for unlimited voice, texting, and data over its advanced Fourth Generation (4G) network;
- a \$40 plan for its older 2G network, unlimited voice calls, texting, and email/web browsing – but excluding video streaming, except YouTube videos, which are available to subscribers without limit.

According to MetroPCS,<sup>7</sup> YouTube videos are included in the cheaper package because (a) they are very popular with MetroPCS customers, and (b) Google, the owner of YouTube, constructed a special compression technique permitting the 2G network to transfer video files without the congestion spillovers normally incurred by video streaming. Rival video sites are disadvantaged by the arrangement, but MetroPCS gains no benefit from that outcome (it has no ownership interest in Google and receives no compensation from the content provider<sup>8</sup>), but only from the enhanced satisfaction of its customers. While the case against anticompetitive foreclosure is overwhelming,<sup>9</sup> it is unclear whether the FCC will dismiss the complaint. Indeed, the NN Order

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<sup>5</sup> The *no unreasonable discrimination* rule is applied only to fixed networks. While the *no blocking* rule applies to mobile as well as fixed operators, it only prohibits blocking of services competing with mobile network voice or video products. FCC NN Order, *supra* note 1, at 17,905 ¶ 1.

<sup>6</sup> Ex Parte Presentation from Free Press to Julius Genachowski, Chairman, Fed. Commc’ns Comm’n (Jan. 10, 2011), available at <http://fjallfoss.fcc.gov/ecfs/document/view?id=7021025487>.

<sup>7</sup> Ex Parte Presentation from MetroPCS Communications, Inc., to Julius Genachowski, Chairman, Fed. Commc’ns Comm’n (Feb. 14, 2011), available at <http://fjallfoss.fcc.gov/ecfs/document/view?id=7021029361>.

<sup>8</sup> *Id.*

<sup>9</sup> Thomas W. Hazlett, *FCC Net Neutrality Rules and Efficiency*, FINANCIAL TIMES, Mar. 29, 2011, <http://www.ft.com/cms/s/0/f75fd638-5990-11e0-baa8-00144feab49a.html>.

*invites* the allegation, pointedly using the MetroPCS price schedule to illustrate the type of business arrangement it considers to be problematic discrimination.<sup>10</sup> It has quickly turned into an example of the complexity of the NN trade-offs – imposing restrictions inhibiting an innovative, low-cost competitor in broadband access markets so as to protect an “open” flow of traffic – inherent in NN policy enforcement.

While Internet growth and innovation are impressive, the FCC finds that the marketplace “faces real threats.”<sup>11</sup> Left unregulated, broadband providers will inevitably be tempted to bias the access service provided to end users, favoring applications that they own or are paid to support. This would force upstart service suppliers to bargain with a “gatekeeper,” undermining the “open Internet,” where users “at the edge” are able to freely communicate with all others. The result would be a disruption of the virtuous circle – infrastructure builders creating demand for content and applications, and then content and applications driving demand for more infrastructure investment -- fueling Internet growth. “Restricting edge providers’ ability to reach end users, and limiting end users’ ability to choose which edge providers to patronize, would reduce the rate of innovation at the edge and, in turn, the likely rate of improvements to network infrastructure.”<sup>12</sup>

This paper critiques the NN policy – specifically, the no blocking and no unreasonable discrimination rules. After a short legal analysis evaluating the likelihood that the FCC’s rules are likely to be declared beyond the scope of the agency’s charter in Part II, we focus upon the economic impact of net neutrality regulations. In Part III we explain the regulatory status of the Internet. It is beyond paradoxical that the FCC argues that it is imposing new regulations so as to preserve the Internet’s current economic structure; that structure has developed in an unregulated environment where firms are free to experiment with business models – and vertical integration – at will.

We next explore, in Part IV, the widespread use of “non-neutral” business forms by ISPs, Internet backbone providers, and application developers. Far from the Internet being an architectural construction, the network of networks is an evolving ecosystem in which key

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<sup>10</sup> The Order states, “These dangers to Internet openness are not speculative or merely theoretical.” FCC NN Order, *supra* note 1, at 17,926 ¶ 36. It then lists several examples. In the next paragraph, it offers, “[A] major mobile broadband provider prohibits use of its wireless service for ‘downloading movies using peer-to-peer file sharing services’ and VoIP applications.” *Id.* ¶ 37. The footnote cites MetroPCS, which in addition to limiting video streaming on its 2G network, also (and for similar reasons) limited peer-to-peer voice calls. *Id.*

<sup>11</sup> FCC NN Order, *supra* note 1, at 17,907 ¶ 4.

<sup>12</sup> *Id.* at 17,910 ¶ 14.

linkages between the “transport layer” and the “content/application layer” are efficiently deployed, advancing innovation, serving consumers, and driving Internet growth. “Walled gardens” are an essential part of the Internet, and exist (in varying forms) throughout the market. Indeed, they have since the first government-run interconnected data networks in the U.S. defense establishment precluded unauthorized users, uses, and – categorically - all commercial enterprises. They have enabled the emergence of mass market e-commerce via innovative business models deployed by AOL, NTT DoCoMo, and Apple iPhone, among others; they are adapted by content providers, like ESPN3, to create new models for delivering high-quality programs by selling only to ISPs and not to end users; they have ushered upstarts into the market, as when – in 2002 – a fledgling Google wagered its future by paying dominant ISP AOL to feature its search utility as a default application on its subscribers’ start-up page; and they have proven pivotal in attacking, and overcoming, the “mother of all monopolies” in plain old telephone service (POTS). In this episode, cable operators now offer “digital voice” fixed line phone service to over 95 percent of U.S. households – don’t cry for Ma Bell -- with guaranteed quality-of-service (QoS) for calls, using dedicated, congestion-free bandwidth on their own local systems – an advantage unavailable to independent voice-over-Internet (VoIP) providers and, hence, both discriminatory and procompetitive. Such “gardens” have not hampered the evolution of networks or killer applications, but bolstered incentives for investors and produced the very “innovation commons” upon which the FCC marvels today.

Part V lays out the economic problem that the NN rules aim to counter: anticompetitive foreclosure. Actions by firms resulting in this outcome are already illegal under the antitrust laws, where the “rule of reason” is employed to separate socially beneficial practices from those that are harmful. NN goes far further than existing law, categorically prohibiting various forms of economic integration in a manner equivalent to antitrust’s per se rule, properly reserved for conduct that is so likely to cause competitive harm that the marginal benefit of a fact-intensive analysis cannot be justified. In this case, the NN Order bans conduct that is typically highly efficient, promoting investment and innovation, as has been demonstrated in the Internet space repeatedly. While the FCC purports to examine instances to the contrary, neither the economic literature concerning vertical contracting practices such as those banned by the NN Order, nor the FCC’s collection of anecdotal allegations of anticompetitive foreclosure can withstand scrutiny. Part VI deconstructs these speculative claims of anticompetitive ISP conduct.

Part VII then deals with the economic arguments marshalled by the FCC to support its claim that anticompetitive foreclosure threatens to disrupt broadband market gains. On the one side, the Commission simply ignores compelling evidence that “open access” regulations have distorted broadband build-out in the United States, visibly reducing subscriber growth when imposed and visibly increasing subscriber growth when repealed. On the other, the FCC manages to cite just one study – not of the broadband market – to support its claims of widespread foreclosure threats. This empirical study, upon closer scrutiny than the Commission appears to have given it, actually shows *no evidence* of anticompetitive foreclosure. This fatal analytical flaw constitutes a smoking gun in the FCC’s economic analysis of net neutrality. A Conclusion follows in Part VIII.

## II. FCC JURISDICTION

A critic might be inclined to refer to the FCC’s net neutrality policy as “unprecedented.”<sup>13</sup> This proves an excessively charitable summary, as salient precedent rebukes the FCC’s overtures towards far-reaching ancillary jurisdiction over the Internet itself. The FCC unsuccessfully attempted to claim such jurisdiction merely eight months prior to the NN Order in *Comcast Corp. v. FCC*.<sup>14</sup> In *Comcast*, several internet end users noticed their internet service provider – Comcast – reduced the traffic speed to certain peer-to-peer file sharing applications.<sup>15</sup> Two net neutrality advocacy groups petitioned the FCC to enjoin Comcast from managing network traffic by differentiating data speeds.<sup>16</sup> Comcast capitulated to these demands in light of an impending adverse order; the FCC ordered Comcast make required disclosures indicating Comcast’s development of nondiscriminatory network management policies, but indicated an injunction mandating neutrality would follow if Comcast failed to comply with the FCC’s requirements.<sup>17</sup>

Comcast appealed to the D.C. Circuit, challenging the FCC’s order on jurisdictional, amongst other, grounds – specifically that the FCC lacked jurisdiction to regulate Internet

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<sup>13</sup> See Kay Bailey Hutchison, *U.S. Innovation Is Hostage to Regulatory Overreach*, POLITICO, Feb. 17, 2011, <http://www.politico.com/news/stories/0211/49652.html>.

<sup>14</sup> 600 F.3d 642 (D.C. Cir. 2010).

<sup>15</sup> See *id.* at 644.

<sup>16</sup> See *id.*

<sup>17</sup> See *id.* at 645.

network practices.<sup>18</sup> The FCC conceded Congress had not granted it express authority to regulate Internet network management, instead claiming regulating Comcast's network management fell within its ancillary jurisdiction<sup>19</sup> – its power to “perform any and all acts, make such rules and regulations, and issue such orders, not inconsistent with [the Communications Act], as may be necessary in the execution of its functions.”<sup>20</sup> The FCC cited two Congressional policy statements emphasizing the “continued development of the Internet” and the growth of a “rapid, efficient, Nation-wide . . . communication service” at “reasonable charges” as providing grants of authority, thereby enabling the FCC's regulation.<sup>21</sup> The FCC also offered a handful of patchwork statutory sections as express grants of authority in the alternative, most notably § 706 of the Telecommunications Act, providing the FCC “shall encourage the deployment on a reasonable and timely basis of advanced telecommunications capability to all Americans.”<sup>22</sup>

The D.C. Circuit unequivocally rejected this interpretation, calling it “flatly inconsistent” with precedent and noting that “if accepted it would virtually free the Commission from its congressional tether.”<sup>23</sup> The court first laid out the relevant test from Supreme Court precedents: to support ancillary jurisdiction, the FCC must demonstrate its action is “reasonably ancillary to . . . effective performance of its statutorily mandated responsibilities.”<sup>24</sup> The court then highlighted one of the FCC's most extreme concessions at oral argument – that under the FCC's rationale, it could subject Comcast's internet service to “pervasive rate regulation” in order to ensure a “reasonable” price – in demonstrating the breadth of the FCC's interpretation of its ancillary jurisdiction.<sup>25</sup> The D.C. Circuit unequivocally held that simple Congressional policy statements, while useful in delineating the bounds of expressly delegated authority, did not constitute “statutorily mandated responsibilities” which could ground the FCC's ancillary jurisdiction alone.<sup>26</sup> The court dispensed summarily with the FCC's § 706 argument, pointing to a prior FCC § 706 interpretation acknowledging the provision granted no regulatory authority.<sup>27</sup>

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<sup>18</sup> *See id.*

<sup>19</sup> *See id.*

<sup>20</sup> 47 U.S.C. § 154(i) (2006).

<sup>21</sup> *See Comcast*, 600 F.3d at 651-62; *see also* 47 U.S.C. § 230(b); *id.* § 151..

<sup>22</sup> *See Comcast*, 600 F.3d at 658; 47 U.S.C. § 1302(a).

<sup>23</sup> *Comcast*, 600 F.3d at 655.

<sup>24</sup> *Id.* at 646.

<sup>25</sup> *Id.* at 655.

<sup>26</sup> *Id.* at 654.

<sup>27</sup> *Id.* at 659.

The court thereby vacated the FCC's order against Comcast,<sup>28</sup> inspiring some legal speculation as to whether the FCC could implement net neutrality absent additional congressional permission whatsoever.<sup>29</sup>

The FCC's recent net neutrality rulemakings demonstrate it shares no academic equivocation as to the breadth of its authority.<sup>30</sup> "In an act of superior confidence or of sheer foolishness," the FCC employed substantially similar ancillary jurisdiction theories as rebuked by *Comcast*.<sup>31</sup> The NN Order invokes a pastiche of statutory provisions in order to justify its three net neutrality rules: parts of Titles II, III, and VI of the Communications Act and, most candidly, an open reinterpretation of § 706 to enable a jurisdictional interpretation consistent with the FCC's understanding "before the *Comcast* decision."<sup>32</sup> As one dissenting FCC Commissioner remarked, the FCC "discover[ed]" § 706, a regulatory "superpower, unlocked only after an adverse court opinion and political pressure to find some legal foundation" to justify the NN Order<sup>33</sup> – the language of which closely tracked a failed bill before Congress.<sup>34</sup> *Comcast* appears to have taught the FCC little in the way of interpretative humility in the Commission's search for an unbounded grant of regulatory authority over the Internet.

Yet the historical parallels between the FCC's jurisdictional assertions underlying the NN Order and prior FCC errors neither begin nor end with *Comcast*. Cable television's rise in the late 1960s inspired substantial fear in broadcast television companies; in turn, broadcast companies sought FCC regulation of cable companies.<sup>35</sup> This presented a jurisdictional conundrum: while the Communications Act expressly granted the FCC power to regulate broadcasting companies – and the FCC's jurisdiction over cable systems supported by

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<sup>28</sup> *Id.* at 661.

<sup>29</sup> *See, e.g.,* FCC NN Order, *supra* note 1, at 18,052 (McDowell, Comm'r, dissenting); Patric M. Verrone, *The Comcast Case and the Fight for Net Neutrality*, L.A. LAW., May 2011, at 9, 9 ("The FCC . . . has been at the center of the [net neutrality] debate, most recently issuing [the NN Order]. How, and even if, it can enforce that order in light of the *Comcast* case goes to the core of the FCC's rule-making authority over the Internet." (footnote omitted)).

<sup>30</sup> *See* FCC NN Order, *supra* note , at 17,967 ¶ 115 ("Broadband Internet access services are clearly within the Commission's subject matter jurisdiction and historically have been supervised by the Commission. . . . [O]ur adoption of the basic rules of the road for broadband providers implements specific statutory mandates in the Communications Act and the Telecommunications Act of 1996.").

<sup>31</sup> *See* Babette E.L. Boliek, *Regulation Versus Antitrust: How Net Neutrality Is Defining the Boundaries*, B.C. L. REV. (forthcoming 2011) (manuscript at 6), available at [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1832774](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1832774).

<sup>32</sup> *See* FCC NN Order, *supra* note 1, at 17,968-78.

<sup>33</sup> *Id.* at 18,096 (Baker, Comm'r, dissenting).

<sup>34</sup> *See* FCC NN Order, *supra* note 1, at 18,096.

<sup>35</sup> Glen O. Robinson, *The New Video Competition: Dances with Regulators*, 97 COLUM. L. REV. 1016, 1019 (1997).

microwave antennas was widely accepted – the Communications Act failed to contemplate, much less regulate, non-broadcast cable signal transmission.<sup>36</sup> The FCC asserted jurisdiction over comprehensive non-broadcast cable regulation as “ancillary” to its express power to regulate broadcast transmissions.<sup>37</sup> The Supreme Court upheld the FCC’s regulation as necessary to effect its textually enumerated responsibilities,<sup>38</sup> leading to a wave of cable-company regulations including common ownership requirements, sponsorship disclosures, and the now-infamous Fairness Doctrine.<sup>39</sup> In short order, however, the expansive use of FCC jurisdiction led to absurd results, with one Seventh Circuit case having to go so far as to expressly delineate that the FCC lacked authority to regulate building construction simply on account of some relationship to broadcast interference.<sup>40</sup> As will likely occur with the NN Order, the protectionist pedigree of the 1960s and 1970s cable regulatory regime grew apparent in retrospect.<sup>41</sup>

The FCC’s NN Order also presents serious constitutional problems. Broadband ISPs likely enjoy First Amendment speech protections, as several federal district courts have noted,<sup>42</sup> which the NN Order casually dismisses.<sup>43</sup> Indeed, the NN Order asserts with little explanation and even less precedent that broadband ISPs’ network regulation serves no editorial function within the First Amendment’s purview.<sup>44</sup> This approach overlooks substantial federal First Amendment jurisprudence imposing little to no editorial requirement to entitle a publisher or carrier some First Amendment protection when filtering the content of others.<sup>45</sup> Even this relaxed approach ignores the robust First Amendment protection ISPs enjoy when providing more content-related services, such as video programming, which likely fall under the NN

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<sup>36</sup> Joseph R. Fogarty & Marcia Spielholz, *FCC Cable Jurisdiction: From Zero to Plenary in Twenty-Five Years*, 37 FED. COMM. L.J. 113, 115 (1985).

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

<sup>38</sup> *United States v. Southwestern Cable Co.*, 392 U.S. 157 (1968).

<sup>39</sup> *General Cable Television Industry and Regulation Information Fact Sheet*, FCC (June 2000), <http://transition.fcc.gov/mb/facts/csgen.html>.

<sup>40</sup> *Ill. Citizens Comm. for Broad. v. FCC*, 467 F.2d 1397, 1401 (7th Cir. 1972).

<sup>41</sup> *Robinson*, *supra* note 35, at 1019.

<sup>42</sup> *See, e.g.*, *Ill. Bell Tel. Co. v. Vill of Itasca*, 503 F. Supp. 2d 928, 947-49 (N.D. Ill. 2007); *Pac. Bell Tel. Co. v. City of Walnut Creek*, 428 F. Supp. 2d 1037 (N.D. Cal. 2006); *Comcast of Cal. I, Inc. v. City of Walnut Creek*, 371 F. Supp. 2d 1147 (N.D. Cal. 2005); *Comcast Cablevision of Broward Cnty, Inc. v. Broward Cnty*, 124 F. Supp. 2d 685, 691-92 (S.D. Fla. 2000).

<sup>43</sup> FCC NN Order, *supra* note 1, at 17,983 ¶ 143 & n.458.

<sup>44</sup> *Id.* at 17,983.

<sup>45</sup> *See Turner Broadcasting Sys., Inc. v. FCC*, 512 U.S. 622, 653 (1994).

Order's ambit.<sup>46</sup> Net neutrality advocates often cite the potential harms of an ISP squelching a rival product's traffic – or “favoring” its own traffic – through lower or higher data speeds, respectively.<sup>47</sup> It is relatively simple to envision a potential First Amendment conflict when the NN Order prevents an ISP from carrying its own traffic – its own speech – in its preferred method.<sup>48</sup>

Further defects in the NN Order illustrate the ad hoc and conceptually incoherent qualities inherent in the FCC's approach. The cause of some dissenting ridicule<sup>49</sup> – and with historical echoes to construction regulation – the FCC disclaimed any intent to regulate retail distributors of broadband ISP access, such as coffee shops, bookstores, and airlines.<sup>50</sup> The FCC instead parses these retailers out of the proposed regulations, deeming them “premise operators.”<sup>51</sup> Yet the conceptual justification for net neutrality – grounded in fears that Internet providers may favor their own content or disfavor content of rivals – broaches no obvious exception. A hypothetical illustrates the absurdity of the distinction: what competitive problems inhere in AT&T degrading network traffic to Comcast that do not similarly infect Starbucks blocking Internet traffic to Caribou Coffee?

The above issues illustrate the limits of categorical mandates more than the limits of the FCC. Absurdities in both jurisdictional assertions and substance arise in applying categorical prohibitions to certain classes of conduct without reference to their actual causes and effects, both beneficial and malign. The FCC attempts to ameliorate these distinctions by creating ad hoc exceptions that prevent certain absurd outcomes without acknowledging the NN Order inherently promotes other equally absurd outcomes. The counter-productivity of categorical

<sup>46</sup> See Randolph J. May, *Net Neutrality Mandates: Neutering the First Amendment in the Digital Age*, 3 I/S: J.L. & POL'Y FOR INFO. SOC'Y 197, 202 (2007).

<sup>47</sup> See, e.g., *Comcast Corp. v. FCC*, 600 F.3d 642, 644 (D.C. Cir. 2010) (discussing FCC complaints filed by Free Press and Public Knowledge); *Net Neutrality 101*, SAVE THE INTERNET, <http://www.savetheinternet.com/net-neutrality-101> (last visited Aug. 14, 2011) (“Net Neutrality means that Internet service providers may not discriminate between different kinds of content and applications online. . . . The biggest cable and telephone companies . . . believe they should be able to charge Web site operators, application providers and device manufacturers for the right to use the network. Those who don't make a deal and pay up will experience discrimination: Their sites won't load as quickly . . .”).

<sup>48</sup> May, *supra* note 46, at 204 (“Even though [neutrality laws] do not literally ‘restrict’ and ISP from publishing content of its own choosing, they would compel the ISP to convey or make available content that, in its editorial judgment, it would otherwise choose not to convey or make available.”).

<sup>49</sup> See David Eldridge, *FCC Chief Defends New “Rules of Road” on Net Neutrality*, WASH. TIMES, Feb. 16, 2011, <http://www.washingtontimes.com/news/2011/feb/16/fcc-chairman-defends-net-neutrality-rules/> (quoting Congressman Greg Walden's sarcastic remark: “I am relieved, however, that the FCC declined under its newfound authority to regulate coffee shops, bookstores, airlines and other entities” (internal quotation marks omitted)).

<sup>50</sup> FCC NN Order, *supra* note 1, at 17,935 ¶ 52.

<sup>51</sup> *Id.*

prohibitions may prove a novel problem to the FCC – and an inherent one to the administrative rule-making process – but as it turns out, it is an exceptionally old dilemma to antitrust, which evolved a sophisticated balancing process for investigating and adjudicating these claims on a case-by-case basis: the Rule of Reason.

### III. THE NON SEQUITUR: SAVING THE (UNREGULATED) INTERNET BY REGULATING IT

[T]here is little dispute in this proceeding that the Internet should continue as an open platform.<sup>52</sup>

Broadband Providers Have the Incentive and Ability to Limit Internet Openness.<sup>53</sup>

The FCC’s net neutrality policy perches on irony: if the new rules are needed to preserve the salubrious structure of the Internet, why has the asserted threat failed – by the FCC’s own analysis – to yet undermine the “open platform”? Why have broadband ISPs resisted the easy profits available from foreclosing competition among applications, squeezing their subscribers, and profiting from the very actions feared? The Commission does not ask this question, but it is worth answering.

The NN Order posits that “[t]oday, broadband providers have incentives to interfere with the operation of third-party Internet-based services that compete with the providers’ revenue-generating telephony and/or pay services.”<sup>54</sup> In a fundamental sense, that is undeniably true – firms are always tempted to extract additional consumer surplus, given the opportunity, and indeed have a fiduciary obligation to shareholders to pursue such returns. This may even be a defensive imperative in the marketplace, as the FCC notes: “[O]nline edge services appear likely to continue gaining subscribers and market significance, which will put additional competitive pressure on broadband providers’ own services.”<sup>55</sup>

Exactly – spotlighting the rivalrous tension promoting customer interests. These “competitive pressures” spring from market forces unconstrained by network neutrality

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<sup>52</sup> FCC NN Order, *supra* note 1, at 17,915¶ 19.

<sup>53</sup> *Id.*

<sup>54</sup> *Id.* ¶ 22.

<sup>55</sup> *Id.*

regulation. “[B]roadband providers have the ability to act as gatekeepers,”<sup>56</sup> and if they thereby “have the incentive and ability” to pre-empt these proconsumer options, they have taken a different path, creating an outcome so robust as to create consensus that “the Internet should continue as open platform.”<sup>57</sup> The marketplace that the FCC recommends preserving stands as an ongoing experiment as to whether the dangerous consequences the Commission warns of will obtain without new rules. Instead of reporting on those harms materializing, the regulator instead reports that unregulated gatekeepers do just what the FCC would like them to.

Actually, the market process is far more nuanced, and market structure far more interesting, than the FCC describes. The Commission sees the Internet as a constructed edifice, engineered to produce a particular flow of communications. This vision is incorrect in technical terms. Moreover, it is immediately misapplied by extending the perceived structural template as a descriptor of *economic relations*. Whatever the engineering designs of networks or the interfaces between them, the terms of trade on which demanders and suppliers transact are *economic*. Those terms are not, and have never been, “open end-to-end.” They are the standard building blocks of markets: property and contracts, layered upon a general legal regime enabling ownership, production, and trade.

Whatever is argued about the manner in which networks operate, the creation of networks is a financial investment. So, too, the wide array of inputs and complements supporting the ecosystem – from website applications, to online services, to content, to private networks, to virtual private networks, to servers, routers, and the hardware and software employed by subscribers to access their broadband ISP. Backbone networks, transporting high-volume data flows over long-distance links, send and receive traffic at prices negotiated with other networks. Large backbones often use “bill and keep” contracts, where traffic is exchanged without payments either way, a practice known in the Internet as “peering.” Such arrangements reduce transaction costs when traffic flows are roughly commensurate. When smaller networks connect to larger ones, however, it pays to keep track, and the smaller typically pays the larger. The unregulated system

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<sup>56</sup> *Id.* at 17,919 ¶ 24.

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

creates an accounting system with valuable properties, matching supply with demand, supporting Internet build-out, and yielding incentives for the creation of larger, faster networks.

The market is “open” or “neutral” in that entry is free, and costs and consumer demand interact to set prices. But this is distinctly not the “neutrality” advanced by the Commission, where suppliers -- transport networks on one side, applications providers on the other - rigidly adhere to “layers” with strict boundaries. In the FCC’s view, data networks are “dumb pipes” that stick to their assigned task, treating all traffic, all applications, and all other carriers alike. In reality, this system cannot be saved by network neutrality, because it never existed.

Networks discriminate against other networks, refusing to accept traffic from those which do not offer satisfactory payments. Were smaller networks not paying discriminatorily higher prices to send their traffic to larger networks, the incentive to invest more to grow larger would be greatly diminished, reducing Internet performance via free riding – “tragedy of the commons.”<sup>58</sup> Content providers, as well, pay to play. Google, Microsoft and Yahoo! monetize ad revenues from “intention-based advertising” surrounding “free” key word searches offered to end users. Each of these applications is created by large investments not only in web crawlers that catalogue millions of websites and in proprietary search algorithms that attempt to deliver matches most valuable to the user, but via bundling (integration) with high-quality transport service. The Internet’s layers naturally mix. When customers get their search results faster, they are happier, and more likely to return for more. Speed is therefore a key competitive advantage, not just in search but in virtually every application on the Internet.

Hence, firms integrate. Content companies like Google construct their own global delivery networks; others purchase such speed-enhancements through content delivery networks (CDNs) like Akamai, Bitgravity, or Limelight Networks. Some ISPs have attempted to compete with these CDNs by providing application vendors local caching services (storing commonly requested data on services nearer to end users, speeding delivery) for an extra fee. This constitutes a pay-for-fast-delivery option that improves service for customers, allowing entrants to better compete with incumbents. When an upstart search engine takes on Google, the

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<sup>58</sup> Garret Hardin, *The Tragedy of the Commons*, 162 SCIENCE 1243 (1968); see also MICHAEL HELLER, THE GRIDLOCK ECONOMY (2008).

opportunity to pay an ISP for faster service – closing the gap with Google’s own global CDN – is closed.

The FCC is more or less right when it says that “The Internet is a level playing field. Consumers can make their own choices about what applications and services to use.”<sup>59</sup> But it is wrong when it attributes that outcome to a structure that quarantines ISPs, keeping them from actively managing networks, creating content alliances, or exercising “gatekeeper” functions. As shown in the next Part, ISPs commonly engage in such “non-neutral” behavior, always have, and in so doing advance the Internet’s “innovation commons.” Nonetheless, a market structure has emerged that exhibits a striking degree of transport specialization by ISPs, which elect to leave development of most services and applications to third party suppliers. The mass-market “walled gardens” of years past, including those of AOL and Excite@Home, have faded. This result has been produced by engineering design but by profit calculus under competitive market (including capital market) constraints. The choices made by ISPs reflect trade-offs in garnering additional revenues (say, by “blocking or degrading content”<sup>60</sup> to favor affiliated services) against revenues lost due to subscriber defections.

Curiously, the FCC sees this, understanding that firm self-interest provides an efficiency check. It argues for new NN rules based, in part, upon the fact that “the market has already spoken in favor of nondiscriminatory access by turning away from ‘walled gardens’ such as AOL, Genie, Delphi, Prodigy, and Compuserve.”<sup>61</sup> This is, firstly, a highly incomplete rendition of history. The market *turned to* “walled gardens” during an important time, and the model succeeded because consumers were well served (and therefore had a higher demand for the ISP subscriptions) by the proprietary content that the “gardens” grew. This enabled a critical extension of e-commerce into the mass-market, both by encouraging AOL’s “carpet bombing” of America with millions of easy-to-use dial-up sign-up disks,<sup>62</sup> a marketing investment of considerable scale, and then by driving an enormously positive response to the campaign by consumers. As Ken Auletta describes it:

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<sup>59</sup> FCC NN Order, *supra* note 1, at 17,907 ¶ 3.

<sup>60</sup> *Id.* ¶ 4.

<sup>61</sup> Preserving the Open Internet, Broadband Industry Practices, 74 Fed. Reg. 62,638, ¶ 103 (proposed Oct. 22, 2009) [hereinafter FCC NN NPRM] (to be codified at 47 C.F.R. pt. 8).

<sup>62</sup> In 1996 alone, AOL distributed some 250 million subscription sign-up disks in the United States. KARA SWISHER, AOL.COM: HOW STEVE CASE BEAT BILL GATES, NAILED THE NETHEADS, AND MADE MILLIONS IN THE WAR FOR THE WEB 99 (1999).

Webheads would sneer that using AOL was ‘the Internet on training wheels’ . . . Yet it was AOL’s user-friendliness that helped popularize the Web – and which attracted thirty-four million paid subscribers in 2002.<sup>63</sup>

That the integrated model became markedly less useful, as content markets flourished throughout the (non-AOL) Internet, is reflected in the reality that AOL and other ISPs migrated to new modes. The correct takeaway is that markets reflect efficiencies, not that a given structure, at a given point in time, is the “correct” model to freeze into place by law. The marketplace reveals efficiencies by continually testing new options and discovering what innovations might improve upon extant operations. Indeed, the recent purchase of the Huffington Post (a news and opinion website) by AOL<sup>64</sup> is emblematic of the ongoing search for optimality. It is a \$315 million wager that the ISP ownership of content may indeed have some new, or remaining, efficiencies.

Second, the evidence that the market migrated away from “walled gardens” is one which suggests regulation is unnecessary. The Commission here argues that the outcome of an unregulated market process was efficient, but then argues to disrupt that process to mandate administratively designed outcomes – the recurring non sequitur.

Third, the argument reflects the Commission’s underlying assumption that firms respond rationally to economic challenges. The methodology is uncontroversial; the “market test” provides subtle, essential, and far-reaching information. But the Commission then seeks to advance a new regime under which such valuable data cannot be revealed. Business models will be regulated, and - should certain types of economic integration become more efficient – rigid structures preclude experimentation.

In fact, there are often strong economies to integration, but also many productive gains from specialization. When the latter outweigh the former, these services are generally uneconomic for the ISP to supply. The alternative possibility is that ISPs inefficiently provide certain services, and/or impose various vertical restrictions, because they are able to quash competitive forces in the process. As witnessed by the FCC’s lack of evidence to this effect – the Commission, even while claiming jurisdiction, has prosecuted virtually no actual instances of

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<sup>63</sup> KEN AULETTA, *GOOGLED: THE END OF THE WORLD AS WE KNOW IT* 94-95 (2009).

<sup>64</sup> Rebecca Kaplan, *AOL Buys Huffington Post in \$315M Deal*, NAT’L J., Feb. 7, 2011, <http://www.nationaljournal.com/whitehouse/aol-buys-huffington-post-in-315-million-deal-20110207>.

anticonsumer conduct, and argues for NN rules on the basis of a *looming* threat<sup>65</sup> - there is no sign that anticompetitive foreclosure is driving ISP structural choices. Conversely, when ISPs do integrate into complementary services, and the foray survives, it signals that the ISP profits from the integration. The FCC, which supposes that any such integration is *prima facie* evidence of foreclosure, short-circuits the analysis: it must show, not only that ISPs integrate, but that they do so to achieve anticompetitive, inefficient outcomes. Indeed, it must show far more: that such anticompetitive outcomes are ubiquitous rather than rare (otherwise a categorical prohibition would likely incur far more net costs than a case-by-case adjudication under antitrust law) and that the collateral damage inflicted by its rules – a first-order decrease in investment incentives, as networks lose property rights to manage their systems – does not outweigh the social gains.

In fact, the Commission’s articulated goal of “preserving” what it observes to be an “open Internet” is all that is needed to reject the policy advanced. Were the anticompetitive opportunities ubiquitous under a regime permitting integration, then the Internet would not constitute either an “open Internet” nor one worth “preserving.” The cognitive dissonance of regulating an unregulated market to protect what has emerged is, however, of longstanding and high pedigree. For over a decade now, we have been living under the dark cloud of Internet

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<sup>65</sup> It has been widely noted in the NN proceeding that the Commission repeatedly cites just two instances of egregious “gatekeeper” conduct by broadband ISPs. In 2005, a small telephone company in North Carolina, Madison River, blocked the use of VoIP services for its DSL customers. A \$15,000 fine was imposed on the operator, which agreed to discontinue the practice. This is the only such example noted by the Commission among the more than 1,000 fixed line telephone carriers in the United States. *See List of ILECs*, TELEPHLUX, <http://www.telephlux.com/list-of-ILECs.html> (last visited Aug. 7, 2011). In 2008, Comcast, the country’s largest cable TV operator, blocked certain users’ peer-to-peer downloads without adequately disclosing the practice to customers. Comcast reached an agreement with BitTorrent, the peer-to-peer software vendor whose users were being blocked, which was then approved by the Commission. The FCC, nonetheless, issued an Order, which was then overturned by the D.C. Circuit Court of Appeals as being beyond the scope of its legislative charter. Neither instance was likely to constitute anticompetitive foreclosure, but even if they had, they would constitute little justification for a sweeping new regulatory policy. As Georgetown University economist Marius Schwartz writes, “This is a remarkably thin record on which to even contemplate the far-reaching regulation. Furthermore, both incidents were swiftly addressed in the absence of the proposed rules, further spotlighting the glaring gap between the proffered rationale for intervention and the proposed rules.” Declaration of Marius Schwartz ex. 3 at 4, Preserving the Open Internet, GN Docket No. 09-191 (FCC Jan. 14, 2010) [hereinafter Schwartz 2010]. U.C. Berkeley economist Michael Katz cites additional FCC examples of potential neutrality violations and quotes the FCC’s words in stating:

*Even if all of these assertions were correct, which is far from evident, they would not establish that the NPRM’s proposed rule against discrimination would promote consumer welfare. In fact, these assertions contribute nothing toward “distinguishing socially beneficial discrimination from socially harmful discrimination in a workable manner.”*

Declaration of Michael L. Katz attach. B ¶ 60, Preserving the Open Internet, GN Docket No. 09-191 (FCC Jan. 9, 2010) [hereinafter Katz 2010] (quoting FCC NN NPRM, *supra* note 61, at 62,646 ¶ 56).

death, even as amazing innovations from the network of networks rock our world and then rock it again. Harvard Law Professor Lawrence Lessig wrote in 2001:

The Internet revolution has ended just as surprisingly as it began. None expected the explosion of creativity that the network produced; few expected that explosion to collapse as quickly and profoundly as it has. The phenomenon has the feel of a shooting star, flaring unannounced across the night sky, then disappearing just as unexpectedly. Under the guise of protecting private property, a series of new laws and regulations are dismantling the very architecture that made the Internet a framework for global innovation.<sup>66</sup>

Lessig articulated just the model of the Internet that the FCC relies on today. “Policymakers need to understand the importance of this architectural design to the innovation and creativity of the original network.”<sup>67</sup> This structure, which allegedly baked in “end-to-end” data flows to avoid frictions imposed by transport networks,<sup>68</sup> was being violated by the “walled gardens” of the Internet. AOL had emerged as the dominant U.S. ISP, in large measure because it offered its customers proprietary content, and in 2000 the major cable operators had entered into exclusive agreements with ISPs such as Excite@Home and RoadRunner, companies that – like AOL – sought to optimize the user’s experience by providing some of the content and applications that they would access. This is just the form of discrimination feared by the FCC today.

So the development of the broadband market over the past decade affords an opportunity for an ‘out of sample’ forecast of the Lessig hypothesis. What has emerged? Broadband was nascent when Lessig wrote; not 1 percent of U.S. households subscribed. Today, over 70 percent do – one index of “the explosive growth in the use of broadband.”<sup>69</sup> As the Commission itself describes it:

BROADBAND IS TRANSFORMING American life . . . Parents on business trips use their smartphones to check e-mail or watch short videos of their children playing soccer, hundreds, if not thousands, of miles away. Americans work together in real time on complex documents from different desks in the same office, and workers in different offices around the world collaborate

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<sup>66</sup> Lawrence Lessig, *The Internet Under Siege*, FOREIGN POL’Y, Nov.-Dec. 2001, at 56, 56.

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

<sup>68</sup> Mark A. Lemley & Lawrence Lessig, *The End of End-to-End: Preserving the Architecture of the Internet in the Broadband Era*, 48 UCLA L. REV. 925 (2001).

<sup>69</sup> FED. COMM’NS COMM’N, NATIONAL BROADBAND PLAN 16 (2010), available at <http://download.broadband.gov/plan/national-broadband-plan.pdf>.

via videoconferencing technology. . . . Students draw on the richness of the Internet to research historical events or watch simulations of challenging math problems. People are using broadband in ways they could not imagine even a few years ago.<sup>70</sup>

“Death” – or “anticompetitive foreclosure” – is difficult to find in the FCC’s description of the Internet ecosystem, one decade on from Lessig’s diagnosis.<sup>71</sup> Indeed, the patient has become so robust that the Commission wants to institute rules to protect its current strapping – posthumous - structure. The “architectural design” model failed to predict the market’s evolution – as per the FCC’s own view of the matter.

#### IV. THE NETWORK OF NETWORKS IS NOT NEUTRAL

“The network is not neutral and never has been,” Clark said, dismissing as “happy little bunny rabbit dreams” the assumptions of net neutrality supporters that there was once a “Garden of Eden” for the Internet. NSFnet, an early part of the Internet backbone, gave priority to interactive traffic, he said: “You’ve got to discriminate between good blocking and bad blocking.”<sup>72</sup>

The FCC misunderstands the economic nature of the network of networks, presenting a stylized history of the Internet that is highly misleading. For instance, the NN Order asserts that there is no historic practice of “pay to play,” wherein delivery networks collect fees from content suppliers for access (or superior access) to the ISP’s customers:

First, pay for priority would represent a significant departure from historical and current practice. Since the beginning of the Internet, Internet access providers have typically not charged particular content or application providers fees to reach the providers’ retail service end users or struck pay-for-priority deals, and the record does not contain evidence that U.S. broadband providers currently engage in such arrangements. Second this departure from longstanding norms could cause great harm to innovation and investment in and on the Internet. . . . [P]ay-for-priority

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<sup>70</sup> *Id.* at 15

<sup>71</sup> Professors Mark Lemley and Lawrence Lessig made further predictions as to the development of broadband markets. See Lemley & Lessig, *supra* note 68. Most striking was the fear that cable TV operators would suppress video streaming to protect their cable TV service revenues. *Id.* at 944. The explosion of Internet video sites, from YouTube to Hulu to Netflix, strongly supports rejection of the Lessig Hypothesis. On this point, see Tim Lee, *A Look Back at Lessig and Lemley*, TECH. LIBERATION FRONT, Dec. 12, 2007, <http://techliberation.com/2007/12/12/a-look-back-at-lessig-and-lemley/>.

<sup>72</sup> Greg Piper, *Internet Architect Suggests “Futures Market” to Avoid Policy Disputes*, COMM. DAILY, Feb. 5, 2009, at \_\_\_.

arrangements could raise barriers to entry on the Internet by requiring fees from edge providers.<sup>73</sup>

This statement, taken as a predicate for categorical rules outlawing certain pricing practices or deals between ISPs and content providers, is both dubious and dangerous. It implicitly concedes that “Internet access providers have . . . struck pay-for-priority deals,” but spins the market description by inserting the modifier, “typically.” This protects the Commission from a straightforward falsehood, but opens the path to rules barring what have been – and are today – important business models advancing innovation. Not only have “walled gardens” generated network growth and, therein, network externalities – from AOL’s dial-up ISP to the proprietary, vertically integrated cable ISPs (@Home, Road Runner) that forged the path in residential broadband – but “discriminatory” economic arrangements help a multitude of backbone networks, edge apps, and mass market ISPs today.

It is not a departure from “longstanding norms” for app vendors to strike deals for preferential treatment. ISPs have long sold prime real estate on their start-up pages – charging app providers for preferential treatment – in deals putting together Google/AOL,<sup>74</sup> Rogers Cable/Yahoo!,<sup>75</sup> and Disney/Comcast.

“Non-neutrality” also widely exists in the very lively CDN space, where popular app sellers buy faster access to the customer’s screen by paying for local caching (supplied globally) by a company like Akamai or Limelight Networks.<sup>76</sup> And it intensifies competitive forces when a broadband ISP is allowed to compete for this business, caching content for those applications that pay extra. These payments are not, as characterized by the FCC, simply extractions that have one-way impacts – increasing barriers to entry. This single-entry book-keeping overlooks

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<sup>73</sup> FCC NN Order, *supra* note 1, at 17,947 ¶ 76.

<sup>74</sup> See DAVID A. VISE & MARK MALSEED, *THE GOOGLE STORY* 112 (2006).

<sup>75</sup> Rogers is a major Canadian cable operator. James McTaggart, *Was the Internet Ever Neutral?* 4 (Sept. 30, 2006), available at <https://www.it-can.ca/direct/pdf/Roundtable18-9-07.pdf>.

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[C]ommercial content distribution networks, such as Akamai, Limelight Networks, and Internap Network Services, operate thousands of servers throughout the world that cache content and services to provide faster and more reliable access to specific Internet websites. . . . [T]hese arrangements allow participating content and access providers to pay for a higher quality of service . . . . In addition to these caching services, the Department [of Justice Antitrust Division] believes that there can be significant benefits in allowing broadband providers to manage their networks and differentiate among some traffic on the Internet.

that, in offering to deliver content better and faster, ISPs take money to *deliver content better and faster*. The “dirt road fallacy” the Commission advances is bogus.<sup>77</sup> Marius Schwartz criticizes this thinking as the “simplistic notion, associated with crude versions of the so-called ‘end-to-end principle,’ that the Internet should be a dumb network with rigidly uniform service quality and pricing.”<sup>78</sup>

ISPs often – indeed, routinely – prioritize traffic so as to improve customer experience. This happens both when CDNs allow app vendors to ‘pay to play,’ and in standard network management functions. Service providers with no conceivable anticompetitive motive, including non-profit organizations and firms lacking market power, routinely restrict customers’ devices and use of the network in their “acceptable use policies” (AUPs). For example, Virginia Broadband (VBB), a wireless Internet Service Provider (WISP) serving about 3,200 subscribers<sup>79</sup> requires that subscribers refrain from “excessive” use of the network.<sup>80</sup> VBB, in competing for

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<sup>77</sup> Professors J. Gregory Sidak and David J. Teece deconstruct the claim:

It is not credible that a network operator would intentionally degrade its best-effort delivery of packets in hopes of inducing suppliers of content and applications to buy prioritized delivery of packets. The empirical evidence confirms that broadband ISPs have, in fact, been investing billions of dollars annually to *increase* the speed and *improve* the quality of best-effort Internet service, even while many broadband ISPs also provide prioritized delivery of video and voice packets over the same physical infrastructure. That outcome is exactly what economics would predict under real-world conditions of platform competition and complementarity between content availability and performance and demand for broadband Internet access services. Even if ISPs were to consider relegating traffic from content and applications providers who did not choose to pay for enhanced QoS to a full-time dirt road—as distinct from the beneficial prioritization of delay-sensitive traffic at times and places of congestion through packet-scheduling algorithms, which is the real issue here—the risk of loss of subscribers would mean, among other things, that ISPs would have no net incentive to do so. Charging different prices for different levels of service promotes inclusion, not exclusion.

J. Gregory Sidak & David J. Teece, *Innovation Spillovers and the “Dirt Road” Fallacy: The Intellectual Bankruptcy of Banning Optional Transactions for Enhanced Delivery over the Internet*, 6 J. COMPETITION L. & ECON. 521, 532 (2010).

<sup>78</sup> Schwartz 2010, *supra* note 65, at 4.

<sup>79</sup> This is the subscriber level reported in an undated document submitted to the National Telecommunications & Information Administration, U.S. Department of Commerce, requesting funds from the 2009 ARRA (“stimulus” monies) to extend its rural network (which stretches across 17 counties in Virginia). Executive Summary, Virginia Broadband, LLC, Rappahannock Region Last Mile Broadband Delivery (2009), <http://www.ntia.doc.gov/broadbandgrants/applications/summaries/1220.pdf>.

<sup>80</sup> The AUP states:

VABB shall have the right to monitor Customer's "bandwidth consumption" (i.e. aggregate volume of data that may be sent or received) at any time and on an on-going basis, and to limit excessive bandwidth consumption by Customer (as determined by VABB) by any means available to VABB, including suspension or termination of Services. VABB reserves the right to implement specific limits on the maximum amount of bandwidth consumption available to Customer per month - defined as 30 consecutive days, beginning on the first day of service for the level of ISP Service subscribed for by

subscribers, has evidently determined that the losses associated with the proscribed options are exceeded by the value of improved opportunities for network users overall. These limits help VBB create a competitive network; indeed, their rules are *productive inputs* into the supply of new broadband options. Lariat Wireless, a small ISP in Laramie, Wyoming, forbids its customers from operating servers, another effort to reduce network congestion and so preserve the utility of the system for other users. Entrepreneur Brett Glass, who launched the WISP in the early 1990s as a co-op, took it over as a for-profit venture in 2003 – making returns of “less than \$5 per customer per month.”<sup>81</sup> Glass testifies:

Our most popular residential service plan comes with a minor restriction: it does not allow the operation of servers. Mr. Chairman, most Internet users would not know what a server was if it bit them, and have no problem uploading content to a Web site such as YouTube for distribution. Business customers that do need to operate servers can obtain that capability by paying a bit more to cover the additional cost of expensive rural bandwidth. But if the rules take effect and the FCC decides against MetroPCS,<sup>82</sup> we'll almost certainly be forced to shift everyone to the more expensive plan. We will therefore be less competitive and offer less value to consumers.<sup>83</sup>

An even starker example of usage restrictions is observed with respect to the (fixed) local area network owned by Ohio University. In a policy that went into effect in April 2007, students and faculty were prohibited from using any peer-to-peer application. The intent is clearly not to suppress competition. According to Chief Information Officer Brice Bible, “The network is a shared resource, and we must ensure that it is available to all users. Peer-to-peer file-sharing consumes a disproportionate amount of resources, both in bandwidth and human technical

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Customer. If Customer exceeds the bandwidth consumption limits assigned to the level of ISP Service for which Customer has subscribed in any month, VABB has the right to limit bandwidth consumption by Customer in excess of such level by any means available to VABB, including to impose an additional fee of \$.05/Megabyte and/or suspension of Services.

*Terms and Conditions*, VIRGINIA BROADBAND, <http://vabb.com/terms.php#uacceptableuse> (last visited Aug. 7, 2011).

<sup>81</sup> *Ensuring Competition on the Internet: Net Neutrality and Antitrust: Hearing Before the Subcomm. on Intellectual Prop., Competition, and the Internet of the H. Comm. on the Judiciary*, 112th Cong. (2011) [hereinafter *NN Hearing*] (prepared testimony of Laurence Brett (“Brett”) Glass, Owner & Founder, Lariat).

<sup>82</sup> MetroPCS is the fifth largest wireless carrier and the firm inspiring the first NN complaint to the FCC under the new rules. The case is explained below. In brief, MetroPCS allows subscribers on an inexpensive plan to access some video content, but not to use their phones for unlimited video streaming. *See infra* \_\_\_\_\_.

<sup>83</sup> *NN Hearing*, *supra* note 81, at 3-4.

support.”<sup>84</sup> Other universities to ban Skype, at least for some period of time, include U.C. Santa Barbara,<sup>85</sup> San Jose State,<sup>86</sup> and the University of Minnesota.<sup>87</sup> More recently, Oxford University banned Spotify, citing network bandwidth concerns.<sup>88</sup> The point of these examples is not to suggest that the IT administrators are right (or wrong), or that better methods for managing networks (than outright bans on certain devices or applications) will become available. It is to read the very strong evidence that reasonable experts charged with keeping networks running – and in no position to extract monopoly profits from vertical foreclosure strategies – might engage in actions that the FCC identifies as “departing from longstanding norms.”

Even if such norms did exist, it would not be clear why regulators should lock the market into them. Indeed, the FCC attempts to make its argument by appealing to the acceptability of such business models to unregulated firms, but then arguing for regulatory enforcement, slipping back into the non sequitur. Not only is the FCC’s structural argument wrong, it is clear to some that the structure of the Internet is, and ought to be, in flux. Many network engineers, including Internet pioneer David Clark, co-author of the oft-cited “end-to-end” paper,<sup>89</sup> argues that with broadband networks displacing dial-up Internet it is appropriate and efficient that “large content networks” (where applications are supplied to the web via high-density access providers) send monetary payments to “large eyeball networks” (where residential customers are served in less dense configurations and, therefore, at generally higher average costs). This is because broadband networks involve substantial infrastructure projects; in contrast, the dial-up ISPs largely piggybacked on existing systems. The policy conclusion is a normative appeal – “pay to play” is welfare-enhancing - but it is based on a positive observation. The emergence of CDNs is already affecting such transactions, and the integration of “large eyeball networks” into the CDN space is a natural development well under way. A new norm has arrived. To pre-empt this

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<sup>84</sup> Notice, *Ohio University Announces Changes in File-sharing Policies*, OHIO UNIVERSITY (Apr. 25, 2007), <http://www.ohio.edu/students/filesharing.cfm>.

<sup>85</sup> Ryan Paul, *More Universities Banning Skype*, ARS TECHNICA, Sept. 2006, <http://arstechnica.com/old/content/2006/09/7814.ars>.

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

<sup>87</sup> *University of Minnesota Recommends Against Skype*, SKYPE FORUM (Nov. 29, 2005), <http://forum.skype.com/index.php?showtopic40891>.

<sup>88</sup> Mike Butcher, *Oxford University Takes a Dislike to Spotify, Bans It*, TECHCRUNCH EUROPE, Jan. 18, 2010, <http://eu.techcrunch.com/2010/01/18/oxford-university-takes-a-dislike-to-spotify-bans-it/>.

<sup>89</sup> J.H. Saltzer, D.P. Reed & D.D. Clark, *End-to-End Arguments in System Design*, 2 ACM TRANSACTIONS ON COMPUTER SYS. 277 (1984).

evolving market niche on the view that the Internet is an “open end-to-end” network lacking “gatekeepers” would be to subvert that development, undermining Internet growth.<sup>90</sup>

It has been postulated that “innovation at the edge” is far more robust than “innovation at the core” of the Internet. Exciting new applications that ride over the network are there seen as generating more economic value than the pipes that carry bits to their destination. “[U]ncordinated innovation at the edge of the network . . . has taught us that, at least sometimes, decentralised innovation trumps innovation at the core.”<sup>91</sup> Yet comparing one set of innovations to the other is not only problematic because we lack a metric to scale the rival contributions, but it is conceptually flawed.<sup>92</sup> Applications at the edge rely on investments in the core, and vice versa. The sets of services are complements, precisely the argument for net neutrality rules – which seek to reduce barriers to edge innovation by attempting to impose rules that purportedly best maintain this complementarity. The implication of that position is that a flourishing edge is indicative of a flourishing core. To separate developments based on appearances is to arbitrarily unpack a team effort.

Similarly, it is an error to categorically favor one set of investment activities over the other as a matter of law. Restrictions placed on advanced data transport networks will predictably harm edge innovators where the result of such regulation is to materially forestall investments in complementary capital (i.e., broadband build-out). Rules constraining network business models are liable to do just this, as they impose rigidities on a changing and unpredictable market environment. Economists and business strategy experts have focused on

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<sup>90</sup> David D. Clark & Marjory S. Blumenthal, *The End-to-End Argument and Application Design: The Role of Trust* (2007),

<http://groups.csail.mit.edu/ana/Publications/PubPDFs/End%20%20end%20argument%20and%20application%20design%20final%20TPRC2007.pdf>.

<sup>91</sup> Lawrence Lessig, *Do You Floss?*, LONDON REV. BOOKS, Aug. 18, 2005, at 24.

<sup>92</sup> Prof. Lessig has suggested that the metric be simple observation: which set of utilities – applications or transport networks – look more useful.

[B]ut when you look at . . . that class of innovators for the network versus the innovators that actually built the Internet, even if we can't in the strict economic sense prove which would have been better, then we have a pretty clear sense of which of those classes of innovators we'd like to be trusting the innovation in this particular context to and which environment has demonstrated more innovative capacity between the two. And maybe it's just a cultural thing, maybe it's red versus blue thing I don't know, but my intuition is that's the way we should be focusing on instead of this really crude really really misleading pro-regulation/anti-regulation debate...”

Lawrence Lessig, Professor, Stanford University, Panel on Internet Economics and “Net Neutrality” at the Conference on Key Issues in Telecommunications Policy (May 10, 2006), *available at* <http://www.aei.org/event/1307>.

the general problem for innovators as one where those creating productive platforms may be left without economic gain, even as other firms extract returns. “It is quite common for innovators . . . to lament the fact that competitors/imitators have profited more from the innovation than the firm” that took the original risks.<sup>93</sup>

This dilemma may undermine the deployment of advanced communications networks. As one recent study laments, “The broadband value chain is headed for a train wreck.”<sup>94</sup> The source of this dire forecast is that network builders will not recoup sufficient returns from the value yielded network applications, disrupting feedback loops and leading to market failure. “The ‘all you can eat’ pricing models that are common today create incentives for providers to limit usage growth rather than invest to support it.”<sup>95</sup> The study concludes that, “Good solutions to this problem need to align the incentives of network operators and upstream stakeholders, for example by enabling monetization of usage that imposes costs on providers.”<sup>96</sup> The policy conclusion may be right or wrong. The more fundamental point is that the analysis properly sees the success of edge and core as inextricably linked, and it properly sees that dynamic adjustments to business models may well improve the mechanisms by which the market supports newer, faster, and better services over time. Rather than protecting one class of economic activity by imposing restrictions on competition from other parts of the value chain, it sees a balancing of interests as key to progress for the system as a whole. The following examples of efficient non-neutrality highlight this economic view.

*DoCoMo’s “walled garden.”*<sup>97</sup> NTT’s DoCoMo, the leading cellular carrier in Japan, first brought web access to customers in February 1999, before cellular systems were engineered for broadband (3G) applications. The carrier<sup>98</sup> launched i-mode as “the first packet-based,

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<sup>93</sup> David J. Teece, *Profiting from Technological Innovation: Implications for Integration, Collaboration, Licensing and Public Policy*, 15 RES. POL’Y 285, 285 (1986).

<sup>94</sup> BROADBAND WORKING GROUP, MIT COMM’NS FUTURES PROGRAM & CAMBRIDGE UNIV. COMM’NS RESEARCH NETWORK, THE BROADBAND INCENTIVE PROBLEM 2 (2005) [hereinafter BROADBAND INCENTIVE PROBLEM], available at <http://cfp.mit.edu/docs/incentive-wp-sept2005.pdf>.

<sup>95</sup> *Id.* at 11.

<sup>96</sup> *Id.*

<sup>97</sup> This sub-section is based on Thomas W. Hazlett, *Modular Confines of Mobile Networks: Are iPhones iPhone?* 19 SUP. CT. ECON. REV. (forthcoming 2011), available at [http://iep.gmu.edu/iepfiler/papers/Hazlett\\_iPhony\\_SSRN-id1533441.pdf](http://iep.gmu.edu/iepfiler/papers/Hazlett_iPhony_SSRN-id1533441.pdf).

<sup>98</sup> Originally NTT Mobile Communications Network. Renamed NTT DoCoMo in April 2000.

always-on, mobile Internet service available anywhere in the world.”<sup>99</sup> “Official” i-mode vendors are featured on the phone’s menu, enabling customers to easily access their content. Billing is handled exclusively through DoCoMo, which lists transactions on subscribers’ monthly statements, and charges content providers 9 percent of revenues for the service. DoCoMo also allows “unofficial sites” to be accessed by i-mode users, although such vendors suffer a severe competitive disadvantage.

DoCoMo erected a “walled garden” which, critics charged, limited customer choice.<sup>100</sup> Yet, i-mode created an innovative hot-house for content. By enabling a platform that limited application prices via vertical restraints, included payments to the ISP, and excluded non-compliant services (specifications set by the carrier), content providers have been given access to a more valuable platform and endowed with more productive opportunities.

At the heart of all this is a paradox: i-mode depends on outside providers for everything from handsets to content, yet it's managed so carefully that nothing is left to chance. Critics see a walled garden, more mobile mall than wireless Web. But in fact, i-mode's success comes less from being walled than from being obsessively tended.<sup>101</sup>

I-Mode has proven exceptionally popular with third party applications developers. Katsumoto Robert Hori, CEO of Cybird, has twenty-three sites connected to i-mode. “For a company like us,” Hori said, “the i-mode environment has proven very profitable.”<sup>102</sup> The result has been a steady stream of content innovation.<sup>103</sup> DoCoMo’s vertical control has favored certain technologies, formats, or business models. The carrier decided, for example, to support Linux and Symbian software for i-mode applications but to exclude Microsoft.<sup>104</sup> Customer acceptance was so pronounced that DoCoMo became Japan’s leading ISP, fixed or mobile. By

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<sup>99</sup> JOHN RATLIFF, DOCOMO AS NATIONAL CHAMPION: I-MODE, W-CDMA AND NTT’S ROLE AS JAPAN’S PILOT ORGANIZATION IN GLOBAL TELECOMMUNICATIONS 12 (2000), available at <http://citeseerx.ist.psu.edu/viewdoc/summary?doi=10.1.1.22.9078>.

<sup>100</sup> As reported by Frank Rose, *Pocket Monster: How DoCoMo’s Wireless Internet Service Went from Fad to Phenom – and Turned Japan into the First post-PC Nation*, WIRED, Sept. 2001, <http://www.wired.com/wired/archive/9.09/docomo.html>.

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

<sup>102</sup> *Id.*

<sup>103</sup> Jack Qiu, *NTT DoCoMo: Review of a Case*, JAPAN MEDIA REV. (Oct. 2004), <http://www.ojr.org/japan/research/1097446811.php>.

<sup>104</sup> Wireless Watch, *Microsoft Excluded from DoCoMo’s Ecosystem*, THE REGISTER, Nov. 26, 2004, [http://www.theregister.co.uk/2004/11/26/Microsoft\\_excluded\\_from\\_docomo/](http://www.theregister.co.uk/2004/11/26/Microsoft_excluded_from_docomo/).

March 2007, it served 52.6 million cell phone subscribers, of which 47.6 million bought i-mode services.<sup>105</sup> This success prompted Japan’s other wireless networks, KDDI and Softbank,<sup>106</sup> to each offer competing platforms. DoCoMo responded by extending its proprietary platform into e-commerce.<sup>107</sup> The upshot is that Japan is noted as the leading wireless data services market globally.

*Dedicated cable bandwidth for cable telephony.* For years, U.S. regulators grappled with the challenges presented in the local telephone market. Thought to be a natural monopoly at the time of the AT&T divestiture in 1984, the objective of gaining rivalry between competing services formed the basic motivation for the Telecommunications Act of 1996. While great efforts were expended in network sharing mandates, ultimately overturned by federal courts as inimical to the stated objectives of the Act, success was finally had: local phone competition emerged when cable TV operators provided high-quality wireline voice services nationwide, head to head with local phone companies.

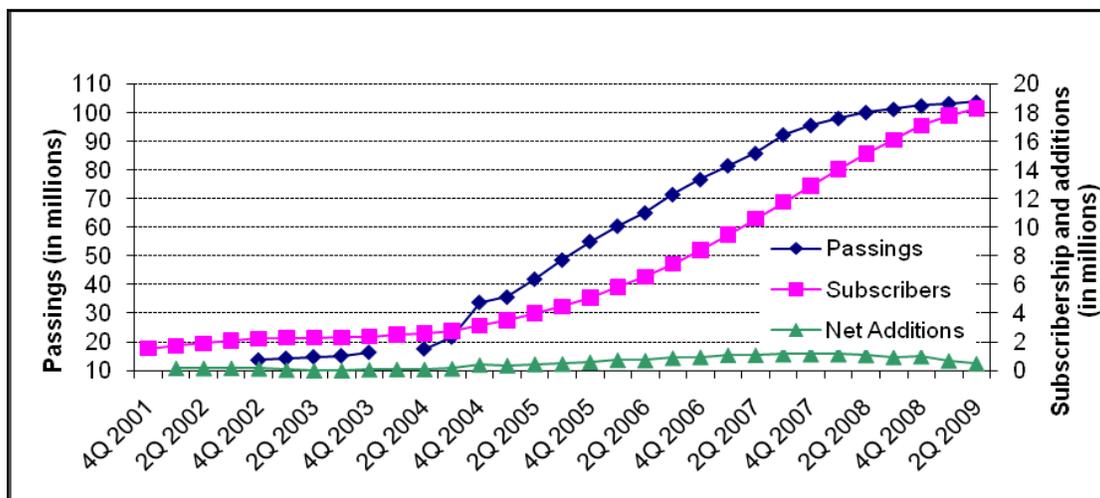


FIG. 1 U.S. CABLE TELEPHONE DEPLOYMENT, 2001-09<sup>108</sup>

<sup>105</sup> *Annual Operating Data*, NTTDOCoMo, <http://www.nttdocomo.co.jp/english/corporate/ir/finance/annual/> (last visited Aug. 7, 2011).

<sup>106</sup> Softbank acquired the assets of Vodafone Japan in 2006. Vodafone had purchased J-Phone in 2001.

<sup>107</sup> See, e.g., John Boyd, *Here Comes the Wallet Phone*, IEEE SPECTRUM, Nov. 2005, at 12; Dan Einhorn, *DoCoMo’s “New Business Model,”* BUS. WEEK, April 19, 2004, [http://www.businessweek.com/technology/content/apr2004/tc20040419\\_6212\\_tc058.htm](http://www.businessweek.com/technology/content/apr2004/tc20040419_6212_tc058.htm).

<sup>108</sup> LOCAL TELEPHONE COMPETITION, FED. COMM’NS COMM’N (2009); Leichtman Research Group - Research Notes (1Q 2002 through 3Q 2009), <http://www.leichtmanresearch.com/research.html#notes>.

The technology deployed by cable operators was voice-over-Internet (VoIP), a product generally called “digital voice.” Build-out and subscribership began exploding in about 2004.<sup>109</sup> Two points are directly relevant to the discussion here: (a) Cable operators use dedicated bandwidth within their local area networks (LANs) to provide a premium service for cable VoIP subscribers.<sup>110</sup> Independent VoIP service providers such as Vonage or Skype are free to market their services to cable modem subscribers, but cannot gain access to the LAN ‘fast lane’ reserved for the cable operator’s voice customers.<sup>111</sup> This evinces vertical control of a complementary application, with discrimination in favor of network-provided services. (b) The discrimination is clearly procompetitive. The leveraging of the network is what, in part, entices cable operators to create and vigorously market voice services. It yields higher returns, and more aggressive competitive risk taking, in extending competitive telephony. With over 100 million U.S. homes now having a choice between rival fixed line phone operators, a key, longstanding competitive policy objective has been met. It owes much to the vertical integration of cable data and cable voice.

*Clearwire’s network discrimination.* An emergent wireless broadband network is being built by Clearwire, a public company whose investors have included Sprint, Intel, Motorola, Google, Comcast, and Time Warner Cable. The system, now offering 4G services at the cutting edge of wireless technology, is investing billions of dollars in an effort to challenge the leading fixed and wireless broadband ISPs. One of the interesting structural features of its operations is that it seeks to leverage the competencies of its partners, favoring their vertical services over unaffiliated rivals. For instance, network access devices embed default applications provided by partner Google.<sup>112</sup> Marketing deals extend to partners Sprint, Comcast, and Time Warner Cable.

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<sup>109</sup> See Figure 1.

<sup>110</sup> Ryan Leatherbury, *Dedicated Bandwidth over Cable: Simplifying the Migration to VoIP Service*, CONNECTED PLANET ONLINE (May 21, 2003, 12:00 PM), [http://connectedplanetonline.com/access/infocus/telecom\\_dedicated\\_bandwidth\\_cable/](http://connectedplanetonline.com/access/infocus/telecom_dedicated_bandwidth_cable/).

<sup>111</sup> “The telephone service that Comcast and the telephone companies sell uses dedicated bandwidth, while the over-the-top VoIP service that Vonage and Skype offer uses shared bandwidth. I certainly hope that native phone service outperforms ad hoc VoIP; I pay good money to ensure that it does.” Richard Bennett, *Damned if You Do, Screwed if You Don’t*, A REGULAR OLD BLOG (Jan. 20, 2009), <http://bennett.com/blog/2009/01/damned-if-you-do-screwed-if-you-dont/>.

<sup>112</sup> “According to published reports, Google has invested \$500 million to secure its place as Clearwire’s default Internet search engine—which probably means Clearwire users will automatically rely on Google unless they know how to manipulate their handheld device’s software to select another search application.” Ted Hearn, *Clearwire*

In some respects, such discriminatory operations are unexceptional – even *de rigeur*. Investors often seek, and obtain, preferential terms in exchange for their financial support. With Clearwire an upstart (with just 688,000 subscribers at year-end 2009,<sup>113</sup> as compared to more than 100 million fixed and mobile ISP subscribers) presumably possessing no market power, there is nothing to suggest that these preferential business terms are anything but procompetitive. But this says much more than that whatever NN rules are adopted should make allowance for firms without market power to enjoy full flexibility in their choice of business models. Rather, it demonstrates that firms use such alliances to more effectively innovate in a competitive market. To categorically exclude such conduct would target all such efficiencies.

*Apple's App Store.* The robust rivalry in smart phones, arguably triggered by Apple iPhone but pioneered by Research In Motion's Blackberry, features highly integrated applications platforms that crucially depend on vertical coordination across multiple layers. The capital deployments of networks, the innovations of device makers, the efficiency of operating systems, and the ingenuity of application providers all tie together in a "wireless ecosystem" that consumers enter by subscribing. There are varying degrees of proprietary control exercised in this cross-platform rivalry: RIM and Apple tend towards more proprietary solutions, while Google's Android OS tends to leave more for third parties to engineer.<sup>114</sup> That is not to say that third parties will predictably generate more sales under one model or the other; to date the RIM and Apple forms of integration are proving most successful in attracting customers and, in Apple's case, application developers. The future may reveal new winners and new models, structures chosen out of competitive confrontation in the market. Network neutrality rules seek to truncate that selection process by foreordaining that less vertical coordination is categorically preferred to more. The economics of that assertion are wrong. Often, more integrated business models outperform more neutral (less integrated) rivals, and so produce social gains.

Indeed, "walled gardens" have contributed materially to the evolution of the Internet. One important example is the business model deployed by America Online (AOL) in the mid-1990s. While the World Wide Web was just beginning to feature content appealing to mass-market consumers, AOL sought to dramatically expand subscribership by offering custom

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*Quiet on Google Stake*, MULTICHANNEL NEWS (June 19, 2008, 10:57 AM),

[http://www.multichannel.com/article/106191-Clearwire\\_Quiet\\_On\\_Google\\_Stake.php](http://www.multichannel.com/article/106191-Clearwire_Quiet_On_Google_Stake.php).

<sup>113</sup> Press Release, Clearwire, Clearwire Reports Fourth Quarter and Full Year 2009 Results (Feb. 24, 2010), available at <http://corporate.clearwire.com/releasedetail.cfm?ReleaseID=551255>.

<sup>114</sup> Hazlett, *supra* note 97 (manuscript at 22-23).

features and proprietary websites. Paying brand name media companies, including *TIME* and the *New York Times*, and investing in new services like the Motley Fool, a financial website, it offered its members what they could not find elsewhere. This not only provided competition to rival ISPs, it gave AOL added incentives to market its services to new customers, “carpet-bombing . . . America with free AOL disks,” in a campaign that would eventually distribute “more than 250 million disks bearing AOL software to the mass market.”<sup>115</sup> Spreading easy to use access was enormously important. “Webheads would sneer that using AOL was ‘the Internet on training wheels,’” writes Ken Auletta. “Yet it was AOL’s user-friendliness that helped popularize the Web – and which attracted thirty-four million paid subscribers in 2002.”<sup>116</sup> As Michael Katz summarizes,

There is no evidence that any particular model of an “open” platform with one-sided pricing and limited network management is the only or best way to facilitate innovation, investment, and consumer welfare. Apple’s iPhone provides an excellent example of a managed system that has been extremely successful in meeting consumer demands.<sup>117</sup>

*Preferential Deals Between ISPs and Content Providers.* Development of innovative “edge” applications has often been advanced by rivalry among content vendors seeking to secure preferential deals with ISPs. Web browsers such as Mozilla Firefox or Opera, for instance, gain traction – entering a market in which the dominance of Microsoft’s Internet Explorer has been documented in U.S. antitrust courts – by entering into exclusive contracts with both ISPs and complementary application providers.<sup>118</sup> Google, now the world’s leading search engine, strategically achieved economies of scale via exclusive contracts with ISPs. On May 1, 2002, Google’s service was first featured as the default choice on AOL’s start-up page – a prime locational advantage sought also by search rivals Inktomi and Overture, but won by Google’s commitment to compensate the country’s leading ISP “with a very large financial guarantee, running to many millions of dollars.”<sup>119</sup>

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<sup>115</sup> SWISHER, *supra* note 62, at 99.

<sup>116</sup> AULETTA, *supra* note 63, at 94-95.

<sup>117</sup> Katz 2010, *supra* note 65, ¶ 76.

<sup>118</sup> Marshall Fitzpatrick, *Yahoo! Loses Mobile Giant Opera to Google; Did Google Just Buy a Mobile Browser?*, READWRITEWEB (Feb. 27, 2008, 8:44 AM), [http://www.readwriteweb.com/archives/yahoo\\_looses\\_opera.php](http://www.readwriteweb.com/archives/yahoo_looses_opera.php).

<sup>119</sup> VISE & MALSEED, *supra* note 74, at 113.

Today, services such as ESPN3 market themselves not to end-users but to ISPs; customers of nonsubscribing ISPs do not obtain access to their content.<sup>120</sup> This approach may or may not run afoul of net neutrality regulation, depending on rules adopted and interpretations rendered. But the more essential point is that this business model, one that creates “walled garden” content for ISPs, is instigated by the application provider and is a business model selected to advance its interests. Market structures differentiate the content available on competing ISPs are not inherently hostile to the interests of edge innovators. Treating them as if they are does not protect such entrepreneurial activity, but suppresses it.

## V. ANTITRUST’S RULE OF REASON VERSUS NET NEUTRALITY

The core of the net neutrality debate is centered upon the desirability of a regulatory rule prohibiting network operators from entering into vertical contractual relationships.<sup>121</sup> Proponents of net neutrality have emphasized the possibility that broadband access providers have an incentive to disadvantage rivals and ultimately harm competition.<sup>122</sup> The NN Order articulates these concerns:

[A] broadband provider may act to benefit edge providers that have paid it to exclude rivals (for example, if one online video site were to contract with a broadband provider to deny a rival video site access to the broadband provider's subscribers). End users would be harmed by the inability to access desired content, and this conduct would lead to reduced innovation and fewer new services. Consistent with these concerns, delivery networks that are vertically integrated with content providers, including some MVPDs, have incentives to favor their own affiliated content."<sup>123</sup>

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<sup>120</sup> David Joachim, *Sports’ Greatest Hits at One Web Site (but There’s a Catch)*, N.Y. TIMES, July 31, 2006, <http://www.nytimes.com/2006/07/31/technology/31cable.html?fta=y>. Since this article was published, ESPN360 changed its name to ESPN3.

<sup>121</sup> See Gary S. Becker, Dennis W. Carlton & Hal S. Sider, *Net Neutrality and Consumer Welfare*, 6 J. COMPETITION L. & ECON. 497, 509 (2010); Jonathan E. Nuechterlein, *Antitrust Oversight of an Antitrust Dispute: An Institutional Perspective on the Net Neutrality Debate*, 7 J. ON TELECOMM. & HIGH TECH. L. 19, 21 (2009); Howard A. Shelanski, *Network Neutrality: Regulating with More Questions than Answers*, 6 J. ON TELECOMM. & HIGH TECH. L. 23, 24 (2007);.

<sup>122</sup> FCC NN Order, *supra* note 1, at 17,915 ¶ 21.

<sup>123</sup> *Id.* at 17,918 ¶ 23 (footnotes omitted).

The FCC cites the standard modern vertical foreclosure references emerging from the “raising rivals’ cost” literature, which considers the conditions under which an incumbent firm might successfully disadvantage rivals, reduce competition, and harm consumers.<sup>124</sup>

As is well known in the industrial organization literature, while vertical contracts can occasionally give rise to competitive foreclosure concerns, they can also generate significant efficiencies and enhance consumer welfare.<sup>125</sup> Indeed, vertical contractual arrangements are often efficient and result from the normal competitive process. They are frequently observed between firms lacking any meaningful market power, implying that there must be efficiency justifications for the practice. The economics literature is replete with such procompetitive explanations: reducing double marginalization, preventing free riding on manufacturer-supplied investments,<sup>126</sup> reducing free riding and facilitating investment in promotional effort,<sup>127</sup> to name a few. The benefits of these efficiencies are at least partially passed on to consumers in the form of lower prices, increased output, higher quality, and greater innovation.

Vertical contractual arrangements pose a more complex and nuanced problem for designing efficient legal rules than do other forms of business conduct that are either presumptively anticompetitive (e.g., cartels) or nearly always procompetitive (e.g., an above cost price reduction). A vast theoretical literature documenting both pro- and anticompetitive uses of vertical contractual arrangements evidences this problem. Vertical contracts, without more, have theoretically ambiguous welfare effects – that is, some forms of discrimination are efficient and pro-consumer while others raise potential competitive concerns. Antitrust jurisprudence has developed a case-by-case, rule of reason approach to vertical foreclosure concerns, while net neutrality regulation would ban, as a class, certain vertical relationships. A critical question, and

<sup>124</sup> FCC NN Order, *supra* note 1, at 17,918-19 ¶ 23 n.59 (citing Steven C. Salop & Thomas Krattenmaker, *Anticompetitive Exclusion: Raising Rivals’ Costs to Achieve Power over Price*, 96 YALE L.J. 214 (1986); Steven C. Salop & David Scheffman, *Raising Rivals’ Costs*, 73 AM. ECON. REV. 267–71 (1983)).

<sup>125</sup> Oliver Williamson, Michael L. Wachter & Jeffrey E. Harris, *Understanding the Employment Relation: The Analysis of Idiosyncratic Exchange*, 6 BELL J. ECON. 250, 269-70 (1975); *see also* R.H. Coase, *The Nature of the Firm*, 4 ECONOMICA 386, 398-401 (1937) (indicating that integration between entrepreneurs in a given market lowers the transaction costs associated with divisions of labor, thereby increasing a firm’s productive processes that directly flow to the consumer); Benjamin Klein, Robert G. Crawford & Armen A. Alchian, *Vertical Integration, Appropriate Rents, and the Competitive Contracting Process*, 21 J.L. & ECON. 297, 300 (1978) (discussing how vertical integration allows for avoidance of postcontractual opportunistic behavior).

<sup>126</sup> Howard Marvel, *Exclusive Dealing*, 25 J.L. & ECON. 1 (1982); *see also* *Ryko Mfg. Co. v. Eden Servs.*, 823 F.2d 1215 (8th Cir. 1987).

<sup>127</sup> *See, e.g.*, Benjamin Klein & Joshua D. Wright, *The Economics of Slotting Contracts*, 50 J.L. & ECON. 421 (2007); Benjamin Klein & Andres V. Lerner, *The Expanded Economics of Free-Riding: How Exclusive Dealing Prevents Free-Riding and Creates Undivided Loyalty*, 74 ANTITRUST L.J. 473 (2007); Benjamin Klein & Kevin M. Murphy, *Vertical Restraints as Contract Enforcement Mechanisms*, 31 J.L. & ECON. 265 (1988).

the one to which we now turn, is whether the antitrust approach is a superior alternative to net neutrality regulation which would ban, as a class, certain vertical relationships.<sup>128</sup>

Approaching this question requires a clear objective function: consumer welfare. A rigorous economic approach to designing a legal rule that would maximize consumer welfare in the context of business conduct with ambiguous welfare consequences is desirable. Such an approach requires an analytical framework that takes into account: (1) the probability that the business arrangement is anticompetitive; (2) the magnitude of the social cost of errors in assessing the competitive virtue of the business arrangement, including both false positives (procompetitive conduct is erroneously barred) and false negatives (anticompetitive conduct is falsely absolved); and (3) the administrative costs of implementing the alternative legal rules. The so-called error-cost approach to the design of legal rules, which amounts to the application of economic analysis and empirical evidence in a decision-theoretic framework,<sup>129</sup> has a long history in the economic analysis of law generally,<sup>130</sup> and antitrust specifically.<sup>131</sup>

Generally, the error-cost approach allows a regulator, court, or policymaker to use new evidence to update a prior belief about the anticompetitive (or procompetitive) nature of a specific business practice, either as the theoretical and empirical understanding of the practice evolves over time or with case-specific information. The optimal decision rule is then based upon the new, updated belief about the likelihood that the practice will be anticompetitive, thus minimizing a loss function measuring the social costs of false positives, false negatives, and administrative costs.<sup>132</sup> The cost-minimizing rule, and thus the legal rule most likely to maximize consumer welfare, depends most critically on the likelihood that particular practices are anticompetitive and the magnitude of the losses attributable to both types of error.

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<sup>128</sup> Accord Howard A. Shelanski, *Competing Legal Approaches to Network Neutrality Regulation*, 3 COMM. & CONVERGENCE REV. 26, 30 (2011) (“[I]t is this very ambiguity in the welfare effects of price discrimination and in the incentives to discriminate inefficiently that is important. The welfare ambiguity means that any rule patently barring discrimination could have unintended, negative consequences because the conduct sought to be barred — price discrimination — is neither always bad nor always good.”).

<sup>129</sup> See Frank H. Easterbrook, *The Limits of Antitrust*, 63 TEX. L. REV. 1 (1984).

<sup>130</sup> See, e.g., William M. Landes, *An Economic Analysis of the Courts*, 14 J.L. & ECON. 61 (1971); Richard A. Posner, *THE BEHAVIOR OF ADMINISTRATIVE AGENCIES*, 1 J. LEGAL STUD. 305 (1972).

<sup>131</sup> C. Frederick Beckner III & Steven C. Salop, *Decision Theory and Antitrust Rules*, 67 ANTITRUST L.J. 41 (1999); Keith N. Hylton & Michael Salinger, *Tying Law and Policy: A Decision Theoretic Approach*, 69 ANTITRUST L.J. 469 (2001); Joshua D. Wright, *Overshot the Mark? A Simple Explanation of the Chicago School’s Influence on Antitrust*, 5 COMPETITION POL’Y INT’L 179 (2009).

<sup>132</sup> For a more formal exposition of such a loss function in the context of the vertical contracting practices at issue in the present debate, see James C. Cooper, Luke M. Froeb, Dan O’Brien & Michael G. Vita, *Vertical Antitrust Policy as a Problem of Inference*, 23 INT’L J. INDUS. ORG. 639 (2005).

One can begin to approach the design of an optimal legal rule for the set of business practices under the net neutrality umbrella — a variety of vertical contractual relationships — by focusing upon a more narrow inquiry: under what conditions would a per se prohibition on such business practices maximize consumer welfare? Once those conditions are identified, one can examine whether they are satisfied in the present setting. From a welfare perspective, a per se rule would be appropriate only if vertical contracts were overwhelmingly (but not necessarily always) likely to cause competitive harm and the ability to engage in a more fact-intensive inquiry to absolve instances of procompetitive vertical contracts provided a sufficiently small marginal benefit to consumers.

A leading antitrust casebook describes

per se rules [as] mak[ing] the most economic sense when factors like the following are present: [(1)] if permitted, the prohibited conduct will likely harm competition severely; [(2)] if the conduct is reviewed for reasonableness rather than held illegal per se, defendants will frequently claim that their conduct is reasonable, it will be costly and time-consuming to evaluate those claims, and in the end, few such claims will prove to be valid; and [(3)] little pro-competitive conduct will be deterred by establishing a rule that denies defendants the ability to prove that their conduct was reasonable.<sup>133</sup>

It is simple to see that the design of a consumer-welfare maximizing legal rule for vertical contracting cannot be resolved by competing theories alone; empirical evidence is a necessary input to application of the error-cost framework. Such evidence allows a court or regulator to form sensible estimates of the key parameters: How often is the potentially prohibited conduct anticompetitive? What is the magnitude of the social losses imposed by false positives or negatives? While economists can reasonably disagree about which empirical studies should receive the most weight for purposes of policy analysis, or forming a precise probability estimate, we shall see that even a summary view of the existing literature reveals that the calls

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<sup>133</sup> GAVIL ET AL., *ANTITRUST LAW IN PERSPECTIVE: CASES, CONCEPTS AND PROBLEMS IN COMPETITION POLICY* (2d ed. 2008); see also Jonathan B. Baker, *Per Se Rules in the Antitrust Analysis of Horizontal Restraints*, 36 *ANTITRUST BULL.* 740 n.29 (1991) (“[F]rom a law and economics perspective, per se rules may be preferred to a rule of reason when violations are expensive for a court to observe but are strongly correlated with observable behaviors that are cheaply observed, and when it would be expensive for a violator to break the law without engaging in the observable behavior. Under such circumstances, the judicial system would minimize enforcement costs by conditioning liability on the cheaply observable behavior, and the resulting enforcement errors, corporate compliance costs, and social costs of deterring socially beneficial actions, would not produce an efficiency loss.”).

for network neutrality — a per se approach — are either indifferent or immune to Bayesian updating based upon the empirical evidence on vertical contracts.

Multiple academics review the existing theory and evidence on vertical restraints and single-firm conduct more generally, and they uniformly conclude that the practices are generally procompetitive. Furthermore, they conclude antitrust rules should “slant” towards requiring plaintiffs to demonstrate clear anticompetitive effect before courts and juries can find violations.<sup>134</sup> No serious antitrust scholar argues that underlying economic theory and empirical evidence warrant per se treatment for vertical contracts.<sup>135</sup> A comprehensive survey of the vertical contracting literature in economics is beyond the scope of our present task, though it has been done admirably by others.<sup>136</sup> Some highlights from those surveys paint the picture of just how divergent the economic evidence is from the conditions under which a per se rule can be justified on consumer welfare grounds.

While measuring the welfare effects of vertical restraints can be especially difficult in the absence of a natural experiment, over the last twenty-five years there has been a concerted effort to add empirical knowledge to our large menu of theoretical models. Two recent empirical surveys summarize the existing empirical literature. The first, authored by a group of Federal Trade Commission and Department of Justice economists, reviews twenty-four papers, published between 1984 and 2005, providing empirical effects of vertical integration and vertical restraints. The second, by Francine Lafontaine and Margaret Slade, reviews twenty-three papers with some overlap with the first survey. While the reader is referred to these surveys for methodological details concerning individual studies, a careful review, provided here, of both surveys offers a synthesis of the evidence.

Cooper et al. observe that “empirical analyses of vertical integration and control have failed to find compelling evidence that these practices have harmed competition, and numerous

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<sup>134</sup> See, e.g., Cooper et al., *supra* note 132; Francine Lafontaine & Margaret Slade, *Exclusive Contracts and Vertical Restraints: Empirical Evidence and Public Policy*, in HANDBOOK OF ANTITRUST ECONOMICS (Paolo Buccirossi ed., forthcoming 2009); Daniel P. O’Brien, *The Antitrust Treatment of Vertical Restraints*, in REPORT: THE PROS AND CONS OF VERTICAL RESTRAINTS 40 (2008), available at [http://www.kkv.se/upload/Filer/Trycksaker/Rapporter/Pros&Cons/rap\\_pros\\_and\\_cons\\_vertical\\_restraints.pdf](http://www.kkv.se/upload/Filer/Trycksaker/Rapporter/Pros&Cons/rap_pros_and_cons_vertical_restraints.pdf).

<sup>135</sup> Some have argued that the per se rule previously applied to minimum resale price maintenance, prior to *Leegin Creative Leather Products, Inc. v. PSKS, Inc.*, 551 U.S. 877 (2007), is justified on stare decisis grounds. See Marina Lao, *Free Riding: An Overstated, and Unconvincing, Explanation for Resale Price Maintenance*, in HOW THE CHICAGO SCHOOL OVERSHOT THE MARK: THE EFFECT OF CONSERVATIVE ECONOMIC ANALYSIS ON U.S. ANTITRUST 196, 201 (Robert Pitofsky ed., 2008).

<sup>136</sup> Cooper et al., *supra* note 132; O’Brien, *supra* note 134; Lafontaine & Slade, *supra* note 134.

studies find otherwise,” and while “some studies find evidence consistent with both pro- and anticompetitive effects,” “virtually no studies can claim to have identified instances where vertical practices were likely to have harmed competition.”<sup>137</sup>

Lafontaine and Slade reach a similar conclusion. Summarizing and synthesizing the evidence they reviewed, the authors conclude that “it appears that when manufacturers choose to impose restraints not only do they make themselves better off, but they also typically allow consumers to benefit from higher quality products and better service provision . . . the evidence thus supports the conclusion that in these markets, manufacturer and consumer interests are apt to be aligned.”<sup>138</sup>

In a more recent analysis of the vertical restraints literature, Dan O’Brien notes that three additions to the literature provide new evidence that vertical restraints mitigate double marginalization and promote retailer effort. O’Brien goes on to conclude that “with few exceptions, the literature does not support the view that these practices are used for anticompetitive reasons,” and supports “a fairly strong prior belief that these practices are unlikely to be anticompetitive in most cases.”<sup>139</sup>

To be clear, our claim is not that vertical contracts can never generate foreclosure and create competitive concerns. To the contrary, we stipulate that reasonable economists can differ in their views about the likelihood of competitive harm on a case-by-case basis; net neutrality supplants that case-by-case approach with a blanket prohibition. Recalling the conditions that render per se rules desirable from a consumer welfare perspective — that is, if vertical contracts were always or almost always anticompetitive in practice — and contrasting those theoretical conditions with the state of empirical evidence indicating that vertical contracts are overwhelmingly procompetitive, it is clear that net neutrality cannot be supported on economic grounds as evidence-based policy.

A close evaluation of the studies discussed in the economic literature will reveal that few deal with network access providers, cable, or wireless. Indeed, the NN Order anticipates the objection that it is promulgating policies that far outstretch the data, citing the Goolsbee study and a number of examples of perceived anticompetitive conduct.<sup>140</sup> As we discuss,<sup>141</sup> the

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<sup>137</sup> Cooper et al., *supra* note 132, at 18.

<sup>138</sup> Lafontaine & Slade, *supra* note 134, at 409.

<sup>139</sup> O’Brien, *supra* note 134, at 72-73.

<sup>140</sup> FCC NN Order, *supra* note 1, at 17,918 ¶ 23 n.60.

Goolsbee study neither sets forth enough evidence to justify a conclusion that vertical contracts warrant application of a per se rule nor actually demonstrates anticompetitive foreclosure. With respect to the anecdotal evidence of foreclosure, even taking the FCC's descriptions of these events at face value for the moment, as Professor Gerald Faulhaber observes, “by any standard, four complaints about an entire industry in over a decade would seem to be cause for a commendation, not for restrictive regulations.”<sup>142</sup>

Not only is there substantial evidence that access regulation has deterred rather than advanced broadband network deployment, but there is a plethora of marketplace experience demonstrating that “non-neutral” business models deployed by ISPs have often proven highly efficient. Vertical integration, in which a firm expands its scope to produce complementary products, and vertical restrictions, where a firm favors one set of complements over another, can enable productive coordination leading to lower costs and better products. That such strategies may also, in certain instances, produce anticonsumer results is established in economic theory,<sup>143</sup> even as the empirical support for successful, anticompetitive outcomes is weak.<sup>144</sup> But no theory or empirical analysis supports the view that such market structures are inherently anticompetitive and should be categorically restricted. This forms the basis of the very strong arguments by Alfred Kahn,<sup>145</sup> Jon Nuechterlein,<sup>146</sup> Scott Hemphill,<sup>147</sup> and others<sup>148</sup> that network discrimination conflicts are best left to antitrust enforcement. Moreover, the history of regulatory attempts to impose vertical structures on communications carriers has not, in most instances, ended happily for consumers.<sup>149</sup>

The economic theory and evidence do not support the conclusion that vertical contracts generally, or those under the net neutrality umbrella specifically, are always anticompetitive.

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<sup>141</sup> See *infra* Part VII.

<sup>142</sup> Gerald R. Faulhaber, *Economics of Net Neutrality*, 3 COMM. & CONVERGENCE REV. 53, 57 (2011).

<sup>143</sup> See Joseph Farrell & Phil Weiser, *Modularity, Vertical Integration, and Open Access Policies: Towards a Convergence of Antitrust and Regulation in the Internet Age*, 17 HARV. J.L. & TECH. 85 (2003).

<sup>144</sup> See Cooper et al., *supra* note 132.

<sup>145</sup> Alfred E. Kahn, *Network Neutrality* (AEI-Brookings Joint Ctr. for Regulatory Studies, Working Paper No. RP07-05, 2007), available at [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=973513](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=973513).

<sup>146</sup> Jonathan Neuchterlein, *Antitrust Oversight of an Antitrust Dispute: An Institutional Perspective on the Net Neutrality Debate*, J. TELECOMM. & HIGH TECH. L. (2008).

<sup>147</sup> Scott Hemphill, *Network Neutrality and the False Promise of Zero-Price Regulation*, YALE J. ON REG. (2008).

<sup>148</sup> See J. Gregory Sidak, *A Consumer-Welfare Approach to Network Neutrality Regulation of the Internet*, 2 J. COMPETITION L. & ECON. 349 (2006); Philip J. Weiser, *The Next Frontier for Network Neutrality*, 60 ADMIN. L. REV. 273 (2008); Christopher S. Yoo, *Beyond Network Neutrality*, 19 HARV. J.L. & TECH. 1 (2005).

<sup>149</sup> See Gerald R. Faulhaber, *Policy-Induced Competition: The Telecommunications Experiments*, 15 INFO. ECON. & POL'Y 79 (2003); Bruce M. Owen, *Antecedents to Net Neutrality*, REG., Fall 2007, at 14, 15.

That is not our burden to bear. Quite the contrary, the burden lies with those advocating the rigid per se approach to demonstrate that consumers will benefit from a legal rule prohibiting whole classes of business arrangements, as compared to alternatives. For net neutrality to generate consumer gains relative to the leading alternative, antitrust's rule of reason, it must be the case that there is a substantial basis in economic theory and empirical evidence upon which to conclude that the vertical contracting is nearly always anticompetitive. Describing the relationship between that assertion and economic reality as "at tension" would seriously understate the state of affairs.<sup>150</sup>

With good reason, both the FTC and DOJ have called into question a net neutrality regime and argued that antitrust is up to the task of protecting consumers from vertical contracts that threaten competition. Former Chairman Deborah Majoras observed:

let me make clear that if broadband providers engage in anticompetitive conduct, we will not hesitate to act to use our existing authority. But I have to say, thus far, proponents of net neutrality regulation have not come to us to explain where the market is failing or what anticompetitive conduct we should challenge; we are open to hearing from them.<sup>151</sup>

The DOJ is also on the record criticizing network neutrality. While the FCC dismissed the DOJ critique<sup>152</sup> as limited to "price regulation, which we are not adopting,"<sup>153</sup> the Commission appears to have missed the point and economic substance of their own regulatory regime. To the contrary, it is well understood that network neutrality is indeed a form of price regulation. As Becker, Carlton, and Sider correctly observe: "net neutrality, however, is properly considered a form of price regulation because it limits the form of pricing that can be practiced. Such regulations thus limit a broadband provider's revenue opportunities and its ability to

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<sup>150</sup> See Bruce M. Owen, *Antitrust and Vertical Integration in "New Economy" Industries with Application to Broadband Access*, 38 REV. INDUS. ORG. 363, 381 (2010) ("[E]mpirical evidence that vertical integration or vertical restraints are harmful is weak, compared to evidence that vertical integration is beneficial -- again, even in cases where market power appears to be present. Thus, it is reasonable to conclude that prophylactic regulation is not necessary, and may well reduce welfare. Sound policy is to wait for ex post evidence of harm to justify intervention in specific cases.").

<sup>151</sup> Deborah Platt Majoras, Chairman, Fed. Trade Comm'n, Luncheon Address at The Progress & Freedom Foundation's Aspen Summit (Aug. 21, 2006); accord FED. TRADE COMM'N, BROADBAND CONNECTIVITY COMPETITION POLICY (2007), available at <http://www.ftc.gov/reports/broadband/v070000report.pdf> ("[T]o date we are unaware of any significant market failure or demonstrated consumer harm from conduct by broadband providers.").

<sup>152</sup> DOJ 2010, *supra* note 3.

<sup>153</sup> FCC NN Order, *supra* note 1, at 17,931 ¶ 43 n.143.

differentiate itself from competitors, and thereby stifle incentives to invest and innovate.”<sup>154</sup>

None of the above says that regulators cannot improve the performance of broadband services. Procompetitive reforms can help enormously. First among these initiatives is a push for aggressive spectrum policies that permit advanced wireless broadband networks to develop more rapidly and with far larger capacities. Indeed, competition among fixed and wireless data networks is substantially truncated by the artificial lack of bandwidth, a constraint imposed not by opportunity costs but by rigid regulatory structures that leave vast swaths of valuable airspace severely under-utilized.<sup>155</sup> The FCC’s recent emphasis on new liberal license allocations in the National Broadband Plan constitutes a major shift in regulatory focus and is a welcome development.<sup>156</sup>

One final argument concerning the relative merits of antitrust should be addressed. The FCC and net neutrality proponents often argue that the fact that antitrust analysis might not prohibit all use of vertical contracts is a bug rather than a feature of that regime.<sup>157</sup> However, that antitrust is not a “slam dunk” can be a feature as well as a bug. The economic discipline of antitrust requires the Commission to establish a real theory, garner actual evidence, and convince judges who do not depend on the regulated industry for future employment. The rule of reason,

<sup>154</sup> Becker et al., *supra* note 121, at 513.

<sup>155</sup> I recently submitted a proposal to the FCC for an overlay license auction which would facilitate the efficient, expeditious reallocation of TV Band frequencies to potentially higher-valued uses (including mobile broadband). Thomas W. Hazlett, *Unleashing the TV Band: A Proposal for An Overlay Auction*, A National Broadband Plan for Our Future, Docket No. GN 09-51(Dec. 18, 2009). Many previous studies have noted the social cost of the spectrum allocation rigidities that artificially constrain wireless services. See Reed Hundt & Gregory L. Rosston, *Spectrum Flexibility Will Promote Competition and the Public Interest*, IEEE COMM. MAG. Dec 1995 at 40. Gregory L. Rosston & Jeffrey Steinberg, *Using Market-Based Spectrum Policy to Promote the Public Interest*, 50 FED. COMM. L.J. (1997); Thomas W. Hazlett, *The Wireless Craze, the Unlimited Bandwidth Myth, the Spectrum Auction Faux Pas, and the Punchline to Ronald Coase’s ‘Big Joke’: An Essay on Airwave Allocation Policy*, 15 HARV. J.L. & TECH. 335 (2001); Gerald R. Faulhaber, *The Future of Wireless Telecommunications: Spectrum As A Critical Resource*, 18 INFO. ECON. & POL’Y 256 (2006); Thomas W. Hazlett, *Optimal Abolition of FCC Allocation of Radio Spectrum*, 22 J. ECON. PERSP. 103 (2008); Thomas W. Hazlett & Roberto E. Muñoz, *A Welfare Analysis of Spectrum Allocation Policies*, 40 RAND J. ON ECON. 424 (2009); Thomas W. Hazlett, *Tragedy T.V.: Rights Fragmentation and the Junk Band Problem*, 53 ARIZONA L. REV. (forthcoming 2011); Thomas W. Hazlett & Roberto E. Muñoz, *What Really Matters in Spectrum Allocation Design* (AEI Brookings Joint Center Working Paper No. 04-1, 2004) (updated April 16, 2010 for the Berkeley-Georgetown Conference on Wireless Policy), available at [http://businessinnovation.berkeley.edu/Mobile\\_Impact/Hazlett-Munoz\\_Spectrum\\_Matters.pdf](http://businessinnovation.berkeley.edu/Mobile_Impact/Hazlett-Munoz_Spectrum_Matters.pdf).

FED. COMM’NS COMM’N, *supra* note 69, at 73-106; see also Thomas W. Hazlett, *Putting Economics Over Ideology*, BARRON’S, July 10, 2010, available at <http://mason.gmu.edu/~thazlett/opeds/PuttingEconomicsAboveIdeology.pdf>.

<sup>157</sup> See FCC NN Order, *supra* note 1, at 17,930-31 ¶ 42 n.141; Jon Leibowitz, Commissioner, Fed. Trade Comm’n, Concurring Statement Regarding the Staff Report: “Broadband Connectivity Competition Policy” (June 27, 2007) available at [www.ftc.gov/speeches/leibowitz/V070000statement.pdf](http://www.ftc.gov/speeches/leibowitz/V070000statement.pdf) (“[T]here is little agreement over whether antitrust, with its requirements for ex post case by case analysis, is capable of fully and in a timely fashion resolving many of the concerns that have animated the net neutrality debate.”).

as applied to vertical contractual arrangements, represents a century-old attempt to develop a legal rule aimed at reliably distinguishing procompetitive from anticompetitive arrangements. Indeed, recent antitrust enforcement efforts suggest that the FTC and DOJ have no problem bringing vertical theories.<sup>158</sup> NN proponents argue that the rule of reason is too restrictive. They contend it may only reach instances of foreclosure or discrimination in which harm to consumers can be demonstrated, thereby absolving discrimination and other undesirable conduct that is competitively beneficial for consumers. This description of the rule of reason is correct; but these features of the rule of reason are consumer protections that stem from an incremental evolution now over a century old and are based upon increasing economic knowledge and evidence. These features are precisely why it has garnered so much support from scholars and commentators.<sup>159</sup>

While the affirmative case for antitrust over network neutrality on consumer welfare grounds is clear, the fact that antitrust might not “work” does not default to the position that the FCC will work. If, after 121 years of trying, the antitrust regime has trouble, then it is difficult to imagine that the FCC – routinely seen as “one of the more dysfunctional agencies in Washington”<sup>160</sup> will do better. Consistent with this observation, the FCC has already flopped with its initial forays; the MetroPCS and Comcast matters, to the extent they are reflective of the net neutrality regime, evince no understanding of the underlying economics in the NN Order.

## VI. THE PLURAL OF ANECDOTE IS NOT DATA: FCC CLAIMS CONCERNING HARMFUL DISCRIMINATION ARE SPECULATIVE, INCOMPLETE, OR CONTRADICTORY

In the absence of systematic empirical evidence, the FCC turns to a number of anecdotal accounts to support its claim that vertical relationships generate “dangers to Internet openness [that] are not speculative or merely theoretical.”<sup>161</sup> Such claims are properly evaluated in the context of the FCC’s case for net neutrality generally. The FCC and NN proponents offer a simple case in support of net neutrality: (1) the Internet has been a virtual circle of innovation,

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<sup>158</sup> See *United States v. Dentsply*, 399 F.3d 181 (3d Cir. 2005); *United States v. Microsoft*, 253 F.3d 34 (D.C. Cir. 2001); *Transitions Optical, Inc.*, 2010 WL 1804580 (FTC 2010); *Intel Corp.*, 2010 WL 3180281 (FTC 2010).

<sup>159</sup> See *supra* notes 145-148.

<sup>160</sup> JAMES B. MURRAY, JR., *WIRELESS NATION: THE FRENZIED LAUNCH OF THE CELLULAR REVOLUTION IN AMERICA* 21 (2002).

<sup>161</sup> FCC NN Order, *supra* note 1, at 17,925, ¶ 35.

(2) the circle depends upon the openness of the Internet, and thus, (3) we need to impose new rules to protect that structure.

The call for new rules is a non sequitur. The Internet most certainly has spurred remarkable innovation, diverse business models, and economic growth. However, much of this innovation has occurred without regulatory requirements that constrain ISPs or others from adopting new business models and arrangements that respond to changes in technology and market conditions.<sup>162</sup> The FCC concedes that vertical contractual arrangements and price discrimination increase consumer welfare.<sup>163</sup> Thus, the case for net neutrality is not only based upon the non sequitur described above, but it also anticipates that the new regime will prohibit at least some procompetitive business arrangements and thus make some consumers worse off.

As we have stressed, from an economic perspective, the critical question is whether the tax imposed upon consumers by restricting vertical contracts facilitating competitive price discrimination can be justified on the grounds that net neutrality will create offsetting consumer welfare gains. Here, as in Part V, the key question is whether the FCC can satisfy the burden of persuasion with an appeal to economic theory and evidence. We have demonstrated that neither basic industrial organization economic theory regarding vertical contracting nor existing empirical evidence support the Commission's position.<sup>164</sup>

The FCC attempts to elude its evidentiary burden to prove that net neutrality's benefits exceed its costs to consumers, asserting that there is no "persuasive reason to believe that in the absence of open Internet rules broadband providers would lower charges to broadband end users, or otherwise change their practices in ways that benefit innovation, investment, competition, or end users."<sup>165</sup> Instead of citing to convincing empirical evidence in support of this proposition, the FCC cites to its own order.<sup>166</sup> Without convincing empirical evidence, the FCC's case for net neutrality collapses under the weight of a cost-benefit analysis<sup>167</sup> and amounts to the naked

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<sup>162</sup> See Becker, Carlton & Sider, *supra* note 121, at 499 ("To date, and in the absence of regulatory requirements to do so, access providers have maintained business models and network management practices that, as a general rule, do not prioritize traffic or impose congestion-based charges").

<sup>163</sup> NPRM, *supra* note 61, at 62,651 ¶ 103.

<sup>164</sup> See *supra* Part V. The Commission's contention that its concerns are not "merely theoretical or speculative" depends critically upon its misinterpretation of Professor Goolsbee's analysis of foreclosure in cable markets. See *infra* Part VII.B.

<sup>165</sup> FCC NN Order, *supra* note 1, at 17,928-29 ¶ 40.

<sup>166</sup> *Id.* ¶ 17,929 n.132 (citing *id.* at 17,922 ¶ 29); *id.* at 17,929 ¶ 133 (citing *id.* at 17,928 ¶ 28).

<sup>167</sup> The FCC concedes that the benefits of network neutrality rules should exceed their costs. FCC NN Order, *supra* note 1, at 17,927 ¶¶ 38, 39.

assertion that if we do not impose new rules, there is no evidence that the broadband networks will be better. For example, the FCC claims that “widespread interference with the Internet’s openness would likely slow or even break the virtuous cycle of innovation that the Internet enables, and would likely cause harms that may be irreversible or very costly to undo.”<sup>168</sup> This is a radical departure from evidence-based policy.

The most serious attempt to proffer empirical support of the frequency, or social costs, of business arrangements that the net neutrality regime would prevent comes in the form of a list of examples: (1) the 2005 Madison River case, resolved with \$15,000 fine; (2) the 2008 Comcast decision, involving Comcast’s alleged interference with BitTorrent traffic, which was resolved voluntarily and without FCC authority;<sup>169</sup> (3) a mobile operator that “allegedly blocked” access to a payment company that was not the exclusive contractor for the network, where no anticompetitive element in the agreement was noted;<sup>170</sup> and (4) a claim that MetroPCS “restricted the types of lawful applications that could be accessed over its 3G mobile wireless network.”<sup>171</sup>

The NN Order goes further to catalog a handful of “additional allegations of blocking, slowing, or degrading P2P traffic.”<sup>172</sup> The FCC then proceeds to document these additional allegations with yet another list, beginning with the observation that “in May 2008 a major cable broadband provider acknowledged that it had managed the traffic of P2P services.”<sup>173</sup> Of course, universities and small ISPs routinely do the same thing, and it is hardly sufficient to demonstrate the presence of market power, or a serious danger of competitive harm.

Next, the FCC notes that “In July 2009, another cable broadband provider entered into a class action settlement agreement stating that it had ‘ceased P2P Network Management Practices,’ but allowing the provider to resume throttling P2P traffic.”<sup>174</sup> This was RCN, an ‘overbuilder’ with so little market power it has already declared bankruptcy! While RCN denied

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<sup>168</sup> *Id.* ¶ 38.

<sup>169</sup> *See supra* Part II.

<sup>170</sup> As we have discussed, the competitive benefits of exclusive dealing arrangements have long been recognized in the economics literature. For a summary, see Alden F. Abbott & Joshua D. Wright, *Antitrust Analysis of Tying Arrangements and Exclusive Dealing*, in 4 ANTITRUST LAW & ECONOMICS 183 (Keith N. Hylton ed., 2010).

<sup>171</sup> FCC NN Order, *supra* note 1, at 17,925 ¶ 35.

<sup>172</sup> *Id.* at 17,926 ¶ 36.

<sup>173</sup> *Id.* at 17,927 ¶ 38; *see also* Amy Schatz, *Cox About to Feel Wrath of Net Neutrality Activists*, WASH. WIRE (May 15, 2008 5:44 PM), <http://blogs.wsj.com/washwire/2008/05/15/cox-about-to-feel-wrath-of-net-neutrality-activists/>.

<sup>174</sup> FCC NN Order, *supra* note 1, at 17,926 ¶ 36 (footnotes omitted).

any wrongdoing in settling these allegations,<sup>175</sup> and the FCC acknowledges that its targeting of P2P applications was aimed at easing network congestion, the more pertinent point for evaluating the desirability of network neutrality rules is that RCN does not have market power, and such discrimination is much more likely to be efficient and proconsumer than result in anticompetitive foreclosure.

The FCC's next anecdotal example of allegations of conduct the network neutrality rules will address is the claim that "other broadband providers have engaged in similar degradation."<sup>176</sup> As with the RCN example, the FCC's economics do not distinguish what it describes as "degradation" that makes all parties worse off from that which enhances others' services. In summing up allegations of blocking, slowing, or degrading P2P traffic, and assigning equal weight to all such allegations regardless of their competitive impact, the FCC eschews a consumer-welfare oriented approach. The FCC observes that broadband providers frequently reserve "sweeping rights to block, degrade, or favor traffic," including one provider whose terms of service reserve such rights "without limitation." But evaluate those terms compared to any small Internet service provider without market power (including, for example, Virginia Broadband) and one will see similar network management rules. A central tenet of industrial organization economic analysis is that if one commonly observes contractual terms and business arrangements adopted by both firms with and without market power, the practice is likely efficient.

Finally, the FCC stacks two more anecdotal exemplars of blocking allegations, observing that "a major mobile broadband provider prohibits use of its wireless service for 'downloading movies using peer-to-peer file sharing services' and VoIP applications."<sup>177</sup> Once again, the FCC's example involves MetroPCS; once again, the FCC's anecdotal account fails to recognize that without market power, MetroPCS's wireless network management principles do not threaten consumers. Quite the contrary, these rules enhance others' services, and welfare, but those benefits are omitted from the FCC's anecdotal scorecard. The FCC ends its string of anecdotes in describing complaints concerning Comcast's allegedly "overly restrictive device approval procedures."<sup>178</sup> Comcast has now completed a 105 MBPS Docsis 3.0 deployment across its

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<sup>175</sup> *Id.* ¶ 36 n.110.

<sup>176</sup> *Id.* ¶ 36.

<sup>177</sup> *Id.*

<sup>178</sup> *Id.*

entire market area, about 40 percent of the United States, and key to advancing American consumers' access to broadband.

Three consistent themes emerge from evaluation of these anecdotes. One is that they bear little to no resemblance to the concerns about economic foreclosure described throughout the NN Order. For example, market power is a necessary condition for such foreclosure; without it, industrial organization economists recognize that the same business practices condemned in the NN Order are likely to be welfare enhancing. When the FCC shifts from economic theory to its attempt to muster empirical support for its new rules, it abandons any attempt to apply the theories with rigor, or to ensure that their conditions are satisfied. Appeals to anecdote are relied upon in support of a theoretical model which, on its own terms, would reject the relevance of the example.

The second theme is that, despite the dearth of empirical data supporting its concerns and the nearly uniform recognition that vertical contracting practices are more likely to help than harm consumers, the NN Order defiantly but perversely rejects the notion that it involves heavy-handed regulation. As discussed above, the FCC converts strenuous objection from the Department of Justice into support for network neutrality on the basis of a serious misunderstanding of basic economics. The FCC claims that while the DOJ "specifically endorsed requiring greater transparency by broadband providers," it "recognized that in concentrated markets, like the broadband market, it is appropriate for policymakers to limit 'business practices that thwart innovation.'"<sup>179</sup> Most boldly, the FCC claims that "although the Department cautioned that care must be taken to avoid stifling infrastructure investment, it expressed particular concern about price regulation, which we are not adopting."<sup>180</sup> The FCC appears utterly unaware that net neutrality rules regulate prices by prohibiting certain business models.<sup>181</sup> Even where the FCC rules do not outright prohibit certain business models, the regulations perversely aim at Internet service providers that block content so as to appeal to their subscribers preferences! For example, the FCC would eliminate obvious procompetitive "blocking," including

an Internet access service that provides access to a substantial subset of Internet endpoints based on end users preference to avoid certain content, applications, or services; Internet access services

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<sup>179</sup>*Id.* at 17,931 ¶ 42 n.143.

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

<sup>181</sup> Becker, Carlton & Sider, *supra* note 121, at 513.

that allow some uses of the Internet (such as access to the World Wide Web) but not others (such as e-mail); or a “Best of the Web” Internet access service that provides access to 100 top websites could not be used to evade the open Internet rules applicable to “broadband Internet access service.”<sup>182</sup>

Thirdly, the FCC discussion of these anecdotes reveals an important flaw in the reasoning of net neutrality proponents concerning the link between incentives for network owners to discriminate, incentives to invest, and consumer welfare. Proponents of network neutrality often conflate discrimination with welfare, arguing, as Professor Barbara van Schewick does, that “if network owners do not have an incentive to discriminate [anticompetitively] against independent applications anyway, the imposition of a network neutrality regime will not reduce their profits.”<sup>183</sup> It is possible to simultaneously hold the views that network owners have no incentive to discriminate against independent applications and that regulation reduces their incentives to invest. FCC Chief Economist Marius Schwartz explains the flaw in the contrary position. Schwartz correctly explains that van Schewick and others’ argument “assumes counterfactually that all discrimination and, in fact, all charging, is necessarily harmful. It also ignores inevitable regulatory errors and that the resulting uncertainty will discourage investment.”<sup>184</sup>

As we have explained, the claim is not that ISPs have no incentives to integrate or manage networks; they quite commonly do so fruitfully. But they also do so efficiently and in all ranges of manners and methods that produce benefits for consumers and appeal to their preferences. The option value to do so in the future is quite obvious. What is clear, however, after an evaluation of the theoretical and empirical support that can be mustered in favor of the FCC’s network neutrality rules, is that the anticompetitive foreclosure arguments – integrating into content, creating monopolies, and then extracting rents by leveraging ISP market power – are so far from the real world evidence that not a single serious example (one that is faithful to the anticompetitive foreclosure theories relied upon by the FCC in justifying network neutrality) can be attempted, let alone established. The premier applications – Google Search, Twitter, Facebook, Netflix, Hulu.com – are coming onto the platform. At best, these applications purchase (or create their own) CDNs, and the ISPs are starting to play. Critically, however, no

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<sup>182</sup> FCC NN Order, *supra* note 1, at 17,933 ¶ 47 (footnote omitted).

<sup>183</sup> Barbara van Schewick, *Towards an Economic Framework for Network Neutrality Regulation*, 5 J. ON TELECOMM. & HIGH TECH. L. 329, 332 n.6 (2007).

<sup>184</sup> Schwartz 2010, *supra* note 65, at 30 n.52.

monopoly has been sighted (even if only on a far-off horizon), and the idea that integration brings new rivalry is clearly a procompetitive outcome. Quashing it would reduce both consumer welfare, broadband infrastructure investment incentives, and useful services for content developers – a policy failure trifecta.

## VII. THE FCC’S FAILED SEARCH FOR ECONOMIC EVIDENCE

### A. *Alleged Instances of Discrimination are Uncompelling Evidence of Anticompetitive Conduct*

The Commission has been crafting a net neutrality policy for the better part of a decade. The NN Order states that the rules “we adopt today follow directly from the Commission’s bipartisan Internet Policy Statement, adopted unanimously in 2005,”<sup>185</sup> guidelines that were announced in a famous speech by former FCC Chairman Michael Powell in early 2004.<sup>186</sup> The Commission opened a Notice of Inquiry in 2007,<sup>187</sup> flowing into a 2009 Notice of Proposed Rulemaking<sup>188</sup> and then to the NN Order issued in December 2010.

From the beginning, regulators focused on examples of ISP conduct that restricted network usage in ways that appeared both discriminatory and unrelated to the provision of high-quality service. Powell’s initial foray was driven by theories of anticompetitive foreclosure<sup>189</sup> and examples of allegedly “non-neutral” conduct by broadband ISPs.<sup>190</sup> Nothing in this rendition of marketplace evolution connected the ISP actions to reduced consumer welfare or

<sup>185</sup> FCC NN Order, *supra* note 1, at 17,907 ¶ 5.

<sup>186</sup> *Preserving Internet Freedom: Guiding Principles for the Industry*, Michael K. Powell, Chairman, Fed. Comm’n Comm’n, Preserving Internet Freedom: Guiding Principles for the Industry, Remarks at the Silicon Flatirons Symposium on “The Digital Broadband Migration: Toward a Regulatory Regime for the Internet Age” (Feb. 8, 2004), available at [http://hraunfoss.fcc.gov/edocs\\_public/attachmatch/DOC-243556A1.pdf](http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-243556A1.pdf).

<sup>187</sup> Broadband Industry Practices, 22 FCC Rcd. 7894 (2007).

<sup>188</sup> FCC NN NPRM, *supra* note 61.

<sup>189</sup> Powell cited research that listed possible sources of anticompetitive vertical conduct: Joseph Farrell & Philip J. Weiser, *Modularity, Vertical Integration, and Open Access Policies: Towards a Convergence of Antitrust and Regulation in the Internet Age*, 17 HARV. J.L. & TECH. 85 (2003).

<sup>190</sup> Powell noted that

[a] few troubling restrictions have appeared in broadband service plan agreements. Professor Tim Wu of the University of Virginia School of Law catalogued some of these . . . things such as cable companies’ early efforts to impose restrictions on use of virtual private networks, WiFi and home networking equipment and on operation of servers in the home.”

See Tim Wu, *Network Neutrality, Broadband Discrimination*, 2 J. ON TELECOMM. & HIGH TECH. L. 141 (2003).

suggested that NN rules would improve options for users. Vertical restrictions can generally be connected to network efficiencies in management or pricing, potentially improving overall user experience. Meanwhile, reduced regulation – avoiding new NN mandates – tends to improve investment incentives for ISPs, leading to improved infrastructure build-out.<sup>191</sup> Hence, the examples put forth by the FCC require some overall evaluation, balancing countervailing effects, to establish a case for market failure let one for regulatory effectiveness. Even while citing instances of such conduct (or misconduct), Powell surmised that mere anecdotes failed to form a compelling argument for regulatory intervention. “[T]he case for government imposed regulations regarding the use or provision of broadband content, applications and devices is unconvincing and speculative.”<sup>192</sup>

Economists reviewing the FCC record consistently lodge the same objection. In response to the Commission’s 2007 Notice of Inquiry, for instance, the Antitrust Division of the U.S. Department of Justice declared the entire record devoid of the indicators of anticonsumer conduct: “Commenters failed to submit evidence in response to the Commission’s request for evidence of harmful discrimination or other behavior suggesting the existence of a systematic or widespread problem.”<sup>193</sup> Following the 2009 Notice of Proposed Rulemaking, the noted industrial organization economist and former FCC Chief Economist, Michael Katz, noted that the Commission presented “a stylized and inaccurate perception of the current state of the Internet.” Acting to implement net neutrality regulations on this view “would be antithetical to evidence-based policy making and would lead to policy conclusions that were not grounded in reality.”<sup>194</sup> In a paper responding to the proposed NN rules, lawyer J. Gregory Sidak and economist David J. Teece argue that “speculative fears cannot justify the overbroad prohibition embodied in the FCC’s proposed nondiscrimination rule.”<sup>195</sup> And Marius Schwartz, a

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<sup>191</sup> This is not only implied by economic theory, and the consensus view of financial analysts, it is a relationship assumed by FCC broadband regulators. When rejecting calls for “open access” regulation on cable modem service suppliers in 1999, FCC Chair William Kennard said that to impose such mandates on ISPs would suppress investment flows and truncate the emerging marketplace. “The fact is that we don’t have a duopoly in broadband. We don’t have a monopoly in broadband. We have a NO-opoly. . . . We have to get these pipes built. But how do we do it? We let the marketplace do it.” William E. Kennard, Chairman, Fed. Comm’ns Comm’n, *The Road Not Taken: Building a Broadband Future for America*, Remarks Before the National Cable Television Association (June 15, 1999), available at <http://transition.fcc.gov/Speeches/Kennard/spwek921.html>. For economic research highly consistent with this view, see *infra* Part \_\_\_.

<sup>192</sup> Powell, *supra* note 186, at 4.

<sup>193</sup> DOJ 2006, *supra* note 76, at 9.

<sup>194</sup> Katz 2010, *supra* note 65, ¶¶ 5-6.

<sup>195</sup> Sidak & Teece, *supra* note 77, at 537.

Georgetown economics professor (appointed the new FCC Chief Economist in June 2011<sup>196</sup>) offered an even blunter assessment: “no analysis of the effectiveness of competition in the broadband marketplace is presented.”<sup>197</sup>

### B. *The FCC’s Citation to Economic Authority*

Such criticism was heard by the FCC. In the December 2010 NN Order, the Commission laid out its slim list of alleged horrors – the Madison River and Comcast episodes again the featured examples – but then confronted the lack of economic evidence head-on in Footnote 60. Acknowledging that potential sources of non-neutral conduct do not show anticonsumer consequence, the NN Order references a single study – written by University of Chicago economist, Austan Goolsbee<sup>198</sup> – and states:

In addition to the examples of actual misconduct that we provide . . . the Goolsbee Study provides empirical evidence that cable providers have acted in the past on anticompetitive incentives to foreclose rivals, supporting our concern that these and other broadband providers would act on analogous incentives in the future. We thus disagree that we rely on “speculative harms alone” or have failed to adduce “empirical evidence.”

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<sup>196</sup> News Release, Fed. Commc’ns Comm’n, FCC Names Marius Schwartz Chief Economist; Jonathan Baker and Gregory Rosston to Serve as Senior Economists for Transactions, (June 6, 2011), *available at* <http://www.fcc.gov/document/fcc-names-marius-schwartz-chief-economist-jonathan-baker-and-gregory-rosston-serve-senior-e>.

<sup>197</sup> Schwartz 2010, *supra* note 65, at 3.. Prof. Schwartz went on to show how the agency’s approach to economic analysis as entirely ad hoc.

The Notice states that “imposing a fee on content, application, and service providers could reduce total welfare more than imposing the same fee on the end users and no fee on the content, application, and service providers.” (¶ 70.) But one cannot presume a systematic tendency in this direction. It is true that higher fees to content providers — unaccompanied by incremental performance or other benefits — would tend to discourage their participation; but the same is true on the consumer side if higher prices are charged to them. By themselves, these observations clearly are not sufficient to guide policy.

*Id.*, at 21.

<sup>198</sup> AUSTAN GOOLSBEE, VERTICAL INTEGRATION AND THE MARKET FOR BROADCAST AND CABLE TELEVISION PROGRAMMING (2007), *available at* [http://fjallfoss.fcc.gov/edocs\\_public/attachmatch/DA-07-3470A10.pdf](http://fjallfoss.fcc.gov/edocs_public/attachmatch/DA-07-3470A10.pdf), *revised by Research Studies on Media Ownership*, FED. COMMC’NS COMM’N (Sept. 5, 2007), <http://transition.fcc.gov/ownership/studies.html>.

This claim, the FCC's sole citation<sup>199</sup> to supporting economic scholarship, is remarkable on a number of fronts.

First, there is the simple matter that the one study they find to inform their economic analysis regarding anticompetitive conduct by broadband ISPs does not concern broadband services. Hence, the Commission reveals that it was unable to locate a single study that, by examining marketplace data, concluded that there existed credible evidence of market failure.

Second, there is the equally revealing fact that the Goolsbee study, which does not evaluate regulatory rules, provides no evidence whatever on the efficacy of network neutrality, or related, policies. The Commission has, hence, failed to adduce any support for its assertion that the reforms instituted would positively impact consumers.

Third, Professor Goolsbee does not claim the economic conclusions the FCC claims: "This kind of calculation," he writes in reference to his empirical investigation, "is obviously meant only to be suggestive. But applied with better data to more narrowly defined markets, this type of approach might be able to provide an empirical basis for the threshold-type exemptions often used by the FCC and other regulatory agencies where certain markets or firms are exempted from regulation when they have been deemed to be 'competitive.'"<sup>200</sup> The FCC skips the suggestion for further research, preferring to take the economics as decided – no matter the explicit disclaimer "obviously" offered by the author.

Fourth, the Commission elects to selectively cite only the Goolsbee results, ignoring other economic research that evaluates the effects of cable TV regulation, ignoring research published in peer reviewed journals. Before noting that research, it helps to explain the key issue being investigated in papers researching the effects of vertical integration in cable TV markets.

Bias in selecting cable TV programming – say, Time Warner is more likely to include CNN-fn, rather than Bloomberg, on channel line-ups of its cable TV systems, given that it owns CNN-fn and not Bloomberg – could be explained by efficiency as readily as by any anticompetitive factor. Indeed, Time Warner may have purchased (or launched) CNN-fn because it believed its subscribers would find its programming valuable. Vertical integration allows the operator the opportunity to supply its own inputs, cutting out the middleman – and the

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<sup>199</sup> To be clear, Footnote 60 also cites the following passage: DAVID WATERMAN & ANDREW WEISS, VERTICAL INTEGRATION IN CABLE TELEVISION 142–43 (1997). Yet, these economists (Prof. Waterman is at the University of Indiana, Dr. Weiss at the FCC) do not claim to have found anticompetitive foreclosure in cable TV markets.

<sup>200</sup> GOOLSBEE, *supra* note 198, at 30.

costs thereof. (Prices are often reduced via integrated structure, as such enterprises avoid “double marginalization.”) Hence, the economic literature on vertical integration seeks to discern the difference between favoritism, which drives virtually the whole of the FCC analysis, and market inefficiency, which the FCC categorically ignores. The Goolsbee study purports to have found anticompetitive conduct.

Yet, the FCC ignores the broad swath of research that reach sharply different conclusions. For instance, in Tasneem Chipty’s 2001 paper, evidence of cable operator favoritism (for owned channels) was found, with the result that subscribers gained access to a greater number of cable networks and quality-adjusted prices fell. Consumer welfare increased with integration, in the presence of “foreclosure.”<sup>201</sup> This was largely consistent with a 1997 study by George Ford and John D. Jackson that found that vertical integration reduced costs.<sup>202</sup> And it is entirely consistent with the consensus findings in other markets. As Stanford economist and long-time cable television expert Bruce Owen summarizes:

While there is no shortage of theoretical models in which vertical integration may be harmful, most such models have restrictive assumptions and ambiguous welfare predictions—even when market power is assumed to be present. Empirical evidence that vertical integration or vertical restraints are harmful is weak, compared to evidence that vertical integration is beneficial—again, even in cases where market power appears to be present.<sup>203</sup>

A recent survey of empirical research on vertical integration in cable and other sectors, conducted by four economists at the U.S. Federal Trade Commission, stated that it is “difficult to find evidence that vertical controls reduce welfare.”<sup>204</sup> The authors concluded:

Because the welfare effects of vertical practices are theoretically ambiguous, optimal decisions depend heavily on prior beliefs, which should be guided by empirical evidence. Empirically, vertical restraints appear to reduce price and/or increase output. Thus, absent a good natural experiment to evaluate a particular restraint’s effect, an optimal policy places a heavy burden on

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<sup>201</sup> Tasneem Chipty, *Vertical Integration, Market Foreclosure, and Consumer Welfare in the Cable Television Industry*, 91 AM. ECON. REV. 428, 450 (2001).

<sup>202</sup> George S. Ford & John D. Jackson, *Horizontal Concentration and Vertical Integration in the Cable Television Industry*, 12 REV. INDUS. ORG. 501 (1997).

<sup>203</sup> Bruce M. Owen, *Antitrust and Vertical Integration in the “New Economy,”* 29-30 (Stanford Law and Economics Olin Working Paper No. 400, 2010), available at [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1689278](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1689278).

<sup>204</sup> Luke Froeb, Director, Bureau of Econ., Fed. Trade Comm’n, Economics & Antitrust: Enforcement R&D (Sept. 2, 2005), available at <http://www.ftc.gov/speeches/froeb/earie.pdf>.

plaintiffs to show that a restraint is anticompetitive.<sup>205</sup>

This survey, consistent with other findings, represents a consensus representing the state of economic understanding. In an important 2007 paper in the *Journal of Economic Literature*, economists Francine Lafontaine and Margaret Slade summarize economic research thusly:

[O]verall a fairly clear empirical picture emerges. The data appear to be telling us that efficiency considerations overwhelm anticompetitive motives in most contexts. Furthermore, even when we limit attention to natural monopolies or tight oligopolies, the evidence of anticompetitive harm is not strong . . . . As to what the data reveal in relation to public policy, . . . [w]e are . . . somewhat surprised at what the weight of the evidence is telling us. It says that, under most circumstances, profit maximizing vertical-integration decisions are efficient, not just from the firms' but also from the consumers' points of view. Although there are isolated studies that contradict this claim, the vast majority support it. Moreover, even in industries that are highly concentrated so that horizontal considerations assume substantial importance, the net effect of vertical integration appears to be positive in many instances. . . . We therefore conclude that, faced with a vertical arrangement, the burden of evidence should be placed on competition authorities to demonstrate that that arrangement is harmful before the practice is attacked.<sup>206</sup>

Fifth, and perhaps most fundamentally, the FCC's citation to the Goolsbee study is *logically incorrect*. When the evidence in the research paper is properly interpreted, it does not imply market failure. Indeed, it reveals – with the marketplace data it examines using the empirical model it develops – that cable TV operators are *not*, on average, engaging in anticompetitive conduct. To reference, as its sole economic evaluation, the Goolsbee paper as supporting not only a conclusion of endemic market failure, but evidence suggesting that regulatory intervention on the order of NN rules is proconsumer, is so egregious an error as to call for a rather detailed explanation of what the Goolsbee analysis involves and what conclusions it reaches.

### C. *Evaluating the Goolsbee Results*

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<sup>205</sup> James C. Cooper, Luke M. Froeb, Dan O'Brien & Michael G. Vita, Abstract, *Vertical Antitrust Policy as a Problem of Inference*, 23 INT'L J. INDUS. ORG. 639 (2005).

<sup>206</sup> Francine Lafontaine & Margaret Slade, *Vertical Integration and Firm Boundaries: The Evidence*, 45 J. ECON. LIT. 629, 677, 680 (2007).

i. Empirical Approach

Goolsbee studies the question of anticompetitive conduct without directly addressing the question of whether consumers are better off due to vertical integration. Indeed, the analysis assumes that most of what influences the flow of video programming to consumers is exogenous to the key question it investigates: whether, given the existing system and a number of cable TV networks as carriage choices, cable operators tend to carry their own program networks as opposed to the networks owned by others. This is part of the economic analysis of vertical integration in cable TV markets, but it is dominated by other concerns. The more important questions for consumers involve how markets create new video programming and expand platforms for delivering this programming to customers.

An illustration with the weakness of this approach is found by considering the implications of Professor Goolsbee's admission that vertical integration is decreasing over time. "Tables 8A and 8B show that of the top 15 networks as measured by the size of their prime time audience, the share of vertically integrated networks has been falling over time, from eight in 1997 to four in 2005."<sup>207</sup> Simultaneously, a huge increase occurs in the quantity of programming being carried by cable TV operators: "The number of networks increased by 359 in the ten years from 1996 to 2005." Moreover, the overwhelming proportion of these new networks is not owned by cable TV operators. "Independent networks made up 311 of that 359, vertically integrated networks only 48. The share of networks identified by the FCC as being vertically integrated has basically been cut in half over this period—from almost 40% in 1996 to just over 20% in 2005."<sup>208</sup>

These facts illuminate the question of how consumers are likely impacted by market structure. While they are noted in the Goolsbee analysis, however, they are then cast aside, finding no part of the economic analysis and being ignored in the policy conclusions reached. This arbitrarily sets aside some of the most essential data bearing on the question of anticompetitive foreclosure. The dramatic expansion in cable TV programming, and audience share versus broadcast TV, implies that markets – with or without vertical integration – are

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<sup>207</sup> GOOLSBEE, *supra* note 198, at 21.

<sup>208</sup> *Id.*

improving content quality and viewer choice.<sup>209</sup> That most new program channels are produced by firms not owning cable TV systems is evidence that operators are not foreclosing entry into vertical markets. That the most successful cable TV networks – such as ESPN, by far the most valuable<sup>210</sup> -- are owned by broadcasters, firms which compete head-to-head with cable TV operators, strongly supports this conclusion.

Goolsbee notes “[t]he data suggest that vertical integration has been getting less prevalent over time.”<sup>211</sup> Indeed, not only have independent entrants become increasingly successful, but cable TV programmers with ownership interests in cable or satellite distribution have been divesting, splitting their firms into specialized, standalone parts. This raises distinct implications. Were operators to extract monopoly profits by favoring their own, less valuable programming, they would sacrifice these gains by failing to become – or stay – highly integrated. Such key market evidence is simply ignored, despite its direct bearing on the defined research topic:

[I]t is . . . worth trying to understand why vertically integrated systems tend to be more likely to carry their own channels than independent cable systems and whether this can be attributed to market power.<sup>212</sup>

Goolsbee conducts two sets of econometric tests using data from cable TV markets. The first inquiry seeks to determine whether multiple system cable TV operator (MSO)-owned cable TV program networks out-perform cable TV networks owned by other firms. This is undertaken to discover whether there are efficiencies (as per evidence of out-performance) associated with vertical integration. The second investigation focuses on cable operator carriage decisions, searching for information about the degree of favoritism exhibited for networks owned by the operator. The paper claims to find no evidence of efficiency, and possible evidence of anticompetitive foreclosure, given that self-carriage bias both appears and then appears to lessen

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<sup>209</sup> THOMAS W. HAZLETT, VERTICAL INTEGRATION IN CABLE TELEVISION: THE FCC EVIDENCE 10 (2007), available at <http://www.arlingtoneconomics.com/studies/vertical-integration-in-cable-television.pdf>.

<sup>210</sup> According to Cable Operators . . . Fox News Channel Most Valuable Network on Lineup, VIAMEDIA BLOG (Feb. 24, 2011), <http://viamediablog.com/2011/02/24/according-to-cable-operators-fox-news-channel-most-valuable-network-on-lineup/> (“ESPN, as might be expected, was valued highest at \$1.16 per sub/month”).

<sup>211</sup> *Id.* at 2. The disparity in the text may stem from the fact that the first comment related to both broadcasting and cable, although the passage quoted did not invoke this distinction.

<sup>212</sup> *Id.* at 21.

in markets with more intense retail competition. Both empirical pursuits are seriously flawed, however. Properly interpreted, they bring forth *no evidence* supporting the conclusion that anticompetitive foreclosure is deterring consumer welfare.

ii. The Efficiency Inquiry

Here, cable TV program networks are examined to see if those owned by cable TV systems exhibit higher subscriber growth, revenues, and program expenditures than independent networks. Finding no systematic statistical relationship, the paper concludes that there is no evidence that economic efficiency is causing or resulting from vertical integration.

The interpretation is suspect in two respects. First, the lack of observed results from vertical integration could be interpreted, just as easily, as indicating that there is no evidence of an anticompetitive outcome. Were integrated cable operators to favor their own programming networks, such networks could well exhibit higher growth rates. For instance, Professors Dong Chen and David Waterman's 2005 article is cited in Goolsbee for its showing that cable operators may favor their own programming on basic tiers, relegating rival cable program networks to digital tiers. Such discrimination would presumably result in nonintegrated program networks exhibiting relatively poor growth in subscribers, license fees, and advertising revenues. That the lack of affiliation produces no statistically significant correlation suggests that this does not obtain. More generally, the evidence reveals neither efficiency nor anticompetitive discrimination. Hence, Chen and Waterman, who find evidence of operator favoritism in cable channel selections, conclude, "It was not possible to conclude from this study whether the foreclosure patterns we observe are efficiency or anti-competitively motivated, or how measures of consumer welfare are affected."<sup>213</sup>

Second, the cable network indices Goolsbee examines are at least two levels removed from the actual efficiencies that we seek to understand. The first level is corporate: vertical integration, when adopted by firms, is designed to advance the economic returns of the combined entity, not just the program network. Hence, some cable TV networks could be vertically integrated with cable operators to achieve important efficiencies that result in increased revenues

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<sup>213</sup> Dong Chen & David Waterman, Vertical Foreclosure in the U.S. Cable Television Market: An Empirical Study of Program Network Carriage and Positioning (Oct. 2005) (unpublished manuscript) *available at* <http://ssrn.com/abstract=843544> (manuscript at 19).

or subscribers not for the program network but for the MSO. Indeed, the MSO might invest in certain networks that feature low earnings, at least for some period, if they expand system subscribership (say, by expanding content menu diversity) or promise to prove more popular in future periods (when some of the gains will be realized by the MSO as well as the network). This dynamic would explain the Goolsbee findings, but imply the existence of economies from integration.

Consider the first basic cable TV network, C-SPAN, founded in 1979 by a consortium of MSOs.<sup>214</sup> While funded by cable TV operators, it is non-profit, selling no ads and realizing only modest license fees (from operators) that are used to cover costs, not repatriate owners.<sup>215</sup> In the empirical framework in Goolsbee, the low (zero) returns constitute evidence of a lack of efficiency. In fact, the integration created new video content in order to expand the universe of cable subscriptions, increasing revenues flowing to operators. These benefits are ignored in the analysis. That C-SPAN has survived for over thirty years suggests that it is valuable to subscribers, even as it exhibits zero returns as a standalone enterprise.

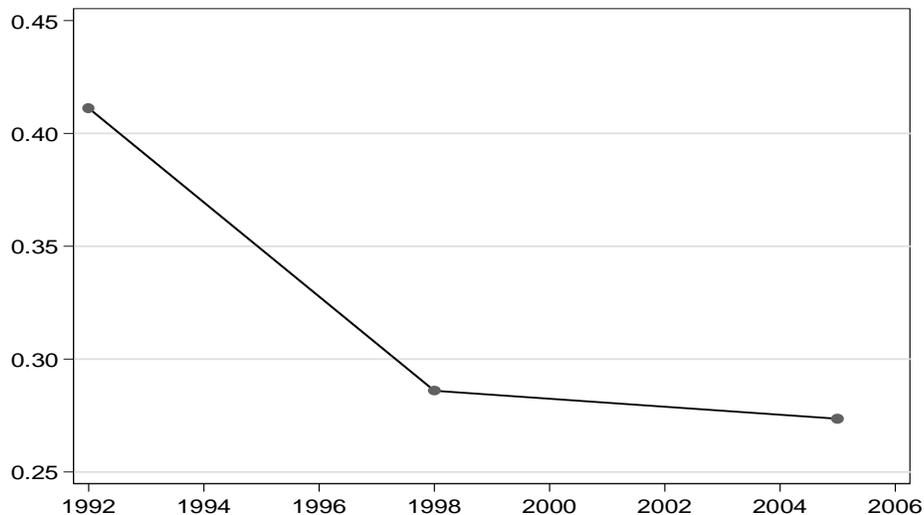
The second level of efficiency involves the question: does vertical integration enhance consumer welfare? This would tend not to be the case were vertical foreclosure the intent and effect of cable operator-created programming. If that were the outcome, MSOs would launch program networks, give preferential carriage to these owned properties, exclude rival services, and in so doing deny the rivals the scale economies necessary to effectively compete for carriage in other systems. Yet the history of cable TV programming reveals that independent firms, and particularly those in the broadcasting business – a key competitor to cable – have owned the great majority of successful ventures. From ESPN to Fox News, from Discovery to A&E, the most widely distributed cable TV program networks have little or no cable TV equity interests. And MSO ownership has been declining over time, as Goolsbee notes (see above) and as shown in Figure 2. This market outcome is inconsistent with the foreclosure theory, which predicts that integrated operators will squeeze out independent (non-cable operator) program networks over time.

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<sup>214</sup> WATERMAN & WEISS, *supra* note 199, at 25.

<sup>215</sup> *About C-SPAN*, C-SPAN, <http://www.c-span.org/About/About-C-SPAN/> (last visited Aug. 7, 2011).

FIG. 2 MSO OWNERSHIP SHARES OF TOP TWENTY CABLE NETWORKS,  
WEIGHTED BY CASH FLOWS (1992, 1999, 2005)<sup>216</sup>



In 2005, just 27 percent of the twenty most profitable cable TV program networks were owned by cable TV operators, weighted by (a) equity shares of ownership and (b) cash flows of the cable program networks.<sup>217</sup> This represents a substantial decline in the level of vertical integration exhibited in earlier years. In 1992, for example, cable operators owned 41 percent of the top twenty program networks, similarly weighted. The three most profitable networks (Nickelodeon, ESPN, and MTV) had no MSO ownership; seven of the ten most profitable networks have no MSO ownership (eight out of ten, adjusting for the 50 percent MSO ownership of Fox Sports and Discovery). It should be noted that even this ratio is largely due to MSO holdings in networks 11-20; in the top ten, MSOs accounted for just 19 percent of cash flows.

<sup>216</sup> KAGAN, BASIC CABLE TV NETWORKS (1993); FED. COMM'NS COMM'N, ANNUAL ASSESSMENT OF THE STATUS OF COMPETITION IN MARKETS FOR THE DELIVERY OF VIDEO PROGRAMMING, SIXTH ANNUAL REPORT (2000); Kagan (2005).

<sup>217</sup> To clarify the weightings, suppose there are just two cable TV networks, one of which is 50 percent owned by a group of MSOs, the other having no MSO ownership. If the MSO-affiliated network accounts for 60 percent of total cash flows (between the two cable program networks), the weighted-average MSO ownership share =  $(0.5) \times (0.6) = 0.3$ , or 30 percent. It should be noted that these top twenty networks accounted for 110 percent of all cable TV network cash flows (meaning that the networks smaller than the top twenty generated negative cash flows in aggregate).

TABLE 1 OWNERSHIP SHARES OF TOP TWENTY CABLE NETS BY CASH FLOW (2005)

<i>Network</i>	<i>Owner</i>	<i>Share</i>	<i>Cash Flow</i>	
			<i>(\$ Mil)</i>	<i>MSO Share</i>
Nickelodeon	Viacom	100%	900.3	0%
ESPN	Disney	80%	858.9	0%
	Hearst	20%		
MTV	Viacom	100%	692.3	0%
TNT	<b>TW</b>	100%	642.6	100%
Disney	Disney	100%	441.1	0%
USA	GE	100%	416.9	0%
Discovery	<b>Cox</b>	25%	377.8	50%
	Hendricks	2%		
	Liberty	49%		
	<b>Newhouse</b>	25%		
Fox Sports	Fox	50%	373.6	50%
	<b>Cablevision</b>	50%		
CNBC	GE	100%	360.1	0%
Fox News	News Corp.	100%	350.6	0%
TLC	<b>Cox</b>	25%	338.3	50%
	Hendricks	2%		
	Liberty	49%		
	<b>Newhouse</b>	25%		
LIFE	Disney	50%	332.9	0%
	Hearst	50%		
CNN+HN	<b>TW</b>	100%	325.2	100%
TBS	<b>TW</b>	100%	290.0	100%
BET	Viacom	100%	285.2	0%

HGTV	Scripps	100%	193.9	0%
AMC	<b>Cablevision</b>	100%	184.8	100%
TOON	<b>TW</b>	100%	184.3	100%
VH1	Viacom	100%	184.3	0%
A&E	Disney	38%	182.8	0%
	GE	25%		
	Hearst	38%		
CF-ADJUSTED % OF TOP 20 TOTAL				27%

Source: Kagan (2005). Note: Cable MSOs in **boldface**.

Since Goolsbee, the trend towards *disintegration* has continued. While Comcast acquired about one-half of NBC from General Electric in 2011,<sup>218</sup> the 2009 Time Warner spin-off of Time Warner Cable involved far more cable TV programming.<sup>219</sup> Time Warner's content includes CNN, HLN, HBO, TNT, TBS, TCM, TruTV, and the Cartoon Channel.<sup>220</sup> NBC, while owning a broadcast TV network, had relatively smaller cable TV programming assets - USA, CNBC, MSNBC, E!, and Bravo – and owns only about half of its joint venture (with NBC Universal). In 2004, NewsCorp acquired 34 percent (a controlling interest) of the largest U.S. satellite TV system (and second largest video subscription service), DirecTV.<sup>221</sup> In 2008, however, it sold its interest (which had grown to 38.5 percent) to Liberty Media (which does not own cable or satellite TV distribution assets<sup>222</sup>). By divesting, NewsCorp, owner of Fox Television, **FX**, Fox News Channel, Fox Business Channel, and several sports networks, eliminated its integration into program distribution in the United States.

While the Goolsbee “efficiency analysis” is unconvincing due to model misspecification, these observed trends in market structure should not be ignored. They offer important evidence counter to the hypothesis that cable operators are offering lower-quality, higher-priced programming networks that they can force upon their subscribers via foreclosure of rivals' content.

### iii. The Carriage Favoritism Inquiry

The primary empirical investigation conducted in Goolsbee involves a statistical analysis that attempts to predict whether a particular cable TV network (twelve different cable TV networks are chosen for the exercise) will gain carriage on a particular cable TV system, given various characteristics of the market, the cable system, and whether or not the cable operator (or its parent company) owns the cable TV network in question. Goolsbee finds that cable operators *do* tend to favor the program networks they own. This evidence of favoritism for a company's

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<sup>218</sup> *Comcast Completes NBC Universal Merger*, REUTERS, Jan. 29, 2011, available at <http://www.reuters.com/article/2011/01/29/us-comcast-nbc-idUSTRE70S2WZ20110129>.

<sup>219</sup> *Time Warner Cable Spinoff to Finish Next Month*, N.Y. TIMES, Feb. 27, 2009, <http://dealbook.nytimes.com/2009/02/27/time-warner-cable-spin-off-to-finish-next-month/>;

<sup>220</sup> *Highlights*, TIME WARNER, <http://www.timewarner.com/our-content/turner-broadcasting-system/> (last visited Aug. 7, 2011).

<sup>221</sup> Tim Mullaney, *Liberty Completes Swap of News Corp., DirecTV Stakes (Update3)*, BLOOMBERG NEWS, Feb. 27, 2008, [http://www.bloomberg.com/apps/news?pid=newsarchive&sid=a4JFvml25M\\_8](http://www.bloomberg.com/apps/news?pid=newsarchive&sid=a4JFvml25M_8).

<sup>222</sup> *Company Overview*, LIBERTY MEDIA, <http://www.libertymedia.com/company-overview.aspx> (last visited Aug. 7, 2011).

own programming assets may be, as discussed, explained either by the efficiencies of vertical integration or by the strategic interests of the firm in anticompetitively foreclosing alternatives. To differentiate between these sources of bias, the Goolsbee equations include another explanatory variable: DBS penetration.<sup>223</sup> If higher satellite TV subscribership in the local market is associated with a reduction in favoritism (i.e., a decrease in the probability the cable operator will carry its own programming, all else equal), then the economic implication drawn by Professor Goolsbee is that enhanced competition – as proxied by the satellite penetration rate<sup>224</sup> - is constraining MSO carriage choices - the “evidence suggests, perhaps, an explanation rooted in competitive pressures rather than efficiencies.”<sup>225</sup>

a. *Data*

Before turning to the estimated results, the data used for analysis deserve comment. Goolsbee first considers five of the most popular cable TV networks owned, in whole or in part, by MSOs: AMC, CNN, TBS, TNT, and Discovery.<sup>226</sup> He notes that these program channels cannot be used in the statistical analysis due to lack of variation in cable system carriage: they have essentially ubiquitous coverage on all systems.<sup>227</sup> “Clearly there is little scope for strategic behavior when every system has enough capacity to carry all the major channels.”<sup>228</sup>

That would appear to constitute evidence, however, of the fact that cable operators have created the capacity to host a multitude of popular networks, and then carry all popular networks, not just those they own. Moreover, the stated reason for excluding the evidence is that there is little self-carriage favoritism worth searching for when we already know that nonowners carry these networks just as owners do. But this transmits valuable information about the *lack of foreclosure*. Excluding these data inherently biases the analysis to follow.

<sup>223</sup> The variable is an interactive term, with a dummy for MSO ownership (of the cable network whose carriage is being evaluated) times the DBS penetration in the DMA (designated market area, also known as a local television market, of which there are 210 nationally).

<sup>224</sup> Penetration rate = subscribers/total homes in the DMA in which the cable TV system is located. What Goolsbee calls DBS penetration is actually ADS (alternative delivery system) penetration, which includes DBS, “large dish” satellite TV, multipoint multi-channel distribution systems, and satellite master antennae systems.

<sup>225</sup> GOOLSBEE, *supra* note 198, at 29.

<sup>226</sup> GOOLSBEE, *supra* note 198, at 27. The statement is followed by a parenthetical aside, “although the work of Chen and Waterman, 2006 does show that there may still be interesting decisions regarding what networks get carried on the digital versus the analog tier.” *Id.* The reference does not plausibly explain the situation with respect to these cable TV channels because the problem with moving from the analog to the digital tier is reduced coverage (analog tiers reaching all subscribers while digital tiers reaching fewer). The first five cable networks listed in Table 5, GOOLSBEE, *supra* note 198, Table 11, the object of this discussion, achieve virtually universal coverage – overcoming whatever discrimination Goolsbee or Chen and Waterman purport to find.

<sup>227</sup> See Table 2 (taken from Prof. Goolsbee’s Table 11).

<sup>228</sup> *Id.*

TABLE 2 CARRIAGE RATES FOR INTEGRATED NETWORKS BY SYSTEM TYPE		
	<i>System Owns Network</i>	<i>System Does Not Own Network</i>
<i>Type I</i>		
AMC	98.7%	98.4%
CNN	99.9%	99.8%
Discovery	100%	99.8%
TBS	100%	97.2%
TNT	100%	99.5%
<i>Type II</i>		
Boomerang	43.4%	13.2%
BBC America	89.3%	38.2%
CNN International	17.7%	5.1%
FitTV	24.5%	45.9%
FUSE	57.6%	60.8%
G4	83.7%	93.9%
PBS Kids	2.1%	8.8%
Science Channel	4.1%	15.6%
Style	5.4%	6.1%
Travel Channel	97.4%	79.7%
TV One	7.2%	9.0%
WE	97.2%	71.2%

Source: Goolsbee (2007), Table 11.

Similarly, the study omits from the statistical analysis, and then excludes from its economic conclusions, the information yielded by the large number of widely distributed cable TV program networks featuring no MSO ownership. Using industry data from 2005, there were ten networks that were at least as profitable (in terms of annual cash flow) as AMC (the least

profitable MSO-affiliated network excluded due to its ubiquitous carriage).<sup>229</sup> These would appear to be extremely useful data; alone, they suggest that strategic behavior by MSOs to exclude rivals' programming is, again, not in evidence.

The MSO and non-MSO networks explicitly rejected for inclusion in the econometric investigation of anticompetitive foreclosure constitute the overwhelming share of cable program network revenues and profits. In 2005, the five MSO-affiliated program networks accounted for 17 percent of total network cash flows, while the 10 non-MSO program networks accounted for another 45 percent. If strategic moves by MSOs could block entry by rivals, the incentives would presumably be strongest just here. For these reasons, tossing this evidence aside seriously biases the test conducted towards foreclosure and away from efficiency.

Having dropped the most popular and economically important networks from consideration, the paper then examines twelve cable TV program networks that are “wholly or partially vertically integrated basic cable TV networks . . . [with] carriage rates between 5% and 90% . . . .”<sup>230</sup> This results in the analysis of the twelve networks identified in Table 2 as *Type II*. In contrast to the economic importance of *Type I* networks and comparable networks not owned by MSO, which together account for about 62 percent of industry profits, the Type II networks accounted for just 1.3 percent of cash flows in 2005.

Noteworthy among this group is that seven of the twelve exhibit higher carriage rates among cable TV systems that do not own them than among those which do.<sup>231</sup> This is remarkable, in that the transactional advantages of ownership would seem to be pronounced among networks that are new and growing, with carriage obtained early on via cable TV systems owned by the parent company, to the extent that such carriage would occur at all. But this information is, again, overlooked in favor of the estimation of a marginal favoritism metric.

#### b. *Empirical Model*

That analysis focuses on how the probability of carriage changes when (a) the cable TV network is owned in part or wholly by the cable system's parent company, as indicated by the estimated coefficient on *Vertical Integration* [“*VI*”]; (b) satellite TV penetration changes when the cable TV network is owned in part or in whole by the cable system's parent, indicated by the coefficient on the interactive term *Vertical Integration \* DBS Penetration* [“*VI\*DP*”]. A probit

<sup>229</sup> These are: Nickelodeon, ESPN, MTV, Disney, USA, Lifetime, CNBC, Fox News, BET, HGTV, and WE.

<sup>230</sup> GOOLSBEE, *supra* note 198, at 27.

<sup>231</sup> See Table 2.

regression (predicting the probability the cable channel is carried on a particular cable TV system, given various factors adjusted for by the independent variables<sup>232</sup>), is run for each of the twelve Type II cable networks selected.<sup>233</sup>

Multiple problems emerge with this model. First, *DBS penetration* does not measure the existence of competition; rather, it measures the subscribership of satellite television in the local television market in which each observed cable system exists. The data do not reflect DBS subscribership in the specific area covered by a given cable TV system, but across a far larger area in which the cable TV system happens to exist. But beyond this data mismatch, the far more fundamental problem is that the DBS penetration rate does not measure the *level of competition* because the satellite video offering – the substitute product which is (correctly) seen to potentially constrain cable TV system pricing and carriage decisions in the Goolsbee model – does not change from market to market. What varies, and what the Goolsbee equations likely measure, is the build-out of cable TV systems in the DMA. As a 2005 GAO report found, DBS penetration averages 15 percent among households where subscribers also have access to cable TV (i.e., they live in homes already passed by cable), but achieves 65 percent penetration where there is no cable available.<sup>234</sup> But the variation in DMA cable saturation (homes passed/total homes) does not represent variation in competition *in the areas served by cable*.

Second, while neither *DBS penetration* nor *VI\*DP* proxy “competition,” other factors that presumably impact carriage decisions by cable TV operators are excluded. Most obviously, channel capacity is of key importance theoretically; cable systems allocate scarce channel slots to different programming choices, and – as Professor Goolsbee notes – expanded channel capacity accommodates more programming from all ownership sources. Yet Goolsbee argues that including channel capacity loses too many observations (due to missing data)<sup>235</sup> and that

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<sup>232</sup> The independent variables are: a dummy variable equal to one when the cable network is owned by the cable system; an interactive variable equal to the ownership dummy (= 1 when the cable operator owns the program network) times satellite TV penetration in the local TV market (DMA); the satellite TV penetration (DMA); fiber’s share of system plant miles; a dummy equal to one if the system is analog only; a dummy equal to one if the system is two-way; population density; population growth rate; percent of residents of Hispanic origin in local area; percent of residents under eighteen years of age; percent of residents over sixty-five years of age; percent of residents who are black; population per household; natural log of income; percent of local residents who are homeowners.

<sup>233</sup> The model appears in each of the reported results tables in GOOLSBEE, *supra* note 198, 39-45 Table 12A-12K.

<sup>234</sup> U.S. GOV’T ACCOUNTABILITY OFFICE, GAO-05-257 DIRECT BROADCAST SATELLITE SUBSCRIBERSHIP HAS GROWN RAPIDLY, BUT VARIES ACROSS DIFFERENT TYPES OF MARKETS 9 (2005). About 9 percent of U.S. households were found not to have access to cable television. *Id.*

<sup>235</sup> “Adding channel capacity did not change the results but is missing from a large number of the system level observations and thus dramatically reduced the sample.” GOOLSBEE, *supra* note 198, at 28.

results are, in any event, unchanged. When we run the same model but include cable system channel capacity,<sup>236</sup> however, results change substantially (see below). It would also be useful to include an explanatory variable for “cable homes passed” per local DMA, in that this could help distinguish the effect of DBS penetration from the effect of cable build-out.

c. *Results*

Two key estimated relationships are obtained in Goolsbee, summarized here in Table 3.<sup>237</sup> The first is that, in eight of twelve estimated equations, the *Vertical Integration* dummy coefficient is positive and statistically significant at the 95 percent confidence level. The second is that the estimated coefficient on the interactive term, *Vertical Integration \* DBS penetration*, is negative and statistically significant in the same eight equations. Professor Goolsbee takes this evidence to suggest that integrated cable TV firms do, as seen in other studies, favor their own programming over that owned by other firms. Moreover, this favoritism diminishes in markets where the cable operator faces more competition from DBS, as measured by the estimated coefficient on *Vertical Integration \* DBS penetration*. This, concludes Professor Goolsbee, excludes efficiency as an explanation of self-carriage favoritism, leaving anticompetitive foreclosure. In short, Professor Goolsbee finds that cable operators are more likely to carry their own program networks, and they are most likely to do it where they can “get away with it” due to a lack of competition.

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<sup>236</sup> Channel capacity is defined for analog tiers. WARREN PUBLISHING, TELEVISION AND CABLE FACTBOOK (2007).

<sup>237</sup> The results for the FUSE regression are not reported, in that “the probit showed a significant positive coefficient on vertical integration and a significant negative on the interaction with DBS but something in the data lead the standard errors to be absurdly small and the coefficients absurdly large.” GOOLSBEE, *supra* note 198, at 29.

TABLE 3. KEY COEFFICIENT ESTIMATES IN GOOLSBEE (2007)

	<i>Vertical Integration</i>	<i>VI * DBS</i>	<i>“Neutral” DBS Penetration</i>	<i>MSO Owner</i>
BBC America	2.733**	-0.066*	41.3%	Newhouse
Boomerang	1.407**	-0.039*	36.0%	Time Warner
CNN Int’l	2.279**	-0.066**	34.6%	Time Warner
Fit TV	1.414**	-0.074*	19.1%	Newhouse
G4	0.151	-0.121+	7.2%	Comcast
PBS Kids	2.043**	-0.156**	13.2%	Comcast
Science	3.533**	0.194**	18.2%	Comcast
Style	-0.035	-0.009	0%	Newhouse
Travel	0.752+	0.002	n.a.	Newhouse
TV One	1.583**	-0.061**	26.0%	Comcast
WE	7.317**	-0.412**	17.8%	Cablevision
FUSE	not reported due to “strange probit result”			Cablevision

\*\* significant @ 1%; \* significant @ 5%; + significant @ 10%.

On their own terms, these statistical results do *not* yield evidence of anticompetitive self-carriage bias. Before explaining this, however, a number of comments on the strength of the econometric evidence are appropriate.

First, while the paper reports eleven regressions, twelve were estimated, the results from one (involving FUSE) being so “absurd”<sup>238</sup> as to go unreported. The statistical difficulties encountered in this estimation suggest that the data may not fit the model well. These problems are likely to be an issue in estimating the other equations. Indeed, the results obtained for WE, the other Cablevision-owned network (like FUSE) in the sample, appear economically “absurd,”

<sup>238</sup> GOOLSBEE, *supra* note 198, at 29.

as shown below. Both sources of information strongly undercut the validity of the estimated coefficients in explaining market behavior.

Second, only eight of twelve regressions suggest that, at standard confidence levels, there exists a statistically significant relationship between vertical integration and cable carriage choices. The evidence, even accepting the underlying economic model, becomes even weaker when it is recalled that the twelve channels chosen for analysis were selected because the very widely distributed channels owned by cable operators – such as AMC and CNN – were omitted. It was argued that anticompetitive foreclosure was not a factor for these channels: “it is important to note that the historic literature on vertical integration and the carriage decision no longer applies to most of the major vertically integrated networks because all of them are carried on virtually all major cable systems.”<sup>239</sup> The very popular channels not owned by cable operators – such as MTV and ESPN – could also have been examined (reversing the favoritism hypothesis) but were not. Presumably, the same result would obtain for the nonintegrated channels: “the historical literature on vertical integration and the carriage decision” would not apply to these ubiquitously available networks.

Further, there are numerous problems with the data, including deficiencies in the Warren cable TV database and the geographical mismatch between cable TV franchise areas and the DMAs in which they operate. Beyond these issues, the regressions do not adjust for share ownership of cable networks by MSOs; Time Warner’s incentives, when owning all of Boomerang, are treated the same as Comcast’s with its 40 percent share of G4. And relevant information about vertical integration in the twelve selected cable TV networks is discarded: CNN International, wholly owned by Time Warner, has *exited* the U.S. market. Launched in 1985 and backed by the second-largest U.S. cable operator, it proved unsuccessful in the U.S. – much as did CNNfn, which went dark in Dec. 2004.<sup>240</sup>

As shown in Table 3, CNN International had carriage in but 18 percent of Time Warner’s U.S. cable households and just 5 percent of other firms’. The Goolsbee regressions show evidence of anticompetitive foreclosure in Time Warner carriage decisions. This is because the firm is found more likely (than other MSOs) to carry CNN International, but the tendency is found to be reduced in areas (DMAs) where DBS penetration is higher. The interpretation is that

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<sup>239</sup> GOOLSBEE, *supra* note 198, at 26-27.

<sup>240</sup> Linda Moss, *CNNfn’s Loss, Others’ Gain*, MULTICHANNEL NEWS, Dec. 2004, <http://www.multichannel.com/article/CA487306.html>.

the intensified competition in such high-DBS areas forces Time Warner to move CNN International off its line-ups, making way for more competitive fare.

That is unconvincing, and – even accepting the DBS penetration rate as a metric for competitiveness - it does not show what the argument implies. That would require evidence that high DBS penetration drove the Time Warner system to omit the network it owned *and* move something more valuable into its place. Dumping CNN International in such markets suggests, by itself, that fewer channels are presented to customers in such markets. Associating the dropping of an owned cable channel is then correlated, wrongly, with “competitiveness.”

The weakness of the results shown in Table 3 can perhaps be understood by considering the largest and most significant empirical estimates. In the WE (“Women’s Entertainment”) regression, the coefficient on *Vertical Integration* equals 7.3, twice the magnitude in any other estimated equation. Similarly, the coefficient on *VI\*DP* equals -0.41, more than twice the magnitude (in absolute value) obtained elsewhere. Both estimated parameters are significant at the 1 percent level.

So this is what we would appear to learn: Cablevision Systems, which owns WE, highly favors its own programming relative to other program networks, except when it faces a lot of competition, as measured by the DBS penetration rate for the DMA. But consider further how the DBS penetration rate varies in the case of Cablevision’s systems. The company’s website describes its operations thusly:

Founded in 1973 as a cable television operator with 1,500 Long Island customers, today, Cablevision operates the nation's single largest cable cluster, passing more than 4.5 million households and 600,000 businesses in the New York metropolitan area with our state-of-the-art fiber-rich network.<sup>241</sup>

The company’s subscribers are located in New York, New Jersey, Connecticut, and Pennsylvania, clustering around New York City.<sup>242</sup> DBS penetration variance by DMA is irrelevant to Cablevision’s program choices; their customers face the same substitute products across the metropolitan area that it serves. It is interesting that the WE regression produced

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<sup>241</sup> *Corporate Information*, CABLEVISION, <http://www.cablevision.com/about/index.jsp> (last visited Aug. 7, 2011).

<sup>242</sup> Indeed, the database Goolsbee used features thirty-three systems owned by Cablevision, all located in three DMAs: New York (DMA 1), Philadelphia (DMA 4), and Hartford/New Haven (DMA 28).

manageable coefficient estimates; the other Cablevision-owned network (FUSE) did not.<sup>243</sup> But that the model found a link between  $VI*DP$  and WE carriage strongly suggests spurious correlation, not strategic behavior.

Even were the results obtained in the cable program network regressions plausible and were there no problems with data or economic interpretation, the regressions would not constitute evidence suggesting vertical integration in cable as anticompetitive. That is because the estimated parameters allow calculation of “break even” DBS penetration levels where the estimated favoritism ends for a given MSO-owned cable channel. This statistic is reported in Goolsbee as “DBS share for VI neutrality,” and presented in Table 12.

Goolsbee’s estimates show that, given the model, MSOs are discriminating in favor of their own programming up until a DBS penetration rate of the critical value. After that value, the model suggests that the operator *discriminates against its own programming*. Given existing levels of DBS penetration, it turns out that the eight estimated regressions imply that there is more likely to be this latter discrimination against self-carriage. The results break down this way:

- Twelve channels are investigated in separate regressions.
- Eight of the regressions produce statistically significant coefficients (at standard confidence levels), in the proper direction, for both  $VI$  variables: BBC America, Boomerang, CNN International, Fit TV, PBS Kids, Science, TV One, and WE.
- The most recent data as of the Goolsbee analysis (July 2007) showed that the national average DBS penetration, with DMAs weighted by households, equaled 26.7 percent.<sup>244</sup>
- Five of the Eight equations that find a pattern between  $VI$  and carriage choice in the model (those for Fit TV, PBS Kids, Science, TV One, and WE) exhibit a DBS “neutrality share” below the current national average level of “competition.”
- Three of the Eight equations (those for BBC America, Boomerang, and CNN International) exhibit a DBS “neutrality share” above the national average.

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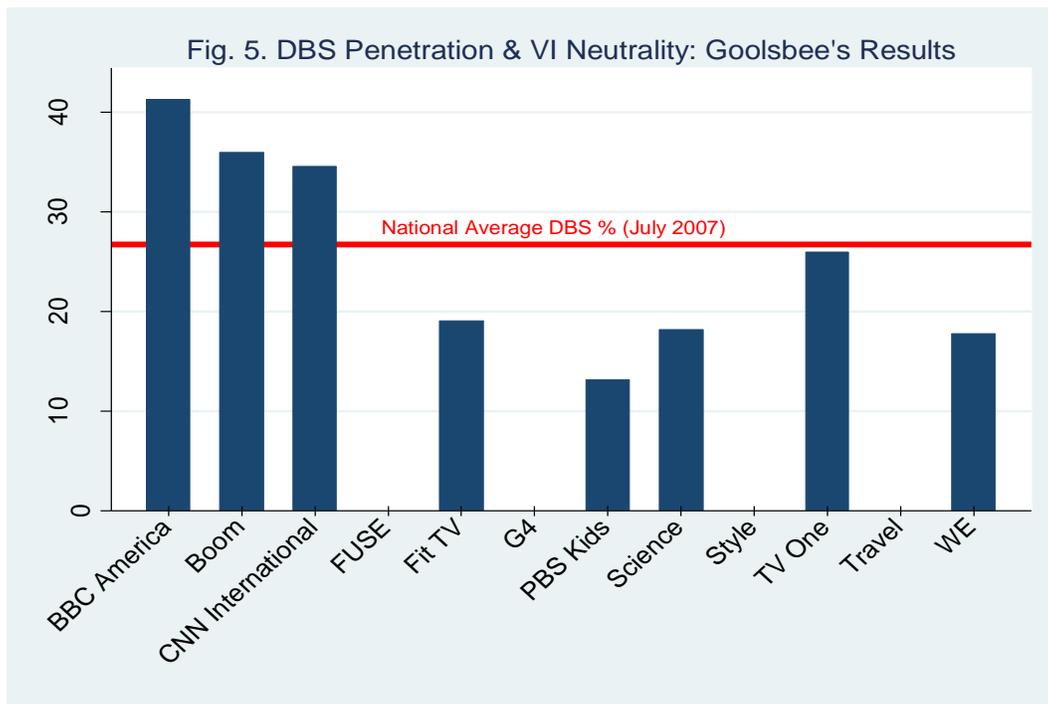
<sup>243</sup> GOOLSBEE, *supra* note 198, at 29.

<sup>244</sup> The equally weighted mean value across all DMAs is slightly higher.

- Hence, the empirical model in Goolsbee suggests that *cable systems owned by operators are at least as likely (five times in eight) to suffer negative bias from their parent companies as they are to enjoy favoritism.*

These results, interpreted according to the model that produced them, offer no support for the conclusion that anticompetitive vertical foreclosure has been found. The evidence presented leads to implausible implications, namely that cable operators discriminate against their own programming. But those results, however explained, do not imply vertical foreclosure.

FIG. 3 DBS PENETRATION & VI NEUTRALITY: GOOLSBEE’S RESULTS

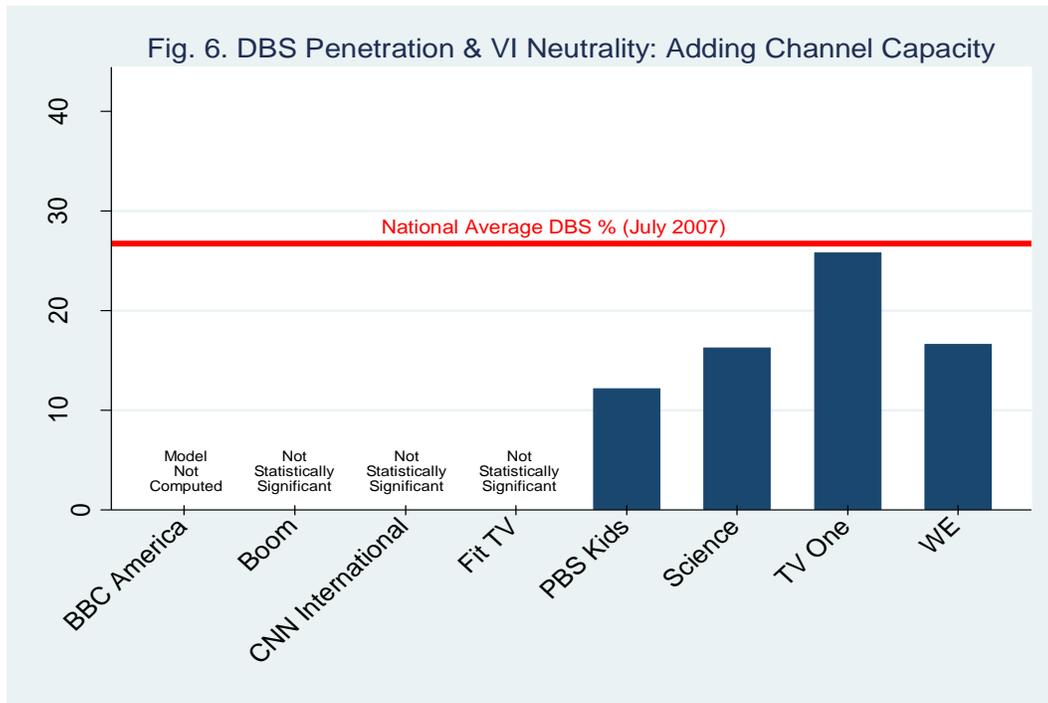


It is also possible to see how adding (analog) *Channel Capacity*<sup>245</sup> (CC) and *Cable Saturation* by DMA as independent variables alters econometric results. This offers a robustness check, helping to discern whether the coefficient estimates produced in the Goolsbee model are stable across alternative specifications that include theoretically important causative factors. In fact, statistical outcomes substantially vary.

<sup>245</sup> Channel Capacity per cable system was obtained from WARREN PUBLISHING, *supra* note 236.

In particular, simply adding one additional variable – *CC* – eliminates the results obtained for the only three regressions suggesting, given the assumptions of the model, that cable operators discriminate against program networks owned by rivals and do so more in areas where DBS penetration is higher.<sup>246</sup> In two of the equations (for Boomerang and CNN International), the estimated coefficients for the two VI variables are insignificant. In the third (for BBC America), the model will not compute due to colinearity.<sup>247</sup> Including *Cable Saturation* as an explanatory variable produces additional instability in results.

FIG. 4 DBS PENETRATION & VI NEUTRALITY: ADDING CHANNEL CAPACITY



<sup>246</sup> A substantial number of observations are lost when *Channel Capacity* is included, reducing observations (each denoting a different cable TV system) from about 1400 to about 800, depending on the regression. Data unavailability already excludes the overwhelming share of cable TV systems from the analysis, however. Goolsbee’s regressions incorporate approximately 1400 observations from a universe that, in 2006, was comprised of 7,090 systems. See *Industry Data*, NAT’L CABLE & TELECOMM. ASS’N, <http://www.ncta.com/ContentView.aspx?contentId=54> (last visited Aug. 7, 2011) (reporting Warren Communications data).

<sup>247</sup> See Fig. 4.

In sum, even accepting the estimates at face value, only three of the twelve regressions suggest that cable operators, on average, discriminate in favor of their own programming, five of the twelve predict that operators discriminate against their own networks, and four of the twelve offer no statistical relationship between carriage choices and vertical integration. Even the results obtained for just the three regressions suggesting discrimination vanish when *Channel Capacity* is added as an explanatory variable. Hence, none of the regressions produce robust results consistent with the hypothesis that vertical integration leads to anticompetitive foreclosure in the marketplace. These results are summarized in Figures 3 and 4, and Table 4, the latter of which also notes the relative economic importance of widely distributed networks (which form the lion's share of industry profits), which were excluded from the analysis because the data were not expected to yield variance in carriage choices that could be associated with self-carriage bias.

TABLE 4. EVIDENCE ON EFFECT OF VERTICAL INTEGRATION IN GOOLSBEE (2007)

<i>Network Category</i>	<i>% of 2005 Cable Program Net Cash Flow</i>	<i>Included in Regressions</i>	<i>Implications of Evidence</i>
top MSO-owned program networks ( <i>AMC, CNN, Discovery, TBS, TNT</i> )*	17	No	widely carried MSO-owned channels implies lack of “self-carriage” favoritism or, therefore, anticompetitive foreclosure
top non-MSO program networks ( <i>Nickelodeon, ESPN, MTV, Disney, USA, Lifetime, CNBC, Fox News, BET, HGTV</i> )**	45	No	widely carried non-MSO channels implies lack of “self-carriage” favoritism or, therefore, anticompetitive foreclosure
12 smaller cable networks ( <i>BBC America, Boomerang, CNN International, Fit TV, FUSE, PBS Kids, Science Channel, Style, Travel Channel, TV One, WE</i> )	1.3***	Yes	8 of 12 regressions report two statistically significant coefficients which, jointly, are consistent with a “self-carriage” bias that lessens as DBS penetration rises. Five of the eight biases become “neutral” with DBS penetration at or below the national average, meaning no anticompetitive foreclosure is generally in evidence. The 3 regressions consistent with foreclosure at typical DBS penetration are not robust to

			<p>the inclusion of <i>Channel Capacity</i>. Robust results consistent with the observation of anticompetitive vertical foreclosure in the marketplace: 0 for 12.</p>
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\* Networks rejected in Goolsbee (2007) for inclusion in foreclosure tests due to widespread coverage.

\*\* Networks not owned by MSOs which had 2005 cash flows exceeding those for AMC, the least profitable network excluded from foreclosure estimates due to widespread coverage.

\*\*\* Data from Kagan (2005); CNN International and PBS Kids not listed or included in totals.

iv. Public Policy

The Goolsbee analysis does not offer even the beginnings of an economic case for further regulation. To make that case, two substantial elements would have to be established. The first is a showing that vertical integration threatens consumer welfare. The second is a cost-benefit analysis suggesting that proposed regulatory changes will reduce quality-adjusted prices for consumers. The first showing is attempted, but the results wither upon scrutiny. The second showing is not even begun. The empirical predicate for the FCC’s net neutrality rules is, by Footnote 60, nonexistent.

VIII. ECONOMIC EVIDENCE FROM U.S. BROADBAND MARKETS

While citing sources that do not support the FCC’s regulatory initiative, the NN Order ignores empirical evidence that – while precisely on point – strongly rejects the economic presumptions on which the NN Order is based. Indeed, when considering the question of market failure, and considering regulatory fixes to remedy the observed inadequacies, virtually the first investigation would seem to focus on market growth. If the marketplace is not performing well, and can be improved by regulation, there ought to be evidence of that in the output patterns evident.

Hence, when the U.S. Department of Justice Antitrust Division commented on the first regulatory foray by the FCC in this area, it immediately questioned the existence of market failure by citing robust growth statistics:

On the empirical side, despite the Commission's request for evidence of harmful discrimination or behavior . . . . Commenters failed to present evidence suggesting that a problem exists. To the contrary, it appears that the Internet is flourishing without the proposed sectoral regulation. Statistics evidence an explosion in Internet usage in recent years due to new applications and increased broadband subscribership. . . . Between June 2005 and June 2006, the Commission found that high-speed lines increased by 52 percent (or 22.2 million lines).<sup>248</sup>

Similarly, three years later, two prominent economists objected to the FCC's move to regulate net neutrality due, in part, to market performance: "The rapid growth in recent years in broadband subscribers, Internet usage, service quality and reductions in price indicate that consumers have derived significant benefits from competition and innovation."<sup>249</sup>

Of course, overall trends may not be helped by alleged discriminatory practices; the possibility remains that negative effects are masked by macroeconomic effects and, moreover, that such growth impediments could be reduced by regulation of broadband ISPs to counter anticompetitive practices. Fortunately, a series of natural experiments have been conducted in the U.S. broadband marketplace that casts light on just this set of questions. Research has evaluated how both networks and subscribers change their behavior in response to changes in "open access" rules, regulations that aim to achieve similarly "open" or "neutral" traffic flows across broadband networks, and such research has been published in peer-reviewed scholarly journals.<sup>250</sup> The FCC ignores such evidence, which – unlike studies of vertical integration that deal only with (cable TV) market, and not regulatory, data – cast direct light on the effectiveness of the *broadband industry rules* such as they seek to implement.

Cable TV operators have never been subject to "open access" rules, regulations that would force a network owner to share its facilities with rival service suppliers at regulated terms and conditions. Legally, this unregulated environment stems from cable broadband's

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<sup>248</sup> DOJ 2006, *supra* note 76, at 5-6.

<sup>249</sup> Declaration of Gary S. Becker and Dennis W. Carlton attach. A ¶ 9, Comments of Verizon to the Federal Communications Commission, Preserving the Open Internet, GN Docket No. 09-191 (Jan. 14, 2010) [hereinafter Becker & Carlton 2010]. Both of the authors are economists at the University of Chicago. Gary Becker was awarded the Nobel Prize in Economics in 1983, while Dennis Carlton, one of the world's leading industrial organization experts, formerly served as Deputy Assistant Attorney General for Economic Analysis, Antitrust Division, U.S. Department of Justice.

<sup>250</sup> Thomas W. Hazlett & Anil Caliskan, *Natural Experiments in U.S. Broadband Regulation*, 7 REV. NETWORK ECON. 460 (2008).

categorization as an “information service” rather than a “telecommunications service.” In terms of regulatory decision-making, it also reflects the fact that policy makers have believed that imposing such mandates on cable broadband providers would discourage investment in infrastructure and stymie the growth of new services.<sup>251</sup>

However, telephone carriers offering competing broadband services, primarily digital subscriber line (DSL) services, were originally subject to such network sharing rules and then deregulated. This regulatory structure, varying across time and technologies, allows us to observe how markets changed following regime switches. Not only can cable modem (CM) service growth be compared to DSL, but the regime governing DSL was abruptly changed when the Commission voted to end “line sharing” in February 2003. This policy had allowed third parties to lease the high-frequency portion of incumbent telephone companies’ voice lines, using the shared link to provide data services to retail customers at relatively low (wholesale) rates. Ending “line-sharing” dramatically raised the prices charged competitive local exchange carriers (CLECs), undercutting their business models and effectively driving them from the market. Then, in August 2005, after the U.S. Supreme Court had refused to overturn the FCC’s deregulatory policy for cable TV systems,<sup>252</sup> the Commission further deregulated telephone carriers, eliminating remaining network access rules by designating DSL – like cable modems – an “information service.”

This regulatory pattern allows three windows with which to view the competition between cable modem and DSL services. Of interest is the relative success of CM services versus DSL in terms of subscribership. Where the implementation of “open access” rules stimulates innovation sufficient to dominate any potential investment disincentives, subscriber growth should reflect this. Specifically, cable growth should be disadvantaged relative to DSL growth during the time that “open access” regulation is in effect.

#### A. *Period I (DSL regulated)*

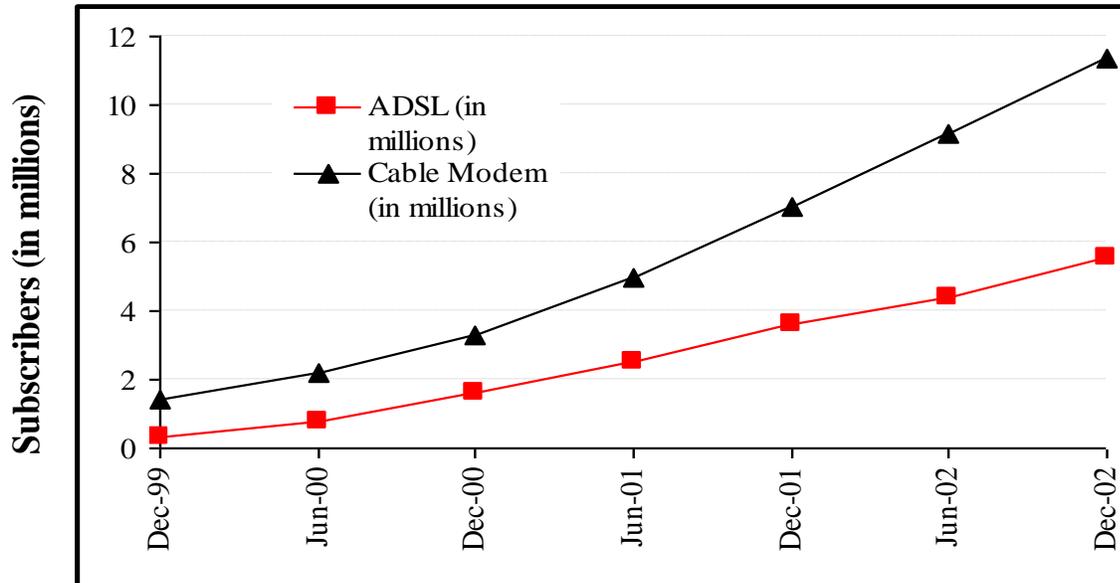
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<sup>251</sup> See, e.g., Kennard, *supra* note 191.

<sup>252</sup> Nat’l Cable & Telecomms. Ass’n. v. Brand X Internet Servs., 545 U.S. 967 (2005).

Until 1Q2003, DSL was regulated under relatively tight wholesale price controls. During this period, cable operators emerged as leaders in the “broadband race.” Through 2002, CM households held nearly a two-to-one advantage over DSL households.<sup>253</sup>

FIG. 5. CABLE MODEM V. DSL SUBSCRIBERSHIP, 1999-2002<sup>254</sup>



Was this decisive CM edge caused by regulatory differences? Later evidence, gleaned from regime change, would soon suggest that it was. But even at the time, there was important knowledge weighing on this issue. GTE, a large local exchange carrier, joined with AOL, the leading (dial-up) Internet Service Provider, sought to promote “open access” rules on cable modem suppliers.<sup>255</sup> Given that GTE was a direct cable rival in the emerging market for broadband services, it is clear that the firm believed that regulation would retard, rather than stimulate, CM deployment.<sup>256</sup>

<sup>253</sup> See Figure 5.

<sup>254</sup> Hazlett & Caliskan, *supra* note 250, at 467.

<sup>255</sup> George Bittlingmayer & Thomas W. Hazlett, “Open Access:” *The Ideal and the Real*, 26 TELECOMM. POL’Y 295 (2002).

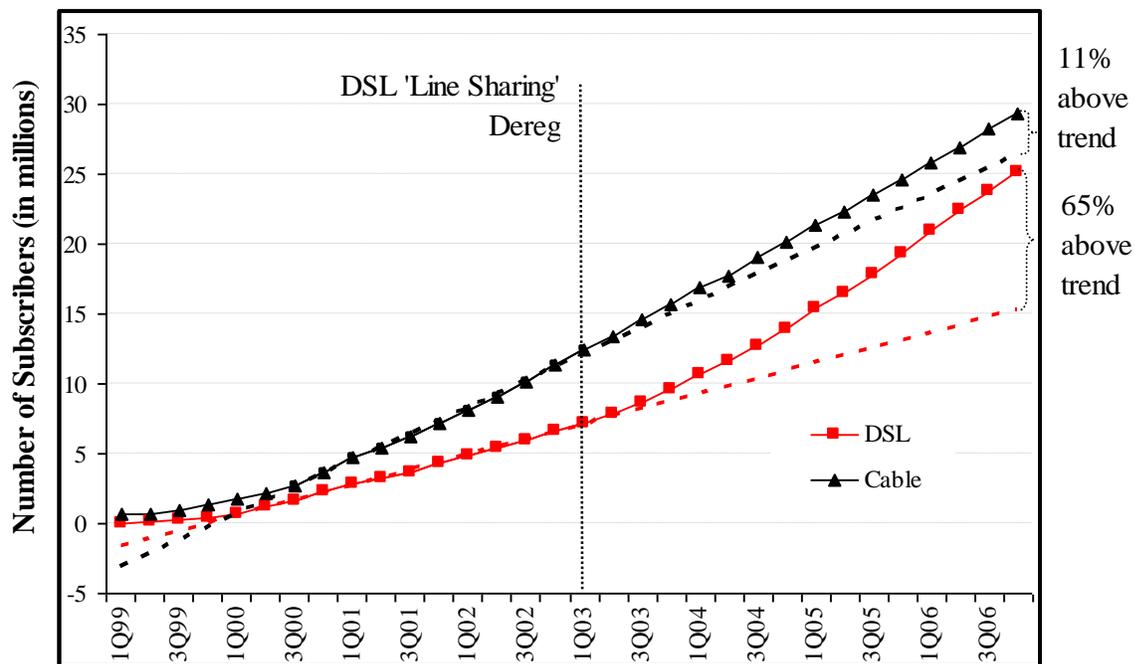
<sup>256</sup> That firms often lobby for regulatory rules that will handicap rivals is logically compelling and a widely understand paradigm in economic analysis. See, e.g., Thomas G. Krattenmaker & Steven C. Salop, *Anticompetitive*

B. *Period II (DSL “line sharing” ended)*

The elimination of line-sharing raised wholesale rates, undermining “open access.” In line with this, data-CLEC growth was adversely impacted. But the key issue is what happened to overall broadband growth, and DSL in particular?

DSL lines spurred in the post-deregulation period, sending the total broadband trend much higher. Quarterly subscriber growth, which had trailed cable nearly two-to-one under line-sharing, matched cable modem subscriber growth within just a few quarters.

FIG. 6. CM & DSL SUBSCRIBER GROWTH PRE- AND POST-DEREGULATION



C. *Period III (DSL an “information service”)*

Exclusion: Raising Rivals’ Costs to Achieve Power Over Price, 96 YALE L.J. 215 (1986); Bruce Yandle, Bootleggers and Baptists-The Education of a Regulatory Economist, REGULATION, May/June 1983, at 12.

With further deregulation in mid-2005, DSL exhibited another increase from trend.<sup>257</sup> The larger impact was apparently associated with the policy reform of 1Q2003, however. At that pivot point, the projected year-end 2006 DSL universe is projected to be about 15 million households. The actual year-end DSL subscribership was over 25 million. The 65 percent increase from trend did not come at the expense of cable modems, which maintained their growth profile. And the results cannot be attributed to marketplace changes unconnected to U.S. policy shifts, a possibility adjusted for in regressions that used Canadian cable modem and DSL subscribership as control variables.<sup>258</sup> The implication of the evidence is that U.S. consumers responded very positively to policy choices that refrained from imposing “open access” or eliminated such rules once in place. The entire three-stage regulatory path is consistent with this interpretation.

#### D. *Fiber Unbundling*

Network sharing mandates have also been imposed, and then eliminated, on broadband networks using fiber-to-the-home (FTTH) technology. This opens a fourth policy window to consider. In simple terms, there was virtually no FTTH deployed in the United States prior to the October 2004 decision by the FCC to preempt fiber network “open access” rules (also known as “unbundling”). At that point, substantial investments commenced such that today, more than 20 million households are able to subscribe to the Internet through ultra-fast fiber connections, with over 6 million subscribing.<sup>259</sup>

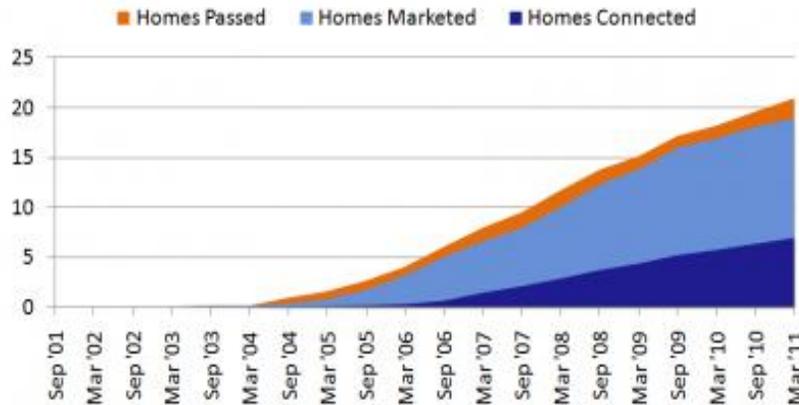
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<sup>257</sup> That incremental effect is not shown here, as the 2003 and 2005 DSL deregulations are combined in Figure 4. The effect is quantified, and found statistically significant, in Hazlett & Caliskan, *supra* note 250.

<sup>258</sup> For the econometric results, see Hazlett & Caliskan, *supra* note 250. The empirical model explains U.S. DSL subscriber growth as a function of contemporaneous U.S. CM growth, as well as Canadian CM and DSL growth (separately). This controls for changes in technology or equipment pricing that would be reflected in a market such as Canada (with similar CM v. DSL rivalry) but does not operate under the same regulatory regime switches as in the U.S. The pronounced upswing in post-regulation DSL growth is not explained by such other factors.

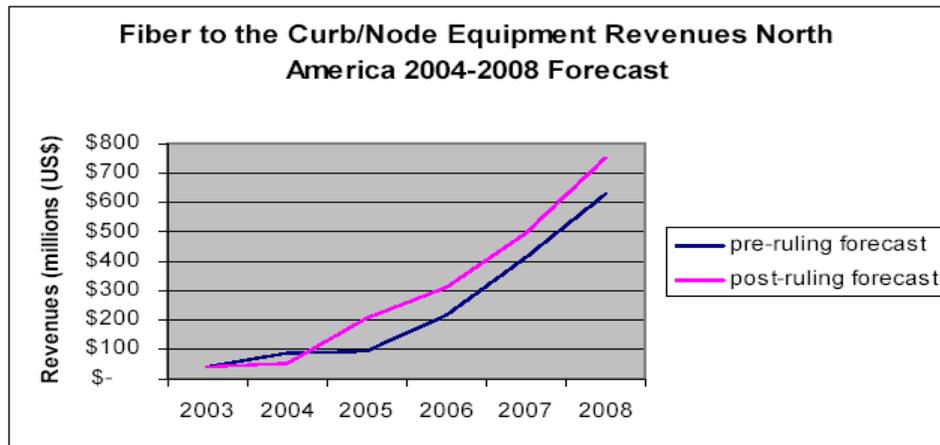
<sup>259</sup> See Figure 7.

FIG. 7. FTTH HOMES PASSED AND SUBSCRIBERS (U.S.)<sup>260</sup>



These data are consistent with the hypothesis that broadband network regulation is inversely related to deployment, and experts have asserted causality to the relationship. Fiber industry sales forecasts, for example, were projected by industry consultancy Gartner. Their initial forecast for 2004-08 was undertaken prior to the FCC deregulation. When the decision to bar unbundling obligations on new fiber networks was made, Gartner explicitly upped its sales estimates for fiber optic inputs.<sup>261</sup>

FIG. 8. GARTNER FIBER FORECASTS, 2004-08<sup>262</sup>



<sup>260</sup> *Growth of Fiber to the Home*, FTTH COUNCIL, <http://www.ftthcouncil.org/node/1425> (last visited Aug. 7, 2011).

<sup>261</sup> See Figure 8.

<sup>262</sup> Gartner Consulting, *One Gigabit or Bust Roundtable* (Nov. 15, 2004), <http://www.cenic.org/events/archives/1gob/112004/mgilbertpres.pdf>.

#### D. Summary

Across all regime windows, the less regulated broadband platform out-performs. Cable modem service, unburdened by “open access” mandates, spurted out to an early, and quite substantial, advantage in terms of build-out and subscribership. When network sharing mandates on telephone networks were dramatically (and unexpectedly) reduced, DSL – while predicted to shrink, due to the inability of third party providers to continue to compete for retail customers<sup>263</sup> — surged. The further deregulation of DSL services in 2005 reinforced this trend, effectively giving DSL (de)regulatory with CM services. By year-end 2006, DSL had increased its growth rate so sharply that it accounted for some 25 million households – some 65 percent, or 10 million homes, more than the trend up through 2002 would have predicted.<sup>264</sup>

These results do not directly examine how vertical integration or restrictions levied by broadband ISPs are impacting customers; rather, they focus on the policy margin regulators should be most interested in: will rules limiting the power of ISPs to exclude rival services, content, or applications be likely to expand network growth and serve consumer interests? The historical data, given the FCC’s varying regulatory broadband policies, is rich. It suggests that broadband deployment is furthered when “open access” regulations are eliminated. That is information that a policy analysis, unless arbitrary and capricious, must consider in its decision-making.

### IX. CONCLUSION

Consumers may take small solace in the fact that the FCC’s NN Order, as presently constituted, will likely meet a swift end before the D.C. Circuit for the same or similar reasons as its order in *Comcast* a few short months ago. As broader regulation of network management appears beyond the scope of the Communications Act, the enduring imposition of NN, as with most other regulatory decisions, will lay with Congress. It seems unlikely Congress will offer up NN for the foreseeable future; activists met substantial opposition in even the Democratic-controlled Congress of 2008-10. An element of the 2008 DNC Party Platform, the newly

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<sup>263</sup> Saul Hansell, “Communications Compromise: High-Speed Access May Cost More,” *New York Times* (Feb 21, 2003).

<sup>264</sup> See Figure 6.

Republican House will almost certainly refuse to condone through legislation what NN proponents have thus far sought primarily through regulation.

Sound economic analysis, supported by robust and meaningful empirical data, must animate any upcoming debate over net neutrality – as it must with any consumer-welfare-oriented legislation. Agencies often overlook the long-run costs of both their proposed policies as well as the regulatory forms those policies take; NN-like rules are far from novel, and their imposition is anything but a partisan affair. From C Block licenses to cable broadcast, promulgating regulations with obvious protectionist implications and dubious consumer welfare benefits has proven a truly bipartisan affair. NN follows in this pedigree, privileging certain market participants at the expense of others – and consumers. Both Congress's and the courts' rejection of NN is therefore welcome news for consumers at large.

Yet such solace is indeed small, as NN's short-run welfare costs begin to mount in earnest. The FCC has received its first complaint under the NN order, against MetroPCS, a small cellular carrier primarily serving low-income consumers. The complaint alleges MetroPCS favors certain websites (namely YouTube, owned by Google) at the expense of others, harming consumers by excluding other websites. The complaint ignores hard-won observations elementary to antitrust in its application of a categorical regulatory prohibition. MetroPCS enjoys no financial stake in increasing Google's traffic, holds an incredibly small market share, and provides massive savings to consumers. The MetroPCS complaint demonstrates the failures of NN unto itself: a firm, providing concrete and known benefits to consumers, using inexpensive technology through a mutually beneficial arrangement with a third party, increases consumer welfare in untold ways. With its lack of an intellectually and economically coherent method of recognizing a simple distinction between procompetitive and anticompetitive network discrimination, the FCC prepares to condemn the cellular carrier of choice amongst many low-income phone users. This systemic failing in categorical prohibitions might be an unexpected consequence were it new; unfortunately, it is a problem antitrust has spent a hundred years correcting. One can hope NN takes nowhere near as long.