

## EDITOR'S NOTE

Welcome to the third Issue of Volume 65 of the *Federal Communications Law Journal*, the nation's premier communications law journal and the official journal of the Federal Communications Bar Association.

This Issue provides a discussion of a broad array of current issues in communications law. The Issue opens with an article by Jeffrey A. Eisenach, a Managing Director at Navigant Economics LLC and an Adjunct Professor at George Mason University Law School, and Hal J. Singer, a Managing Director at Navigant Economics LLC, on secondary spectrum markets and efficient spectrum allocation. The article uses the Verizon/SpectrumCo proceeding as a case study in the FCC's handling of secondary market transactions and concludes that rather than allowing spectrum to smoothly flow to its highest valued uses, the Commission tends to conduct lengthy administrative reviews that cost time and money. Eisenach and Singer propose congressional action to limit the FCC's discretion in reviewing secondary transactions.

Next, the Issue turns to a book review by Deborah Salons, an attorney licensed to practice in California and a certified Information Privacy Professional, on *Clouconomics: The Business Value of Cloud Computing* by Joe Weinman. Salons summarizes Weinman's framework for analyzing the complementary roles of cloud computing and traditional information technology. She concludes that the book is a worthwhile read for businesspeople and telecommunications practitioners interested in the cloud-computing sector.

Then, the Issue features an exchange between Harold Furchtgott-Roth and Susan Crawford on her book *Captive Audience*. Furchtgott-Roth, a Senior Fellow at the Hudson Institute and the Founder of the Center for the Economics of the Internet, critiques Crawford's characterization of the market dynamics in the provision of high-speed broadband. He argues that cable modem service does not have a "captive audience" for high-speed broadband because of inter-modal competition from fiber, wireless, and satellite.

Susan Crawford, who is a Fellow at the Roosevelt Institute and a Professor of Law at the Benjamin N. Cardozo School of Law, defends her book by highlighting the limitations of wireless as a substitute for fixed broadband and demonstrating the competitive advantages of the cable broadband industry, as compared to its inter-modal competitors. Crawford concludes by reiterating her call for the federal government to create a public policy plan, which would guarantee that all Americans have access to affordable, high-speed broadband connectivity.

The *Journal* is committed to providing its readership with substantive coverage of relevant topics in communications law, and we appreciate the continued support of contributors and readers alike. We welcome your feedback and submissions—any questions or comments about this Issue or

future issues may be directed to [fclj@law.gwu.edu](mailto:fclj@law.gwu.edu), and any submissions for publication consideration may be directed to [fcljarticles@law.gwu.edu](mailto:fcljarticles@law.gwu.edu). This Issue and our archive are available at <http://www.fclj.org>.

Dennis W. Holmes  
*Editor-in-Chief*

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## ***Federal Communications Law Journal***

The *Federal Communications Law Journal*, the nation's oldest and largest communications law journal, is published jointly by the Federal Communications Bar Association (FCBA) and the George Washington University Law School. The FCLJ is in its sixty-fifth volume of publication (it was not published during World War II), and this is the journal's inaugural year at GW Law.

The FCLJ publishes three issues per year with spine dates of January, April, and June, and features articles and student notes on issues in telecommunications, the First Amendment, broadcasting, telephony, computers, Internet, intellectual property, mass media, privacy, communications and information policymaking, and other related fields. As the official journal of the Federal Communications Bar Association, the FCLJ has over 4,100 subscribers including Association members as well as legal practitioners, industry experts, government officials and academics. Only 25 other law journals in the United States have as many or more subscribers. The FCLJ has the second largest readership of any specialty law journal in the United States.

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# FEDERAL COMMUNICATIONS LAW JOURNAL



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## ARTICLE

### **Avoiding Rent-Seeking in Secondary Market Spectrum Transactions**

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Since at least the early 1990s, policymakers have recognized the benefits of using market-based mechanisms to allocate spectrum usage rights, including relying on auctions to award spectrum licenses and, more importantly, allowing secondary markets to reallocate licenses among existing uses and licensees. One of the benefits of market-based approaches is that they reduce incentives for parties to expend lobbying resources to secure self-serving outcomes, i.e., to engage in rent-seeking. This article assesses the role of rent-seeking in secondary market transactions over the past decade, and concludes that rent-seeking is commonplace in large transactions despite secondary market reforms implemented by the Federal Communications Commission (FCC) in 2003–2004. The FCC’s unlimited discretion to intervene on behalf of rivals induces the rent-seeking behavior that the authors document. The article concludes that if this discretion is curbed competitors will reallocate their resources to more productive affairs.

## BOOK REVIEWS

### ***Cloudonomics: The Business Value of Cloud Computing* – A Review**

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Welcome to the rise of the Cloud. Where does the Cloud fit in to contemporary computer ecosystem? In this book review, Deborah Salons explores the framework for analyzing the complementary roles of cloud computing and traditional information technology by Joe Weinman in *Cloudonomics: The Business Value of Cloud Computing*. The review examines key aspects and potential issues that contribute to the economics of cloud computing, as raised by Weinman, such as the on-demand

properties of cloud computing, latency issues in the cloud, and availability. The review also touches on Weinman's views regarding behavioral cloudonomics, the future of cloud computing, and the legal implications of cloud computing.

## **In Search of a Captive Audience: Susan Crawford's *Captive Audience***

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High-speed broadband is an increasingly essential component for Americans to operate in the twenty-first century economy. Susan Crawford, in her book *Captive Audience*, proposes that, at present, cable modem systems have a stranglehold on high-bandwidth, low-latency broadband access and that public policy needs to address this market concentration. In this book review, Harold Furchtgott-Roth, a Senior Fellow at the Hudson Institute and the founder of the Center for Economics on the Internet examines the claims set forth in *Captive Audience*, taking issue with Crawford's characterization of the high-speed broadband market. This review argues that Crawford's economic analysis is lacking and that her international comparisons do not hold up to scrutiny. Specifically, Furchtgott-Roth finds that cable companies do not have a "captive audience" for high-speed broadband because of the existence of inter-modal competition from fiber, wireless, and satellite. He concludes that Crawford does not provide a compelling argument that Washington should interfere with a competitive sector absent a more rigorous showing of market failure.

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In this essay, Susan Crawford responds to Harold Furchtgott-Roth's criticisms. In her response, Crawford notes the many assumptions that she and Furchtgott-Roth share: U.S. presidential administrations have not often considered the FCC an important agency; communications policy is not often made on the merits; and the federal government would probably be terrible at running a nationwide network itself. However, given this agreed-on background, Crawford differs markedly from her reviewer in her prescriptions. Taking into account the experiences of high-speed Internet access consumers in America, and based on current data, she explains why mobile wireless access is not a substitute for fixed wired Internet access and why the right option for global high-speed Internet access competitiveness is driving an upgrade to competitive fiber. She concludes by reiterating her call for federal, state, and local governments to craft policy designed to foster the building of fiber-optic networks and guarantee that all Americans have affordable, high-speed Internet access.



# Avoiding Rent-Seeking in Secondary Market Spectrum Transactions

Jeffrey A. Eisenach\*  
Hal J. Singer†

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Although authors were engaged by Verizon in relation to the SpectrumCo transaction, the views expressed here are exclusively their own and are not informed by any confidential information from the transaction. They are grateful to Kevin W. Caves, Anna Koyfman, and Chris Holt for research assistance.

## I. INTRODUCTION

The power to allocate spectrum to specific uses and assign licenses to specific users is the power to distribute wealth.<sup>1</sup> Recipients of desirable spectrum assignments, sometimes from the Federal Communications Commission (“FCC” or the “Commission”) and sometimes directly from Congress, have benefited handsomely over the years, and it is widely recognized that millions, if not billions, of dollars have been spent on rent-seeking—that is, on lobbying and similar activities designed to secure advantageous outcomes in spectrum allocation decisions.<sup>2</sup> Such is the nature of government-administered markets.

Beginning in the late 1950s, academics and, eventually, policymakers recognized that spectrum would more likely be put to its highest value use if it was allocated by markets rather than politicians and civil servants.<sup>3</sup> The spectrum reform consensus that developed over the course of the next five decades called for the creation of flexible usage rights that allow spectrum to be used for any (legal and non-interfering) purpose, the use of auctions to assign licenses to initial licensees, and the development of secondary markets to allow users to exchange spectrum freely.<sup>4</sup> In the early 1990s, these recommendations began to be adopted as policy, starting with the use of auctions to distribute newly released spectrum into the market and, later, with the development of secondary markets.<sup>5</sup> The emergence of a secondary market for spectrum has resulted in billions of dollars in trades and likely improved consumer welfare significantly, relative to the alternative of continued, command-and-control style regulation.<sup>6</sup>

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1. In the parlance of spectrum policy, spectrum is “allocated” to a use and “assigned” to a user. For example, certain bands are “allocated” for mobile communications services, and the right to use those bands is then “assigned” (in the form of licenses) to specific users. We will sometimes use the term “allocate” to refer to both steps, and similarly will use “reallocate” to refer to the process of both repurposing spectrum (from one use to another) and to transferring usage rights among licensees.

2. See Anne O. Krueger, *The Political Economy of the Rent-Seeking Society*, 64 AM. ECON. REV. 291, 291-93 (1974) (explaining that because of quantitative restrictions on spectrum allocation, rent-seeking is competitive and can generate large licensing fees).

3. See EVAN KWEREL & WALT STRACK, FCC, AUCTIONING SPECTRUM RIGHTS 2 (2001), available at <http://wireless.fcc.gov/auctions/data/papersAndStudies/aucspec.pdf> (“An economically efficient licensing mechanism would assign licenses to parties that value them most highly, minimize wasteful private expenditures to obtain spectrum, foster (economically) efficient spectrum use and increase competition with existing spectrum-based services with minimum delay and cost to the government.”).

4. Promoting Efficient Use of Spectrum Through Elimination of Barriers to the Dev. of Secondary Mkts., *Notice of Proposed Rulemaking*, FCC 00-402, paras. 2-3 (2000) [hereinafter 2000 NPRM], available at [http://hraunfoss.fcc.gov/edocs\\_public/attachmatch/FCC-00-402A1.pdf](http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-00-402A1.pdf).

5. *Id.* at para. 2.

6. *Id.*

The emergence of a robust secondary market for the spectrum used for mobile voice and, more recently, mobile broadband is perhaps the single biggest success story of the spectrum reform movement.<sup>7</sup> Commercial Mobile Radio Service (“CMRS”) licenses provide for a substantial degree of flexibility, allowing licensees to use technologies (e.g., CDMA, GSM, Wi-Max, LTE) and offer services (e.g., text messages, voice, web browsing, mobile video) of their choice in the geographic and frequency range they desire.<sup>8</sup> Thus, to cite a prominent example from 2011, Qualcomm was able to sell spectrum it had been using to provide commercially unsuccessful mobile television service to AT&T, which will use it for two-way mobile voice and data, thereby helping to alleviate the “spectrum crunch” that has come about as a result of the emergence of smart phones and mobile data services.<sup>9</sup>

In addition to flexible rights, the success of secondary markets depends on the ability of market participants to engage in transactions quickly, at relatively low cost, and with a reasonable degree of certainty.<sup>10</sup> Under FCC rules adopted in the mid-2000s, most secondary market transactions were granted “fast track” treatment, resulting in a significant reduction in the time required to obtain approval.<sup>11</sup> Many transactions involving CMRS spectrum, however, remain subject to “special” public notice and comment procedures, including those in which a current licensee has foreign ownership or seeks to acquire additional, overlapping spectrum. This practice arguably serves as a *de facto* invitation for the sorts of rent-seeking behavior that plagued the old “command and control” system.<sup>12</sup>

Pursuant to section 310(d) of the Communications Act of 1934 and FCC rules, an acquiring firm must file applications for assignment of licenses with the Commission, asking for permission to consummate the transaction.<sup>13</sup> Typically, opposition parties (including competitors, trade

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7. John W. Mayo & Scott Wallsten, *Enabling Efficient Wireless Communication: The Role of Secondary Spectrum Markets*, 22 INFO. ECON. & POL’Y 61, 62 (2010).

8. Jeffrey A. Eisenach, *Spectrum Reallocation and the National Broadband Plan*, 64 FED. COMM. L.J. 87, 123 (2011). The specific spectrum bands subject to flexibility and eligible for secondary market rules have varied over time. Unless otherwise noted, we refer to licenses for spectrum used for mobile radio service and subject to flexibility and trading as “CMRS” licenses.

9. App’n of AT&T Inc. & Qualcomm Inc. for Consent to Assign Licenses & Authorizations, *Order*, FCC 11-188, paras. 4-5 (2011), available at [http://hraunfoss.fcc.gov/edocs\\_public/attachmatch/FCC-11-188A1.pdf](http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-11-188A1.pdf).

10. Eisenach, *supra* note 8, at 119-23.

11. Mayo & Wallsten, *supra* note 7, at 64.

12. *Id.*

13. 47 U.S.C. § 310(d) (2012); *see, e.g.*, 47 C.F.R. §§ 1.2111, 73.3597 (2012); App’n of Cellco P’ship d/b/a Verizon Wireless & SpectrumCo LLC for Consent to Assign Licenses, WT Docket No. 12-4 (filed Dec. 16, 2011) (seeking consent to assign 122 Advanced Wireless Services licenses to Verizon Wireless from SpectrumCo); *see also* App’n of Cellco P’ship d/b/a Verizon Wireless & Cox TMI Wireless, LLC for Consent to Assign Licenses, WT Docket No. 12-4 (filed Dec. 21, 2011) (seeking consent to assign thirty Advanced Wireless Services licenses to Verizon Wireless from Cox Wireless).

associations, and non-profit groups) respond with petitions asking the FCC to deny approval for the transaction.<sup>14</sup> The petitioners generally fall broadly into two categories—competitors and ideological interest groups—but their complaints are similar: the transaction, regardless of the size, would result in the acquiring firm holding licenses to “too much” spectrum, thereby disadvantaging its competitors and ultimately giving the acquiring firm market power in the market for wireless services.<sup>15</sup> These parties’ pleas for relief also have much in common: they typically urge the Commission to either deny permission for the transfer altogether or, in the alternative, to apply various regulatory conditions, many of which would have the effect of improving competitors’ market positions. In short, both the competitors and the ideological opponents seek to impose conditions that would transfer rents from the applicants to themselves or other parties while, of course, cloaking their arguments in “the public interest.”

Two sets of policy issues present themselves in scenarios where this rent-seeking behavior occurs. First, with respect to any given transaction, do opponents make a convincing case that the transaction would reduce consumer welfare and harm the public interest or, conversely, that the proposed regulatory conditions would generate net benefits? If no public interest harm can be demonstrated, then the application should be approved, and the transaction should be allowed to proceed without conditions.

Second, to what extent is rent-seeking present in secondary spectrum markets, and what are its consequences? We present empirical evidence that rent-seeking is commonplace and becoming more so, and we argue that it results not only in higher transaction costs, increased risk, and longer (often significant) delays, but also in resource misallocation, i.e., that rent-seeking leads to both dynamic and allocative inefficiencies. Indeed, we estimate that delays in FCC review of secondary market transactions have raised costs by nearly \$10 billion since 2003. Thus, the Commission should view the pleas of any interveners it determines to be engaged in rent-seeking with disfavor and make clear that it will view such activities in the future with prejudice.

The remainder of this paper is organized as follows. In Section II, we recount the development of secondary spectrum markets, beginning with a reminder of the failings—including rent-seeking—of the command-and-control system and concluding with an assessment of major secondary market transactions since the adoption of market-oriented reforms in the early 2000s. In Section III, we present a case study on the positions taken

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14. See, e.g., Petition to Deny of COMPTTEL, AT&T Inc. & BellSouth Corp. App’ns for Approval of Transfer of Control, WC Docket No. 06-74 (filed June 5, 2006) [hereinafter COMPTTEL Petition to Deny].

15. Stephen F. Sewell, *Assignments and Transfers of Control of FCC Authorizations Under Section 310(d) of the Communications Act of 1934*, 43 FED. COMM. L.J. 277, 290 (1991).

by various competitors and other opponents of the 2012 transaction involving Verizon Wireless (“VZW”) and SpectrumCo. Section IV discusses the consequences of rent-seeking in secondary markets, and offers some tentative policy recommendations. Section V presents a brief summary of our conclusions.

## II. SECONDARY MARKETS AND EFFICIENT SPECTRUM USE

The evolution of spectrum policy from a pure command-and-control system of administrative allocation to today’s increasingly market-driven approach has been underway for more than two decades.<sup>16</sup> It was motivated, in part, by the growing recognition that the command-and-control approach led interested parties to engage in rent-seeking, resulting not only in inefficient resource allocation but also wasteful spending on lobbying and related activities.<sup>17</sup> In this section, we describe both the progress and the limitations of the reforms. We begin by discussing the nexus between spectrum allocation and rent-seeking. Next, we describe the policy reforms that have been put in place since the mid-1990s. Finally, we analyze the effects of these policy reforms, noting that they have sped up the review process for smaller transactions but have not eliminated opportunities for rent-seeking in larger ones. Indeed, our analysis of the opposition to large CMRS transactions over the last decade shows that rent-seeking is commonplace.

### A. *Rent-Seeking and the Case Against Administrative Allocation*

Rent-seeking describes the efforts of private actors—individuals or corporations—to use the power of the state to pursue private gain.<sup>18</sup> In situations where the state has the ability to award monopolies or other forms of economic privilege, individuals and citizens will expend resources to capture the resulting economic rents. As Gordon Tullock explained in 1967, “[t]hese expenditures, which may simply offset each other to some extent, are purely wasteful from the standpoint of society as a whole; they

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16. Philip J. Weiser & Dale N. Hatfield, *Policing the Spectrum Commons*, 74 *FORDHAM L. REV.* 663, 670 (2005) (“Over forty years after Coase first argued for it, the FCC began to reform its traditional spectrum management regime and to treat licenses in a more property-like manner. In particular, the FCC began to heed the calls for reform in the early 1990s and, following the congressional directive to use auctions to assign spectrum licenses, the agency has embarked on a number of initiatives to move spectrum policy towards a property rights model.”).

17. Jerry Brito, *The Spectrum Commons in Theory and Practice*, 2007 *STAN. TECH. L. REV.* 1, 34 (2007).

18. See generally Krueger, *supra* note 2, at 291-303.

are spent not in increasing wealth, but in attempts to transfer or resist transfer of wealth.”<sup>19</sup>

It is well understood that the administrative allocation of scarce spectrum licenses creates strong incentives for rent-seeking. In his classic 1959 article describing the problems with administrative spectrum allocation, Ronald Coase noted that the FCC had “recently come into public prominence” as a result of disclosures about “the extent to which pressure is brought to bear on the Commission by politicians and businessmen (who often use methods of dubious propriety) with a view to influencing its decisions.”<sup>20</sup> As he explained,

That this should be happening is hardly surprising. When rights, worth millions of dollars, are awarded to one businessman and denied to others, it is no wonder if some applicants become overanxious and attempt to use whatever influence they have (political and otherwise), particularly as they can never be sure what pressure the other applicants may be exerting.<sup>21</sup>

In the years since, Coase’s insight has been well documented.<sup>22</sup> Indeed, one study found that expenditures on rent-seeking resulted in the dissipation of up to 94% of the potential rents generated in spectrum lotteries.<sup>23</sup> That is, as much as 94% of the potential gains from the spectrum awarded in the lotteries was spent on efforts to maximize the probability of winning a license. Thus, it is not surprising that the desire to avoid—or at least minimize—rent-seeking in spectrum allocation decisions has been one of the primary motivations for moving to market-based approaches.<sup>24</sup>

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19. Gordon Tullock, *The Welfare Costs of Tariffs, Monopolies, and Theft*, 5 W. ECON. J. 224, 228 (1967).

20. R.H. Coase, *The Federal Communications Commission*, 2 J.L. & ECON. 1, 35 (1959).

21. *See id.* at 35-36.

22. *See, e.g.*, Comments of 37 Concerned Economists at 4 n.2, Promoting Efficient Use of Spectrum Through Elimination of Barriers to the Dev. of Secondary Mkts., WT Docket No. 00-230 (filed Feb. 7, 2001). For a comprehensive critique of early spectrum allocation decisions, see John O. Robinson, *Spectrum Management Policy in the United States: An Historical Account* (FCC OPP Working Paper Series, Working Paper No. 15, 1985).

23. *See, e.g.*, Thomas W. Hazlett & Robert J. Michaels, *The Cost of Rent-Seeking: Evidence from Cellular Telephone License Lotteries*, 59 S. ECON. J. 425, 431 (1993) (showing that rent-seeking resulted in the dissipation of as much as 94% of the potential rents from cellular license lotteries).

24. *See, e.g.*, KWEREL & STRACK, *supra* note 3, at 2 (“Under comparative hearings applicants expend real resources to increase their probability of winning a license – primarily the time of lawyers and engineers in preparing applications, litigating, and lobbying. While such expenditures are privately valuable, they are largely socially unproductive.”); *see also* Evan Kwerel & Alex D. Felker, *Using Auctions to Select FCC Licensees* 12-13 (FCC OPP Working Paper Series, Working Paper No. 16, 1985).

The potential for rent-seeking is perhaps even greater in the context of spectrum reallocation than in the case of initial allocations, as license transfers often take place in the context of mergers, where firms are vulnerable to regulatory demands to agree “voluntarily” to various conditions.<sup>25</sup> As discussed in detail below, it is common practice for both competitors and ideologically motivated interest groups to attempt to capitalize on this vulnerability to obtain self-serving regulatory outcomes, often unrelated to the license transfer or merger.<sup>26</sup> This is not to say that all outside participation in spectrum transfer proceedings is inefficient or self-serving. Instead, regulators should view with great skepticism efforts to win conditions, especially when the proposed conditions are tangential to the license transfer itself. Indeed, the National Telecommunications and Information Administration (“NTIA”) recognized the potential for rent-seeking to disrupt efficient reallocation in its 1991 report recommending a market-based approach to reallocation, finding that “even if spectrum managers [in a command and control regime] are able to design a reallocation plan that is economically efficient, its effects on current users may raise equity concerns and almost certainly will raise political concerns that can make the actual implementation of the plan extremely difficult.”<sup>27</sup>

### *B. The Emergence of Market-Based Mechanisms for Spectrum Reallocation*

The gradual (and still incomplete) transition from administrative allocation to market-based approaches in spectrum allocation has taken

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(“Comparative hearings and lotteries use up a great deal of real resources (primarily the time of legal, engineering, and economic consultants.)”).

25. See, e.g., Howard A. Shelanski, *From Sector-Specific Regulation to Antitrust Law for US Telecommunications: The Prospects for Transition*, 26 TELECOMMS. POL’Y 335, 341 (2002) (noting concerns that regulators have “extracted conditions from the merging parties that the agency never could have obtained under the antitrust laws, that were beyond the FCC’s regulatory power to mandate (hence the conditions had to be voluntarily binding, for the carriers), and that were not reviewable by a court of law”); see also Philip J. Weiser, *Reexamining the Legacy of Dual Regulation: Reforming Dual Merger Review by the DOJ and the FCC*, 61 FED. COMM. L.J. 167, 169-70 (2008) (“[T]he FCC . . . relies on its authority to evaluate whether the acquiring firm should be permitted—under the broad and ill-defined ‘public interest’ test—to acquire and operate the licenses held by the to-be-acquired firm . . . . [T]his unrestrained mandate creates considerable opportunity for mischief.”).

26. See, e.g., Thomas M. Koutsky & Lawrence J. Spiwak, *Separating Politics from Policy in FCC Merger Reviews: A Basic Legal Primer of the “Public Interest” Standard*, 18 COMMLAW CONCEPTUS 329, 344 (2010) (quoting Frank Easterbrook, *The Supreme Court, 1983 Term—Foreword: The Court and the Economic System*, 98 HARV. L. REV. 4, 39 (1984) (“Often an agency with the power to deny an application (say, a request to commence service) or to delay the grant of the application will grant approval only if the regulated firm agrees to conditions. The agency may use this power to obtain adherence to rules that it could not require by invoking statutory authority.”)).

27. NAT’L TELECOMMS. & INFO. ADMIN., U.S. SPECTRUM MANAGEMENT POLICY: AGENDA FOR THE FUTURE 71 (1991) [hereinafter AGENDA FOR THE FUTURE], available at <http://www.ntia.doc.gov/osmhome/91specagen/1991.html>.

place over the course of decades.<sup>28</sup> An important milestone occurred with NTIA's 1991 *Agenda for the Future* report, which explicitly called for shifting from administrative allocation towards markets:

NTIA believes that, for most purposes, a spectrum management system that provides users with both incentives and opportunities to use spectrum in ways that are economically efficient will produce greater benefits for society than a centrally planned, highly regulatory system that attempts a "top down" approach to managing spectrum use.

... For most private-sector users, a choice mechanism suggests itself that could be much more efficient than the current system—the market.<sup>29</sup>

The Commission took some important steps towards reform in the 1980s, including a 1988 Order providing for substantial license flexibility in Digital Cellular Services.<sup>30</sup> Most of the focus on market-based reform was on the use of auctions to replace administrative proceedings (e.g., comparative hearings) for the initial allocation of licenses.<sup>31</sup> By the mid-1990s, attention returned to license flexibility and other steps aimed at facilitating secondary markets.<sup>32</sup> In 1996, for example, the Commission permitted CMRS licensees to "disaggregate" and "partition" their licenses,<sup>33</sup> in the early 2000s, it broadened this authority to more licensees and moved to permit spectrum leasing.<sup>34</sup>

Throughout the reform process, the Commission has been motivated by its recognition of the growing demand for spectrum, especially for

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28. See generally Weiser & Hatfield, *supra* note 16.

29. AGENDA FOR THE FUTURE, *supra* note 27, at 71.

30. See, e.g., Amendment of Parts 2 & 22 of the Comm'n's Rules to Permit Liberalization of Tech. & Auxiliary Serv. Offerings, *Report and Order*, FCC 88-317, 3 FCC Rcd. 7033 (1988). Licenses for Personal Communications Services (PCS), auctioned in 1993, have always been subject to considerable flexibility. See also Amendment of the Comm'n's Rules to Establish New Pers. Comm. Servs., *Second Report and Order*, FCC 93-451, 8 FCC Rcd. 7700 (1993).

31. U.S. GEN. ACCOUNTING OFFICE, GAO-03-277, TELECOMMUNICATIONS: COMPREHENSIVE REVIEW OF U.S. SPECTRUM MANAGEMENT WITH BROAD STAKEHOLDER INVOLVEMENT IS NEEDED 8 (2003), available at <http://www.gao.gov/new.items/d03277.pdf>.

32. *Id.*

33. Geographic Partitioning & Spectrum Disaggregation by Commercial Mobile Radio Servs. Licensees, *Report and Order and Further Notice of Proposed Rulemaking*, WT Docket No. 96-148, paras. 1-4 (1996), available at <http://transition.fcc.gov/Bureaus/Wireless/Orders/1996/fcc96474.txt>.

34. See 2000 NPRM, *supra* note 4, at paras. 3-4; see also Promoting Efficient Use of Spectrum Through Elimination of Barriers to the Dev. of Secondary Mkts., *Report and Order and Notice of Proposed Rulemaking*, FCC 03-113, paras. 2-3 (2003) [hereinafter *First Report and Order*], available at [http://hraunfoss.fcc.gov/edocs\\_public/attachmatch/FCC-03-113A1.pdf](http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-03-113A1.pdf). For a review of the spectrum reform movement, see Eisenach, *supra* note 8, at 90-97.



mobile telephone (and now mobile broadband), and its concern that barriers to reallocation were slowing the movement of spectrum from lower-to higher-value uses.<sup>35</sup> For example, in its December 2000 *Secondary Markets Policy Statement*, the Commission expressed concern that “[t]he preclusion of higher valued uses might occur if service flexibility is restricted by rule or the cost of trading is high,” and noted that “there is continuing growth in demand for spectrum for new data networks and advanced services such as third generation mobile services that offer much faster mobile data speed.”<sup>36</sup> In short, the concerns that motivated the Commission to promote secondary markets over a decade ago are more or less identical to the concerns that dominate spectrum policy discussions today.<sup>37</sup>

The Commission’s secondary markets reform efforts culminated, in 2003 and 2004, in two major Orders aimed in large part at streamlining procedures for license transfers and assignments. While the Commission is statutorily bound by section 310(d) of the Communications Act to approve transfers of control only upon finding that “the public interest, convenience, and necessity will be served thereby,”<sup>38</sup> it concluded in the 2003 and 2004 Orders that its section 10 forbearance authority allowed it to adopt streamlined, “fast-track” approval procedures in many cases.<sup>39</sup> The 2003 *First Report and Order* established the underlying foundations for spectrum leasing for Wireless Radio Service<sup>40</sup> licenses, and established two forms of streamlined approval procedures depending on the type of lease or transfer involved.<sup>41</sup> The 2004 *Second Report and Order* expanded the set of transactions subject to the streamlined procedures, including allowing some

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35. Eisenach, *supra* note 8, at 90-97.

36. Principles for Promoting the Efficient Use of Spectrum by Encouraging the Dev. of Secondary Mkts., *Policy Statement*, FCC 00-401, para. 11 (2000), available at [http://hraunfoss.fcc.gov/edocs\\_public/attachmatch/FCC-00-401A1.pdf](http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-00-401A1.pdf); see also 2000 *NPRM*, *supra* note 4, at para. 7 (“In certain markets, spectrum is becoming increasingly congested and spectrum constraints are threatening to limit the growth of new services, particularly in more densely populated urban areas . . .”).

37. See Eisenach, *supra* note 8, at 100 (noting that the language used in the 2010 *National Broadband Plan* to describe the need for additional CMRS spectrum is similar to language used in previous reports, including the 1991 *Agenda for the Future* report).

38. 47 U.S.C. § 310(d) (2012) (“No construction permit or station license, or any rights thereunder, shall be transferred, assigned, or disposed of in any manner, voluntarily or involuntarily, directly or indirectly, or by transfer of control of any corporation holding such permit or license, to any person except upon application to the Commission and upon finding by the Commission that the public interest, convenience, and necessity will be served thereby. Any such application shall be disposed of as if the proposed transferee or assignee were making application under section 308 of this title for the permit or license in question; but in acting thereon the Commission may not consider whether the public interest, convenience, and necessity might be served by the transfer, assignment, or disposal of the permit or license to a person other than the proposed transferee or assignee.”).

39. See *First Report and Order*, *supra* note 34, at paras. 150-59.

40. The covered services included virtually all spectrum then being used for CMRS services, and we use the terms “Wireless Radio Service” and CMRS interchangeably unless otherwise noted. See 2000 *NPRM*, *supra* note 4, at para. 13, n.19.

41. See *First Report and Order*, *supra* note 34, at paras. 8-16.

transfers and licenses to be approved without formalized, automatic notice and comment proceedings.<sup>42</sup> As noted below, these provisions led to significant reductions in the costs and delays associated with many secondary market transactions and generated substantial benefits.<sup>43</sup>

However, the Commission also determined that certain classes of assignments and transfers “raise the kinds of potential public interest concerns that would necessitate public notice or individualized review prior to granting.”<sup>44</sup> Specifically, the Commission found,

Consistent with our competition policies, however, we will exclude from this approach [transactions] involving spectrum that (1) is, or may reasonably be, used to provide interconnected mobile voice and/or data services and (2) creates a “geographic overlap” with other spectrum used to provide these services in which the spectrum [acquirer] holds a direct or indirect interest (of 10 percent or more), either as a licensee or as a spectrum lessee. Because [such transactions] potentially raise competition concerns, they will continue to be subject to case-by-case review and approval.<sup>45</sup>

Thus, for many transactions involving CMRS licenses, the Commission’s secondary market reforms stopped short of eliminating the automatic notice and comment proceedings that effectively invite opponents to challenge license assignments and transfers. As discussed below, these procedural provisions, combined with the Commission’s inconsistent approach to assessing competition and imposing conditions, have given rent-seekers both the ability and the incentive to pursue their objectives through license assignment and transfer proceedings.

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42. Promoting Efficient Use of Spectrum Through Elimination of Barriers to the Dev. of Secondary Mkts., *Second Report and Order, Order on Reconsideration, and Second Further Notice of Proposed Rulemaking*, FCC 04-167, paras. 10-84 (2004) [hereinafter *Second Report and Order*], available at [http://hraunfoss.fcc.gov/edocs\\_public/attachmatch/FCC-04-167A1.pdf](http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-04-167A1.pdf); see also Mayo & Wallsten, *supra* note 7, at 64.

43. See FCC, CONNECTING AMERICA: THE NATIONAL BROADBAND PLAN 79 (2010), available at <http://download.broadband.gov/plan/national-broadband-plan.pdf> (“Spectrum flexibility, both for service rules and license transfers, has created enormous value.”).

44. *Second Report and Order*, *supra* note 42, at para. 103 (footnote omitted). In addition to the competition issues which are the focus of discussion here, the Commission also noted other criteria, such as foreign ownership and transfers by designated entities, that could raise public interest concerns and thus preclude expedited approval. *Id.*

45. *Id.* at para. 25. The language quoted here initially referred only to spectrum leases, but is applied to assignments and transfers, by reference. *Id.* at para. 103. See also *First Report and Order*, *supra* note 34, at para. 119 (requiring parties to disclose in their applications “whether the . . . arrangement reduces the number of CMRS competitors in the market”).

### C. Secondary Markets in Practice

License transfers and re-assignments were commonplace even before the development of the robust secondary markets we see today. In a 1985 paper, for example, Kwerel and Felker noted that “[i]n recent years . . . the FCC has annually processed over 600 applications for reassignment or transfer of [Public Mobile Service] licenses,”<sup>46</sup> and reported that “[b]etween May and December 1984 . . . the FCC approved over 100 license reassignments . . . represent[ing] roughly 5% of the total number of SMRS licenses granted to date.”<sup>47</sup>

More recent data from the Commission’s Universal Licensing System (“ULS”), reported by Mayo and Wallsten, shows that by the mid-2000s, the FCC was processing over 2,000 license transfers and assignments annually.<sup>48</sup> Moreover, as shown in Figure 1, the 2003–2004 fast-track reforms appear to have significantly reduced the average time required to obtain approval of secondary market transactions, reducing the average time for approval for all transactions from 340 days in 1998 to seven days in the first quarter of 2012, while the time for approval of Personal Communications Services (“PCS”) transactions declined from 326 days to thirty-six days over the same period.<sup>49</sup>

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46. Kwerel & Felker, *supra* note 24, at 9.

47. *Id.* at 9-10 (footnote omitted). They also report that, as of 1983, 65% of television broadcast licenses were held by assignees rather than the original licensees. *Id.* at 9 n.12.

48. See Mayo & Wallsten, *supra* note 7, at 68 (Table 3).

49. Similar data is reported in Mayo & Wallsten, *id.* at 71 (Figure 3). We are grateful to the authors for providing their underlying data and for assistance in replicating their methodology, which allowed us to update their work and produce the updated data reported here.

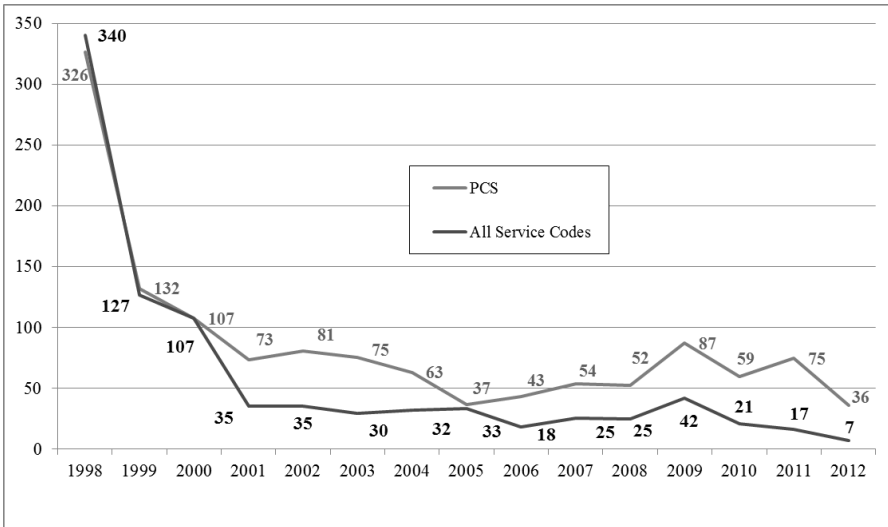


Figure 1: Time from Application to Approval, 1998-2012<sup>50</sup>

Of course, the aggregate data masks the distinction between transactions granted streamlined approval under the 2003–2004 reforms and those still subject to automatic notice and comment procedures. In other words, it masks the distinction between transactions at least partially insulated from rent-seeking and those still vulnerable to it.

Under the Commission's rules, applicants wishing to transfer spectrum that is or can be used for CMRS services must certify whether the proposed transaction (a) involves a geographic overlap of spectrum rights and/or (b) would reduce the number of CMRS competitors in the market.<sup>51</sup> Applications that raise either issue are generally not eligible for streamlined review procedures.<sup>52</sup> Instead, when such applications are received, the Wireless Telecommunications Bureau issues a public notice, and opens a formal Commission proceeding seeking comment on the application.<sup>53</sup> Parties wishing to oppose the transfer must submit petitions to deny the application within fourteen days of the public notice.<sup>54</sup> The applicants then have an opportunity to file replies in opposition to the petitions to deny, and the remainder of the proceeding goes forward according to a pleading

50. *Universal Licensing System*, FCC, <http://wireless.fcc.gov/uls/index.htm?job=home> (last visited Apr. 9, 2013). Our results differ slightly from those reported in Mayo & Wallsten, *supra* note 7, at 71 (Figure 3). In particular, they identify a spike in 2001 approval times for all service codes which does not appear in our data. Based on our discussions with the authors, we attribute this difference to the fact that our figure shows the average days of approval across all transactions, while theirs reports the average approval time across different service codes (i.e., our figure represents an average of averages).

51. 47 C.F.R. § 1.948 (2012).

52. *Id.*

53. *Id.*

54. *Id.* In some of the major spectrum transactions, the Wireless Telecommunications Bureau has allowed thirty days for the filing of petitions to deny.

cycle established by the Commission, with full opportunity for public comment, including ex parte submissions filed throughout the duration of the review.

The practical effect of this “carve out” is that acquisitions by incumbent CMRS providers of overlapping spectrum licenses are subject to essentially the same procedures that prevailed for all transactions prior to the 2003–2004 Orders, making the streamlined procedures irrelevant in the transactions in which rent-seeking is most likely to occur.

In an effort to reduce uncertainty, the Commission has, on occasion, sought to provide guidance on the standards it will apply with respect to competition issues. For non-exempt transactions (i.e., those involving CMRS spectrum in which the acquiring party holds a 10% or greater interest in geographically overlapping licenses), it has applied a two-part “screen,” comprised of (a) a market concentration screen (as measured by the Herfindahl-Hirschman Index, or HHI) in downstream local product markets,<sup>55</sup> and (b) a spectrum aggregation screen, initially adopted in 2004, which focuses on the acquiring party’s post-transaction spectrum holdings in local markets (relative to the total amount of spectrum available for CMRS services).<sup>56</sup> According to the Commission, the purpose of the spectrum screen was to “to eliminate from further consideration any market in which there is no potential for competitive harm as a result of [the] transaction.”<sup>57</sup> However, both screens have been modified over the years, and petitioners have not hesitated to urge the Commission to conduct detailed reviews of transactions that fail to trigger either screen.

In practice, the Commission’s reviews of license transactions have demonstrated the potential to devolve into essentially unstructured public interest reviews in which any and all criteria may be considered and any

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55. See Annual Rpt. & Analysis of Competitive Mkt. Conditions with Respect to Mobile Wireless Including Commercial Mobile Servs., *Fourteenth Report*, FCC 10-81, para. 52 (2010), available at [http://hraunfoss.fcc.gov/edocs\\_public/attachmatch/FCC-10-81A1.pdf](http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-10-81A1.pdf) (“The Commission employed an HHI screen in its review of transactions during 2009, including the *AT&T/Centennial* transaction. The HHI screen identified service areas in which (1) the post-transaction HHI would be both greater than 2800 and would increase by at least 100, or (2) the post-transaction HHI would have increased by at least 250.”).

56. See, e.g., App’ns of AT&T Wireless Servs., Inc. & Cingular Wireless Corp. for Consent to Transfer Control of Licenses & Authorizations, *Memorandum Opinion & Order*, FCC 04-255, para. 108 (2004) [hereinafter *Consent to Transfer Control Memorandum*], available at [http://hraunfoss.fcc.gov/edocs\\_public/attachmatch/FCC-04-255A1.pdf](http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-04-255A1.pdf); App’ns of AT&T Inc. & Cellco P’ship d/b/a Verizon Wireless for Consent to Assign or Transfer Control of Licenses & Authorizations & Modify a Spectrum Leasing Agreement, *Memorandum Opinion and Order*, FCC 10-116, para. 35 (2010), available at [http://hraunfoss.fcc.gov/edocs\\_public/attachmatch/FCC-10-116A1.pdf](http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-10-116A1.pdf). In 2001, Spectrum screen took the place of the Commission’s prior “spectrum cap,” which formally limited the amount of CMRS spectrum any carrier could control. See 2000 Biennial Regulatory Review Spectrum Aggregation Limits for Commercial Mobile Radio Servs., *Notice of Proposed Rulemaking*, FCC 01-28, para. 3 (2001), available at [http://hraunfoss.fcc.gov/edocs\\_public/attachmatch/FCC-01-28A1.pdf](http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-01-28A1.pdf).

57. *Consent to Transfer Control Memorandum*, *supra* note 56, at para. 109.

and all conditions are potentially on the table (i.e., to resemble for practical purposes the “comparative hearings” secondary markets were designed to replace). Indeed, in some respects, the process remains essentially unchanged. For example, in order for the Commission to consider a petition to deny, section 309(d) of the Communications Act<sup>58</sup> requires that the petitioner must be a “party in interest, i.e., a person aggrieved or whose interests are adversely affected by the Commission’s authorization.”<sup>59</sup> Arguably, therefore, the statute not only *encourages* self-interested parties to file, but *requires* that filers be self-interested; and, it forces the Commission to consider the harm allegedly suffered by the aggrieved party, even if only for purposes of establishing standing, in its deliberations.<sup>60</sup>

To assess the extent of rent-seeking in the Commission’s reviews of secondary market transactions, we gathered data on the most significant CMRS transactions reviewed by the Commission from 2004 to 2011 (excluding the 2012 Verizon-SpectrumCo transaction), as identified by the FCC in its annual CMRS competition reports. The resulting eighteen transactions are shown in Table 1.

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58. 47 U.S.C. § 309(d) (2012).

59. See 47 C.F.R. § 1.117 (2012); cf. 47 C.F.R. § 1.939(a) (2012) (“Any party in interest may file with the Commission a petition to deny . . . .”); 47 C.F.R. § 1.939(d) (2012) (“A petition to deny must contain specific allegations of fact sufficient to make a *prima facie* showing that the petitioner is a party in interest and that a grant of the application would be inconsistent with the public interest, convenience and necessity.”).

60. See, e.g., AmericaTel Corp. App’n for Transfer of Control & Pro Forma Assignment of Section 214 Authorizations, *Memorandum Opinion, Order, Authorization and Certificate*, FCC 94-175, 9 FCC Rcd. 3993, para. 9 (1994) (explaining that under Commission precedents, petitioners must establish that they would suffer direct injury and establish a causal link between the spectrum assignment and the injury); L.A. Cellular Tel. Co. App’n for Renewal of Domestic Pub. Cellular Radio Telecomms. Serv. Station License KNKA351 for Frequency Block A in the L.A., Cal. Metro. Serv. Area, *Order*, File No. 05166-CL-MR-95, para. 5 (1998), available at <http://transition.fcc.gov/Bureaus/Wireless/Orders/1998/da980411.txt> (explaining that Petitioners must establish that “specific competitive harm” would occur in specified markets).

Application Date	Assignee	Assignor	Description	Valuation (\$000)
9/26/2003	Cingular	Nextwave	Purchase of NextWave spectrum licenses by Cingular (34 markets)	\$1,400,000
3/18/2004	Cingular	AT&T	Acquisition of AT&T Wireless by Cingular	\$41,000,000
1/24/2005	Alltel	Western Wireless	Acquisition of Western Wireless Alltel (1.4 million customers in 19 states)	\$6,000,000
2/8/2005	Sprint	Nextel	Merger between Sprint and Nextel (40 million subscribers)	\$70,000,000
12/2/2005	Alltel	Midwest Wireless	Acquisition of Midwest Wireless by Alltel (400,000 subscribers)	\$1,075,000
3/31/2006	AT&T	Bellsouth	Acquisition of BellSouth by AT&T, including consolidation of Cingular Wireless JV	\$86,000,000
6/25/2007	Atlantis	Alltel	Acquisition of Alltel announced by TPG Capital and GS Capital Partners ("GSCP")	\$27,500,000
7/13/2007	AT&T	Dobson	Acquisition of Dobson Communications Corporation by AT&T (1.7 million subscribers)	\$2,800,000
10/1/2007	T-Mobile	SunCom	Acquisition of SunCom by T-Mobile Inc.	\$2,400,000
6/10/2008	Verizon Wireless	Alltel	Acquisition of Alltel by Verizon	\$28,100,000
10/29/2007	AT&T	Aloha	Purchase of Aloha 700 MHz licenses by AT&T (12 MHz covering 196 million people)	\$2,500,000
6/6/2008	Clearwire	Sprint-Nextel	Combination of Sprint Nextel spectrum with Clearwire spectrum in new Clearwire JV	\$3,300,000
9/4/2007	Verizon Wireless	Rural Cellular	Acquisition of Rural Cellular Corp. by Verizon Wireless (~716,000 subscribers in 5 regions)	\$2,670,000
11/21/2008	AT&T	Centennial	Acquisition of Centennial Communications Corp. by AT&T (~1,100,000 subscribers)	\$945,000
5/22/2009	AT&T	Verizon Wireless	Divestiture of Alltel spectrum from Verizon-Alltel acquisition	\$2,350,000
6/16/2009	Atlantic Tele-Network	Verizon Wireless	Divestiture of Alltel spectrum from Verizon-Alltel acquisition	\$200,000
1/13/2011	AT&T	Qualcomm	Purchase of Qualcomm spectrum licenses by AT&T	\$1,930,000
4/21/2011	AT&T	T-Mobile	Acquisition of T-Mobile USA by AT&T	\$39,000,000

Table 1: Major CMRS Spectrum Transactions Reviewed by the FCC, 2004-2011<sup>61</sup>

These transactions are broadly representative of the diversity of major secondary market deals. Several (e.g., Alltel-Western Wireless, AT&T-Dobson) represent acquisitions of operating CMRS carriers by other CMRS carriers; others (e.g., Atlantis-Alltel, Clearwire-Sprint/Nextel) involve restructurings, in which the identities of the spectrum licensees changed, but the operating entities remained essentially the same; and, still others (e.g., Cingular-Nextwave, AT&T-Aloha) are transfers of licenses to operating companies from licensees who were not using the spectrum, as in the case of VZW-SpectrumCo.<sup>62</sup>

Our primary interest is in the extent and nature of lobbying activities by potential rent-seekers. Accordingly, using the Commission's Electronic Comment Filing System ("ECFS"), we gathered, for each proceeding, a variety of information on the review process, including: (a) the number of

61. See *Reports*, FCC, [https://www.fcc.gov/reports?filter\\_terms%5B96%5D=96&op=Apply+Filter](https://www.fcc.gov/reports?filter_terms%5B96%5D=96&op=Apply+Filter) (last visited July 8, 2013), for the CMRS Competition Reports and the Wireless Competition Reports that contain the data used in this Table.

62. One of the deals—the merger of AT&T and BellSouth—involved substantial landline assets, but we include it nonetheless since it also involved the consolidation of ownership of CMRS carrier Cingular, which was a joint venture of AT&T and BellSouth.

parties that filed petitions to deny; (b) the number of distinct conditions petitioners sought to place on the transaction; (c) the total number of private-party filings in the proceeding; and, (d) the duration of review, measured as the number of days from submission to disposition. These data are summarized in Table 2.

Transaction	Year Review Completed	Petitions for Denial	Distinct Conditions Sought	Total Public Filings	Duration of Review
Cingular - Nextwave Telecom	2004	1	1	8	138
Cingular - AT&T	2004	4	1	247	218
Alltel - Western Wireless	2005	2	2	64	168
Sprint - Nextel	2005	6	3	232	176
Alltel - Midwest Wireless	2005	1	1	32	304
AT&T - Bellsouth	2006	8	4	12,138	273
Atlantis - Alltel	2007	0	0	9	123
AT&T - Dobson	2007	2	1	40	129
T-Mobile - SunCom	2008	1	1	10	130
Verizon Wireless - Alltel	2008	16	7	211	147
AT&T - Aloha	2008	0	0	3	88
Clearwire - Sprint-Nextel	2008	2	3	133	151
Verizon Wireless - Rural Cellular	2008	3	7	97	331
AT&T - Centennial	2009	2	5	90	349
AT&T - Verizon Wireless	2010	4	3	197	396
ATN - Verizon Wireless	2010	4	1	129	308
AT&T - Qualcomm	2011	7	10	215	343
AT&T - T-Mobile	2011	57	6	44,577	216*
<b>Average</b>		6.7	3.1	3246	222

\* Application withdrawn

Table 2: Characteristics of FCC Review Proceedings, 2004-2011<sup>63</sup>

Three aspects of the data in Table 2 are especially noteworthy. First, all of the transactions that involved the transfer of spectrum between active operators of CMRS, or related services, prompted petitions to deny, while the two that did not—Atlantis' acquisition of Alltel and AT&T's acquisition of Aloha—involved non-operating entities. Moreover, it is commonplace for petitions to be filed and conditions to be sought even in transactions where public-interest-based concerns about adverse effects on competition seem difficult to justify, such as Alltel's 2005 acquisition of Western Wireless and T-Mobile's 2008 acquisition of SunCom.<sup>64</sup>

63. See *Electronic Comment Filing System*, FCC, <http://apps.fcc.gov/ecfs/> (last visited July 8, 2013) (click 'Search for Filings,' and search the database by entering the docket numbers obtained from the CMRS Competition Reports and Wireless Competition Reports in Table 1 in the 'DA/FCC Number' field), for the data used in this Table.

64. Petition for Clarification or, in the Alternative, Declaratory Ruling Under Section 310(b)(4) of the Comm. Act of 1934, as Amended, & Request for Streamlined Processing of T-Mobile USA, Inc. & Suncom Wireless Holdings, Inc. at 3-4, SunCom Wireless Holdings, Inc. Petition for Determination of the Pub. Interest Under Section 310(b)(4) of the Comm. Act of 1934, as Amended, File No. ISP-PDR-20071001-00013 (filed Oct. 1, 2007), available at <https://wireless2.fcc.gov/UlsEntry/attachments/attachmentViewRD.jsp?applType=search&fileKey=877777018&attachmentKey=18245881&attachmentInd=applAttach>.



Second, both the level of opposing activity involved in FCC reviews and the duration of reviews have increased in the past decade. Applications for which reviews were completed between 2004 and 2008 attracted an average of 3.5 petitions to deny, as compared with 14.8 for those since 2008; the average number of filings rose from about 1,000 (between 2004 and 2008) to over 9,000 (thereafter),<sup>65</sup> the average number of conditions sought increased from 2.38 (from 2004 to 2008) to 5.00 (thereafter); and, arguably most importantly, the duration of the average review increased from 183 days (from 2004 to 2008) to 349 days (thereafter).

Third, to better understand the substance of the issues involved in these proceedings, we examined the filings submitted by opponents of the transactions (that is, those submitting petitions for denial) to determine whether and to what extent they simply opposed the transaction unconditionally, as opposed to asking the Commission to impose conditions. To the extent conditions were requested, we noted the nature of the conditions demanded by opponents. Specifically, for each entity which filed petitions to deny in two or more proceedings,<sup>66</sup> we noted the number of instances in which each entity demanded a particular condition, such as mandatory roaming, handset exclusivity, etc.<sup>67</sup> Table 3 displays the results of this analysis.

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65. These trends hold even if one omits outliers. Specifically, omitting VZW-Alltel and AT&T-T-Mobile from the petitions count, the averages are 2.5 petitions per application for 2004–2008 and 3.4 petitions per application for 2009–2011; similarly, omitting AT&T-Bellsouth and AT&T-T-Mobile from the public filings count, the averages are 91 filings per proceeding for 2004–2008 and 158 filings per proceeding for 2009–2011.

66. We do not show results for an additional seventy-four petitioners, who each filed in only one proceeding, nor for three federal agencies. We also exclude COMPTEL, which filed in two proceedings (AT&T-BellSouth and AT&T-T-Mobile). However, COMPTEL's filing in BellSouth was limited to landline issues, and it did not demand conditions in AT&T-T-Mobile. See COMPTEL Petition to Deny, *supra* note 14; Petition to Deny of COMPTEL, App'ns of AT&T Inc. & Deutsche Telekom AG for Consent to Assign or Transfer Control of Licenses & Authorizations, WT Docket No. 11-65 (rel. May 31, 2011).

67. In counting petitioners and conditions, we treated joint petitioners as if they had filed separately. For example, Consumers Union filed jointly with Free Press in two transactions. In our tabulations, we attributed the conditions demanded in those filings to both Consumers Union and Free Press.

Petitioner	Transactions Petitioned	Condition							Total
		Mandatory Roaming	Ban on Handset Exclusivity	Divestiture	Handset Inter- operability	Net Neutrality	Other		
<b>Competitors</b>									
Cellular South	5	3	4	1	2	0	0	10	
Rural Telecom. Group	4	3	3	1	1	0	3	11	
Rural Cellular Association	3	2	1	0	2	0	1	6	
COMPTEL	2	0	0	0	0	0	0	0	
Cincinnati Bell	2	2	2	1	0	0	1	6	
DISH Network	2	0	0	1	0	0	0	1	
King Street Wireless	2	0	1	0	1	0	1	3	
Leap Wireless	2	1	1	1	0	0	1	4	
MetroPCS	2	2	1	2	0	0	0	5	
NTELOS	2	2	1	2	0	0	0	5	
National Association of Black Owned Broadcasters	2	0	0	1	0	0	1	2	
United States Cellular	2	0	0	1	0	0	1	2	
<i>Subtotal</i>	<i>30</i>	<i>15</i>	<i>14</i>	<i>11</i>	<i>6</i>	<i>0</i>	<i>9</i>	<i>55</i>	
<b>Ideological Interest Groups</b>									
Consumers Union	6	2	1	3	1	2	7	16	
Chatham Avalon Park Community Council	3	0	0	2	0	0	1	3	
Consumer Fed. of Am.	3	1	0	2	0	0	4	7	
Free Press	3	2	1	1	1	1	6	12	
Media Access Project	2	1	1	0	1	1	2	6	
New America Foundation	2	1	1	0	1	1	2	6	
Public Knowledge	2	1	1	0	1	1	2	6	
<i>Subtotal</i>	<i>21</i>	<i>8</i>	<i>5</i>	<i>8</i>	<i>5</i>	<i>6</i>	<i>24</i>	<i>56</i>	
<b>Total</b>	<b>51</b>	<b>23</b>	<b>19</b>	<b>19</b>	<b>11</b>	<b>6</b>	<b>33</b>	<b>111</b>	

Table 3: Repeat Petitioners and their Demands, 2004–2011<sup>68</sup>

Several aspects of the data in Table 3 are noteworthy. First, 100% of the petitioners were prepared to allow transactions to proceed if the Commission would add one or more conditions. While in some cases the conditions demanded were plausibly related to some alleged anticompetitive effect of the proposed transaction—i.e., at least *consistent with* a public interest motivation—in many cases the Commission concluded the requested conditions were not consistent with the public interest.

Second, the most frequently demanded conditions across all petitioners, accounting for nearly two-thirds (72 out of 111) of the total, were mandatory roaming, spectrum divestitures, bans on handset exclusivity, and handset interoperability. Each of these types of conditions, if granted by the Commission, would directly benefit the petitioning competitors. Mandatory roaming would provide competitors with the right to utilize applicants' networks for roaming at non-commercial rates rather than at (presumably higher) commercially negotiated ones. Required divestitures would give competitors opportunities to acquire spectrum at below market, forced-sale prices. Handset exclusivity bans would remove the competitive advantages acquired by some firms through successful product differentiation; and, handset interoperability would force firms operating in certain spectrum bands to purchase more expensive handsets in order for them to be able to operate on spectrum bands used by their

68. See *Electronic Comment Filing System*, *supra* note 63. The comments resulting from the search described were analyzed for proposed conditions to the transactions and divided into two categories: competitors and ideological interest groups.

competitors. That is, each of the conditions most-frequently demanded by opponents represents *prima facie* rent-seeking.

Third, and perhaps of greatest interest, there is very little difference between the conditions demanded by competitors and those demanded by ideologically motivated opponents. The four most common rent-seeking conditions, just discussed, account for 85% of the demands made by competitors, and also account for nearly half (46%) of those made by ideological opponents. In contrast, the one markedly “ideological” condition that makes the list, network neutrality, was not demanded by any competitors, and accounts for only 9% of the demands made by ideological opponents (five out of fifty-six).

These findings strongly suggest that the so-called “bootleggers and Baptists” (“B&B”) phenomenon is prevalent in FCC spectrum transfer proceedings.<sup>69</sup> As put forward by economist Bruce Yandle, the B&B theory of regulation states that

Durable social regulation evolves when it is demanded by both of two distinctly different groups. “Baptists” point to the moral high ground and give vital and vocal endorsement of laudable public benefits promised by a desired regulation. Baptists flourish when their moral message forms a visible foundation for political action. “Bootleggers” are much less visible but no less vital. Bootleggers, who expect to profit from the very regulatory restrictions desired by Baptists, grease the political machinery with some of their expected proceeds. They are simply in it for the money.<sup>70</sup>

To be clear, the B&B phenomenon does not imply that ideologically motivated “Baptist” groups “sell out” their principles to advance the rent-seeking objectives of the “bootleggers.” To the contrary, the ideologues’ desired policy outcomes—which, in this case, amount to the imposition of a particular type of industry structure through regulation—happen to be consistent with policy decisions that simultaneously serve the interests of more traditionally “self-serving” industry actors.<sup>71</sup> Similarly, we are not

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69. See generally Bruce Yandle, *Bootleggers and Baptists in Retrospect*, 22 REG. 5 (1999), available at <http://www.cato.org/sites/cato.org/files/serials/files/regulation/1999/10/bootleggers.pdf>.

70. *Id.*

71. A complete review of the motivations behind each claim in each proceeding is beyond the scope of this study. Two typical examples, however, illustrate the point. In its filing in opposition to the Clearwire-Sprint/Nextel transaction, RCA made no apology for acting on behalf of the interests of a competitor as opposed to protecting competition. Indeed, RCA stated that its filing was based on its concern that “[t]he increase in competition [resulting from the transfers] can be expected to cause Cellular South to sustain economic injury that is direct, tangible and immediate.” Petition to Deny of Rural Cellular Ass’n at 3, App’ns of Sprint Nextel Corp. & Clearwire Corp. for Consent to Transfer Control of Licenses, Authorizations, & De Facto Transfer Spectrum Leases, WT Docket No.

saying that conditions proposed by a competitor can never advance the public interest. However, as a general matter, horizontal competitor complaints in merger proceedings are inherently suspect since in most cases they benefit from reduced competition, but suffer when mergers result in lower costs (i.e., economic efficiencies) for the merging firms.<sup>72</sup>

More broadly, we acknowledge that these results provide only an initial look at the extent and nature of rent-seeking in FCC reviews of secondary market transactions, and that more granular, case-by-case research into the incentives of the various parties and the likely effects of their demands would certainly be worthwhile. At the same time, we believe the data presented above demonstrate that rent-seeking plays an important role in these proceedings, and thus provide a useful lens through which to assess opponents' claims concerning the VZW-SpectrumCo transaction. We turn to those claims in the remaining sections.

### III. A CASE STUDY: RENT-SEEKING BEHAVIOR IN THE VERIZON WIRELESS - SPECTRUMCO PROCEEDING

In December 2011, Verizon Wireless ("VZW") announced that it had reached an agreement with SpectrumCo LLC and, separately, with Cox TMI Wireless LLC to acquire roughly 20 MHz of nationwide spectrum for approximately \$3.6 billion, making the transfer one of the largest secondary market transactions for bare licenses ever.<sup>73</sup> As in previous secondary market transactions, two groups of filers petitioned to block the VZW-SpectrumCo merger: competitors and ideological interest groups.<sup>74</sup>

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08-94 (filed July 24, 2008) (emphasis added). By contrast CFA's more public-interested justification for its petition to deny the Sprint-Nextel merger argues that "FCC approval of this transaction will harm consumers by allowing one entity to control an excessive amount of mobile broadband communications spectrum in many markets throughout the county." Petition to Deny of Consumer Fed'n of Am. & Consumers Union at 1, Nextel Comm. & Sprint Corp. Seek Consent to Transfer Control of Licenses, WT Docket No. 05-63 (filed Mar. 30, 2005).

72. See Alan A. Fisher et al., *Price Effects of Horizontal Mergers*, 77 CAL. L. REV. 777, 782 (1989).

73. Tim McElgunn, *Verizon Wireless and CableCos Agree to \$3.6B Spectrum Swap*, BLOOMBERG BNA (Dec. 7, 2011), <http://www.bna.com/verizon-wireless-cablecos-n12884904947/>.

74. In addition to the petitioners shown in Table 4 and discussed below, one individual, Maneesh Pangasa, also filed a petition to deny. Petition to Deny of Maneesh Pangasa, App'n of Cellco P'ship d/b/a Verizon Wireless & SpectrumCo, LLC & Consent TMI Wireless, LLC Seek FCC Consent to the Assignment of AWS-1 Licenses, WC Docket No. 12-4 (filed Feb. 3, 2012). As of June 14, 2012, Mr. Pangasa had submitted a total of 294 additional filings, or an average of approximately two per business day. See Search for FCC Filings of Maneesh Pangasa in 12-4, FCC, [http://apps.fcc.gov/ecfs/comment\\_search/input?z=td7wl](http://apps.fcc.gov/ecfs/comment_search/input?z=td7wl) (enter '12-4' in 'Proceeding Number,' 'Maneesh Pangasa' in 'Name of Filer,' and '6/4/12' in 'To' under 'Received'). In addition to Mr. Pangasa, a number of other parties have filed comments in the proceeding, including a group of Boston Community Leaders, the Communications Workers of American, the Competitive Enterprise Institute,

Table 4 shows six competitors and thirteen ideological opponents that filed timely petitions to deny in the docket assigned to the transactions.<sup>75</sup>

Petitioner	Condition						Other Transactions Petitioned
	Mandatory Roaming	Handset Exclusivity	Divestiture	Handset Interoperability	Other	Total	
<b>Competitors</b>							
Hawaiian Telecom	0	0	0	0	1	1	0
MetroPCS	1	0	0	0	0	1	2
NTCH	1	1	0	1	2	5	0
RCA	1	1	1	1	1	5	3
RTG	0	0	1	0	0	1	4
T-Mobile	0	0	0	0	0	0	0
<i>Subtotal</i>	<i>3</i>	<i>2</i>	<i>2</i>	<i>2</i>	<i>4</i>	<i>13</i>	<i>9</i>
<b>Ideological Interest Groups</b>							
Public Knowledge	1	0	0	1	1	3	2
Access Humboldt*	1	0	0	1	1	3	0
Benton Foundation*	1	0	0	1	1	3	0
New America Foundation*	1	0	0	1	1	3	2
Center for Rural Strategies*	1	0	0	1	1	3	0
Future of Music Coalition*	1	0	0	1	1	3	1
Media Access Project*	1	0	0	1	1	3	2
Nat. Consumer Law Ctr*	1	0	0	1	1	3	0
Writers Guild of Am.*	1	0	0	1	1	3	1
Diogenes Telecom. Project	0	0	0	0	0	0	1
Free Press	0	0	0	0	0	0	3
NJ Div. of Rate Counsel	0	0	1	0	0	1	1
Rural Broadband Policy Group**	0	0	0	0	0	0	0
<i>Subtotal</i>	<i>9</i>	<i>0</i>	<i>1</i>	<i>9</i>	<i>9</i>	<i>28</i>	<i>13</i>
<b>Total</b>	<b>12</b>	<b>2</b>	<b>3</b>	<b>11</b>	<b>13</b>	<b>41</b>	<b>22</b>

\*Joint filing with Public Knowledge

\*\* Members include Center for Rural Strategies, Access Humboldt, Virginia Rural Health Association, Virginia Rural Health Resource Center, Highlander Research and Education Center, Mainstreet Project and Partnership of African American Churches

Table 4: VZW-SpectrumCo Transaction: Petitions to Deny<sup>76</sup>

Sprint-Nextel, and The Greenlining Institute. See Reply Comments of Massachusetts Cmty. Leaders, Cellco P’ship d/b/a Verizon Wireless & SpectrumCo LLC for Consent to Assign Licenses, WC Docket No. 12-4 (filed Mar. 26, 2012); Reply Comments of the Competitive Enter. Inst., App’ns of Cellco P’ship d/b/a Verizon Wireless & SpectrumCo LLC & Cox TMI Wireless, LLC for Consent to Assign Licenses, WC Docket No. 12-4 (filed Mar. 5, 2012); Comments of Sprint Nextel Corp., App’n of Cellco P’ship d/b/a Verizon Wireless & SpectrumCo LLC for Consent to Assign Licenses, WC Docket No. 12-4 (filed Feb. 22, 2012); Opening Comments of the Greenling Inst., App’n of Cellco P’ship d/b/a Verizon Wireless & SpectrumCo LLC for Consent to Assign Licenses, WC Docket No. 12-4 (filed Feb. 21, 2012). As of June 14, 2012, approximately 502 public filings (not including Mr. Pangasa’s) had been filed—more than in all but two of the proceedings (AT&T/BellSouth and AT&T-T-Mobile), detailed in Section II above. See Search for FCC Filings of 12-4, FCC, [http://apps.fcc.gov/ecfs/comment\\_search/input?z=td7wl](http://apps.fcc.gov/ecfs/comment_search/input?z=td7wl) (enter ‘12-4’ in ‘Proceeding Number’ and ‘6/4/12’ in ‘To’ under ‘Received’).

75. In addition, Information Age Economics filed an untimely Petition to Deny proposing five other conditions: (1) a data roaming mandate; (2) AWS capability for future LTE devices; (3) interoperability with other CDMA/LTE devices; (4) certain conditions on the proposed auction of Verizon’s Lower 700 MHz band A and B frequencies; and (5) a two to three year timeframe for consummation of AWS spectrum transactions involved. Petition to Condition or Otherwise Deny of Info. Age Econ. at 8-10, App’n of Cellco P’ship d/b/a Verizon Wireless & SpectrumCo LLC for Consent to Assign Licenses, WT Docket No. 12-4 (filed Aug. 7, 2012) [hereinafter Information Age Economics Petition].

By definition, each group demanded that the Commission deny the proposed license assignments.<sup>77</sup> However, as in the transactions discussed above, virtually all of the competitors and many of the ideological opponents also sought conditions on the transaction, if approved.<sup>78</sup> Both sets of parties, in other words, were hoping to extract something of benefit from their participation in the proceeding. Below, we analyze public versions of their filings to assess the nature of the “rents” being sought by those opposing the VZW-SpectrumCo transaction. We take no position on the net societal benefits of the transaction; the purpose of this section is to describe the position of petitioners and to summarize the outcome of their efforts.

### A. *The Competitors*

As shown in Table 4, six competitors, or competitor trade associations, filed petitions to deny. A review of the competitor filings shows that each petitioner’s primary concern was that the transaction would make VZW a more efficient competitor, and thus place them (as competitors) at a disadvantage. Each of the competitive petitioners, in other words, begged the Commission to protect them from what they acknowledged—implicitly and sometimes even explicitly—to be an efficiency-enhancing transaction.<sup>79</sup> Moreover, all but one of the petitioners—T-Mobile—asked for specific conditions to be attached to approval, and three of these five are “repeat conditioners,” meaning they previously filed petitions to deny and demanded conditions in one or more of the secondary market transactions listed in Table 1.<sup>80</sup>

We begin with T-Mobile, which filed the most extensive petition to deny and reply comments, complete with expert and reply declarations by two economists, as well as multiple follow-up *ex parte* presentations.<sup>81</sup> While T-Mobile did not formally propose conditions, it did advance a clear and unambiguously self-serving objective. The company sought to have the Commission deny the transfer so that it could purchase the spectrum from

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76. See Search for Petitions to Deny in WT Docket No. 12-4, FCC, [http://apps.fcc.gov/ecfs/comment\\_search/](http://apps.fcc.gov/ecfs/comment_search/) (enter '12-4' in 'Proceeding Number' and select 'Petition' from 'Type of Filing') (last visited July 8, 2013).

77. See 47 U.S.C. § 309(d)(1) (2012).

78. See *supra* Table 2; see also Information Age Economics Petition, *supra* note 75.

79. Of course, each petitioner cloaks its claims in the argument that it is necessary to protect them, as competitors, in order to preserve competition.

80. See, e.g., sources cited *infra* notes 81, 89, 95, 97, 98, 110.

81. See Petition to Deny of T-Mobile USA, Inc., App’n of Cellco P’ship d/b/a Verizon Wireless & SpectrumCo LLC for Consent to Assign Licenses, WT Docket No. 12-4 (filed Feb. 21, 2012) [hereinafter T-Mobile Petition]; Reply to Opposition to Petition to Deny of T-Mobile, USA, Inc., App’n of Cellco P’ship d/b/a Verizon Wireless & SpectrumCo LLC for Consent To Assign Licenses & App’n of Cellco P’ship d/b/a Verizon Wireless & Cox TMI Wireless, LLC, for Consent to Assign Licenses, WT Docket No. 12-4 (filed Mar. 26, 2012) [hereinafter T-Mobile Reply].

SpectrumCo at a lower price.<sup>82</sup> Thus, while T-Mobile never formally sought “divestiture,” its declared purpose was to cancel the transaction and thus force the spectrum back onto the market. T-Mobile later withdrew its opposition upon its own acquisition of spectrum from Verizon (discussed below).<sup>83</sup>

T-Mobile was hardly the only party pleading in self-interest. The Rural Telecommunications Group (“RTG”), for example, argued that the transaction should be denied because it would “make it harder for *rural carriers* to properly compete.”<sup>84</sup> RCA, formerly the Rural Carriers Association, now the Competitive Carriers Association, complained of “the substantial harms that will accrue to *competitive carriers* if the Transactions are allowed to proceed.”<sup>85</sup> Like T-Mobile, both groups cast their arguments in public interest terms, arguing in part that there would be few, if any, efficiency benefits from the transaction.<sup>86</sup> On the other hand, NTCH, Inc., a Tier III wireless carrier, which competes with Verizon in a handful of markets,<sup>87</sup> argued the transaction should be disapproved precisely because of its efficiency benefits:

Verizon devotes the lion’s share of its Opposition to demonstrating that it needs additional spectrum to grow bigger and to operate more efficiently . . . . These arguments show conclusively that Verizon doesn’t get it: no one disputes these points because they are true, and *that is precisely what makes these deals objectionable*.<sup>88</sup>

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82. See T-Mobile Petition, *supra* note 81; T-Mobile Reply, *supra* note 81.

83. Jon Brodtkin, *T-Mobile Likely to End Attempt to Block Verizon Spectrum Purchase*, ARS TECHNICA (June 25, 2012), <http://arstechnica.com/information-technology/2012/06/t-mobile-likely-to-end-attempt-to-block-verizon-spectrum-purchase/>.

84. Petition to Deny of the Rural Telecomms. Grp., Inc. at i, App’n of Celloco P’ship d/b/a Verizon Wireless & SpectrumCo LLC for Consent to Assign Licenses & App’n of Celloco P’ship d/b/a Verizon Wireless & Cox TMI Wireless, LLC, for Consent to Assign Licenses, WT Docket No. 12-4 (filed Feb. 21, 2012) [hereinafter RTG Petition] (emphasis added).

85. Petition to Condition or Otherwise Deny Transactions of RCA–The Competitive Carriers Ass’n at 2, App’n of Celloco P’ship d/b/a Verizon Wireless & SpectrumCo LLC for Consent to Assign Licenses & App’n of Celloco P’ship d/b/a Verizon Wireless & Cox TMI Wireless, LLC, for Consent to Assign Licenses, WT Docket No. 12-4 (filed Feb. 21, 2012) [hereinafter RCA Petition] (emphasis added).

86. See RTG Petition, *supra* note 84; RCA Petition, *supra* note 85.

87. See Petition for Reconsideration of NTCH at 9, App’ns of Celloco P’ship d/b/a Verizon Wireless & SpectrumCo LLC & Cox TMI, LLC for Consent to Assign AAWS-1 Licenses, WT Docket No. 12-4 (filed Sept. 24, 2012).

88. Reply of NTCH, Inc. at 1-2, App’n of Celloco P’ship d/b/a Verizon Wireless & SpectrumCo LLC for Consent to Assign Licenses & App’n of Celloco P’ship d/b/a Verizon Wireless & Cox TMI Wireless, LLC, for Consent to Assign Licenses, WT Docket No. 12-4 (filed Mar. 26, 2012) (emphasis added). In a clear case of rhetorical intemperance, even by the standards of modern political advocacy, NTCH goes on to compare VZW to Nazi Germany:

As noted above, all of the competitive petitioners, except T-Mobile, demanded that if the Commission did approve the transaction, it should apply one or more conditions.<sup>89</sup> RCA's list was the most comprehensive:

RCA recommends that the Commission impose the following conditions on any grant of the proposed Transactions: (1) substantial divestitures of un- or under-used LTE-ready, currently usable spectrum *to existing operating carriers*; (2) Verizon must offer voice and data roaming rates at least as favorable to those provided to the Cable Companies under the reseller agreements; (3) an interoperability requirement for Verizon handsets operating in the 700 MHz and AWS bands; and (4) conditions to ensure that the market for special access is not further constrained.<sup>90</sup>

As explained above, all of these conditions would have the effect of benefitting RCA's member carriers. Indeed, RCA took care to ask that any conditions imposed by the Commission were crafted so as to benefit its members specifically, by asking that the Commission require divestitures only for "existing operating carriers," thereby excluding new entrants, and require the roaming rates offered to RCA members satisfy a "most-favored nation" clause.<sup>91</sup>

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In Verizon's view, what is good for Verizon is presumptively good for the public. To see the fallacy in this approach, we need only recall that pre-World War II Germany's annexation of all surrounding German-speaking territories permitted it to operate more efficiently, unified the German Volk, eliminated artificial boundaries, and gave Germany access to additional resources needed to fuel its further growth. By that measure, the policy of Anschluss made perfect sense. The problem is that it was disastrous for the rest of Europe that had to suffer the consequences of this new and improved German Reich.

*Id.* at 2.

89. In addition to the competing petitioners discussed below, Hawaiian Telecom ("HT") asked the Commission to deny the application or condition it on excluding Hawaii from the joint marketing agreements, or delaying their implementation there, on the grounds that HT would be harmed by the more robust competition the joint marketing agreements would produce in wireline services. *See* Hawaiian Telecom Comm., Inc. Petition to Deny or Condition Assignment of Licenses at 14-15, App'n of Cellco P'ship d/b/a Verizon Wireless & Spectrum Co LLC for Consent to Assign Licenses, WT Docket No. 12-4 (filed Feb. 21, 2012).

90. Reply to Opposition to Petition to Condition or Otherwise Deny Transactions of RCA-The Competitive Carriers Association at 35, App'n of Cellco P'ship d/b/a Verizon Wireless & SpectrumCo LLC for Consent to Assign Licenses, WT Docket No. 12-4 (filed Mar. 26, 2012) (emphasis added).

91. *See id.* at 35, 38 ("Consequently, at an *absolute minimum*, Verizon must offer the following reseller rates, offered to the Cable Companies, as roaming rates to any facilities-based provider." (followed by a listing of specific prices)).



RCA's ongoing efforts to secure various regulatory benefits for its members illustrate the extended, "repeat play" nature of rent-seeking in this environment. This aspect of the process also helps to explain another of RCA's concerns with the transaction, which is that the four SpectrumCo companies "at one time were important allies for competitive carriers."<sup>92</sup> Indeed, as recently as 2011, Cox held a seat on RCA's board of directors, but by mid-April 2012 it seems to have resigned,<sup>93</sup> thus presumably costing RCA both financially and in terms of its perceived influence with policymakers. On the other hand, RCA gained an important ally when, roughly two weeks before reply comments in the VZW-SpectrumCo transaction were due, T-Mobile became a new member of their association.<sup>94</sup> To be clear, we do not mean to suggest there is anything nefarious or improper about these shifting memberships and alliances, which are to be expected as markets shift and interests converge and diverge over time. Our point is simply that the process is clearly a political one, in which the public interest surely plays a role, but advocacy and alliances—i.e., the stuff of rent-seeking—are also present.

### *B. The Ideological Opponents*

Thirteen ideological interest groups submitted petitions to deny VZW's applications, with nine of them filing jointly in a petition led by Public Knowledge.<sup>95</sup> Others include the Diogenes Telecommunications Project, Free Press, the New Jersey Division of Rate Counsel, and the Rural Broadband Policy Group, itself an alliance of seven mostly-rural organizations.<sup>96</sup> Eight of these thirteen petitioners are "repeat filers" who have filed petitions to deny in at least one of the previous proceedings identified in Table 1.<sup>97</sup>

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92. *Id.* at 8.

93. See Press Release, Competitive Carriers Ass'n, CCA Elects 2011/2012 Board of Directors (Apr. 19, 2011), available at <http://rca-usa.org/press/rca-press-releases/rca-elects-20112012-board-of-directors/914748>; see also *2012/2013 CCA Board of Directors*, COMPETITIVE CARRIERS ASS'N, <http://rca-usa.org/about/board-of-directors/2011-2012/91201> (last visited Mar. 25, 2013).

94. See Phil Goldstein, *T-Mobile Joins RCA, Bolstering Rural Carrier Group's Ranks*, FIERCEWIRELESS (Mar. 13, 2012), <http://www.fiercewireless.com/story/t-mobile-joins-rca-bolstering-rural-carrier-groups-ranks/2012-03-13>.

95. See *supra* Table 4; Petition to Deny of Pub. Knowledge, Media Access Project, New Am. Found. Open Tech. Initiative, Benton Found., Access Humboldt, Ctr. for Rural Strategies, Future of Music Coal., Nat'l Consumer Law Ctr., on Behalf of Its Low-Income Clients, & Writers Guild of Am., W., App'n of Cellco P'ship d/b/a Verizon Wireless & SpectrumCo LLC for Consent to Assign Licenses, WT Docket No. 12-4 (filed Feb. 21, 2012) [hereinafter Public Knowledge Petition].

96. See *supra* Table 4.

97. See, e.g., Petition to Deny of Free Press at 8, App'n of Cellco P'ship d/b/a Verizon Wireless & SpectrumCo LLC for Consent to Assign Licenses, WT Docket No. 12-4 (filed Feb. 21, 2012) [hereinafter Free Press Petition] ("Free Press has participated in numerous merger proceedings before the Federal Communications Commission. In each, Free Press

As noted above, nothing in public choice theory suggests that the “Baptists” in the Baptists and Bootleggers model are anything less than sincere, and we have no reason to doubt the sincerity of the opposing petitioners in this case. When, for example, the Rural Broadband Policy Group states that “[i]nstead of depending on big corporations, RBPG supports decisions that encourage local ownership; support community-based broadband networks; and invest in the sustainable future of our communities,”<sup>98</sup> we believe this accurately states the group’s motivations. Similarly, Free Press’ criticism of the Commission’s “long legacy of failing to adequately [*sic*] encourage and promote competition within and between the wireless and wireline markets,” wherein “[m]erger after merger and license transfer after license transfer were approved,”<sup>99</sup> resulting in an “accelerating slide towards monopoly”<sup>100</sup> is surely heartfelt, even if we disagree with it as a matter of analysis. Public Knowledge et al. undoubtedly believe that the transaction would aggravate “existing anticompetitive problems with spectrum aggregation.”<sup>101</sup>

Whereas the competitive petitioners seek regulatory conditions to improve their competitive positions, the ideological opponents view rejection of VZW’s proposal as a step towards establishing a precedent for increased regulatory scrutiny in general. As Free Press puts it, there is “no reason this pattern of poorly protecting the public interest has to continue,” if the Commission will only “[get] serious about the competition crisis,” beginning with rejecting the transaction,<sup>102</sup> and continuing with the articulation of a “vision for competition.” According to Free Press, “[c]onditions are not the same as comprehensive competition policy, and it is far past time for the Commission to articulate its vision for competition, and put actions to its words.”<sup>103</sup>

Similarly, in their reply comments, Public Knowledge and its co-filers presented a lengthy discussion of the Commission’s authority to regulate spectrum allocation in general and to deny or condition approval of secondary market transactions (including VZW-SpectrumCo) in

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has advocated for policies that promote competition and serve in the public interest. As such, Free Press constitutes a ‘party in interest’ within the meaning of Section 309(d) of the Communications Act of 1934, as amended, and has standing to participate in this proceeding.”).

98. Petition to Deny of Members of the Rural Broadband Policy Grp.: Ctr. for Rural Strategies, Access Humboldt, Virginia Rural Health Ass’n, Virginia Rural Health Res. Ctr. Highlander Research & Educ. Ctr., Main St. Project, & P’ship of African Am. Churches at 4, App’n of Cellco P’ship d/b/a Verizon Wireless & SpectrumCo LLC for Consent to Assign Licenses, WT Docket No. 12-4 (filed Feb. 21, 2012).

99. Free Press Petition, *supra* note 97, at 52-53.

100. *See id.* at 52.

101. Public Knowledge Petition, *supra* note 95, at 2.

102. Free Press Petition, *supra* note 97, at 52-53.

103. Reply to Opposition of Free Press at 3, App’ns of Cellco P’ship d/b/a Verizon Wireless & SpectrumCo. LLA & Cox TMI Wireless, LLC for Consent to Assign Wireless Licenses, WT Docket No. 12-4 (filed Mar. 26, 2012).

particular.<sup>104</sup> The ideological opponents, in other words, saw regulation as an end in itself and denial of (or imposition of conditions on) the application as a step towards that objective. With respect to specific conditions, Public Knowledge et al. offered a series of proposals. These included roaming obligations;<sup>105</sup> “a tight schedule for deployment” with “use it or share it” provisions that would obligate VZW to make un-deployed spectrum available to competitors at “reasonable rates;”<sup>106</sup> provisions to force VZW to allow unlicensed use of its spectrum by others while its own buildout is in process;<sup>107</sup> and an equipment interoperability mandate.<sup>108</sup> As is evident from Table 4, these conditions tracked closely with those advanced by the competitors.

More broadly, all of the petitions to deny were consistent with the competitors’ universal desire to have the transaction stopped and the spectrum, one way or another, ultimately put in the hands of someone other than VZW.<sup>109</sup> The New Jersey Division of Rate Counsel, for example, argued specifically for re-auctioning the spectrum to a new owner, a position that coincided perfectly with T-Mobile’s:

Spectrum is a public asset: rather than allow cable companies to benefit from having hoarded spectrum since 2006, the FCC should require them to return the spectrum to the FCC (with compensation to the cable companies based on the price they originally paid through the auction, with interest, plus reasonable compensation for their investment in clearing microwave links and testing) to be re-auctioned on an expedited basis.<sup>110</sup>

Thus, despite the fact that the ideological opponents’ motives differed from those of the competitors, each group sought to gain something from its intervention in the review, and, at the end of the day the proposed remedies—disapprove the transaction, or impose regulatory conditions upon it—were essentially the same. Moreover, the net effects of their rent-seeking activities on the process itself were ultimately identical.

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104. Reply Comments of Pub. Knowledge, Media Access Project, New Am. Found. Open Tech. Initiative, Access Humboldt, Benton Found., & Nat’l Consumer Law Ctr., on Behalf of Its Low-Income Clients at 25-35, App’n of Cellco P’ship d/b/a Verizon Wireless & SpectrumCo LLC for Consent to Assign Licenses, WT Docket No. 12-4 (filed Mar. 26, 2012).

105. Public Knowledge Petition, *supra* note 95, at 48.

106. *Id.* at 49.

107. *Id.* at 50.

108. *Id.* at 53.

109. Free Press Petition, *supra* note 97, at 53 (“[T]he Commission has no choice but to tell Verizon no.”).

110. Petition to Deny of New Jersey Div. of Rate Counsel at v, App’n of Cellco P’ship d/b/a Verizon Wireless & SpectrumCo LLC for Consent to Assign Licenses, WT Docket No. 12-4 (filed Feb. 17, 2012).

### C. The Aftermath

In May 2012, the Commission granted opponents' petitions to suspend its self-imposed 180-day "shot-clock" to approve or disapprove the transaction,<sup>111</sup> and announced that its review would not be complete before August 7—233 days from the date when the initial filing was made.<sup>112</sup> The extensions were justified on the basis of the need to allow review—by both competitors and ideological opponents of the transaction—of thousands of pages of confidential documents provided by Verizon and the other applicants.<sup>113</sup> In the meantime, the commercial and ideological opponents of the deal formally joined forces, forming a new lobbying group called the "Alliance for Broadband Competition," whose members included T-Mobile USA, RCA, and Public Knowledge.<sup>114</sup> This move seemed to blur, if not obliterate completely, the lines between self-interested and principled opposition.

In August 2012, the Commission issued an Order approving the Verizon-Spectrum Co transaction, with conditions.<sup>115</sup> The *VZW-SpectrumCo Order* concluded that "absent mitigating measures, the acquisition . . . would be substantially likely to result in certain public interest harms through foreclosure or raising of rivals' costs, and that the associated benefits would be insufficient to determine on balance that the transaction as proposed was in the public interest."<sup>116</sup> The Commission noted that in June 2012, Verizon Wireless had "reached an agreement with T-Mobile to, among other things, assign a significant number of AWS-1 licenses from Verizon Wireless to T-Mobile, including a number of licenses that Verizon Wireless was proposing to acquire from SpectrumCo, Cox, and Leap."<sup>117</sup> The Commission also noted that VZW "filed a letter offering certain commitments with respect to the provision of roaming service and to the aggressive buildout of the AWS-1 licenses it would acquire in these pending transactions."<sup>118</sup> The Commission concluded that

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111. Letter from Rick Kaplan, Chief, Wireless Telecomms. Bureau, to Michael Samsock, Cellco P'ship dba Verizon Wireless, et al. (May 1, 2012) [hereinafter Kaplan Letter], available at <http://apps.fcc.gov/ecfs/document/view?id=7021917354>.

112. See Marguerite Reardon, *Verizon Likely to Divest Wireless Spectrum to Get Cable Deal OK*, CNET (May 25, 2012) [http://news.cnet.com/8301-1035\\_3-57441306-94/verizon-likely-to-divest-wireless-spectrum-to-get-cable-deal-ok/](http://news.cnet.com/8301-1035_3-57441306-94/verizon-likely-to-divest-wireless-spectrum-to-get-cable-deal-ok/).

113. See Kaplan Letter, *supra* note 111.

114. See Phil Goldstein, *T-Mobile, RCA Join Forces to Stop Verizon's Cable Deals*, FIERCEWIRELESS (May 14, 2012), <http://www.fiercewireless.com/story/t-mobile-rca-join-forces-stop-verizons-cable-deals/2012-05-14>.

115. App'ns of Cellco P'ship d/b/a Verizon Wireless & SpectrumCo LLC & Cox TMI, LLC for Consent to Assign AWS-1 Licenses, *Memorandum Opinion and Order and Declaratory Ruling*, FCC 12-95, para. 17 (2012), available at [http://hraunfoss.fcc.gov/edocs\\_public/attachmatch/FCC-12-95A1.pdf](http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-12-95A1.pdf).

116. *Id.* at para. 2.

117. *Id.* at para. 4.

118. *Id.*

the divestiture and the voluntary commitments would “mitigate the spectrum concentration harms.”<sup>119</sup> According to a February 2012 study by Deutsche Bank, absent any divestiture, VZW’s share of all spectrum holdings, whether in use or not, would have increased from 15% to 19% with the acquisition of SpectrumCo’s and Cox’s spectrum.<sup>120</sup>

On the date of the *VZW-SpectrumCo Order*, the Commission concurrently issued a news release that described the divestiture to T-Mobile as “unprecedented.”<sup>121</sup> While it is not clear what the FCC intended to convey with this language, there appears to be no prior instance in which any designated petitioner was able to secure spectrum *before* the FCC conditionally approved a transaction. While divestitures may represent an appropriate remedy in the abstract, divested assets should not be awarded to designated petitioners during the petitioning process; rather, they should be sold to whoever can put them to the highest alternative use pursuant to a consent order that closes the agency’s review. The FCC’s unbounded ability to extract merger-related concessions on behalf of petitioning parties has arguably reached a peak. In the following section, we provide remedies that would curtail this agency’s ability to distribute merger-related rents and redirect competitors’ energies to more productive activities.

#### IV. THE COSTS OF RENT-SEEKING AND RECOMMENDATIONS FOR REFORM

Rent-seeking imposes costs. At a minimum, it uses up resources in what is, at best, a zero-sum battle for government largesse. As noted above, the amounts wasted in this way are not trivial. Often, however, the costs associated with rent-seeking go well beyond the direct costs of participating in the process. In the context of the secondary markets for spectrum, rent-seeking imposes delays, increases uncertainty, raises the likelihood of regulatory error, and discourages, or even prevents, welfare-enhancing transactions from taking place. In short, it defeats the purposes of creating secondary markets in the first place.

In this section, we briefly detail the costs of rent-seeking in secondary spectrum markets and suggest some reforms designed to improve the process. Before beginning, we want to note that we are not naïve regarding the role of politics in markets. The fact that firms attempt to use the regulatory process to advance their objectives or make life difficult for competitors is not news; and, absent the complete elimination

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119. *Id.*

120. SCOTT WALLSTEN, COMMENTS ON THE VERIZON-SPECTRUMCO DEAL 5 (2010) (citing BRETT FELDMAN, KEY UPDATES ON MAJOR SPECTRUM DEALS (2012)).

121. Press Release, FCC, FCC Concludes Review of Verizon Wireless-SpectrumCo Deal and Approves Related Spectrum Transactions (Aug. 23, 2012) (on file with author) (“To address staff concerns regarding spectrum concentration, Verizon Wireless undertook an *unprecedented* divestiture of spectrum to a competitor, T-Mobile.”) (emphasis added).

of regulation, such activities will always play a role in the relationship between business and government. Similarly, ideological groups of all stripes will continue to petition for the adoption of policies they believe serve the public interest and in doing so will, intentionally or otherwise, find themselves in league with the private firms that stand to benefit from the same policies. Rent-seeking, in other words, is not going to end anytime soon; there will always be “Baptists” and “Bootleggers.”

Nonetheless, it is important to recognize that rent-seeking has costs, and that sound public policy requires reducing those costs as much as possible.

### A. *The Costs of Rent-Seeking in Secondary Spectrum Markets*

Based on our analysis of the nineteen major transactions discussed in this paper (the eighteen in Table 1 plus VZW-SpectrumCo), we identify three specific categories of costs associated with rent-seeking in secondary spectrum markets: direct costs, costs of delay, and increased regulatory risk.

The most obvious form of direct costs are the costs of participation in year-long regulatory proceedings that not only involve hundreds, sometimes thousands, of filings at the FCC but often spill over into full-fledged lobbying campaigns complete with advertising, grass roots activities, and Congressional hearings.<sup>122</sup> Another direct cost is the requirement that applicants reveal sensitive competitive information.<sup>123</sup> It is increasingly commonplace for the FCC to demand such information, and to allow all participants in a proceeding access to the information, subject to a protective order.<sup>124</sup> While the protective orders are designed to limit viewing of this information to attorneys and others not engaged in developing competitors’ business strategies, the applications process might result in the release of firms’ competitive secrets to third parties. Further, it is clear that third parties value having such information as they often expend resources demanding it.<sup>125</sup> While these direct costs are difficult to quantify, they are certainly non-trivial.

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122. Brito, *supra* note 17, at 62.

123. See generally 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*, 14 HARV. J.L. & TECH. 335 (2001).

124. See, e.g., App’ns of Deutsche Telekom AG, T-Mobile USA, Inc. & MetroPCS Comm., Inc. for Consent to Assign or Transfer Control of Licenses & Authorizations, *Second Protective Order*, DA 12-1665, para. 1 (2012), available at [http://hraunfoss.fcc.gov/edocs\\_public/attachmatch/DA-12-1665A1.pdf](http://hraunfoss.fcc.gov/edocs_public/attachmatch/DA-12-1665A1.pdf).

125. See, e.g., MetroPCS Comm., Inc. Reply to Joint Opposition to Petitions to Deny & Comments at 2-3, App’n of Cellco P’ship d/b/a Verizon Wireless & SpectrumCo LLC for Consent to Assign Licenses, WT Docket No. 12-4 (rel. Mar. 26, 2012) (“MetroPCS urged the Commission . . . to require the Applicants to provide a market-by-market analysis of (1) the amount of spectrum Verizon Wireless holds in each geographic area; (2) the precise extent to which the spectrum has been placed in commercial service to serve independent

The second type of cost imposed by rent-seeking is delay, which can be quite expensive. Kwerel and Felker estimate the cost to the applicants of a year's delay at 9% of the value of the transaction.<sup>126</sup> In addition, as explained by Hazlett and Munoz, the *annual* increase in consumer surplus from deployment of additional spectrum is approximately equal to the *total value* of the spectrum to producers.<sup>127</sup> Thus, the lost consumer surplus from delays is substantially greater than the private costs with the annual loss of consumer surplus equal to roughly the transaction's price. Based on these metrics, we calculated the costs of delay for each of the seventeen completed transactions shown in Table 1, where we measured delay as the actual duration of each review less the duration of the shortest review (eighty-eight days, for the AT&T-Aloha transaction).<sup>128</sup> As shown in Table 5, the private costs of delay for the seventeen transactions as a group are over \$8.2 billion, while the lost consumer surplus from the delayed transactions adds another \$1.5 billion.<sup>129</sup> These are significant costs by any standard.

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subscribers; and (3) the nature of the service provided and the utilization as shown in traffic studies. In essence, the Commission has accepted the MetroPCS position by seeking detailed information from the Applicants precisely along the lines recommended by MetroPCS in the FCC Discovery.”).

126. See Kwerel & Felker, *supra* note 24, at 11-12.

127. See, e.g., Thomas W. Hazlett & Roberto E. Muñoz, *A Welfare Analysis of Spectrum Allocation Policies*, 40 RAND J. ECON. 424 (2009); see also Gregory L. Rosston, *The Long and Winding Road: The FCC Paves the Path with Good Intentions*, 27 TELECOMMS. POL'Y 501, 513 (2003); Jerry A. Hausman, *Valuing the Effect of Regulation on New Services in Telecommunications*, 1997 BROOKINGS PAPERS: MICROECONOMICS 1 (1997).

128. We excluded AT&T-T-Mobile on the grounds that the FCC determined that the transaction was not in the public interest, though we do not share that view. In addition, we recognize that some might argue that our calculations assume that extended FCC reviews of these transactions produced no countervailing benefits, e.g., in the form of welfare-enhancing conditions. We are not aware of any evidence that lengthier reviews produce superior outcomes in this sense; indeed, to the extent (as we discuss below) that the duration of reviews is extended by rent-seeking, we believe it likely that any resulting conditions reduce rather than increase consumer welfare.

129. We treat the spectrum transferred in AT&T-Qualcomm as unused since it is being used to provide a commercially unsuccessful (and sparsely utilized) service.

Transaction	Delay	Cost of Delay to Transacting Parties	Lost Consumer Surplus from Delayed Deployment
Cingular - Nextwave Telecom	50	\$17,260	\$191,781
Cingular - AT&T	130	\$1,314,247	-
Alltel - Western Wireless	80	\$118,356	-
Sprint - Nextel	88	\$1,518,904	-
Alltel - Midwest Wireless	216	\$57,255	-
AT&T - Bellsouth	185	\$3,923,014	-
Atlantis - Alltel	35	\$237,329	-
AT&T - Dobson	41	\$28,307	-
T-Mobile - SunCom	42	\$24,855	-
Verizon Wireless - Alltel	59	\$408,797	-
AT&T - Aloha	0	-	-
Clearwire - Sprint-Nextel	63	\$51,263	-
Verizon Wireless - Rural Cellular	243	\$159,981	-
AT&T - Centennial	261	\$60,817	-
AT&T - Verizon Wireless	308	\$178,471	-
ATN - Verizon Wireless	220	\$10,849	-
AT&T - Qualcomm	255	\$121,352	\$1,348,356
<b>Total</b>	<b>134</b>	<b>\$8,231,056</b>	<b>\$1,540,137</b>

Table 5: Costs of Delays in Reviewing Major Spectrum Transactions, 2004-2011<sup>130</sup>

Of course, these costs can be attributed to rent-seeking only to the extent that rent-seeking is the cause of the delays. Intuitively, we would expect not only that greater opposition would result in lengthier reviews, but that the inherent complexity of the transaction (measured, perhaps, by the transaction's value) might also play a role. To test these hypotheses, we analyzed the statistical correlation between the duration of regulatory review and four other transaction characteristics reported in Tables 1 and 2: (1) the value of the transaction; (2) the number of petitions for denial; (3) the total number of public filings; and (4) the number of distinct conditions demanded by petitioners.<sup>131</sup>

Of these four characteristics, the only one showing a strong correlation was the number of distinct conditions demanded by the petitioning parties, with a correlation coefficient of 0.5, which was statistically significant at a 95% confidence interval.<sup>132</sup> We also utilized a simple ordinary least squares regression to assess the relationship between the number of conditions demanded and the duration of review, and found that the coefficient on conditions demanded was positive and significant at a 95% confidence level. Moreover, the magnitude of the regression coefficient indicates that each additional condition demanded adds

130. The delay was calculated based on the date of the Commission's Final Order, less the date of the assignment application filing and the 88 day shortest review. See *supra* Table 2 and the search described in *Electronic Comment Filing System*, *supra* note 63, for this data.

131. Again, we did not include AT&T-T-Mobile, in this case because the duration of review was truncated with AT&T's decision to withdraw its application.

132. None of the other correlations exceeded 0.15, and none were statistically significant at any meaningful level.



seventeen days to the duration of review. While there is some risk in overinterpreting these results, it is worth noting that the average number of conditions requested is 3.1, suggesting that this factor adds roughly fifty-three days to the average review, or about 40% of the average delay of 134 days.

We interpret these results as demonstrating that rent-seeking, as proxied by the number of distinct conditions opposing petitioners seek to have applied to a transaction, contributes significantly to the delay in obtaining approval of secondary market spectrum transactions.

The third and final category of costs imposed by rent-seeking is increased risk, which can be thought of as taking two distinct forms. First, there is the risk to the applicants that a transaction will be *unexpectedly* delayed, saddled with costly conditions, or even disapproved. We emphasize the word “unexpectedly” here to distinguish between predictable and unpredictable costs of a transaction. As the Commission explained in the *First Report and Order*,

We note that to the extent we can create more certainty for the parties involved in transactions, we are more likely to promote efficient secondary markets. We believe we can best promote certainty for parties negotiating spectrum lease agreements by establishing clearly defined rules and benchmarks for what will and will not be permitted, consistent with our competition policies and public interest requirements.<sup>133</sup>

As noted above, rent-seeking detracts from the ability of spectrum market participants to have certainty about the timing and conditions under which transactions can take place. For example, when the Commission seriously entertains pleas to alter the spectrum screen—and thus the very nature of its review—during the course of a transaction, it adds to the uncertainty faced by all future applicants.

The second form of risk that is increased by rent-seeking is the risk of regulatory error, i.e., that the Commission will impose welfare-destroying conditions, or even disapprove a transaction that, in fact, serves the public interest. As Koutsky and Spiwak note, the risk of regulatory error through the imposition of conditions on specific transactions is almost surely higher than if the same policies were deliberated through the regular order of the rulemaking process:

The merger condition drafting and adoption process . . . often occurs in negotiations between the FCC and the merging entities with very little opportunity for public input and review. Are consumers really well-served by backroom,

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133. *First Report and Order*, *supra* note 34, at para. 257.

closed-door negotiations between the regulator and prospective merging parties over important public issues?<sup>134</sup>

The propensity for administrative decision-making to lead to inefficient outcomes in spectrum allocation procedures is partly a function of the incentives and behaviors of administrative agencies. As Robinson explained in his 1985 history of administrative allocation,

With very few exceptions, Commission policy has been to provide some spectrum for all proposed radio services rather than attempt to optimize the value of scarce spectrum resources. This is in part simply a natural consequence of bureaucratic organization. Bureaucrats . . . will seek to avoid resolving issues in ways that lead to complaints by interested factions. This leads to a “something-for-everybody” system of allocation, even though it is by no means clear that this type of allocation actually maximizes the value of scarce spectrum rights to society.<sup>135</sup>

Accordingly, in the context of the secondary market reviews considered here, the “something-for-everybody” phenomenon likely results in a proclivity for granting conditions—a roaming mandate, an interoperability requirement, a strategic divestiture—that cannot easily be justified on consumer welfare grounds, but serve to reduce complaints by “interested factions.”

While it is not possible to quantify the total direct and indirect costs associated with rent-seeking, the evidence presented above leaves little doubt that they are significant and growing. By raising the costs of transactions, rent-seeking drives a wedge between prospective buyers and sellers, functioning in effect as a transactions tax, reducing the number and magnitude of presumptively welfare-enhancing trade that occurs and ultimately lowering the value of the underlying commodity.<sup>136</sup>

### *B. Proposals for Reform*

While rent-seeking cannot be eliminated entirely, it can be reduced. Here we offer a few thoughts on how to do so. Our preferred outcome would be for Congress to limit directly or indirectly the FCC’s discretion to

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134. Koutsky & Spiwak, *supra* note 26, at 346.

135. Robinson, *supra* note 22, at 79.

136. For other types of costs, see T. RANDOLPH BEARD ET AL., TAXATION BY CONDITION: SPECTRUM REPURPOSING AT THE FCC AND THE PROLONGING OF SPECTRUM EXHAUST 4 (2012) (“[T]axation by condition will discourage the larger scale transactions necessary to resolve spectrum exhaust . . . .”) (emphasis added) (internal quotation marks omitted).

review secondary market transactions under the public interest standard.<sup>137</sup> The allure of reassigning merger-related rents is so strong that we are skeptical that reform can ever be achieved from within the agency. Congress could directly limit the FCC's discretion by assigning all merger-related reviews of wireless transactions to an antitrust agency. A more modest step would be for Congress to clarify the criteria under which parties are permitted to file petitions to deny spectrum transactions by replacing the section 309(d) "person in interest" criterion, which requires petitioners to show private harm,<sup>138</sup> with a consumer welfare criterion that requires petitioners to present specific allegations of fact, and clear and convincing evidence, that the approval of the transaction would harm *consumer* welfare.

Alternatively, in lieu of Congressional intervention, we propose three specific steps that the Commission could embrace on its own. First, the Commission can and should consider changing the criteria under which spectrum transactions enjoy presumptive, fast-track approval, thereby raising the costs of attempting to block or condition a transaction to potential rent-seekers. Most obviously, the Commission can and should refrain from opening notice and comment proceedings on matters that fail to trigger specific competitive screens. At a minimum, transactions involving divestitures mandated by the Commission under prior Orders (such as ATN-Verizon)<sup>139</sup> should not be subjected to *de novo* review.

Second, and relatedly, the Commission should make clear that it will no longer engage in mid-review deliberations on whether to change pre-announced review criteria. The current practice of changing the rules after the game has started increases the very type of uncertainty secondary markets are designed to reduce, creates incentives for rent-seekers to try to raise the bar on specific transactions, and forces deliberations on what are inherently policy issues into transaction-specific proceedings, where they are more likely to be decided incorrectly.

Third, the Commission should recognize that its reviews of spectrum allocation transactions are a game with repeated plays. That means what it does in one review affects the behavior of other players in the future. Specifically, each time the Commission applies a condition in one transaction, or even considers doing so,<sup>140</sup> it raises the expected returns to

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137. For an elaboration of this position, see ROBERT E. LITAN & HAL J. SINGER, *THE NEED FOR SPEED: A NEW FRAMEWORK FOR TELECOMMUNICATIONS POLICY FOR THE 21ST CENTURY* (2013).

138. See 47 U.S.C. § 309(d) (2012).

139. See, e.g., App'ns of Atl. Tele-Network, Inc. and Cellco P'ship d/b/a Verizon Wireless for Consent to Assign or Transfer Control of Licenses or Authorizations, *Memorandum Order and Opinion*, DA 10-661, at paras. 46-59 (2010), available at [http://hraunfoss.fcc.gov/edocs\\_public/attachmatch/DA-10-661A1.pdf](http://hraunfoss.fcc.gov/edocs_public/attachmatch/DA-10-661A1.pdf).

140. For example, RCA justifies its demand for mandated roaming in VZW-SpectrumCo in part on the Commission's willingness to consider such a condition in AT&T-Qualcomm. See RCA Petition, *supra* note 85, at 56 ("Notably, the Commission was

rent-seekers in all future transactions and ultimately increases instances of rent-seeking behavior. If the Commission fails to deny with prejudice competitors' efforts to get the agency to violate the section 310(d) prohibition on considering the public interest benefits of a transfer to an alternative licensee, it will be inviting future efforts of the same sort and risk turning the review process into de facto comparative hearings.<sup>141</sup>

## V. CONCLUSIONS

It is clear that the objectives of the FCC's decade-old secondary market reform efforts are not being fully realized. Rather than allowing spectrum to flow smoothly to its highest-valued uses, the FCC engages in lengthy and contentious administrative reviews of most major secondary market transactions. As Commissioner Robert McDowell said in a June 2012 speech, the current process has in many respects come to resemble the widely-derided comparative hearings procedures from the 1970s, and before.<sup>142</sup>

In this paper, we demonstrated that the costs of delay and uncertainty associated with rent-seeking in secondary market proceedings runs, at a minimum, into the billions of dollars. The unquantifiable costs of uncertainty and regulatory risk—potentially translating into transactions that are never even proposed, let alone consummated—are likely far larger. Further reform of the FCC's secondary market review process along the lines we have recommended above could significantly reduce these costs, and increasingly allow spectrum to be used more efficiently and allocated to its highest valued use.

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willing in the *AT&T/Qualcomm Order* to 'carefully consider whether to impose a roaming condition' on that transaction, due to its nationwide competitive impact. Such careful consideration here requires the Commission to adopt a robust voice and data roaming condition that allows smaller carriers the ability to provide services that are competitive to those services offered by Verizon.”).

141. 47 U.S.C. § 310(d) (2012).

142. See Robert M. McDowell, Commissioner, FCC, Remarks Before TIA 2012: Inside The Network (June 7, 2012), available at [http://transition.fcc.gov/Daily\\_Releases/Daily\\_Business/2012/db0607/DOC-314505A1.pdf](http://transition.fcc.gov/Daily_Releases/Daily_Business/2012/db0607/DOC-314505A1.pdf) (“By working under this unwieldy, time-consuming and unpredictable process, the Commission has essentially relegated the secondary market for spectrum transfers to the comparative hearing model of yore used to award broadcast licenses.”).

# ***Cloudonomics: The Business Value of Cloud Computing – A Review***

**Deborah J. Salons\***

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An increasing number of products and services are moving into “the cloud.”<sup>1</sup> Understanding why this migration is occurring is therefore important not only for the businessperson, but for telecommunications practitioners and policymakers alike. There are many reference books on the market about cloud computing—the question is which resource will be the most useful to the cloud-layman. *Clouconomics: The Business Value of Cloud Computing*<sup>2</sup> by Joe Weinman stands apart from other books about cloud computing because, rather than purely addressing the technology or architecture of the cloud, it incorporates discussion of quantitative and behavioral economic factors affecting the adoption and usage of cloud computing.<sup>3</sup> Weinman brilliantly mixes technology with economics to empirically explore the value proposition of cloud computing and provides a unique and thoughtful contribution to the ongoing cloud discussion.

Weinman first coined the term “clouconomics” in the summer of 2008 to describe the examination of cloud computing from the business, financial, and economic perspective.<sup>4</sup> Accordingly, in the book, he considers the “core characteristics of the cloud—on demand resources, usage-based charging, resource sharing, geographic dispersion, and the like—and how they map to and drive business—and even societal—value.”<sup>5</sup> Weinman asserts that the “laws of clouconomics” apply regardless of domain and are not restricted to cloud computing.<sup>6</sup> As he describes it, the approach taken in the book is “a sort of freakonomics of the cloud.”<sup>7</sup> *Clouconomics* “doesn’t focus on industry market projections or vendor offerings but rather on strategy, business models, customer value, and their relationships.”<sup>8</sup>

The main premise of the book is that adoption of cloud computing can cut costs and “add value.” Weinman relies primarily on clouconomics to reach this conclusion. The amount of research incorporated into the book

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1. “The cloud” is shorthand for “cloud computing.” See *infra* note 2 at 1. Defining “cloud computing” is somewhat controversial. The definition most accepted by industry was created by the National Institute of Standards and Technology (“NIST”): “Cloud computing is a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction. This cloud model is composed of five essential characteristics, three service models, and four deployment models.” See NAT’L INST. OF STANDARDS AND TECH., NIST SPECIAL PUBLICATION 800-145, THE NIST DEFINITION OF CLOUD COMPUTING (2011) [hereinafter *NIST Definition Document*], available at <http://csrc.nist.gov/publications/nistpubs/800-145/SP800-145.pdf>.

2. JOE WEINMAN, *CLOUDONOMICS: THE BUSINESS VALUE OF CLOUD COMPUTING* (2012) [hereinafter *CLOUDONOMICS*].

3. Weinman notes that some differentiate between “cloud services” and “cloud computing,” but these distinctions mean little for the purposes of his book. See *id.* at 13 n.1.

4. *Id.* at xvii.

5. *Id.* at xvii-xviii.

6. *Id.* at xviii.

7. *Id.* at xix.

8. *Id.*

is astonishing; every point made is thoroughly supported with economics, facts, and citations. The book is not necessarily “pro-cloud” and does not attempt to sell or push cloud computing; *Cloudonomics* simply provides information for the reader to take into consideration and to evaluate in deciding what is best for his or her organization. Weinman conscientiously presents different perspectives for the reader to consider and recognizes that there is no one-size-fits-all model.

In the first part of the book, Weinman presents a conceptual view of cloud computing. Weinman starts by examining the relationship between traditional information technology (“IT”) and the cloud. Weinman argues that cloud computing can complement a traditional IT strategy as well as offer value on its own.<sup>9</sup> Next, Weinman tackles the common assertions made about the cloud and presents examples of what the cloud is and is not.<sup>10</sup> He also addresses the ongoing debate about the correct definition of cloud computing and presents his own definition to provide a foundation for the book.<sup>11</sup>

The majority of the book is dedicated to applying economic reasoning to multiple aspects of the cloud, in order to explain how cloud computing adoption can generate cost savings and value. Weinman uses cloudonomics to illustrate several assertions: (1) the main benefit of cloud computing is its “on-demand” capability;<sup>12</sup> (2) “acceleration” is free in the cloud and can mitigate latency issues;<sup>13</sup> and (3) the “available” nature of the cloud makes cloud adoption compelling.<sup>14</sup> Weinman asserts that “cloud computing should be at least part of your overall enterprise IT strategy,”<sup>15</sup> and a “hybrid cloud” strategy is cost optimal.<sup>16</sup>

Weinman also applies behavioral economics to analyze the human factors that affect cloud adoption.<sup>17</sup> This discussion adds an important perspective to the conversation and makes the reader think about the social and emotional issues involved in executive decision-making. The book then examines industry patterns, highlighting the telecommunications industry to bolster Weinman’s main argument that the cloud can provide a

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9. See generally *id.* at 22-40.

10. See generally *id.* at 49-62.

11. See generally *id.* at 63-76.

12. *Id.* at 207.

13. *Id.* at 274.

14. *Id.* at 301.

15. *Id.* at 169.

16. See generally *id.* at 171-80. Weinman states that hybrid clouds are often visualized as an enterprise data center networked to a cloud service provider, and he identifies variations on this model: for example, “some service providers offer hybrid hosting, a mix of colocation, managed services, and cloud services.” *Id.* at 175. A hybrid cloud is “a composition of two or more distinct cloud infrastructures (private, community, or public) that remain unique entities, but are bound together by standardized or proprietary technology that enables data and application portability (e.g., cloud bursting for load balancing between clouds).” *NIST Definition Document*, *supra* note 1, at 3.

17. See generally CLOUDONOMICS, *supra* note 2, at 303-14.

cost reduction mechanism and additional business value.<sup>18</sup> Finally, Weinman uses economic theory to make predictions for the future of the cloud, discussing possible pricing model variations, third-party industry creation, and collaboration with emerging niches such as big data.<sup>19</sup>

*Clouconomics* covers a broad range of topics and is written somewhat sequentially, but the twenty-five chapters are “largely self-contained” so the reader can jump into any chapter of interest.<sup>20</sup> There is no specific chapter dedicated to the law; however, potential legal and regulatory considerations are mentioned throughout the book. The overview below groups Weinman’s assertions into the following categories: cloud computing concepts, the economics of cloud computing, behavioral clouconomics, the future of cloud computing, and clouconomics and the law.

## I. CLOUD COMPUTING CONCEPTS

*Clouconomics* begins with a conceptual overview of cloud computing.<sup>21</sup> Typically, a cloud publication or industry event will begin by attempting to define “cloud computing.” In the introduction to *Clouconomics*, Weinman acknowledges, “what [the cloud] *is*, is a matter of disagreement.”<sup>22</sup> He quickly presents his definitional mnemonic for C.L.O.U.D., which involves the important attributes of the technology: **C**ommon infrastructure, **L**ocation independence, **O**nline accessibility, **U**tility pricing and on-**D**emand resources.<sup>23</sup> After providing this foundation, Weinman concentrates on defining his concept of “clouconomics.”<sup>24</sup>

In the first chapter, Weinman compares the cloud computing business model to the business model of the road network of the Roman Empire.<sup>25</sup> Weinman asserts that “[t]he core ideas behind the cloud business model may be thousands of years old, but cloud *computing* is new and transforming all aspects of personal life, business, and society.”<sup>26</sup> This comparison prepares the reader to bridge traditional economic theory with new or future technologies.

Weinman reinforces the importance of cloud computing by asserting that the cloud is “disrupting every dimension of business”<sup>27</sup> as well as “radically reshaping the relationship among governments, the governed,

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18. See generally *id.* at 317-28.

19. See generally *id.* at 329-50.

20. *Id.* at 12.

21. See CLOUDONOMICS, *supra* note 2, at 1.

22. *Id.* at xvii (“So the cloud is the new, *new* thing, but what it actually *is*, is a matter of disagreement.”).

23. *Id.* at 11.

24. *Id.* at 11-12.

25. *Id.* at 1-2.

26. *Id.* at 13.

27. *Id.* at 4.



and nongovernmental organizations, [which] impact[s] regional balances of power and global stability.”<sup>28</sup> He presents examples of cloud impact across the world, supporting the idea that cloud computing is not just a national phenomenon but also a global one.

#### A. *Cloud Computing Versus Information Technology*

Weinman goes on to examine information technology (“IT”) and cloud computing in the context of competitive strategy, and takes the time to explore different use cases.<sup>29</sup> This discussion is valuable, as most chief information officers (“CIOs”) and IT departments are evaluating the multiple trade-offs between cloud computing and traditional IT. Weinman asks, “Does the [c]loud [m]atter?”<sup>30</sup> Weinman explains how IT is strategic and that cloud computing, as a variation of IT, contributes to IT’s strategic value.<sup>31</sup> He describes the necessity to

assess the marginal value created from *cloud* implementations of IT above and beyond the value from *traditional* implementations of IT and show not just a *correlation* between competitive success and basic IT plus cloud value-add but also *causality*.<sup>32</sup>

Weinman concedes that empirical data concerning whether IT generates any return was a challenge to analyze,<sup>33</sup> yet he provides several examples of successful companies that realized the value of IT.<sup>34</sup> Weinman concludes that “[i]nformation technology is the embodiment of a firm’s ability to exploit information, and the cloud can offer unique implementations of such technology that otherwise would be difficult, if not impossible.”<sup>35</sup>

Weinman next examines if there is a strategic value of the cloud in and of itself.<sup>36</sup> He recognizes that the term “cloud” seems to be overused and that this “cloudwashing” has generated backlash and understandably a sense of caution for CIOs.<sup>37</sup> Weinman argues that “[c]loud may well be overhyped, but it is demonstrably creating value.”<sup>38</sup> Weinman goes on to discuss the competitive advantages cloud computing can provide, and

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28. *Id.*

29. *Id.* at 23-26.

30. *See generally id.* at chs. 2, 17.

31. *Id.* at 17-18.

32. *Id.* at 18.

33. *Id.* at 19.

34. *Id.* at 23-24 (discussing companies, including Inditex, AMR, Goldcorp, Harrah’s, Google and Facebook).

35. *Id.* at 26.

36. *Id.*; *see generally id.* at 29.

37. *Id.* at 29.

38. *Id.* at 30.

concludes that the cloud variation of IT can be technical and tactical, as well as strategic.<sup>39</sup> He provides scenarios where the cloud enables companies to go beyond what would be achievable with traditional IT alone by allowing companies to eliminate barriers to scale, leverage network effects, and achieve global brand recognition. Weinman also explains how the cloud provides an even playing field for start-up companies.<sup>40</sup> As far as aligning cloud computing with business strategy, Weinman states that “[d]ifferent firms will find different opportunities to leverage the cloud.”<sup>41</sup>

### *B. Mythbusting*

After establishing that IT and the cloud computing extension of IT can be both valuable and strategic, Weinman reviews the conventional wisdom about cloud computing.<sup>42</sup> An entire chapter is dedicated to common assertions made about cloud computing, which may be particularly helpful to CIOs and other executives struggling with the idea of cloud adoption. Weinman tackles a list of fourteen common contentions and shows how each are debatable by presenting counterarguments. Overall, the author asserts that the “traditional narrative is appealing but not necessarily correct,”<sup>43</sup> and allows room for the reader to make the appropriate conclusions about cloud computing adoption and utilization for his or her unique situation.

### *C. Defining the Cloud*

At the start of Chapter 5, Weinman acknowledges that “[w]e’ve been talking about the cloud without explicitly describing what we mean”<sup>44</sup> and finally elaborates on defining “the cloud.” This structural feature of the book might frustrate readers new to cloud computing; however, it forces the audience to focus strictly on the economics rather than the technological aspects of the cloud.<sup>45</sup> The author first presents the most industry-accepted definition crafted by the National Institute of Standards and Technology (“NIST”):

Cloud computing is a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of

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39. *Id.* at 35.

40. *Id.* at 38.

41. *Id.* at 42.

42. *Id.* at 12; *see also id.* at 49.

43. *Id.* at 61.

44. *Id.* at 63.

45. As a seasoned reader on cloud computing, the Reviewer did not find this organization to be troublesome. However, the novice cloud computing reader should start with Chapter 5 first to avoid any foundational frustrations.

configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction.<sup>46</sup>

Weinman asserts that his mnemonic definition, C.L.O.U.D. (Common infrastructure, Location independence, Online accessibility, Utility pricing, and on-Demand resources),<sup>47</sup> is semantically equivalent to the NIST definition<sup>48</sup> and examines each attribute in greater detail. Chapter 5 also provides examples of what cloud computing is and is not. Weinman asserts that “the cloud concept is related to and draws from other models of computing. However, it can be distinguished from them using the five C.L.O.U.D. criteria.”<sup>49</sup> Weinman claims that his definition is “domain independent” and can be applied to “taxi services, hotel chains, electric utilities[,] and others.”<sup>50</sup> Therefore, “much of the analysis in the rest of the book applies not only to cloud *computing* but to these other domains as well.”<sup>51</sup> Weinman’s definition is helpful overall because the mnemonic allows readers to focus on individual words without getting wrapped up in syntax.

The majority of *Cloudonomics* focuses heavily on the Infrastructure-as-a-Service (“IaaS”) layer of the cloud<sup>52</sup> and discusses the technology at a conceptually high-level. It is not until Chapter 21<sup>53</sup> that Weinman finally discusses the other two service layers of cloud architecture: Platform-as-a-Service (“PaaS”)<sup>54</sup> and Software-as-a-Service (“SaaS”).<sup>55</sup> To differentiate

46. *Id.* at 65; see generally *NIST Cloud Definition Document*, *supra* note 1.

47. See *CLOUDONOMICS*, *supra* note 2, at 65.

48. *Id.*

49. *Id.* at 75.

50. *Id.* at 76.

51. *Id.*

52. IaaS is “[t]he capability provided to the consumer is to provision processing, storage, networks, and other fundamental computing resources where the consumer is able to deploy and run arbitrary software, which can include operating systems and applications. The consumer does not manage or control the underlying cloud infrastructure but has control over operating systems, storage, and deployed applications; and possibly limited control of select networking components (e.g., host firewalls).” *NIST Definition Document*, *supra* note 1, at 3.

53. See generally *CLOUDONOMICS*, *supra* note 2, at ch. 21.

54. PaaS is “[t]he capability provided to the consumer is to deploy onto the cloud infrastructure consumer-created or acquired applications created using programming languages, libraries, services, and tools supported by the provider. The consumer does not manage or control the underlying cloud infrastructure including network, servers, operating systems, or storage, but has control over the deployed applications and possibly configuration settings for the application-hosting environment.” *NIST Definition Document*, *supra* note 1, at 2-3 (citations omitted).

55. SaaS is “[t]he capability provided to the consumer is to use the provider’s applications running on a cloud infrastructure. The applications are accessible from various client devices through either a thin client interface, such as a web browser (e.g., web-based email), or a program interface. The consumer does not manage or control the underlying

these three service layers of cloud computing, Weinman explains, “IaaS offers are targeted at operations personnel: those whose job it is to *run* things; PaaS offers are targeted at developers: those who *build* things; and SaaS is targeted at end users: those who *use* things.”<sup>56</sup> Weinman explains that the benefits and value of PaaS and SaaS resemble IaaS, but also illustrates how PaaS and SaaS “offer additional value in many dimensions.”<sup>57</sup> This particular chapter provides a useful examination of the potential value of PaaS, SaaS, and the economic issues related to their business models.<sup>58</sup> Overall, *Clouonomics*’ main focus is on the general concept of cloud computing and does not strictly focus on the three service levels; rather, the service levels are only discussed when appropriate.

## II. THE ECONOMICS OF CLOUD COMPUTING

Throughout the book several elaborate economic equations are presented that could easily deter a reader that has little or no mathematical background.<sup>59</sup> One interesting feature of the book, however, is that it explains clouonomics by using economic formulas, as well as common examples that the reader can understand outside of the cloud computing domain (such as taxis, hotels, and utilities). Weinman seems to instinctually retreat from the equations at the moment the reader would appear to become frustrated. He also pulls in anecdotes and information provided by various “clouderati,”<sup>60</sup> which provide helpful illustrations of the practical application of his theories.

The book dives deeper into the practical application of cloud computing in Chapter 6. First, Weinman talks about the strategy and value

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cloud infrastructure including network, servers, operating systems, storage, or even individual application capabilities, with the possible exception of limited user-specific application configuration settings.” *Id.* at 2 (citations omitted).

56. *CLOUDONOMICS*, *supra* note 2, at 277.

57. *Id.* at 290.

58. *See generally id.* at ch. 21. Again, this book is not an introduction to cloud computing and may be geared toward an audience already exposed to the basics. This portion provides just enough information to round out the discussion. A novice to cloud computing may want to seek additional resources to really understand the technical aspects of the different layers of cloud.

59. *See, e.g., id.* at 198-99. The Reviewer does not have an economics background and was unable to verify if the economic equations presented were correct. However, the Reviewer was able to follow the logic of the equations and was able to connect them to the point the author was trying to make.

60. The “clouderati” is an invitation-only group of cloud computing subject matter experts; the list of members is managed on Twitter via the “@clouderati” account. Joe Weinman (as @joeweinman) is a member of this group, and he thanks all of the members of the clouderati at the time of the book’s publication in the introduction. *See id.* at xxiv. The Reviewer, Deborah J. Salons (as @dsalons), is also a member of the clouderati, but was not invited to the group until after the publication of *Clouonomics* and was not nominated by Weinman or personally acknowledged by Weinman in *Clouonomics*.

of cloud computing related to cost reduction and business agility,<sup>61</sup> while incorporating economic concepts such as unit cost, delivered cost, and opportunity cost.<sup>62</sup> Weinman asserts that the cloud is a “service business” and discusses the total solution cost, which would be helpful to CIOs, CTOs, and CFOs.<sup>63</sup> He also explores the value of customer and user experience, employee satisfaction, and risk.<sup>64</sup> Weinman concludes that the cloud “generates values in many ways” and “can support a broad range of financial, strategic, employee, and customer goals.”<sup>65</sup>

Just as the reader is left with a very pro-cloud impression, Chapter 7 discusses when it is or is not appropriate for an organization to adopt the cloud.<sup>66</sup> Weinman states honestly that “it depends is often the correct answer” to whether or not to use the cloud.<sup>67</sup> “Different companies with different strategies at different times may have different perspectives on where and why to use the cloud.”<sup>68</sup> The author then explores use cases<sup>69</sup> supporting cloud, including, but not limited to, capabilities, communications, community, collections, and consolidations.<sup>70</sup> Weinman also provides inappropriate cloud use cases, including, but not limited to, constant, custom, compression, and caching.<sup>71</sup> Overall, Weinman sets forth both positive and negative cloud computing use cases. He is not simply pushing cloud adoption; he is forcing the reader to take a look at a variety of considerations.<sup>72</sup>

Weinman applies economic theory to common IT problems, such as demand dilemmas,<sup>73</sup> capacity conundrums,<sup>74</sup> and significance of scale,<sup>75</sup> explaining how a cloud computing strategy provides a viable solution to those problems. First, he discusses how variable and unpredictable demand is problematic when applied to IT strategies.<sup>76</sup> Next, Weinman shows how deploying capacity to respond to variable and unpredictable demand also poses a challenge to cost.<sup>77</sup> He uses quantitative economic analysis to show there will “not be a perfect solution that minimizes the total cost, without

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61. *See generally id.* at ch. 6.

62. *See id.* at 80-83.

63. *Id.* at 81-82.

64. *See id.* at 86-88.

65. *Id.* at 89.

66. *Id.* at 91.

67. *Id.*

68. *Id.*

69. *Id.* (explaining that “use cases” are scenarios).

70. *Id.* at 91-100.

71. *Id.* at 101-03.

72. *See id.* at 101 (“There is much promise and value in the cloud, but that doesn’t mean it’s appropriate for all applications.”).

73. *Id.* at 107.

74. *Id.* at 125.

75. *Id.* at 137.

76. *Id.* at 111-18.

77. *Id.* at 135.

relying on the on-demand, pay-per-use nature of the cloud.”<sup>78</sup> The concept of economies of scale is also examined to explore the possible cost advantages of cloud computing relative to do-it-yourself approaches.<sup>79</sup>

Weinman fortifies the benefits of cloud computing solutions by asserting that “even if the cloud is more expensive on a unit-cost basis, the cloud still can cost less, in terms of total cost.”<sup>80</sup> He presents an economic analysis to conclude that more is less. He shows that “even if cloud computing is more expensive (on a unit-cost basis), you can still use it and save money.”<sup>81</sup> Weinman asserts that “[i]f you take nothing else away from this book, it’s that cloud computing should be at least part of your overall enterprise IT strategy.”<sup>82</sup> This cost analysis is the root of Weinman’s argument that hybrid clouds are likely to be cost optimal.<sup>83</sup> Again, the author shows how there is a benefit to cloud computing and recognizes there is no perfect solution and no one-size-fits-all IT strategy. Weinman only gives the reader the tools to perform an analysis for his or her specific situation.

### A. On-Demand Properties of Cloud Computing

The on-demand property of the cloud is the focus of the next portion of the book. Weinman dedicates an entire chapter to explaining that forecasting is fallible,<sup>84</sup> especially in IT where uncertainty can result from a range of factors such as sudden customer demand spikes, data center outages due to severe weather, distributed denial of service attacks, as well as human error or malice.<sup>85</sup> Weinman solves this dilemma by arguing that “rather than attempting to forecast, it’s easier to exploit the benefits of on-demand capacity.”<sup>86</sup> Weinman uses economic formulas and theory to assert that “[a] true cloud . . . can achieve real business value by minimizing the penalty cost of the wrong capacity to zero.”<sup>87</sup> Although the economic theory is very heavy in this explanation, Weinman still accompanies the formulas with real-life illustrations (in this case, a tennis match) to help the reader move along.<sup>88</sup> This all supports his main point: “Using on-demand capacity—that is, elasticity—to meet unpredictable, accelerated growth is

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78. *Id.*; *see id.* at 125-34.

79. *Id.* at 137-55; *see id.* at 147-49 (list of cost factors to consider when choosing between a cloud or do-it-yourself IT strategy).

80. *Id.* at 159.

81. *Id.* at 161-69.

82. *Id.* at 169.

83. *Id.* at 174. *See id.* at 171-80 (explaining and illustrating hybrid architecture options). *See also id.* at 303-14 (hybrid cloud definition).

84. *Id.* at 181-82.

85. *Id.* at 187.

86. *Id.* at 207.

87. *Id.*

88. *Id.* at 198-99.

one of the main benefits of the cloud . . . .”<sup>89</sup> The book then expands upon the on-demand property of the cloud and addresses how to achieve peak performance while dealing with variable demands.<sup>90</sup> Statistical and mathematical equations explain that aggregating variable demands will work “as long as demands aren’t correlated and don’t have simultaneous peaks.”<sup>91</sup>

### B. Latency Issues in the Cloud

Five chapters of the book are dedicated to discussing the value of time and the issue of latency in the cloud.<sup>92</sup> Latency issues involve the “delays due to signal transmission time over distance.”<sup>93</sup> Weinman explains that “[f]or waiting customers . . . the perception of time is different from the actual passage of time,”<sup>94</sup> and signifies the “race to zero”—the escalating competition “to get as close as possible to the shortest possible time.”<sup>95</sup> For service providers and enterprise, “[l]ocating facilities close to optimized network routes to key services is an essential strategy.”<sup>96</sup>

Weinman again applies economics to explore strategies to improve response time in the cloud. He takes a closer look at the benefits of parallel processing<sup>97</sup> to assert that acceleration in the cloud is free because “[r]egardless of the number of processors, the cost remains constant.”<sup>98</sup> Weinman also examines possible latency shortcuts<sup>99</sup> and concludes that even with increased bandwidth, latency will always remain an issue.<sup>100</sup> Assuming that “latency is proportional to distance,”<sup>101</sup> Weinman examines the solution of a distributed architecture and concludes that “the pay-per-use model of the cloud enables customers to enjoy latency reduction for free by exploiting dispersion.”<sup>102</sup> Finally, the author evaluates consolidation

89. *Id.* at 207.

90. *Id.* at 209-25.

91. *Id.* at 225.

92. *See id.* at chs. 16-20.

93. *Id.* at 245.

94. *Id.* at 229 (emphasis removed).

95. *Id.* at 227.

96. *Id.* at 228.

97. *See generally id.* at 235-43. Parallel processing is “a mode of operation in which a process is split into parts, which are executed simultaneously on different processors attached to the same computer.” *See Parallel Processing Definition*, OXFORDDICTIONARY.COM, <http://oxforddictionaries.com/definition/english/parallel%2Bprocessing?q=parallel+processing> (last visited May 16, 2013).

98. *See* CLOUDONOMICS, *supra* note 2, at 241.

99. *Id.* at 245-53.

100. *Id.* at 252-53 (citing OFFICE OF ENG’G & TECH. & CONSUMER & GOVERNMENTAL AFFAIRS BUREAU, FCC, MEASURING BROADBAND AMERICA: A REPORT ON CONSUMER WIRELINE BROADBAND PERFORMANCE IN THE U.S. (2011), *available at* <https://www.fcc.gov/measuring-broadband-america>).

101. CLOUDONOMICS, *supra* note 2, at 257.

102. *Id.* at 263.

and dispersion strategies and concludes that consolidation and processing strategy can be weaved together for balance.<sup>103</sup> Weinman's bottom line is that with the cloud it is all less costly.<sup>104</sup> These strategies "offe[r] free acceleration through pay-per-use parallel processing and, in some cases, free dispersion via partitionable resources."<sup>105</sup>

### C. Availability

Weinman wraps up the economic discussion of the different cloud computing attributes with a chapter on availability, which he refers to as "a complex mixture of components, including architecture, process, partner selection, and technology diversity."<sup>106</sup> Using cloudonomics, the author illustrates how redundancy can enhance availability<sup>107</sup>: "In addition to redundancy *within* a data center or across multiple data centers in the cloud, there can be redundancy *between* an enterprise data center and the cloud."<sup>108</sup> Putting it all together, Weinman states: "Various attributes of the cloud, such as geographical dispersion and on-demand, pay-per-use resources, make the economics of cloud availability compelling."<sup>109</sup>

## III. BEHAVIORAL CLOUDONOMICS

Near the end of the book, Weinman switches focus from quantitative economic analysis to behavioral economic analysis, recognizing that rational thinking often collides with human emotional, intuitive, and irrational behaviors.<sup>110</sup> Weinman advises that "[p]rospects considering cloud services should become aware of their own biases and incorporate that knowledge in their decision-making processes,"<sup>111</sup> while "[s]ervice providers marketing to those prospects or existing customers should be aware that there is more to decision making than return-on-investment calculations."<sup>112</sup> Weinman emphasizes that regardless of the existence of

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103. *Id.* at 265-74.

104. *Id.*

105. *Id.* at 274.

106. *Id.* at 301.

107. *See id.* at 297-301 (stating that the redundancy of components in the structure of the cloud enables the cloud service to continue to function even when individual components, such as servers, inevitably malfunction).

108. *Id.* at 300.

109. *Id.* at 301.

110. *See id.* at 303-13 (commenting that the biases created by the fact that we are not solely rational decision makers contributes to certain dispositions in connection with cloud adoption; also discussing psychological phenomena such as loss and risk aversion, flat-rate bias, framing and context, the need for control and autonomy, fear of change, hearing and conformity, the endowment effect, the need for status, paralysis by analysis of choice, hyperbolic discounts and instant gratification, and the zero-price effect).

111. *Id.* at 313.

112. *Id.*



logic and rational thinking, the human element cannot be ignored and provides valuable perspective that makes the analysis found in *Cloudonomics* well rounded. This chapter serves as a good resource during decision-making situations.

The penultimate chapter of the book focuses on “cloud patterns” and “illustrates that cloud-native applications can be evaluated using a variety of mechanisms.”<sup>113</sup> Weinman explores communications patterns by focusing on the “the first cloud service of the modern era—the telephone exchange.”<sup>114</sup> Mixing economics with various communications architectures, including subsea cables, microwave towers, and broadcast, is the tactic used to explore the costs and values of networks.<sup>115</sup> Weinman then discusses markets, stating that “[r]ather than all endpoints communicating with each other, a cloud-based marketplace can be divided into buyers and sellers that interact only between groups, not within.”<sup>116</sup> He also notes how the cloud can act as a “repository”<sup>117</sup> and establish a perimeter around networks.<sup>118</sup> Weinman’s purpose in exploring the variety of patterns is to point out that cloud computing not only provides a cost reduction mechanism but also adds value.<sup>119</sup> Overall, this chapter is very heavy on economics but will be of particular interest to telecommunications attorneys because of the focus on traditional communication structures.

#### IV. THE FUTURE OF CLOUD COMPUTING

Finally, Weinman closes the book with predicting the future of cloud computing. Some of his predictions involve the following: pricing,<sup>120</sup> the role of third-party intermediaries such as cloud service brokers,<sup>121</sup> the development of a network of clouds or the “Intercloud,”<sup>122</sup> a variety of cloud federations and alliances,<sup>123</sup> and possible industry consolidation and concentration.<sup>124</sup> Weinman also mentions extensions of cloud computing that are considered leading industry topics, such as big data,<sup>125</sup> storage,<sup>126</sup>

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113. *Id.* at 317.

114. *Id.* at 318.

115. *Id.* at 321.

116. *Id.* at 323.

117. *Id.* at 326.

118. *Id.* at 326-27.

119. *Id.* at 327.

120. *Id.* at 329-32.

121. *Id.* at 333.

122. *Id.* at 334-35.

123. *Id.* at 335.

124. *Id.* at 336.

125. *Id.* at 339.

126. *Id.* at 343.

standards, application programming interfaces (“APIs”), and rating agencies.<sup>127</sup>

Weinman ultimately concludes that “[t]he chaotic, stochastic, complex adaptive characteristics of the industry and its ambient environment suggest that we are still at the beginning of a Cambrian explosion in information technologies generally and in the cloud in particular.”<sup>128</sup> At the rate of innovation, and the daily discoveries made in cloud technology, there is no concrete roadmap for the future of the cloud. Understanding the concepts addressed in *Cloudonomics* can assist with whatever the future may hold.

## V. CLOUDONOMICS AND THE LAW

*Cloudonomics* does not specifically focus on the law, but legal and regulatory considerations do not go unaddressed. A telecommunications practitioner can appreciate this book as Weinman acknowledges that communications make the cloud possible, and he uses past and present examples of applicable telecommunications use studies. For example, the history of telephony, undersea cables, mobile telephones, spectrum auctions, and FCC research<sup>129</sup> are all brought into the cloudonomics analysis. This is unique for a book on cloud computing because other texts typically focus on the hi-tech aspects and architecture of the technology and do not recognize the critical communications foundation necessary for the technology to work.

In the first chapter, Weinman recognizes that “the rapid emergence of the cloud is rapidly outpacing a legal and regulatory system designed for an earlier age”<sup>130</sup> and that “[t]he cloud is impacting and challenging privacy, regulation, and law.”<sup>131</sup> This is often the frustration for many attorneys trying to counsel clients either providing or implementing cloud computing. *Cloudonomics* provides useful information and discussion for practitioners trying to understand or anticipate how business, technology and regulation will converge or clash in the future. The book also takes time to focus on Cloud Service Provider (“CSP”) Cloudonomics and to examine the economic value of Service Level Agreements (“SLAs”).<sup>132</sup> The discussion brings up the risk levels that both the CSP and customer are willing to take when entering into SLAs and how the penalties for SLA violations may be calculated into the CSP business model.<sup>133</sup> The CSP

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127. *Id.* at 344-45.

128. *Id.* at 349.

129. *See id.* at 253.

130. *Id.* at 6.

131. *Id.*

132. *See id.* at 210-12.

133. *See id.* at 212, 222.

perspective is revisited throughout the book and provides useful information for attorneys representing cloud providers.

At the close of the book, one of Weinman's cloud computing predictions involves a legal component: "Cloud services are at the eye of a perfect storm of demand-side diversity, regulation, and continued customer preference for local presence."<sup>134</sup> Regulation of the cloud is a topic often pondered in the cloud computing community; however, the creation of regulation is slower than the speed of innovation. Other instances of legal predictions include the necessity for SLA clarity or reform<sup>135</sup> and the possibility of antitrust regulations in the instance of consolidation.<sup>136</sup>

## VI. CONCLUSION

*Cloudonomics* is a "must read" for any businessperson, telecommunications practitioner, or policymaker involved with cloud computing. Enterprise professionals can use all of this information to develop a cloud computing strategy, balance IT with the cloud, and pick a CSP or several CSPs. CSPs can use this information to understand their own business components as well as their customer concerns. Every organization will be different, but as Weinman suggests, cloudonomics is applicable to many diverse sectors and can be a helpful tool in making management and business decisions.

This book is a comprehensive resource on the business value of cloud computing. Every assertion is supported with economic theory or fact, and the book cites multiple useful references at the end of each chapter. There are also helpful graphics and illustrations of the concepts that assist the reader throughout the book. *Cloudonomics* does more than provide a primer on cloud computing; it dives deep into economic analysis and addresses common sense business concerns.<sup>137</sup>

As Weinman states in the first chapter, "[t]he most exciting thing about the cloud is in how it can create value and transform traditional economic assumptions."<sup>138</sup> This book can be used to understand the cloud and examine ways it can save costs and add value to business. "The future of cloud is sunny indeed,"<sup>139</sup> and *Cloudonomics* is a valuable resource for understanding cloud computing and making informed decisions regarding where the cloud fits in any business strategy.

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134. *Id.* at 338.

135. *Id.* at 333-34.

136. *Id.* at 337.

137. *Cloudonomics* also offers complementary online resources as an added bonus, such as the Cloudonomics website and the online references featured at the end of the chapters. Websites include Cloudonomics.com, ComplexModels.com and <http://joeweinman.com/papers.htm>.

138. *Id.* at 13.

139. *Id.* at 349.

# In Search of a Captive Audience: Susan Crawford's *Captive Audience*

Harold Furchtgott-Roth\*

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Visit an academic conference where Professor Susan Crawford is presenting a paper, and you are sure to find a large crowd and a good story in the room where she is speaking. In the world of academic telecommunications policy, Crawford would appear to be a rock star with a loyal cadre of groupies. Yet as an accomplished classical violist, Crawford does not evoke an image of Led Zeppelin and acid; lead crystal and claret seem more appropriate.

Crawford has her detractors. She is an unapologetic champion of having big government, rather than corporations, solve big problems. She is well-known, but not well-liked, in corporate America. The feeling is probably mutual.

Crawford has something that few in academic telecommunications policy can match: experience at the highest levels of government.<sup>1</sup> And now she has something that many in her academic audience actually can match: a book. Better than many of the books written by those in her audience, Crawford's book is published by Yale University Press and curiously titled *Captive Audience*. Just who is in this audience, and why are they captive? The subtitle, "The Telecom Industry and Monopoly Power in the New Gilded Age," is inapposite. A few strands of fiber are pictured on the cover of the book, but nowhere is there a clear image of the elusive captive audience that she references.

Before exploring the book in search of the captive audience, let's learn a little more about Crawford. The American public owes Crawford a debt of gratitude. From 2005–2008, she served on the board of the Internet Corporation for Assigned Names and Numbers ("ICANN"). ICANN serves as a minimalist form of governance for the Internet.<sup>2</sup> It may appear innocuous and unimportant, but looks are deceiving. Many who seek to destroy the Internet and weaken America have their eyes set on first eliminating ICANN.<sup>3</sup> If one defines a friend as the enemy of our enemies, America has few greater friends than ICANN, and by extension, its board.

Crawford also worked on President Obama's Federal Communications Commission ("FCC") transition team and then served as a Special Assistant for Science, Technology, and Innovation Policy in 2009.<sup>4</sup> To have supported President Obama in 2008 is not unusual in academia. To have actually served in the White House is.

I once attended a meeting with a small group in a conference room in the Old Executive Office Building. When Crawford entered the ornately decorated room, she remarked something to the effect of: "This room

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1. See generally Susan Crawford, Professor, Cardozo Law Sch., Written Statement given at the FCC Field Event on: "The Information Needs of Communities" (Oct. 3, 2011) [hereinafter Crawford Statement], available at <http://transition.fcc.gov/arizona-field-event-100311/Susan-Crawford.pdf>.

2. See Jonathan Weinberg, *Governments, Privatization, and "Privatization": ICANN and the GAC*, 18 MICH. TELECOMM. & TECH. L. REV. 189, 213 (2011).

3. See *id.*

4. See Crawford Statement, *supra* note 1, at 1.

belongs to the American people. Enjoy it. We are all here as visitors.” Jimmy Stewart could not have said it better. Unforced and unaffected, humble, and spoken without the slightest hint of sarcasm, these were not the words of a Washington insider. The usual message is both unspoken and unambiguous: “This room belongs to me, and you had better do what I say.”

As it turns out, Crawford was indeed a visitor, not a Washington insider; she left the White House to return to academia in early 2010.<sup>5</sup> This is just when the storyline of *Captive Audience* begins.

There is an old adage in academia that once you leave, you can never return. Academia is filled with those who have never left, who have never seen the vistas about which they write and teach, who cannot imagine the nether world in which mere mortals live and breathe.

Crawford is an exception to that rule. She was a partner at a major law firm before deciding to try academic life. She left academia briefly to witness the highest levels of government. Returning to academia must be painful, not so much relearning the precision and rigors of academic life as reimagining an idealism that cannot long survive elsewhere. Before writing *Captive Audience*, Crawford had to relearn that idealism a second time.

## I. THE TRIUMPH OF PERSONALITIES OVER LAW

Having scaled the ivory tower, Crawford has now written a book about government from an insider’s perspective, or at least an academic’s perception of an insider’s view. This is something that is certainly not the norm for an academic book. Crawford’s book is also not the standard fare of recent government employees. Written in the first person, those works often have a “kiss-and-tell” familiarity with events framed in one of a few predictable story lines. For those looking for an even better government job, there is the “I-worked-for-the-best-Administration-ever-and-please-hire-me-again” story line. Or for those looking for a private sector job, there is the “Here-is-why-I-am-important” story line. Or for those ready to retire, there is the “Here’s-my-legacy” story line. Or for those with a policy axe to grind, there is the “Here’s-how-to-save-the-world” story line. Or for the occasional bad experience, there is the “You-won’t-believe-how-bad-it-was” story line.

Crawford, however, writes a different story. She does not write in the first person about her government experiences, although that might be a worthwhile story. Ostensibly, the book is about the Comcast-NBC Universal merger and the government approval process. Crawford clearly did not like the approval of the merger.<sup>6</sup> Some readers, myself included, were pleased with the outcome of the Comcast-NBC Universal merger. We

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5. *Id.*

6. SUSAN CRAWFORD, *CAPTIVE AUDIENCE: THE TELECOM INDUSTRY AND MONOPOLY POWER IN THE NEW GILDED AGE 2* (2013).

viewed it as the inevitable outcome of law and economics. Crawford sees the outcome of the merger as resulting from different forces.

*Captive Audience* is about more than the failure of the federal government in one instance to block a merger.<sup>7</sup> It is not a mere fisherman's tale about the big one that got away. No, the book has a much bigger theme: the federal government did not do its job.<sup>8</sup> It is difficult not to be troubled by Crawford's story where larger-than-life personalities overshadow the details of law in Washington. Although Crawford does discuss laws and her interpretation of how government processes should work, she never lapses into a diatribe about the lawlessness of the unfolding story. Crawford is careful not to demonize any of the giant characters that populate her book. She even praises them with human qualities, strengths and weaknesses.<sup>9</sup> They are not individually evil. They are just doing their job. According to her, the result, in Washington, is the triumph of personality over law.

This is a disturbing observation, particularly for those of us who toil with the cold facts of economics and law. One is left almost to wonder: why bother with economics and law if decisions are made based on other factors? I can only imagine the shock of those in academia whose idealism about government and government processes must be shattered by the insights of Crawford. She does not extrapolate beyond this one example, but the reader is hard pressed to infer that Crawford's view of the failure of the federal government in Comcast-NBC Universal is a one-time aberration.<sup>10</sup>

Crawford writes primarily in the third person about events that take place *after* she has left government. No doubt, her government experience informs her work, but she generally refrains from focusing on it. She reviews the history of the merger of Comcast and NBC-Universal, not with the perspective of an academic, but almost with the view of a journalist. To emphasize points, she frequently quotes important people in industry and government.

I was initially annoyed by the frequency of quotes, a journalistic style, in an academic book. Yet perhaps there is good reason. It might sound a little too cynical and fantastic for Crawford, the academic, to say in the first person that Washington is run by personalities with too much influence. But when John Malone and other large personalities say there is influence—albeit rather like Charlie McCarthy sitting beside the ventriloquist Susan Crawford—it sounds less like the rant of an academic and more like the clever observation of a successful businessman.

Ultimately, the reader finds Crawford, an unapologetic champion of bigger government, giving the eulogy for a government process gone

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7. *Id.* at 18.

8. *Id.* at 17.

9. *Id.* at 7.

10. *Id.* at 18.

wrong. *Captive Audience* focuses on the merger of Comcast and NBC-Universal, and implicitly condemns the Obama Administration for failing to block it. The Camelot of the Obama White House in January 2009 must have become something less exalted a year later. The administration, which she had worked very hard to support, would, after she left, do nothing to block the largest media merger in history. Anyone who shared her political idealism must have been crushed.

## II. SKIP THE ECONOMIC ANALYSIS

There is much to like in *Captive Audience*, and I will return to its strengths later. There are, however, glaring weaknesses. These parts of the book should be read quickly, or not at all. Crawford is gifted at storytelling and sketching characters, but her many strengths leave little room to be a skillful economist. Indeed, she makes no pretenses about being one.

Practically all of her economic analysis is at best informal, and more likely wrong. I will give just a few examples. Those seeking a more complete catalog of Crawford's economic misstatements might look elsewhere.<sup>11</sup>

Crawford uses economic terms casually. If the casual usage were approximately correct, I would not quibble, but her form of casual usage is often exactly wrong. Consider the word "monopoly." Crawford frequently states that Comcast is a "monopoly,"<sup>12</sup> a powerful word with a clear meaning to economists: a single supplier in a market. Yet in practically every instance in which she uses the word "monopoly," Crawford mentions one or two other competitors that she claims are weak.<sup>13</sup> With the exception of rural markets, she never describes a market in which there is only one or even a plausibly small number of providers. At worst, Crawford describes an oligopoly. I believe that Crawford means to say "a firm with potential market power" when she says "monopoly." The correct term sounds, and is, less sinister than "monopoly."

Crawford suggests that Comcast and a few other firms are not merely monopolists, but that they continue to attempt to enhance their market power.<sup>14</sup> Crawford's informal use of *monopoly* is not entirely what government agencies charged with enforcing antitrust laws have in mind;

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11. See, e.g., Robert Hahn & Hal Singer, *Is the U.S. Government's Internet Policy Broken?: A Review of Captive Audience by Susan Crawford*, Economic Policy Vignette 2013-1-13, GEORGETOWN UNIV. McDONOUGH SCH. OF BUS., CTR. FOR BUS. & PUB. POLICY 6-13 (Jan. 2013), [http://www.gebpp.org/files/EPV/EPV\\_HahnInternetBroken\\_12013.pdf](http://www.gebpp.org/files/EPV/EPV_HahnInternetBroken_12013.pdf); see also George Ford, *Sloppy Research Sinks Susan Crawford's Book . . .*, @LAWANDECONOMICS BLOG (Jan. 18, 2013, 3:56 PM), <http://phoenix-center.org/blog/archives/1075>.

12. See, e.g., CRAWFORD, *supra* note 6, at 1.

13. See, e.g., *id.* at 2-3.

14. See, e.g., *id.* at 5-11 (discussing Comcast, AT&T, and Verizon).



often, they seek to prevent the enhancement of market power.<sup>15</sup> Had Crawford focused more on claims of attempted abuse of market power rather than claims of monopoly, her arguments might have at least a tinge of plausibility.

To compound a problem, Crawford sometimes refers to a *natural monopoly*, as in “[u]tilities like water and electricity are natural monopoly services. So is telecommunications.”<sup>16</sup> A natural monopoly has a specific meaning in economics, and it is not the meaning Crawford applies to it. If telecommunications were a *natural monopoly*, one firm could provide such services at lower cost than any combination of other firms. Any competitor is unnatural and almost certainly the artifact of government intervention. Worse, such a competitor imposes increased costs on consumers. If telecommunications were a natural monopoly, the hundreds of firms that compete in that market could be likened to leaches sucking on the blood of the American consumer; to help consumers, these firms would cease operations and give themselves over to Comcast, or another designated natural monopolist. I am quite sure that Crawford does not mean any of this. Rather, I suspect that she means the exact opposite: competition is the natural outcome of telecommunications markets.

Whether Comcast or any other firm is a natural monopolist, or simply a monopolist, or merely has some small measure of market power, is an empirical matter and depends on how one defines the relevant service market. Not surprisingly, in an informal book, Crawford does not formally define markets. Instead, she asserts that many services are separate markets without evidence. Along with many other economists,<sup>17</sup> I tend to view markets more broadly than Crawford, and I am not persuaded by her assertions of separate markets.

For example, Crawford distinguishes between “truly high-speed Internet access ranging from 100 Mbps” and Internet access at slower speeds.<sup>18</sup> Crawford’s definition of “high speed” is not universally recognized. The FCC uses a much lower speed to define broadband

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15. Although Crawford does not distinguish monopoly from market power, much of the *Horizontal Merger Guidelines* (“Guidelines”) of the Department of Justice and the Federal Trade Commission focuses on preventing the enhancement of market power. See generally U.S. DEP’T OF JUSTICE & FED. TRADE COMM’N, HORIZONTAL MERGER GUIDELINES (Aug. 19, 2010), <http://www.justice.gov/atr/public/guidelines/hmg-2010.pdf>. The Guidelines note that their purpose is not so much to prevent monopoly as to prevent the enhancement of market power: “The unifying theme of these Guidelines is that mergers should not be permitted to create, enhance, or entrench market power or to facilitate its exercise.” *Id.* at 2.

16. CRAWFORD, *supra* note 6, at 17.

17. See, e.g., MICHAEL L. KATZ & BRYAN KEATING, NETWORK EFFECTS, SWITCHING COSTS, AND COMPETITION IN UNIFIED COMMUNICATIONS 1 (Nov. 5, 2012), available at [http://newsroom.cisco.com/documents/10157/1142732/Katz\\_and\\_Keating\\_on\\_Compatibility\\_Competition\\_UCC.pdf](http://newsroom.cisco.com/documents/10157/1142732/Katz_and_Keating_on_Compatibility_Competition_UCC.pdf).

18. CRAWFORD, *supra* note 6, at 2.

Internet.<sup>19</sup> Akamai, which publishes quarterly with international comparisons of Internet access speeds,<sup>20</sup> uses 10 Mbps as the boundary for high-speed Internet access, which includes most 4G wireless services.<sup>21</sup> This may be a useful distinction, but it does not mean that the two forms of broadband access are necessarily in separate markets. They may well be in the same market, albeit one that economists might call a “differentiated service market.”<sup>22</sup> Sadly for Crawford, it is difficult to be a monopolist in a differentiated service market.

Indeed, to make the point of the book, Crawford should be embracing a broader differentiated service market that would encompass all forms of information distribution. With a narrow market definition for high-speed Internet access, demand for other services will be scarcely affected as the price of high-speed Internet access declines. Yet Crawford repeatedly bemoans that Americans often purchase low-speed Internet access at high prices, supposedly because they have only limited access to high-speed service, and then only at even higher prices.<sup>23</sup> If high-speed access were a separate market from low-speed access, relatively few consumers would switch from low-speed to high-speed access as prices fall. That cannot be the point that Crawford is trying to make.

In a differentiated service market for information distribution, Comcast becomes just one of dozens of competitors to distribute information. In such a market, Comcast or another company may still have some limited ability to raise prices above competitive levels, but such an ability is just that—limited.

Part of Crawford’s reasoning for the high threshold is to keep wireless services in a separate market from wireline.<sup>24</sup> To many Americans, there is no meaningful difference. Akamai presents average broadband speeds by any medium, combining all services together; in the United States, average broadband speeds were 7.2 Mbps in the third quarter of 2012, ranking in the top ten in the world.<sup>25</sup> Average wireless broadband speeds in the United States ranged from 1.3 to 2.7 Mbps in the third quarter of 2012.<sup>26</sup> The speeds for American carriers are roughly in line with those of other countries.<sup>27</sup> The Department of Commerce’s National Broadband Map (“National Broadband Map”) project finds similar results with the

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19. FCC, CONNECTING AMERICA: THE NATIONAL BROADBAND PLAN 135 (2010), available at <http://www.broadband.gov/download-plan>.

20. See AKAMAI, THE STATE OF THE INTERNET: 3RD QUARTER 2012 REPORT 12 (Jan. 2013).

21. *Id.* at 16.

22. See generally EDWARD H. CHAMBERLIN, THE THEORY OF MONOPOLISTIC COMPETITION: A RE-ORIENTATION OF THE THEORY OF VALUE 56-68 (8th ed. 1962) (explaining the meaning of differentiation among products and services in markets).

23. CRAWFORD, *supra* note 6, at 10.

24. *Id.* at 234.

25. See AKAMAI, *supra* note 20, at 12, fig. 9.

26. *Id.* at 29, fig. 25.

27. See *id.*

June 30, 2012, median wireline broadband speed at home of 6.4 Mbps and the median wireless broadband speed of 1.9 Mbps.<sup>28</sup>

“Substitute” and “complement” are other economic terms that Crawford consistently misuses. She repeatedly states that wireline and wireless high-speed broadband are “complements” not “substitutes.”<sup>29</sup> If that were true, demand for wireline broadband services would increase as prices for wireless broadband services continue to decline. I don’t see that. If they were complements, the younger generation of Americans, who have cut the cord and own no landline devices at all, would buy landline broadband devices as wireless prices fall. Again, I don’t see that. I have seen no studies that reach that conclusion; rather they find just the opposite. Young Americans cut the cord not merely for basic telephone service but for cable and other services as well.<sup>30</sup> If one raises the price of wireline broadband services, one does not find Americans reducing their demand for wireless broadband services.

Nor do AT&T and Verizon have “market power” for wireless services enabling them to “raise prices at will.”<sup>31</sup> If that were so, prices would always go up, but they don’t. Market power merely means that a firm can for a “nontransitory” period of time raise prices above competitive levels. Yet, Crawford gives no basis for this assertion.

Nor does Crawford accurately explain accounting terms in *Captive Audience*. The phrase “margin” is used throughout the book as if all margins were the same, but they are not. Throughout the book, Crawford usually refers to “margins” without specificity. For example, Crawford describes “profit margins of about 95 percent” for “wired access” offered by Comcast and Time Warner Cable.<sup>32</sup> The underlying footnote tells a different story and refers to *gross margin*, not *profit margin*.<sup>33</sup> Many an unprofitable business has had high gross margins. Profits are more commonly associated with net income, and one must deduct not only the cost of goods sold (to get the gross profit margin) but also selling, general, and administrative expenses. Depreciation and amortization also must be considered as well as interest expenses and taxes, all before getting to net

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28. See *National Broadband Map*, NAT’L TELECOMS. & INFO. ADMIN., <http://www.broadbandmap.gov/summarize/nationwide> (last visited June 28, 2013) (nationwide summary).

29. CRAWFORD, *supra* note 6, at 157, 234-35.

30. Shalini Ramachandran, *More Television Viewers Taking an Ax to Cable*, WALL ST. J. (Aug. 11, 2012), <http://online.wsj.com/article/SB10000872396390443991704577577420645763122.html>.

31. CRAWFORD, *supra* note 6, at 158.

32. *Id.* at 10.

33. Alex Sherman, *Watching Netflix Could Lead to Higher Cable Bills*, BLOOMBERG (Nov. 30, 2011), <http://www.bloomberg.com/news/2011-11-30/netflix-viewing-seen-swelling-u-s-cable-bills-next-year-tech.html> (“Cable’s broadband *gross margins* are about 95 percent.” (emphasis added)).

income. Wired access may be profitable, but it does not likely have anything remotely resembling a 95% net income margin.<sup>34</sup>

I could go on, but mercy to the patience of the readers of this review suggests I stop. The wise reader should simply glance at the paragraphs with economic jargon and pass over them remembering that the good in the book is yet to come.

### III. SKIP THE INTERNATIONAL COMPARISONS

Even if Crawford's analysis of economics and the American market were correct, which they are not, her analysis of the international market for broadband access is simply wrong. The clever reader will skip the international comparisons as well.

Crawford frequently suggests that the United States is "lagging far behind other countries when it [comes] to . . . the speed and capability of this basic communications tool."<sup>35</sup> Without clear evidence, Crawford even states that Internet access in excess of 100 Mbps "was routinely available in other countries but could not be purchased at all in most parts of the United States."<sup>36</sup>

The most recent evidence suggests otherwise. The National Broadband Map finds that all but four states as of June 30, 2012, had at least part of their populations having access to advertised broadband rates in excess of 100 Mbps.<sup>37</sup> In twenty-two states plus the District of Columbia, over half of the population had access to speeds in excess of 100 Mbps.<sup>38</sup> Indeed, in thirty-seven states plus the District of Columbia, some part of the population as of June 30, 2012, had access to advertised rates in excess of 1 Gbps.<sup>39</sup> Of course, Crawford's statements on the lack of speed in the United States likely were drafted many months ago when speeds may have been less than today.

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34. On a consolidated basis, Comcast earned \$4.16 billion of net income on revenue of \$55.8 billion, or a 7.5% net income margin. Detailed income statements just for broadband access services do not appear to be available. See Comcast Corp., Annual Report (Form 10-K) 78 (Feb. 22, 2012), available at [http://www.comcast.com/2011annualreview/pdfs/Comcast\\_Form\\_10-K.pdf?SCRedirect=true](http://www.comcast.com/2011annualreview/pdfs/Comcast_Form_10-K.pdf?SCRedirect=true); see also GEORGE S. FORD & LAWRENCE J. SPIWAK, WHAT IS THE EFFECT OF REGULATION ON BROADBAND INVESTMENT? 6 (2011), available at <http://www.phoenix-center.org/perspectives/Perspective12-05Final.pdf> (demonstrating that the profitability of Broadband Service Providers is below that of the average for S&P 500 firms, and well below that of other firms in the broadband ecosystem (i.e., Google and eBay)).

35. See, e.g., CRAWFORD, *supra* note 6, at 1. See also *id.* at 261.

36. *Id.* at 2.

37. *National Broadband Map*, NAT'L TELECOMS. & INFO. ADMIN., <http://www.broadbandmap.gov/rank/all/state/percent-population/within-nation/speed-download-greater-than-100mbps/ascending> (last visited June 28, 2013).

38. *Id.*

39. *Id.*

Maximum available speeds are substantially greater than average actual speeds. But in international comparisons of actual speeds, the United States fares far better than Crawford suggests. Akamai finds average U.S. broadband speeds at 7.2 Mbps, ranking ninth in the world, and ahead of other large countries with the exception of Japan and South Korea.<sup>40</sup> Those two countries were the only two in the world with average speeds slightly above 10 Mbps,<sup>41</sup> hardly the 100 Mbps that Crawford sees as necessary. The United States did slightly less well in average peak speeds (fourteenth globally).<sup>42</sup> Hong Kong led the world with average peak speeds of 54.1 Mbps, and the United States had speeds of 29.6 Mbps, both well below Crawford's 100 Mbps threshold for "truly high speed" access.<sup>43</sup> The United States placed slightly better in percentage of broadband using high-speed (greater than 10 Mbps) access, with 18% (seventh globally).<sup>44</sup> South Korea led the world with 52%, still well below 100% of access.<sup>45</sup> Nothing in the Akamai study suggests that Internet access in excess of 100 Mbps "was routinely available in other countries."<sup>46</sup>

If individual states were treated as separate countries, some states would have done about as well as the leading countries. Under average broadband speed, Delaware would have ranked second in the world, behind South Korea.<sup>47</sup> The District of Columbia would have ranked third in peak speed, behind Hong Kong and South Korea.<sup>48</sup> New Hampshire, Vermont, the District of Columbia, Delaware, Massachusetts, and Rhode Island would have ranked third to eighth, respectively, in terms of availability of high-speed (more than 10 Mbps) broadband.<sup>49</sup> New Hampshire would have ranked first in the world in overall broadband (greater than 4 Mbps) connectivity at 87%.<sup>50</sup>

I do not suggest putting much weight on these international comparisons. Every year, various organizations publish international comparisons. The relative rankings of countries vary over time. The inescapable trend, however, is that Internet speeds and connectivity are improving globally and in the vast majority of countries. Newer technologies are diffused globally and adopted globally. Indeed, the market for Internet network equipment is entirely global; there are no national markets for technology. The same manufacturers, with headquarters around the world, but with manufacturing operations primarily in China, sell

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40. AKAMAI, *supra* note 20, at 12.

41. *Id.*

42. *Id.* at 13.

43. *Id.*

44. *Id.* at 14.

45. *Id.*

46. CRAWFORD, *supra* note 6, at 2.

47. AKAMAI, *supra* note 20, at 12, 16.

48. *Id.* at 13, 17.

49. *Id.* at 14, 18.

50. *Id.* at 15, 19.

network equipment to every country. Differences in measured speed such as in the Akamai report are the result of choices about different network configurations and differences in vintages of equipment, not differences in available equipment.<sup>51</sup>

The adoption, rates, and Internet speeds in countries that ranked in first place will be matched in a few years by a large number of other countries. What we are seeing is not a permanent difference in Internet technology across countries but rather a different speed in adoption. The speeds of adoption are remarkably similar across the major industrialized countries, including the United States.<sup>52</sup>

#### IV. SKIP THE HYPERBOLE ABOUT THE IMPORTANCE OF COMCAST

Comcast is a major corporation in America, but it is far from the largest or the most important. It does not need the assistance of Crawford to be larger or more important than it actually is. Chances are, far more Americans have heard of Apple, Exxon, AT&T, or Verizon, than have heard of Comcast. For those Americans who do not live in Comcast's service footprint, which accounts for a great many, if not most, Americans, it is unlikely that they have heard of Comcast. Crawford attributes in a footnote to David Cohen this characterization of Comcast: "the dominant distributor of communications in twenty-two of American twenty-five largest cities."<sup>53</sup> To the regret of Comcast shareholders, the statement is not accurate. Looking at only the top ten cities in population,<sup>54</sup> Comcast is the overwhelming cable distributor in only four: Chicago, Houston, Philadelphia, and San Jose. It is difficult to imagine that if one took a survey of the residents of these four cities, or any other city in America, that Comcast, rather than another company, would necessarily be labeled "the dominant distributor of communications." More likely, residents would accurately suggest that there is competition and no company is the "dominant provider."

For those of us who live in areas served by Comcast, it is difficult to think of it as a "dominant" company. For high-speed fiber broadband service, my home is a once and perhaps future Comcast subscriber. I have used two other providers in addition to Comcast. I may in the future return to Comcast, not because it is dominant, but precisely because it is not. Instead, I might return because it, along with the other firms in the area, is competitive. The wireline service is in addition to several different high-

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51. *Id.*

52. *Id.* at 12.

53. CRAWFORD, *supra* note 6, at 8, 272.

54. See CENSUS BUREAU, TOP 20 CITIES: HIGHEST RANKING CITIES 1790 TO 2010 (2012), available at <http://www.census.gov/dataviz/visualizations/007/508.php>.

speed wireless providers that friends and family view as clear substitutes for wireline service.

Comcast tends to serve urban and suburban areas of America. These are precisely the areas that have the most competition for both greater quality of service and lower prices. Because Comcast and most other major telecommunications providers have nationwide pricing plans, customers in less competitive areas still benefit from more competition in other areas.

Telecommunications services are less competitively provided only in high-cost, low-density areas. Those are precisely the areas where Comcast does not serve. Crawford occasionally addresses rural issues,<sup>55</sup> but these are not part of Comcast's service.

Crawford occasionally lapses into extraordinary overstatement: "The future of the Internet itself in America . . . would be radically affected by the merger decision."<sup>56</sup> If this statement applied to the Comcast-NBCU merger, would it not apply equally well to mergers of other companies? Surely if one were to canvass a recent batch of college graduates and ask them, "On which company does the future of the Internet in America depend?" they would not say Comcast. Crawford, however, would have us believe that Comcast would be high on the list of companies mentioned. Based on her assessment, these graduates would be clamoring for the coveted job at Comcast over companies like Google, Facebook, Twitter, Microsoft, Intel, Qualcomm, Apple, AT&T, and Verizon.

Crawford goes on to suggest with understatement, "Truly high-speed wired Internet access is as basic to innovation, economic growth, social communication, and the country's competitiveness as electricity was a century ago."<sup>57</sup> If Crawford is correct and access to 100 Mbps is the minimum essential level for "innovation, economic growth, social communication, and the country's competitiveness," then both America and the rest of the world fail these standards. Of course, many businesses, universities, and research centers and an increasing number of residential customers have access to Internet speeds in excess of 100 Mbps, but, as the Akamai and the National Broadband Map data reveal, these speeds are far from ubiquitous.<sup>58</sup>

## V. THE ANTITRUST CASE THAT WASN'T

A reader of the introduction to *Captive Audience* might conclude that Comcast faced an impossible hurdle of antitrust law in getting its merger with NBC-Universal approved. After all, "Comcast was gaining strength as a monopoly provider of wired high-speed Internet access."<sup>59</sup> Also,

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55. CRAWFORD, *supra* note 6, at 236.

56. *Id.* at 3.

57. *Id.*

58. See generally AKAMAI, *supra* note 20.

59. CRAWFORD, *supra* note 6, at 1.

“Comcast’s new amplified role as a programmer . . . would probably make content too expensive for any potential competing data distributor.”<sup>60</sup> “Competition would be unlikely, leaving Americans in Comcast’s territories reliant on Comcast alone for truly high-speed wired Internet access.”<sup>61</sup>

Curiously, Crawford has relatively little to say about the Department of Justice (“DOJ”), the one agency that could have effectively blocked the merger. The introductory chapter makes it appear that the merger would make a bad monopoly much worse. But in a brief description of the DOJ’s role, Crawford makes a series of concessions that contradicts the parade of horrors in the introduction and throughout much of the book:

From the start, blocking the merger was unlikely. The agency [DOJ] economists took the view that there were positive gains from vertical integration between content and distribution; “double marginalization” (overhead overlaps triggered by the involvement of multiple companies) could be reduced, innovation could be enhanced by coordinating work on content with work on new forms of distribution, and overall costs could be cut through economies of scale and scope. Case law supported the idea that vertical integration was less worrisome than horizontal mergers; the antitrust agencies had not successfully litigated a vertical merger challenge for decades.<sup>62</sup>

It is odd to find such a concession near the end of the book. Perhaps that would have been the beginning and the end of the story: antitrust case law compelled approval of the Comcast-NBC Universal deal. However, that is not the story that Crawford wanted to tell, and she has some insights that are worth considering.

The statement about the DOJ is a straightforward assertion of laws governing people, rather than personalities trumping the law.<sup>63</sup> The DOJ’s decision not to pursue an antitrust case is not based on the decisions of large personalities but on the judgments of anonymous “economists.”<sup>64</sup> “Case law” governs decisions of those leading the DOJ, not vice versa.<sup>65</sup>

Crawford could have lectured the reader on communications and antitrust law and how the federal government got it wrong. There is no shortage of such books. While *Captive Audience* gives a sense that blocking the merger would have been good, Crawford never descends into

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60. *Id.* at 2.

61. *Id.* at 3.

62. *Id.* at 216.

63. *Id.* at 206.

64. *Id.* at 213.

65. *Id.* at 216.



arguing that such an outcome was dictated by law and that a proper reading of the law would have blocked the merger.

## VI. EXAMINING THE CULT OF WASHINGTON PERSONALITIES

Despite its shortcomings on economics and other areas, *Captive Audience* is perhaps one of the best recent anthropological books on Washington politics and the cult of personality. Crawford's insight is not that the merger passed Washington review because the law and the economics were inescapable; rather, it is that the personalities marshaled by Comcast were undeniable.<sup>66</sup> Many decisions in Washington, or so Crawford would have the reader believe, are the outcome of extraordinary personalities. With the exception of decisions by the DOJ, Crawford portrays major government decisions as driven more by the whim of personality than by the inescapable logic of law and economics.

Throughout the book, Crawford gives the reader the detailed insights of Rep. Ed Markey, Sen. Al Franken, Sen. Herb Kohl, and other D.C. politicians.<sup>67</sup> These individuals wanted to stop the merger of Comcast and NBC-Universal.<sup>68</sup> Allied on the other side were Brian Roberts and David Cohen of Comcast.<sup>69</sup> As third-party arbiter, Crawford often relied on the words of the great antagonist to many liberal causes, John Malone.<sup>70</sup> The irony was precious.

A key takeaway from the book is that when legal outcomes depend as much, if not more, on personalities, anything can happen. The approval of the merger was not the inevitable outcome of Washington; it was merely the inevitable outcome of the alignment of personalities.<sup>71</sup> The Comcast merger would have been blocked had a different FCC Chairman or group of Commissioners been in place.<sup>72</sup> Crawford does not use those specific words, but the message is clear.

According to Crawford, even the Obama Administration itself became an unwitting tool in the hand of corporate interests.<sup>73</sup> Thus, the Obama Administration, the FCC, and DOJ were duped into promoting the concept of the "spectrum crisis," an idea supposedly originated by AT&T and Verizon.<sup>74</sup> The spectrum crisis, according to Crawford, "did not exist."<sup>75</sup> Contrary to this assertion, spikes in the spectrum prices in recent

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66. *Id.* at 211.

67. *Id.* at 87, 91, 206-07.

68. *Id.*

69. *Id.* at 207.

70. *Id.* at 216.

71. *Id.* at 211.

72. *Id.*

73. *Id.* at 247.

74. *Id.* at 241-43.

75. *Id.* at 242.

transactions suggest that the “spectrum crisis” is, in fact, real.<sup>76</sup> Crawford sees the Obama Administration as mere putty in the hands of crafty corporate potters.<sup>77</sup> Even the decision of Deutsche Telekom to sell T-Mobile was caused by an unwitting administration.<sup>78</sup> “In a sense, the Obama Administration itself caused T-Mobile to seek a deal.”<sup>79</sup>

Crawford does not suggest that government decisions are entirely the tawdry result of Washington’s cult of titan personalities, but she does emphasize the importance of personality in ways that are chilling to those of us who would like to see Washington as a dispassionate and impersonal follower of the law.

Crawford saves her greatest insights for Chapter 11, “The FCC Approves,” which is an unintentional parody of a federal agency. The chapter alone is worth the price of the book as it describes the merger review process at the FCC.

It’s a game: the companies that plan to merge know that if they can get the regulators to spend enough time considering the deal, it will probably go through . . . . [I]f no other large companies oppose the deal, the feds’ investment of time in working with the merging parties, coupled with their interest in moving on to other items on their agenda, generally overcomes any private concerns about consolidation of market power.<sup>80</sup>

Crawford’s description of the FCC is hardly flattering. An agency governed by statutes has a process that is described as a “game,” and one that it appears to be easily manipulated by those who know how to play the game. This description complements Crawford’s description of the titan personalities of Washington. How better to play a game than with larger-than-life personalities?

One of Crawford’s statements runs contrary to any reading of a civics text book or the Communications Act: “if no other large companies oppose the deal,”<sup>81</sup> it goes through. Washington is not merely influenced by personalities, in fact, corporate personalities trump mere individuals. The anonymous economists at the DOJ, the years of court precedents, and the sincere government official standing in a conference room in the Old

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76. Press Release, Tech. Policy Inst., Spectrum Prices Have Increased over Past Four Years (Jan. 24, 2013), *available at* <http://www.techpolicyinstitute.org/news/show/23392.html>.

77. CRAWFORD, *supra* note 6, at 243 (“But having worked with the administration to frame both the policy problem (more spectrum capacity!) and its solution (take spectrum away from the broadcasters and give it to broadband!)”).

78. *Id.* at 247.

79. *Id.*

80. *Id.* at 208.

81. *Id.*

Executive Office Building are nothing compared to the power of corporate interests, either pushing for or against a merger. Merger review at the FCC is reduced not to the application of law or economics, but to the public posturing of large corporations. Sadly, Crawford's observation may be all too accurate.

If the merger review process at the FCC is a game, its name must be charades. Here is how Crawford describes the game:

The merging companies figure out whom they have to please in order to avoid controversy and set to work persuading those groups or companies to support their transaction; the FCC, after much negotiating, creates conditions that it feels will serve the public interest and outweigh the anticompetitive harms created by the deal; the merging parties complain bitterly that the conditions are not specific to the merger but are broad attempts to make policy; a long series of meetings and filings is followed by a last-minute scramble for concessions; and on the day the deal is approved, the parties and regulators both issue press releases claiming victory.<sup>82</sup>

In this game of charades, everyone knows their role. The merging parties must persuade other parties. The FCC must "create[] conditions that it feels will . . . outweigh the anticompetitive harms."<sup>83</sup> Crawford cleverly uses the verb "feels" rather than "knows" or "can demonstrate." In Crawford's rendition of the FCC's merger review game, the words "law," "statute," "rule," or "administrative procedure" never appear.

But the critique of the FCC's merger review process does not end there. Crawford describes the details of the process as well:

The merger-approval dance requires a series of steps. What is called a "record" of filings with the FCC is created over a period of months, amounting to hundreds of thousands of pages. Deals are struck before and during the process to make stakeholders (such as interest groups and trade associations) who might object feel that they have gotten something out of the process . . . . Yet after all the filings and the hundreds of meetings, the last phase is often an unseemly scramble for concessions. "At the end," the content-industry employee told me, "people will all be in the room trying to get something. It will matter who is in the room."<sup>84</sup>

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82. *Id.* at 211.

83. *Id.*

84. *Id.* at 208-09.

According to Crawford, the merger review process is not merely a child's game; it is a teenager's dance. There is the public appearance of propriety of a record, consistent with the federal Administrative Procedure Act.<sup>85</sup> But, Crawford notes, the inside process is anything but an appearance of propriety. It involves backroom "deals" and an "unseemly scramble for concessions."<sup>86</sup>

I am all too familiar with the accuracy of Crawford's assessment. As a Commissioner, I dissented from every condition (other than compliance with laws, FCC rules, or comity with other government agencies) on every merger before the FCC.<sup>87</sup> I tried repeatedly to have my staff invited to the "room" where the deals were cut so that they could be witnesses to the sordid abuse of government processes, but they were politely never invited. Crawford aptly quotes Thomas Koutsky and Lawrence Spiwak: "Are consumers really well-served by back-room, closed-door negotiations between the regulator and prospective merging parties?"<sup>88</sup>

Crawford goes on to note, "[T]his 'awful,' detailed, backroom drafting of broad voluntary conditions routinely leads to deal points that are trumpeted by the commissioners approving the merger as wins for consumers that are either unenforced or unenforceable."<sup>89</sup>

Crawford is not always accurate in her description of the FCC. For example, she is way off the mark when she ascribes the failed FCC merger review process to "the belief of some commissioners in the power of 'intermodal competition.'"<sup>90</sup> I have seen no relationship between the willingness of Commissioners to approve merger conditions coerced in closed-door meetings and views on any particular policy matter including intermodal competition.

Crawford is also inaccurate in her whimsical view that "the FCC has broader authority over mergers than the antitrust division of the Department of Justice."<sup>91</sup> She claims that the FCC is charged with "determining how the public's long-term interest will be served by any merger transaction."<sup>92</sup> That is a nice sentiment, but it cannot be found in any federal statute, or even any FCC rule. The Communications Act never mentions the word "merger." The entire legal construct of "merger review"

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85. See 5 U.S.C. § 553 (2006).

86. CRAWFORD, *supra* note 6, at 208-09.

87. See, e.g., App'ns for Consent to Transfer by Time Warner & Am. Online, Inc., to AOL Time Warner, Inc., *Memorandum Order and Opinion*, FCC 01-12, FCC Rcd. 6547 (2001) (Furchtgott-Roth, concurring in part and dissenting in part), available at <http://apps.fcc.gov/ecfs/document/view?id=6512460712>.

88. CRAWFORD, *supra* note 6, at 209 (quoting Thomas M. Koutsky & Lawrence J. Spiwak, *Separating Politics from Policy in FCC Merger Reviews: A Basic Legal Primer of the "Public Interest" Standard*, Phoenix Ctr. Policy Bulletin No. 18 (May 2007), available at <http://www.phoenix-center.org/PolicyBulletin/PCPB18Final.pdf>).

89. CRAWFORD, *supra* note 6, at 210.

90. *Id.* at 209.

91. *Id.* at 210.

92. *Id.*

is based on the FCC's authority to review license transfers.<sup>93</sup> For its own convenience, it routinely approves tens of thousands of such license transfers each year, but it pauses to engage in a separate proceeding on only those licenses associated with major mergers of firms heavily regulated by the FCC.<sup>94</sup>

Crawford also applauds rather than criticizes the FCC and the DOJ for coordinating their information and analyses.<sup>95</sup> Nothing in the Communications Act gives the FCC the authority to share its information with DOJ, and nothing in DOJ's statutes or rules gives it the authority to share its confidential information with other government agencies, such as the FCC, which collect different and less confidential information. The reason the FCC and DOJ coordinate is not a matter of law, but of convenience. The FCC can block a merger by failing to act on it; the DOJ can block a merger only by going to court and convincing a judge to block it. Given the ease of its process, the FCC's discretion is correspondingly larger.

## VII. THE LOSING CASE FOR GOVERNMENT OWNERSHIP

In Chapter 14, the final chapter of her book, Crawford makes an unpersuasive case for government ownership of telecommunications networks. It is an anticlimactic way to end the book after its compelling description of the FCC merger review process. The chapter has two themes: lack of competition and a need for more government ownership.

Crawford is unpersuasive in her assessment of competition in the United States:

America has emerged decades after the breakup of AT&T with a communications system that has all the monopolistic characteristics of the old Bell system but none of the oversight or universality.<sup>96</sup>

The federal government does not share Crawford's assessment, nor do the hundreds of companies that compete in the American telecommunications market. Rather than embracing competition, Crawford seems intent on ignoring it. She confuses the Telecommunications Act of 1996, a law designed to deregulate telecommunications markets,<sup>97</sup> with a law that led to more regulation.

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93. HAROLD FURCHTOTT-ROTH, *A TOUGH ACT TO FOLLOW?* 109 (2006).

94. *Id.* at 112.

95. CRAWFORD, *supra* note 6, at 213-14.

96. *Id.* at 261.

97. Telecommunications Act of 1996, Pub. L. No. 104-104, 110 Stat. 56, 47 U.S.C. § 151 (2012).

America needs more people who can calmly and rationally oppose the free-marketeer rhetoric. People who don't have the knee-jerk response that "we tried regulation in the 1996 Telecommunications Act and it didn't work."<sup>98</sup>

Crawford misconstrues the "free-marketeer" rhetoric. Such rhetoric is more likely to express the sentiment that we tried deregulation in the 1996 Telecommunications Act, and it worked.

Had Crawford wanted to focus her intellect on the one area of telecommunications that is more challenging than others, she might have addressed low-density, high-cost markets. The stories of thin competition and government support might make sense in those areas, but it makes little sense in Manhattan, New York, or even Manhattan, Kansas.

The supposed need for government ownership springs from the argument that there is a lack of competition nationwide. It is no more persuasive. Municipally owned telecommunications systems appear to compete with privately owned networks,<sup>99</sup> but Crawford never examines whether the local taxpayers are wittingly or unwittingly subsidizing government enterprises. Crawford trumpets Google's decision to deploy advanced services in Kansas City, but she does not examine the effect of municipal accommodations given to Google and not to other companies. She celebrates municipal electricity utilities,<sup>100</sup> but she does not examine why there has been remarkably little innovation in electricity distribution in the past century.

Crawford claims that government ownership of some form would help American telecommunications:

Not coincidentally, the United States has fallen from the forefront of new developments in technology and communications. It now lags behind countries that long ago defined communications as a public, and publicly overseen, good.<sup>101</sup>

As noted above, the evidence does not support the assertion that America is lagging behind other countries.<sup>102</sup>

Although the South Korean government and others may mandate 1 Gbps broadband speed,<sup>103</sup> government mandates do not translate into actual speeds. However, Crawford builds on this false foundation to claim a need for greater public involvement in broadband networks. She states that "[i]t

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98. CRAWFORD, *supra* note 6, at 268.

99. *Id.* at 254-57.

100. *Id.* at 256.

101. *Id.* at 261.

102. *See supra* text accompanying notes 40-50.

103. CRAWFORD, *supra* note 6, at 262.

is clear from extensive evidence around the world that this publicly supervised infrastructure should be made available to everyone and provided on a wholesale basis to last-mile competitors in order to keep speeds high and prices low.”<sup>104</sup> The evidence of the benefits of government ownership and direction is far different from that suggested by Crawford. Some countries have extensive central government planning and direction while others do not. The evidence from practically every country is that broadband adoption and speeds are improving rapidly. This is the natural outcome of market forces and is inescapable even in countries with centralized planning.<sup>105</sup>

Crawford calls for a \$90 billion federally owned telecommunications network,<sup>106</sup> while private markets have provided the United States with a telecommunications market that is the most robust and highly invested in the world.<sup>107</sup> Also, America’s multiple telecommunications networks provide consumers with more service choices than in other countries.<sup>108</sup>

Even if there were a need for another telecommunications network, it is surprising that Crawford would trust the United States government with managing a \$90 billion dollar investment in which it has no experience.<sup>109</sup> She accurately ridicules the U.S. government as incapable of effectively reviewing mergers.<sup>110</sup> The reader is asked to believe that a government awed by the greater-than-life personalities in one realm would be a model of efficiency in another. That is a hard story to believe.

Many of the facts and figures in the final chapter fall under the category of economics, which the clever reader will simply skip. For example, Crawford appears to claim that it will only cost \$90 billion to provide fiber optic cables to all American households.<sup>111</sup> According to Dr. George Ford, Crawford relies on Corning’s comments to the *National Broadband Plan*.<sup>112</sup> Yet, the comments state that “[t]he investment required to deploy [fiber to the home] in the least dense 20% of areas is difficult to estimate due to the lack of existing deployments and published data. We have therefore focused on the remaining 80% of [households] in our analysis and recommendations.”<sup>113</sup> Thus, Cambridge Strategic Management Group’s \$90 billion number is *not* an estimate of the “cost to bring fiber to the homes of all Americans” as Crawford claims.<sup>114</sup> Instead, the \$90 billion

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104. *Id.*

105. *Id.* at 261.

106. *Id.* at 267.

107. *Id.*

108. *Id.* at 260-61.

109. *Id.* at 267.

110. *Id.*

111. *Id.*

112. Ford, *supra* note 11.

113. CAMBRIDGE STRATEGIC MGMT. GROUP, FTTH DEPLOYMENT ASSESSMENT 2 (2009), available at [http://www.ftthcommunitytoolkit.wikispaces.net/file/view/ftth\\_deployment\\_assessment\\_-\\_corning\\_10\\_12\\_09\\_final.pdf](http://www.ftthcommunitytoolkit.wikispaces.net/file/view/ftth_deployment_assessment_-_corning_10_12_09_final.pdf).

114. CRAWFORD, *supra* note 6, at 267.

number excludes the 20% of American homes that are the most costly to serve.<sup>115</sup> Dr. Ford calculates that the full cost of deploying fiber to all American homes could run between \$190 billion to \$240 billion for just the upfront capital investment.<sup>116</sup>

### VIII. WHO IS THE CAPTIVE AUDIENCE?

Crawford never formally identifies the captive audience. Presumably, it is the millions of Comcast customers, but practically all of them have competitive alternatives on land, in the air, and in space. But perhaps there is another truer captive audience: the career federal government employees who are asked to review mergers, but who actually do not make the decisions on them. Political appointees above them make the decisions. The career employees, who may have other views and other analyses to offer, have no choice but to go along with their political superiors. The career staff is the real captive audience.

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115. CSMG, *supra* note 113, at 2.

116. Ford, *supra* note 11.



# Response to Harold Furchtgott-Roth

Susan Crawford\*

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Ms. Crawford was formerly a (Visiting) Stanton Professor of the First Amendment at Harvard’s Kennedy School, a Visiting Professor at Harvard Law School, and a Professor at the University of Michigan Law School (2008-2010). As an academic, she teaches Internet law and communications law. In December of 2012, Yale University Press published her book, *Captive Audience: Telecom Monopolies in the New Gilded Age*. She was a member of the board of directors of ICANN from 2005-2008 and is the founder of OneWebDay, a global Earth Day for the internet that takes place each Sept. 22. One of Fast Company’s Most Influential Women in Technology (2009); IP3 Awardee (2010); one of Prospect Magazine’s Top Ten Brains of the Digital Future (2011) and TIME Magazine’s Tech 40: The Most Influential Minds in Tech (2013).

Ms. Crawford received her B.A. and J.D. from Yale University. She served as a clerk for Judge Raymond J. Dearie of the U.S. District Court for the Eastern District of New York, and was a partner at Wilmer, Cutler & Pickering (now WilmerHale) (Washington, D.C.) until the end of 2002, when she left that firm to enter the legal academy.

## I. INTRODUCTION

I have great respect and affection for Harold Furchtgott-Roth, and it seems from his review of *Captive Audience* that he has respect and affection for me. Luckily for the rest of you, my view of his personality—and his view of mine—is irrelevant. I wanted to begin, though, by acknowledging his personal graciousness towards me.

What is relevant is the striking number of issues in his review on which he and I completely agree. We agree that U.S. presidential administrations for a long time have not thought of the FCC as an important agency or its role in the U.S. economy as vital. We agree that communications policy in the U.S. is not necessarily being made based on the merits of particular situations. We agree that the federal government would probably be terrible at running a nationwide network itself.

Where we differ is in our prescriptions, given this agreed-on background. Mr. Furchtgott-Roth's conclusion from these premises is that the only answer is to give up.<sup>1</sup> And my conclusion is that we cannot give up.

My conclusion, unlike Mr. Furchtgott-Roth's, is based on the reality of consumers' experience in America when it comes to high-speed Internet access. Based on how people actually use these connections and how much they are required to pay, consumers are being gouged; the rich are paying too much for services that are both noncompetitive and second-class, and not enough Americans are being served adequately or at all.

Mr. Furchtgott-Roth would have to agree with me, because it is a central tenet of his worldview, that competition is central to any functioning free market. My contribution to this conversation is that we have neither competition nor adequate oversight when it comes to the actual lived experience of Americans as purchasers of high-speed Internet access. As a result, the country needs a wholesale revision of both the manner in which policy is made and the details of those policies so that retail-level competition can in fact be unleashed in the places where it is possible. We need new investments in modern, competitive, wholesale fiber networks in cities across the country so that new retail providers can begin selling services. (Fiber networks can last for decades if they are the right quality, and photonics are getting better all the time.) The entire

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1. As far as I am aware, Mr. Furchtgott-Roth, as an FCC Commissioner, never voted in favor of any conditions suggested by the FCC in connection with telecommunications mergers. See, e.g., Heather Forsgren Weaver, *FCC Reacts as Merger Train Rolls In*, RCRWIRELESS (Oct. 11, 1999), <http://www.rcrwireless.com/article/19991011/sub/fcc-reacts-as-merger-train-rolls-in/>. His point of view has been consistent for decades: Conditions that might impose limits on the anticompetitive behavior of merged telecommunications giants are beyond the power of the FCC to impose. His review of *Captive Audience* should be understood in this light.

nation needs an upgrade, and new entrants into the marketplace—both public and private—are needed to change the status quo that is serving all of us so badly.

If we fail, and if the FCC cannot act because the agency fears that the incumbents will march on Capitol Hill and gut the agency's budget if they do, that will have major implications for our democracy. Nonetheless, we should certainly still try.

We will need leadership from every level of government; mayors, governors, and the President will need to take the current crisis in American communications networks seriously. I wrote *Captive Audience* to encourage these leaders to step up to this challenge and to encourage every American to make his or her voice heard on this fundamental issue when electing representatives to office.<sup>2</sup> World-class, high-speed Internet access should be available to each one of us at a reasonable price, and where it is possible to have retail choices, we should have competition. This issue isn't just about equality or dignity; it's also about economic growth.

## II. MARKET DEFINITION

Mr. Furchtgott-Roth says that we have a competitive "broadband" marketplace.<sup>3</sup> He gets there by saying that 4 Mbps down and 1 Mbps up is the right definition of that marketplace.<sup>4</sup> But that market definition is entirely unrelated to reality. Let's step back and look at what people in America actually do using high-speed Internet access capacity. What are typical, mainstream applications that people are using, and what download speeds and bit capacity (or volume – number of bits per month) do they need for such use?

Here are the facts: Sandvine reports that Netflix is currently the largest source of online traffic in this country.<sup>5</sup> Netflix itself recommends that people accessing its application have 3.0 Mbps download service in order to get "DVD-quality" resolution.<sup>6</sup> And for a HD-quality (high-definition) picture, Netflix recommends at least a 5 Mbps download service.<sup>7</sup>

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2. SUSAN CRAWFORD, *CAPTIVE AUDIENCE: THE TELECOM INDUSTRY AND MONOPOLY POWER IN THE NEW GILDED AGE* (2013).

3. Harold Furchtgott-Roth, *In Search of a Captive Audience: Susan Crawford's Captive Audience*, 65 FED. COMM. L.J. 312, 322-23 (2013).

4. *Id.* at 318-21.

5. SANDVINE INTELLIGENT BROADBAND NETWORKS, *GLOBAL INTERNET PHENOMENA REPORT: 2H 2012*, at 2 (2012), available at [http://www.sandvine.com/downloads/documents/Phenomena\\_2H\\_2012/Sandvine\\_Global\\_Internet\\_Phenomena\\_Report\\_2H\\_2012.pdf](http://www.sandvine.com/downloads/documents/Phenomena_2H_2012/Sandvine_Global_Internet_Phenomena_Report_2H_2012.pdf).

6. *Internet Connection Speed Recommendations*, NETFLIX, <http://support.netflix.com/en/node/306#gsc.tab=0> (last visited Apr. 26, 2013).

7. *Id.*

Let's say a typical American wants to watch one hour of Netflix in HD in one day. That is a conservative, sensible assumption. According to the FCC's most recent numbers (for the first half of 2012), most current DSL connections cannot handle this usage. At least 76% of DSL connections are slower than 6 Mbps downstream.<sup>8</sup> DSL fares reasonably well in slower-speed ranges. For download speeds of at least 768 Kbps and 1.5 Mbps, DSL has 33.7% and 31.0%, respectively, of total fixed connections.<sup>9</sup> But when we consider the speeds required by even moderate users of high-bandwidth communications, like Netflix, the picture changes dramatically: DSL's share of fixed connections falls to just 19.7% for download speeds of at least 3 Mbps (the minimum recommended speed to stream just a single DVD-quality Netflix movie), and to just 8.3% of fixed connections at the 6 Mbps threshold (as noted above, 5 Mbps is the minimum recommended speed to stream a single HD-quality Netflix movie).<sup>10</sup>

Because American households often include more than one person, and people themselves often do more than one thing at a time, it is quite likely that more than one device is being used to access high-bandwidth communications at any given time in Americans' houses. In fact, a growing proportion of American households own multiple devices capable of supporting high-bandwidth communications, and the number of devices per household is increasing.<sup>11</sup> But DSL's shortcomings are even starker when it comes to connections capable of delivering at least 10 Mbps of downstream capacity. For connections of at least 10 Mbps, DSL's share as of mid-2012 was just 2.9% of fixed connections—less than one out of every thirty connections.<sup>12</sup>

Speeds of at least 10 Mbps are, therefore, the threshold at which an Internet connection can become a true replacement for a pay-TV service. At 10 Mbps, a connection can carry two Netflix HD streams, or three different streams of DVD-quality. Or, a household can support one Netflix HD stream while another screen is being used to surf the Web.

This explains why Americans signing up for new high-speed Internet access services are not choosing DSL.<sup>13</sup> What Americans are signing up for

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8. INDUS. ANALYSIS & TECH. DIV., WIRELINE COMPETITION BUREAU, FCC, INTERNET ACCESS SERVICES: STATUS AS OF JUNE 30, 2012, at 30 tbl. 10 (2013) [hereinafter *Internet Access Services Status*], available at [http://transition.fcc.gov/Daily\\_Releases/Daily\\_Business/2013/db0520/DOC-321076A1.pdf](http://transition.fcc.gov/Daily_Releases/Daily_Business/2013/db0520/DOC-321076A1.pdf).

9. *Id.*

10. *Id.*

11. Heather Leonard, *Connected Devices Outnumber People in U.S. Homes*, BUSINESS INSIDER (Mar. 19, 2013, 2:24 PM), <http://www.businessinsider.com/us-homes-have-many-connected-devices-2013-33> (stating that the number of connected devices in U.S. homes increased from an average of 5.3 to 5.7 in three months).

12. *Internet Access Services Status*, *supra* note 8, at 30.

13. *See id.* at 23 tbl. 5, 24 tbl. 6. When cable operators, starting with Comcast, began rolling out DOCSIS 3.0 technology in 2008, DSL's ability to compete on speed went from limited to virtually non-existent. By the second quarter of 2008, both AT&T's and

is their local cable monopoly service.<sup>14</sup> For high-capacity download speeds that are at least 6 Mbps and, more likely, above 10, 15, or even 25 Mbps, the vast majority of Americans have just one choice – their local cable incumbent.<sup>15</sup> According to Leichtman Research Group, during the first nine months of 2012, 88% of new high-speed Internet access subscriptions went to cable, a figure that exceeded 99% during the third quarter of 2012.<sup>16</sup> For 2012 as a whole, less than one out of every eight new high-speed Internet access subscriptions went to anyone other than the cable companies.<sup>17</sup> Even these figures understate the steep decline in users choosing DSL connections because they include not only DSL but also phone companies' fiber services, including Verizon's FiOS Fiber to the Home ("FTTH") service and AT&T's Fiber to the Node ("FTTN") U-Verse service. Focusing only on the DSL customer base of the two big phone companies, AT&T and Verizon, we see it shrinking nearly 23% for AT&T during 2012 and 12.5% for Verizon.<sup>18</sup> During that same period, the nation's top two cable distributors, Comcast and Time Warner Cable, increased their cable

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Verizon's DSL services had begun losing subscribers, a trend that has continued since then. As a result, both AT&T's and Verizon's shares of new high-speed Internet access subscriptions have plummeted from a healthy 54% in 2005 and 2006 to less than 12% for the first nine months of 2012. AT&T INVESTOR BRIEFING, STRONG GROWTH IN WIRELESS & U-VERSE DRIVES REVENUE & ADJUSTED EARNINGS PER SHARE GROWTH IN AT&T'S FOURTH-QUARTER RESULTS 8-10 (Jan. 24, 2013) [hereinafter *AT&T's Fourth-Quarter Results*]; Verizon Reports Strong Revenue & Customer Growth for Verizon Wireless & FiOS Services in 4Q 2012, VERIZON (Jan. 22, 2013), [http://www2.verizon.com/investor/news\\_verizon\\_reports\\_strong\\_revenue\\_and\\_customer\\_growth\\_for\\_verizon\\_wireless\\_and\\_fios\\_services\\_in\\_4q\\_2012.htm](http://www2.verizon.com/investor/news_verizon_reports_strong_revenue_and_customer_growth_for_verizon_wireless_and_fios_services_in_4q_2012.htm). This reflects the continued erosion of Verizon's and AT&T's DSL subscriber base, accompanied by a general slowing of broadband growth among Tier 2 telecommunications companies like CenturyLink, Frontier, and Windstream.

14. Although the FCC doesn't report this clearly, cable incumbents Comcast and Time Warner face very little "overbuilding" competition in metro areas. *Internet Access Services Status*, *supra* note 8, at 23 tbl. 5, 24 tbl. 6; Review of the Commission's Program Access Rules & Examination of Programming Tying Arrangements, *First Report and Order*, FCC 10-17, 25 FCC Rcd. 746, 763 n.97 (rel. Jan. 20, 2010), available at [http://fjallfoss.fcc.gov/edocs\\_public/attachmatch/FCC-10-17A1\\_Rcd.pdf](http://fjallfoss.fcc.gov/edocs_public/attachmatch/FCC-10-17A1_Rcd.pdf).

15. CRAIG MOFFETT, NICHOLAS DEL DEO & AMELIA CHAN, BERNSTEINRESEARCH, WHY WE LIKE CABLE Exhibit 1 (Feb. 4, 2013) (noting that 51–57% of the country has only one provider that can provide speeds over 10 Mbps).

16. See *2.7 Million Added Broadband From Top Cable and Telephone Companies in 2012*, LEICHTMAN RESEARCH GRP., <http://www.leichtmanresearch.com/press/031913release.html> (last visited June 22, 2013).

17. *Id.*

18. For the figure for AT&T, see *Quarterly Earnings – 4Q 2012*, AT&T, <http://www.att.com/gen/investor-relations?pid=262> (last visited June 22, 2013), and *AT&T's Fourth-Quarter Results*, *supra* note 13. The figure for Verizon was derived from *Quarterly Earnings: 4Q 2012 Quarter Earnings*, VERIZON, [http://www2.verizon.com/investor/qreport\\_4q\\_2012\\_quarter\\_earnings\\_01212013.htm](http://www2.verizon.com/investor/qreport_4q_2012_quarter_earnings_01212013.htm) (last visited June 22, 2013), and VERIZON COMM'NS, INVESTOR QUARERLY FOURTH QUARTER 14 (Jan. 22, 2013), available at [http://www2.verizon.com/investor/DocServlet?doc=vz\\_4q\\_quart\\_bulletins\\_2012.pdf](http://www2.verizon.com/investor/DocServlet?doc=vz_4q_quart_bulletins_2012.pdf).

modem subscriber base by 6.7%<sup>19</sup> and 9.9%,<sup>20</sup> respectively. Verizon's FiOS fiber-optic service will be available when fully rolled out to about 10–15% of Americans (18 million people),<sup>21</sup> but Verizon's FiOS overlaps just 15% of Comcast's footprint and just 11% of Time Warner Cable's footprint.<sup>22</sup> These two cable actors face almost no competition for the download speeds that Americans want. And, of course, they never compete with each other. When it comes to connections that allow 10 Mbps or more in downloads and 200 gigabytes of data—a measure of capacity, or volume—per month, we are heading with increasing speed toward a series of regional cable monopolies in wireline high-speed Internet access service provision.

Many ill-informed or possibly simply confused people are asserting that 4G wireless is a substitute method for access to the download speeds I have been writing about, but they are missing the reality of the situation.<sup>23</sup>

Although it is true that both Verizon and AT&T claim that their 4G LTE services will have download speeds equal to a slow cable connection—say, 13–16 Mbps—these two companies also impose monthly data caps of 1–2 GB of data.<sup>24</sup> If you watch a movie in HD over a wireless connection, you're going to use about 3.5 GB of data, blowing through your monthly capacity allowance for a single-device plan costing \$85–\$100

19. The figure for Comcast is derived from *Comcast Reports 4th Quarter and Year End 2012 Results*, COMCAST, <http://cmcsk.com/earningdetails.cfm?QYear=2012&QQuarter=4> (last visited June 22, 2013); COMCAST, FINANCIAL STATEMENTS (2010-2012), <http://cmcsk.com/common/download/download.cfm?companyId=CMCSA&fileid=635080&filekey=f72c419e-2874-4fdb-a4bd-892e9d441572&filename=Comcast4Q12%20Trending%20Schedule.pdf> (last visited June 22, 2013); Press Release, Comcast, Comcast Reports 4th Quarter and Year End 2012 Results (Feb. 12, 2013), available at <http://cmcsk.com/common/download/download.cfm?companyId=CMCSA&fileid=635079&filekey=3aeffc1-45af-41ae-a704-6dbb50b55bd0&filename=Comcast4Q12%20Earnings%20Release%20with%20Tables.pdf>.

20. *Quarterly Earnings*, TIME WARNER CABLE, <http://ir.timewarnercable.com/investor-relations/quarterly-earnings/default.aspx> (last visited June 22, 2013); TIME WARNER CABLE, 2012 TRENDING SCHEDULES, RECONCILIATIONS AND OTHER FINANCIAL INFORMATION (2013), available at <http://ir.timewarnercable.com/files/TWC%20Trending%20Schedules%20Q4%202012%20FINAL.pdf>; Press Release, Time Warner Cable, Time Warner Cable Reports 2012 Fourth-Quarter and Full-Year Results (Jan. 31, 2013), available at <http://ir.timewarnercable.com/files/TWC%20Q4%202012%20Earnings%20Release%20FINAL.pdf>

21. See Victor Godinez, *If Verizon's FiOS Service Isn't Here, It's Not Coming*, DALLAS MORNING NEWS (Nov. 26, 2010, 2:09 PM), <http://www.dallasnews.com/business/headlines/20101008-If-Verizon-s-FiOS-service-isn-6196.ece>.

22. Susan Crawford, *How AT&T and Verizon Manipulate Your Smartphone*, BLOOMBERG (Dec. 26, 2012, 6:31 PM), <http://www.bloomberg.com/news/2012-12-26/how-at-t-and-verizon-manipulate-your-smartphone.html>.

23. See, e.g., Daniel Fisher, *Is 4G Wireless the Ultimate Cable TV Killer?*, FORBES (July 26, 2012, 1:56 PM), <http://www.forbes.com/sites/danielfisher/2012/07/26/is-4g-wireless-the-ultimate-cable-tv-killer/print/>.

24. See Tiffany Kaiser, *AT&T Throttling Unlimited Data Users After Only 1-2 GB*, DAILYTECH.COM (Feb. 15, 2012, 9:35 AM), <http://www.dailytech.com/ATT+Throttling+Unlimited+Data+Users+After+Only+1+2+GB/article24009.htm>.

per month in a single session.<sup>25</sup> These two dominant companies charge as much as \$15 per GB of data for those who exceed the allotted usage cap.<sup>26</sup> This means that watching one movie would cost an additional \$17.50–\$35 (or \$52.50 for those exceeding their monthly cap). And these amounts do not include the cost of the movie itself. In light of these usage caps, it does not seem realistic to claim that consumers see wireless connections as substitutes for a wire at home.<sup>27</sup> And, in fact, they do not: Mobile usage of Netflix is in the low single digits as a percentage of overall Netflix use.<sup>28</sup>

Another inconvenient fact for people who claim that wireless high-speed Internet access is entirely substitutable for these wired cable connections is this: At least 83% of Americans with smartphones also have a home wired connection.<sup>29</sup> People within the smartphone population who are relying on a smartphone alone for access are likely to be low-income, members of minority groups, or both.<sup>30</sup>

In light of all this, Mr. Furchtgott-Roth's purported market definition is entirely unrealistic. And I have not even started talking about new generations of high-bandwidth, high-capacity applications. Home security services, telemedicine, online education, gaming—all of these things will require great capacity—and Americans will be stuck with their local cable monopoly. I will say it clearly: A basic connection for 21st century high-bandwidth, low-latency applications will require not only fast downloads, but also high capacity.<sup>31</sup> We will need symmetrical service, equal uploads and downloads, so that Americans can publish data as well as passively receive it. And for that connection, we're stuck. Verizon FiOS is not going to expand; municipally-overseen fiber rings are coming online too slowly;

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25. Janko Roettgers, *AT&T's New Bandwidth Cap Is Bad News For Netflix*, GIGAOM (Mar. 14, 2011, 7:53 AM), <http://gigaom.com/2011/03/14/att-bandwidth-cap-netflix/>.

26. E.g., *Wireless Plans*, AT&T, <http://www.att.com/shop/wireless/plans-new.html#fbid=gQSfE4Zmq7L> (last visited Apr. 18, 2013).

27. Ryan Kim, *Verizon LTE Worth a Look as Possible DSL Replacement*, GIGAOM (Apr. 25, 2013), <http://gigaom.com/2011/04/04/verizon-lte-worth-a-look-as-possible-dsl-replacement/>.

28. *Netflix Statistics*, STATISTIC BRAIN (Apr. 25, 2013), <http://www.statisticbrain.com/netflix-statistics/> (showing that only 6% of Netflix subscribers are mobile users).

29. JOHN HARRIGAN, TECHNET, BROADBAND ADOPTION IN 2012: LITTLE MOVEMENT SINCE '09 & STAKEHOLDERS CAN DO MORE TO SPUR ADOPTION 4 (2013), available at <http://technet.org/wp-content/uploads/2012/03/TechNet-NBP-Broadband-Report-3-20-2012-FINAL1.pdf>.

30. JOHN HARRIGAN, FCC, BROADBAND ADOPTION & USE IN AMERICA 5, 6 (2010), available at <http://transition.fcc.gov/DiversityFAC/032410/consumer-survey-horrigan.pdf>.

31. See Jon Brodtkin, *Bandwidth Explosion: As Internet Use Soars, Can Bottlenecks be Averted?*, ARS TECHNICA (May 1, 2012, 12:40 PM), <http://arstechnica.com/business/2012/05/bandwidth-explosion-as-internet-use-soars-can-bottlenecks-be-averted/> (noting that by 2015, on-demand video traffic will be equivalent to 3 billion DVDs per month and that according to Cisco, global IP traffic will quadruple by 2015). This demonstrates why usage-capped mobile broadband is a non-starter for true broadband service.

and the cable incumbents have both cramped uploads and unconstrained pricing power within their footprints. That is a monopoly issue.

*Captive Audience* also explains that much of this story was foreordained by regulatory failures following the 1996 Telecommunications Act (“the 1996 Act”).<sup>32</sup> The statute aimed at introducing competition for retail services, but not for the basic very-high-fixed-cost wireline communications facility to homes and businesses.<sup>33</sup> That facility tends towards monopoly—it always does—because of the high barriers to entry for any new market entrant.<sup>34</sup> A new player has to take on large amounts of fixed costs (including, these days, enormously high fixed costs for programming that are far lower per subscriber for the big distributors) just to get a foothold in the market. This facility is, in fact, a natural monopoly.

The answer to that monopoly should be fivefold: (1) unbundling, where it makes sense—making it possible for retail providers to sell differentiated, competing services riding on that platform; (2) interconnection mandates, so that gatekeepers don’t get a chokehold on the ability of others to reach their subscribers; (3) price regulation of the wholesale facility, so that retail providers can count on a particular communications input for their businesses; (4) the obligation to contribute to a common fund so that everyone in the country can get reasonably priced communications services; and (5) the encouragement of municipal networks. All of this should happen with the country’s fiber upgrade once we make that plan. Right now, though, we have no path to that upgrade. We are stuck with the local cable incumbents, who are subject to none of these requirements and whose ability to choose how to price and where to place their services is unconstrained.

Yes, there is marginal cable competition in cities in America. Standard Oil did the same thing—it permitted competitors to nibble away about 10% of its potential customers.<sup>35</sup> That is a smart move when you’re

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32. CRAWFORD, *supra* note 2, at 49-55.

33. See Alan Pearce et al., *Telecom Act Rewrite Is Needed To Return Real Competition To Broadband Sector*, BLOOMBERG LAW (Nov. 7, 2012), <http://about.bloomberglaw.com/practitioner-contributions/telecom-act-rewrite-needed/> (noting that wireline providers were not sufficiently regulated by the Telecommunications Act of 1996).

34. See *Monopoly Power*, ECONOMICS ONLINE, [http://www.economicsonline.co.uk/Market\\_failures/Monopoly\\_power.html](http://www.economicsonline.co.uk/Market_failures/Monopoly_power.html) (last visited June 30, 2013) (noting that “[m]onopoly power can be maintained by barriers to entry”).

35. RON CHERNOW, *TITAN: THE LIFE OF JOHN D. ROCKEFELLER, SR.* 205-06 (Vintage eBooks 2d ed. 2007) (1998) (“Rockefeller, with piratical flair and tactical brilliance, had come to control nearly 90 percent of the oil refined in the United States. Perhaps a hundred tiny refineries still eked out a meager living in the interstices of the industry, but they were mostly tolerated as minor nuisances and scarcely threatened Standard Oil. As Rockefeller himself acknowledged, these isolated cases served a useful political purpose, providing a mirage of competition when it had ceased to exist altogether. He liked to point to these



trying to avoid government oversight. But someone should be noticing that the marginal cable competitors we do have do not fight very hard. They have to stay within their boundaries or they will risk extinction. It would be simple for the local monopoly player to stamp them out. You should ask yourself: Why is a bundle of data and cable pay-TV service in Boston about the same price, whether offered by “overbuilder” RCN or by the incumbent Comcast?<sup>36</sup> Would you not think the upstart would underprice the incumbent player? Answer: That does not happen because the overbuilder has no incentive to rock the boat.

New entrants face many challenges in a high fixed-cost, declining cost-curves market, in which it is difficult for them to differentiate their services, end-user willingness to spend is stable,<sup>37</sup> and incumbents possess a large market share.<sup>38</sup> All of these factors are in place when it comes to the communications industry.<sup>39</sup> Because so much of an incumbent’s costs are either sunk capital or fixed operating costs, it would be relatively easy for an incumbent to cut prices in areas targeted by new competitors and, if needed, offset these cuts with price hikes levied in other geographic or service markets where it does not face comparable competition.<sup>40</sup> That Comcast and Time Warner Cable choose to let competition at the margins survive is a matter of their grace and self-restraint, and competitors know it.

The 1996 Act was intended to encourage competitive market entry by removing regulatory barriers.<sup>41</sup> Because it failed to address consolidation, and because its attempt to ensure that wholesale telecommunications facilities would be unbundled to permit retail competition was gutted by litigation and regulatory weakness, the result is the aggravation of the fundamentally challenging economic hurdles just described.<sup>42</sup> The painfully high percentage of bankruptcies in the CLEC (competitive local exchange carrier) and overbuild (competitive high-speed

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doughty survivors as proof that all the stories about the strong-arm tactics of Standard Oil were grossly exaggerated and that the oil industry was a scene of vibrant competition.”).

36. It is very difficult to cross-compare bundles. *Compare Cable TV, Internet & Phone Bundles*, RCN, <http://www.rcn.com/boston/bundles> (last visited Apr. 25, 2013) (listing bundles for \$79.99/month for 25 Mbps/222 channels) with *Xfinity*, COMCAST, <http://www.comcast.com/internet-service-keystone-belt.html> (last visited Apr. 18, 2013) (listing bundles at \$49.99/month for 50 Mbps/many channels).

37. CRAWFORD, *supra* note 2, at 138.

38. *Id.* at 10-11, 16, 50, 67, 76, 77, 80, 86-109, 110, 122, 132, 151, 156-69, 217-18, 233-53, 259, 268.

39. *E.g., id.* at 50-51.

40. *See, e.g., id.* at 115, 116.

41. H.R. CONF. REP. NO. 104-458, at 113 (1996), *reprinted in* 1996 U.S.C.C.A.N. 124, 124 (stating that the Act was intended “to provide for a pro-competitive, de-regulatory national policy framework designed to accelerate rapidly private sector deployment of advanced telecommunications and information technologies and services”).

42. *Id.*

Internet access service provider) sectors over the past decade is a testament to this dynamic.<sup>43</sup>

Thanks in large part to this combination of deregulation and inevitable market dynamics, the mass-market communications sector is seeing retail competition over basic wholesale lines crumble and the cable-telco duopoly structure migrate to a cable monopoly structure when it comes to 100 Mbps high-speed Internet access. Private capital is spooked; why invest here?<sup>44</sup> With no interconnection mandate, with the ability to use exclusive programming (often sports) as a sledgehammer,<sup>45</sup> and with relentless lobbying by incumbents at all levels of government, we have reached an impasse.<sup>46</sup>

America has a problem. For the vast majority of our citizens, the local cable monopoly provides the only Internet access link capable of supporting existing and new bandwidth-intensive services, including online (sometimes called “over-the-top” or “OTT”) video.

### III. MARKET POWER IN WIRELESS

Mr. Furchtgott-Roth says that Verizon Wireless and AT&T do not have “market power” because, if they did, “prices would always go up.”<sup>47</sup> However, again, he is missing how this market works. Prices can go up without the facial subscription price going up because subscribers are getting less value for the same amount of money. For example, both Verizon and AT&T eliminated their popular unlimited use data plans—within six months of each other—in favor of very restricted data offerings that come with staggering overage charges and per-device fees, and were still able to achieve very healthy subscriber and per-account revenue gains while their competitors suffered subscriber losses.

It is good to be Verizon Wireless and AT&T these days. In the fourth quarter of 2012, Verizon added a record number of subscribers—2.1 million new postpaid subscribers—and now has 92.5 million subscribers on

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43. See Chris Nolter, *CLECs' Last Stand?*, DEAL MAG. (Dec. 9, 2011, 12:00 PM), <http://www.thedeal.com/magazine/ID/043309/features/clecs-last-stand.php> (describing CLEC bankruptcies, takeovers, and consolidation).

44. CRAWFORD, *supra* note 2, at 265. See also Karl Bode, *Verizon Again Confirms FiOS Expansion is Over—Sorry Buffalo, Alexandria, Baltimore and Boston*, DSLREPORTS.COM (Mar. 23, 2012), <http://www.dslreports.com/shownews/Verizon-Again-Confirms-FiOS-Expansion-is-Over-118949>. Verizon's General Counsel Randal Milch explained to Congress Verizon's reasons for discontinuing the expansion of its FiOS high-speed fiber network, saying “Wall Street punished us for investing in FIOS.” *Id.* For the video coverage of Randal Milch's congressional testimony, see HEARING ON VERIZON/CABLE DEALS: HARMLESS COLLABORATION A THREAT TO COMPETITION AND CONSUMERS? (U.S. SENATE COMM. CHANNEL 2012), <http://www.senate.gov/fplayers/jw57/commMP4Player.cfm?fn=judiciary032112p&st=900> (last visited June 30, 2013).

45. CRAWFORD, *supra* note 2, at 141-55.

46. *Id.* at 16, 22, 61-62, 191-97, 212, 221-22, 245, 256, 260.

47. Furchtgott-Roth, *supra* note 3, at 319.

its rolls.<sup>48</sup> The company now reports “average revenue per account” instead of “per user” because of its introduction of shared use plans, and it’s doing very well with those plans. As a snapshot at the end of the fourth quarter of 2012, Verizon’s retail postpaid ARPA (average revenue per account) grew 6.6% over the fourth quarter for the year before to \$146.80 per month, as customers continued to add multiple devices to their accounts and Verizon continued to charge per-device fees.<sup>49</sup> The company’s total wireless revenues were \$20 billion in the fourth quarter of 2012, which is up 9.5% over the year before.<sup>50</sup>

AT&T, which with Verizon Wireless accounts for about two-thirds of wireless subscribers, is also doing well.<sup>51</sup> That same fourth quarter of 2012 saw AT&T add 780,000 wireless postpaid subscriptions, which was the company’s largest increase in three years.<sup>52</sup> Along with prepaid subscribers, AT&T added 1.1 million new customers and ended up with 107 million Americans on its service.<sup>53</sup> And revenues continue to climb, with AT&T seeing an increase of 5.7% over the same quarter the prior year.<sup>54</sup> The total wireless revenue for the fourth quarter of 2012 was \$17.6 billion.<sup>55</sup>

At the same time, Sprint and T-Mobile both lost subscribers and their quarterly revenues are in the single billion digits.<sup>56</sup> If that is not market power, I am not sure what is.

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48. *Verizon Reports String Revenue and Customer Growth for Verizon Wireless and FiOS Services in 4Q 2012*, VERIZON WIRELESS (Jan. 22, 2013), <http://news.verizonwireless.com/news/2013/01/fourth-quarter-2012-earnings.html> [hereinafter Verizon 4Q 2012 Report]; FRAN SHAMMO, VERIZON, 4TH QUARTER 2012 EARNINGS RESULTS 8 (2013), available at [http://www2.verizon.com/investor/DocServlet?doc=vz\\_4q\\_presentation\\_2012.pdf](http://www2.verizon.com/investor/DocServlet?doc=vz_4q_presentation_2012.pdf). AT&T moved in lockstep to introduce the same kind of plan with success.

49. SHAMMO, *supra* note 48, at 8; Verizon 4Q 2012 Report, *supra* note 48.

50. Verizon 4Q 2012 Report, *supra* note 48.

51. Brian X. Chen, *Strong Quarter for Smartphones Bolsters AT&T*, N.Y. TIMES (Apr. 23, 2013), [http://www.nytimes.com/2013/04/24/technology/att-profit-rises-on-smartphones-and-internet-service.html?\\_r=0](http://www.nytimes.com/2013/04/24/technology/att-profit-rises-on-smartphones-and-internet-service.html?_r=0).

52. *Strong Growth in Wireless and U-verse Drives Revenue and Adjusted Earnings Per Share Growth in AT&T's Fourth-Quarter Results*, AT&T (Jan. 24, 2013), <http://www.att.com/gen/press-room?pid=23672&cdvn=news&newsarticleid=35937>.

53. *Id.*

54. *Id.*

55. *Id.*

56. Sprint experienced a total quarterly loss for the fourth quarter of 2012 of 337,000 subscribers, including 243,000 retail postpaid, versus 1.62 million net adds (including 161,000 retail postpaid) in the fourth quarter of 2011. Press Release, Sprint, Sprint Nextel Reports Fourth Quarter and Full Year 2012 Results 2, 4 (Feb. 7, 2013), available at <http://investors.sprint.com/Cache/1001172361.PDF?Y=&O=PDF&D=&fid=1001172361&T=&iid=4057219>. Fourth quarter net operating revenue for Sprint was \$9 billion. *Id.*

T-Mobile reported net postpaid subscriber losses of 515,000 postpaid customers in the fourth quarter of 2012, which is higher than 492,000 contract customers it lost in the third quarter of 2012 but lower than the 706,000 it lost in the fourth quarter of 2011. Press

#### IV. CABLE'S PROFITS FOR ITS DATA SERVICE

Mr. Furchtgott-Roth does actually miss the boat, not just misconstrue the boat, when he talks about cable's profits from its wired high-speed Internet access product. He includes a footnote about Comcast's *overall* profit, but that is for all of its operations.<sup>57</sup> A 7.5% net income margin is quite healthy. I am not writing about everything the cable industry does. I am writing about Comcast's and Time Warner's data service. That service is "almost comically profitable." Here is the complete quote from Wall Street analyst firm Bernstein Research in 2012, laying out the analysis:

Time Warner Cable discloses the direct operating costs attributable to its broadband service. The numbers suggest that broadband is an almost comically profitable service, with direct gross margins of about 97%. But this is actually not as crazy as it first appears. Unlike video or voice, providers don't have to pay for content or interconnection fees. Running incremental bits over a wire should be almost costless. Most of the expenses are buried in shared network operating cost line items and cannot be broken out.

To assess the [return on investment capital] associated with an incremental broadband subscriber, we need to gauge the incremental [net operating profit less adjusted taxes] margin and incremental invested capital. The incremental margin will not be as high as the direct gross margin referenced above, but will be high nevertheless. It needs to take into account shared operating costs and depreciation on the associated [invested capital]. The incremental [investment capital] associated with a new customer is likely relatively small - a modem, capitalized installation costs, perhaps some increased network investment. Today, Time Warner Cable has about \$500 in [invested capital] per primary service unit (the sum of video, voice, and broadband customers), or about \$900 per customer relationship. Video customers require expensive set-top boxes, but broadband customers don't, so the number

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Release, T-Mobile, T-Mobile USA Reports Fourth Quarter 2012 Financial Results 1 (Feb. 28, 2013), available at [http://www.t-mobile.com/Cms/Files/Published/0000BDF20016F5DD010312E2BDE4AE9B/5657114502E70FF3013D3C9250D9FD76/file/Q4%202012%20Press%20Release\\_Financial%20Results\\_FINAL.pdf](http://www.t-mobile.com/Cms/Files/Published/0000BDF20016F5DD010312E2BDE4AE9B/5657114502E70FF3013D3C9250D9FD76/file/Q4%202012%20Press%20Release_Financial%20Results_FINAL.pdf). The company also had 166,000 net prepaid customer additions in the fourth quarter, lower than the 365,000 from the third quarter and 220,000 from the year-ago period. *Id.* Total customers, then, were down 349,000 during the last quarter of 2012. *Id.* T-Mobile said total revenue for the quarter clocked in at \$4.9 billion, with service revenue making up \$4.1 billion of the total. *Id.* at 4. Both figures were down year-over-year, with total revenue off 5.2%, *id.*, and service revenue down 9.2%, *id.* at 3.

57. Furchtgott-Roth, *supra* note 3, at 320 n.34.

for an incremental broadband customer should be lower than these averages. Assuming a \$43 monthly ARPU, in line with Time Warner Cable's 2011 ARPU, and a 35% tax rate, it's not unreasonable to believe the incremental return on investment capital might be 100% or more. With these sorts of economics, garnering additional broadband subscribers is critical to the [return on invested capital] outlook of the providers.<sup>58</sup>

I cannot be any clearer than that. All the costs are sunk, and it costs almost nothing to send an additional gigabyte of data across these lines.<sup>59</sup> I do not think it would be wise for readers of *Captive Audience* to skip the economics outlined in this book.

## V. INTERNATIONAL COMPARISONS

International comparisons are a customary topic in this area, and I think the U.S. is not in the lead. Mr. Furchtgott-Roth agrees with me that the U.S. is not in the lead, but he may think that we are closer to the leaders than I do. And perhaps he does not mind our country not being in the lead. I do, and I question his reliance on Akamai's studies for several reasons.

First, different last-mile network providers (like Comcast and Time Warner Cable) have different relationships with Akamai; some may permit Akamai to connect its servers very close to users, which will be reflected in higher speeds for requests made to Akamai's servers, and some may keep Akamai's servers at a distance, at the edge of their networks, which will lower speed reports.<sup>60</sup> Akamai's numbers for speeds represent a composite or average of these widely-varying relationships. If just one large last-mile network provider treats Akamai "badly," that will have a major effect on the numbers Akamai reports. This fact makes Akamai's speed numbers

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58. BERNSTEINRESEARCH, U.S. TELECOMMUNICATIONS AND U.S. CABLE & SATELLITE: NATURE VS. NURTURE 43-44 (2012).

59. The ISPs' costs, however, to deliver a marginal gigabyte from one of our regional interchange points over their last mile wired network to the consumer is less than a penny, and falling, so there is no reason that pay-per-gigabyte is economically necessary. Moreover, at \$1 per gigabyte over wired networks, it would be grossly overpriced.

Letter from Netflix to Hon. Fred Upton and Hon. Henry Waxman (Apr. 6, 2011).

60. See OECD, OECD COMMUNICATIONS OUTLOOK 2013, at 109 (2013) [hereinafter OECD COMMUNICATIONS OUTLOOK 2013], available at [http://www.oecd-ilibrary.org/science-and-technology/oecd-communications-outlook-2013\\_comms\\_outlook-2013-en](http://www.oecd-ilibrary.org/science-and-technology/oecd-communications-outlook-2013_comms_outlook-2013-en) ("Akamai is a company offering global content distribution services, which gathers quarterly speed data through its server network located around the world. It does not, therefore, rely on speed tests initiated by consumers, but rather on recording the results of delivering content based on this requests. By way of contrast, M-Lab and Ookla compile results from speed tests conducted by users who actively measure their actual speed to access the Internet.")

unreliable.<sup>61</sup> Second, Akamai is measuring only connections to servers run by Akamai that are focused on delivering high-data, rich multimedia content. People who know their connection will not support a great deal of capacity will not even try to view that material on a slow connection—they will self-constrain—so, naturally, the Akamai numbers will skew high. Finally, the Akamai numbers include 4G/LTE connections that, as discussed above, have pricing/capacity limitations that do not make them representative of or substitutable for the U.S. fixed infrastructure. Because the United States leads the world in mobile 4G/LTE deployment, our relatively faster mobile network will make the U.S. Akamai numbers skew high if we take them as representative of U.S. fixed infrastructure.<sup>62</sup>

Even according to Akamai, we're 9th.<sup>63</sup> Here are some other numbers: Pando Networks, another content delivery network ("CDN"), puts U.S. high-speed Internet access at 26th worldwide, at about a quarter of the speed of world leader South Korea.<sup>64</sup> According to PandoNetworks, Eastern European nations dominate the top of the list (Romania, Bulgaria, and Ukraine), with speeds that are about double or triple those in the U.S.<sup>65</sup>

Ookla, which pulls its figures from Speedtest.net, a popular self-indexing site, and reports them on NetIndex.com, puts the U.S. at 28th, behind the EU average, and well behind the UK, the Nordic countries, most of Eastern Europe, and Japan and South Korea.<sup>66</sup> M-Lab also puts the U.S. somewhere in the middle, slower than Belgium, Denmark, Finland,

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61. See Chris Drake, *Akamai's New "Aura" Range of Products Will Intensify the Fight for Telco CDN Business*, INFORMA TELECOMS & MEDIA (Mar. 6, 2012), <http://blogs.informatandm.com/4295/akamai%E2%80%99s-new-%E2%80%9Caura%E2%80%9D-range-of-products-will-intensify-the-fight-for-telco-cdn-business/>.

Akamai's traditional strategy for partnering with network operators has mainly involved deploying servers in their data centres. By contrast, the provision of managed CDN services requires the deployment of CDN technology deep within an operator's network. Although Akamai has quietly provided managed services to telecoms operators for several years, the number of customers of such services has been small.

*Id.*

62. See *US Remains at Forefront of LTE Service Adoption*, TELEGEOGRAPHY (Mar. 15, 2012), <http://www.telegeography.com/products/commsupdate/articles/2012/03/15/us-remains-at-forefront-of-lte-service-adoption/>.)

63. Iain Thomson, *US Remains Global Sluggard in Broadband Speed Rankings*, REGISTER (July 24, 2013), [http://www.theregister.co.uk/2013/07/24/us\\_still\\_lagging\\_in\\_global\\_broadband\\_connection\\_speed\\_rankings/](http://www.theregister.co.uk/2013/07/24/us_still_lagging_in_global_broadband_connection_speed_rankings/).

64. *Pando Networks Releases Global Internet Speed Study*, PANDO NETWORKS (Sept. 22, 2012), <http://www.pandonetworks.com/company/news/pando-networks-releases-global-internet-speed-study>.

65. *Id.*

66. *Household Download Index*, NETINDEX.COM, <http://www.netindex.com/download/allcountries/> (last visited July 29, 2013).

Germany, Hungary, Japan, Luxembourg, Netherlands, Norway, Sweden, and Switzerland.<sup>67</sup> If we look at just Netflix subscribers, and focus only on streaming video speeds, the U.S. sits just ahead of the U.K. and Ireland, well ahead of Mexico, but behind all of the Nordic countries.<sup>68</sup>

Another way to judge the state of Internet access in America is to look at “offered speeds” or “advertised speeds.” These numbers tell us what ISPs are offering to their customers. Even without focusing on fiber, we are behind many other OECD countries. When it comes to offerings, the average advertised download speed for OECD nations is 44.44 Mbps. The average advertised download speed for the U.S. is 44.69, behind Canada, Denmark, Finland, France, Japan, Korea, Netherlands, Norway, Portugal, Slovenia, Sweden, and the United Kingdom.<sup>69</sup>

Yet another way to look at this issue is to focus on the speeds of actual subscriptions. These numbers tell us what people are actually paying for. When it comes to actual subscriptions, we are behind. We're behind for speeds 10 Mbps and higher. In the EU, 59% of all fixed connections now provide speeds of 10 Mbps and above.<sup>70</sup> In Bulgaria and France, already roughly 90% of lines are at least 10 Mbps.<sup>71</sup> In the U.S., that number is only 48.3% as of 2012.<sup>72</sup>

We're behind for speeds 25 Mbps and higher. At least 14.8% of European fixed connections provide speeds of at least 30 Mbps (up from 9% a year ago), mainly thanks to the expansion of cable DOCSIS 3.0 lines. The FCC sets a benchmark at 25 Mbps, and tells us that only 9–14% of fixed connections met it as of June 2012.<sup>73</sup> This is an interesting fact: DOCSIS 3.0 and fiber lines are certainly capable of providing 25 Mbps speeds, but the companies that operate these networks generally choose not to implement this capability. Only 14.2% of cable connections and 21% of fiber connections reach the FCC's 25 Mbps benchmark.<sup>74</sup>

For the foregoing reasons, I prefer OECD numbers for both speed and price.<sup>75</sup> Those numbers show that we are falling far behind. Value matters. People in places like Seoul, Paris, and Amsterdam may not be using the full capacities of their connections, but the fact is they pay only \$35–\$45 for speeds that are much faster than those for which we pay \$100-

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67. See OECD COMMUNICATIONS OUTLOOK 2013, *supra* note 60, at 110 fig. 4.15.

68. *The ISP Speed Index*, NETFLIX, <http://ispspeedindex.netflix.com/> (last visited July 31, 2013) (data for June 2013). Netflix reports on only these countries.

69. See OECD COMMUNICATIONS OUTLOOK 2013, *supra* note 60, at 106 fig. 4.11.

70. EUROPEAN COMM'N, COMM'N STAFF WORKING DOCUMENT: DIGITAL AGENDA SCOREBOARD 2013, SWD(2013)217 final, at 11 (June 12, 2013) <https://ec.europa.eu/digital-agenda/sites/digital-agenda/files/DAE%20SCOREBOARD%202013%20-%20SWD%202013%20217%20FINAL.pdf>.

71. *Id.* at 54.

72. See *Internet Access Services Status*, *supra* note 8, at 30 tbl. 10.

73. *Id.*

74. *Id.*

75. See generally *OECD Broadband Portal*, OECD, <http://www.oecd.org/sti/broadband/oecdbroadbandportal.htm> (last updated July 18, 2013).

\$150 per month.<sup>76</sup> The percentage of fiber connections in many countries is much higher than it is in the U.S.<sup>77</sup> And Sept. 2012 data from the OECD shows that people in the U.S. pay at least \$0.53 per Mbps, where people in Japan, the Netherlands, and Sweden can pay as little as \$0.04, \$0.08, or \$0.11 respectively.<sup>78</sup>

Although comparing the prices of Internet access subscriptions across nations is a difficult endeavor due to the diversity of offerings in terms of speeds, datacaps, and bundled services, the OECD has developed a methodology for comparison that involves classifying ISP offers into ten “baskets” and then comparing the lowest available prices available for an offer in that basket in each nation. For the slowest two baskets, the United States ranks 20th and 18th out of 34 OECD nations in terms of affordability. For the remaining eight baskets, the United States ranks from 26th to 31st out of 34 nations.<sup>79</sup> We pay a lot for our fixed line internet connection subscriptions.

If we had a stagnant market in the U.S. we would be seeing high margins for leading companies that are not losing market share to competitors—and we are. We would be seeing that we are paying more for the same product than people in other countries are—and we are seeing that. This issue is not just about speed. It is also about cost and value, and we ignore what Americans pay for those services at our peril.

## VI. CONCLUSION – THE ROLE OF GOVERNMENT

Mr. Furchtgott-Roth and I have much on which to agree. We agree that the lack of competition in the communications industry—and the lack of universal, reasonably-priced, world-class access for all Americans—may not be one of the federal government’s primary concerns. He is right: The FCC has been something of a backwater for decades. We also agree that, right now in this area, company influence may matter more than the public interest.

Mr. Furchtgott-Roth and I even agree that Comcast may not be all-important. Perhaps I should have spent more pages on Time Warner Cable, which charges even more and delivers even less than Comcast. He questions why I do not write about Facebook, but I am focused on pipes and wires and dirt, not applications. Comcast and Time Warner Cable dominate the wired high-speed Internet access capacity we will need in the

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76. See HIBAH HUSSAIN ET AL., NEW AM. FOUND., THE COST OF CONNECTIVITY 4 (2012), available at [http://newamerica.net/sites/newamerica.net/files/policydocs/The\\_Cost\\_of\\_Connectivity.pdf](http://newamerica.net/sites/newamerica.net/files/policydocs/The_Cost_of_Connectivity.pdf).

77. OECD Broadband Portal, *supra* note 75, at spreadsheet 11 (Percentage of Fibre Connections in Total Broadband (Dec. 2012)).

78. See OECD COMMUNICATIONS OUTLOOK 2013, *supra* note 60, at 218 fig. 7.17.

79. See OECD COMMUNICATIONS OUTLOOK 2013, *supra* note 60, at 212-16 figs. 7.6-7.15.



future, and the dominant wireless companies AT&T and Verizon Wireless are a duopoly with a fringe (Sprint and T-Mobile) in their mobile corner. Google, Facebook, and the other giant ecosystem players are powerful enough to make their own deals with these providers, but new upstarts and consumers are being squeezed.

I agree with Mr. Furchtgott-Roth that the federal government, as it stands today, may lack the ability to own and operate a federal telecommunications network—I have never argued for that. It is likely true that the government that has allowed the current communications crisis to arise will not be very effective at building a network that would solve it. We agree that the cult of personality is a problem; we both want an FCC that is not captured.

But here is the point on which I want to conclude my response to his review. Where we disagree is whether or not we can or should enable all levels of government—local, state, federal—to work together to remedy the problems *Captive Audience* identifies.

My view is that we need to ensure that all Americans have access to affordable, high-speed connectivity. Let's set a goal of 100 Mbps symmetrical, reasonably priced fiber to the home access, and then figure out how to get there. This will require an intentional, long-term, and clear communications policy. We have not had that for a while in America. No one denies that we have moved from a voice monopoly with cross-subsidies to a deregulated market, and that this is having dramatic impacts on the universal service to which Americans are entitled. No one denies that consolidation has proceeded at an epic pace in both the wireline and wireless marketplaces. It cannot be that we simply ignore the effects of these shifts on Americans.

Mr. Furchtgott-Roth seems inclined to deny both this history and the possibility that such a constructive government role is even possible. Instead, he insists, without much evidence, that only a free market can remedy the situation.

In contrast, I look to the early history of electrification as a model. This was a time when the federal government, led by a strong and motivated president, created a public standard for electrification and ensured that it happened. The result was universal electrification and the massive economic benefits it enabled, not just for affluent city-dwellers, but for all Americans.

We have to make it easier for many varieties of competitors to build wholesale fiber networks in America that are subject to clear, express public obligations. We need to have an intentional debate about all of the elements of those obligations, including unbundling, price regulation, and interconnection. We need to make many adjustments in policy as well as ensure that there is capital that can be loaned out to support the construction of these high fixed-cost networks. Where competition is possible, in dense areas, we must mandate it. Where competition is

impossible, we must ensure that Americans get reasonably priced service. We can do all of this, and we must.

And I would be happy to have a drink with Harold Furchtgott-Roth at any time to discuss the details.