

Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554

In the Matter of	)	
	)	
TCR Sports Broadcasting Holding, L.L.P.,	)	MB Docket No. 08-214
	)	
Complainant,	)	
	)	File No. CSR-8001-P
v.	)	
	)	
Comcast Corporation,	)	
	)	Expert Report of Hal J. Singer, Ph.D.
Defendant.	)	
_____	)	

TABLE OF CONTENTS

	Page
Introduction.....	1
Qualifications.....	4
I. The Economic Theory of Exclusionary Conduct.....	7
A. Theory 1: Preventing Rivals from Achieving Economies of Scale .....	8
B. Theory 2: Foreclosing Rivals from the Most Efficient Distribution Channel .....	10
II. The Anticompetitive Nature of Comcast’s Conduct.....	10
A. Discrimination Based on Affiliation.....	12
B. Economies of Scale and “The Exclusive Dealing Case that You Ought to Worry About” .....	14
C. Raising Rivals’ Costs by Denying RSNs Access to the Most Efficient Distribution Network .....	16
III. Harm to MASN and Rival MVPDs Will Redound to Viewers and Advertisers .....	18
A. Harm to Viewers of Sports Programming .....	18
B. Harm to Advertisers.....	20
IV. Market Comparables Provide the Best Evidence of MASN’s Fair-Market Value.....	22
V. MASN’s Proposed Carriage Terms Compare Favorably to the Terms on Which Comcast Purchases Regional Sports Programming in the Contested Areas and Throughout Comcast’s Nation-Wide Footprint.....	24
VI. Regression Analysis Further Demonstrates that MASN’s Proposed Carriage Terms Compare Favorably to the Terms on Which Comcast Purchases Regional Sports Programming.....	29
A. The Estimation Methodology .....	30
1. The Model of Subscriber Fees and Market Characteristics .....	30
2. The Empirical Specification .....	31
B. The Estimation Results .....	33

1.	Data Summary .....	33
2.	Regression Results .....	36
3.	Predicting the Market-Based Subscriber Fee for MASN in the Disputed Areas .....	38
	Conclusion .....	39
	Appendix 1: Curriculum Vitae	
	Appendix 2: Materials Relied Upon	
	Appendix 3: Alternative Regression Results	

## INTRODUCTION

1. Counsel for TCR Sports Broadcasting Holding, L.L.P. (“TCR”), d/b/a Mid-Atlantic Sports Network, Inc. (“MASN”) has asked me to analyze from an economic perspective whether Comcast’s refusal to carry MASN on Comcast’s cable systems in the Harrisburg-Lancaster-Lebanon (“Harrisburg”) Designated Market Area (“DMA”) in Pennsylvania, the Roanoke-Lynchburg DMA in Virginia, and the Tri-Cities DMA in Virginia (collectively, the “contested areas”) is detrimental to consumer welfare and thus anticompetitive. I have also been asked to estimate the fair-market value of carrying MASN in the contested areas.

2. From an economic standpoint, Comcast’s foreclosure of MASN creates the potential for anticompetitive harm in both the upstream programming and downstream distribution markets. By leveraging its (downstream) market power over the distribution of cable programming into the (upstream) regional sports programming market, Comcast could raise prices to consumers of regional sports programming. Moreover, to the extent that discrimination against an unaffiliated regional sports network (“RSN”) allows Comcast to secure the exclusive rights to valuable sports programming, Comcast can then impair the efficiency of rival multi-channel video programming distributors (“MVPDs”) by denying downstream rivals access to that critical input.

3. My report is organized as follows. In Part I, I briefly review the economic theories of exclusionary conduct to lay out the conditions under which such conduct generates anticompetitive effects.<sup>1</sup> Under the first theory, a vertically integrated cable operator can impair

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1. Einer Elhauge, *Defining Better Monopolization Standards*, 56 STANFORD LAW REVIEW 253 (2003); Thomas G. Krattenmaker & Stephen C. Salop, *Anticompetitive Exclusion: Raising Rivals’ Costs to Achieve Power Over Price*, 96 THE YALE LAW JOURNAL 234-45 (1986); Michael Whinston, *Tying, Foreclosure and Exclusion*, 80 AMERICAN ECONOMIC REVIEW 837-60 (1990);

an unaffiliated network's ability to compete for content, viewers, and advertising by denying it the requisite share necessary to exploit economies of scale, thereby raising the network's average total costs. Under the second theory, a vertically integrated cable operator can impair an unaffiliated network's ability to compete for content, viewers, and advertising by denying it access to the most efficient distribution channel for cable programming, thereby raising the network's selling and distribution costs.

4. The next question is whether Comcast's exclusionary conduct is anticompetitive based on the economic criteria cited above. In Part II, I demonstrate that the conditions that lead to anticompetitive effects under both models of vertical foreclosure are satisfied here. This implies that Comcast's exclusion of MASN from the contested areas generates anticompetitive effects. This conclusion is supported by a well-developed body of Commission decisions<sup>2</sup> and academic research<sup>3</sup> establishing that foreclosure of rival sports programmers by vertically integrated cable operators is likely to result in anticompetitive harm to consumers.

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Dennis W. Carlton, Patrick Greenlee & Michael Waldman, *Assessing the Anticompetitive Effects of Multiproduct Pricing*, Working Paper, Mar. 31, 2008, at 1-29.

2. Order on Review, TCR Sports Broadcasting Holding, L.L.P, d/b/a Mid-Atlantic Sports Network v. Time Warner Cable Inc., Case No. 71-472-E-00697-07, Oct. 30, 2008, ¶ 24 (“*Order on Review*”); Eighth Annual Report, *Annual Assessment of the Status of Competition in Markets for the Delivery of Video Programming*, 17 FCC Rcd 1,244, ¶ 14 (2002); Memorandum Opinion and Order, *Applications for Consent to the Assignment and/or Transfer of Control Licenses*, 21 FCC Rcd 8,203, ¶¶ 114, 116, 189 (2006) (“*Adelphia Order*”); Memorandum Opinion and Hearing Designation Order, File Nos. CSR-7876-P, CSR-8001-P, ¶ 119, Oct. 10, 2008 (“*Designation Order*”).

3. Dong Chen & David Waterman, *Vertical Foreclosure in the U.S. Cable Television Market: An Empirical Study of Program Network Carriage and Positioning*, Oct. 2005, at 6-7; Hal J. Singer & J. Gregory Sidak, *Vertical Foreclosure in Video Programming Markets: Implications for Cable Operators*, 6 REV. NETWORK ECON. 348-34949. (2007); General Accounting Office, *The Effect of Competition from Satellite Providers on Cable Rates*, Oct. 2003, at 11; Austin Goolsbee & Amil Petrin, *The Consumer Gains from Direct Broadcast Satellites and Competition with Cable TV*, 72 ECONOMETRICA 351 (2004); Kiran Duwadi & Andrew Wise, *Competition between Cable Television and Direct Broadcast Satellite—The*

5. Having concluded that Comcast's conduct is anticompetitive, I proceed in Part III of my report to analyze the specific ways in which Comcast's foreclosure of MASN in the contested areas has generated anticompetitive effects. There are two classes of consumers who are harmed by Comcast's exclusionary conduct: viewers and advertisers. I explain that Comcast's refusal to carry MASN in the contested areas imposes higher costs on subscribers, including but not limited to former Comcast subscribers who choose to follow MASN on a rival MVPD. With respect to advertisers, I explain how Comcast's conduct has depressed advertisers' demand for commercials on MASN, thereby undermining price competition between MASN and Comcast's affiliated RSNs for advertisers. I also describe two specific cases, one involving **[Begin Highly Confidential]** **[End Highly Confidential]** and the other involving **[Begin Highly Confidential]** **[End Highly Confidential]**, in which Comcast's exclusion of MASN resulted in harm to advertisers.

6. In Part IV, I analyze the fair-market value of carrying MASN in the contested areas based on the objective price MASN programming yields in the marketplace. This exercise is particularly straightforward because all MVPDs that carry MASN in the contested areas have demonstrated their willingness to pay the same rate based on MASN's rate card. For example, in the Harrisburg DMA in 2008, Dish Network, DIRECTV, Kuhn, Armstrong, and Verizon paid MASN **[Begin Highly Confidential]** **[End Highly Confidential]** per subscriber per month. It follows that **[Begin Highly Confidential]** **[End Highly Confidential]** is the objective price that MASN programming yields in the marketplace. Given this simple fact pattern, I conclude that the fair-market value that Comcast should be compelled to pay MASN is the rate

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*Importance of Switching Costs and Regional Sports Networks*, 4 J. COMP. LAW & ECON. 679-705 (2005); FCC, *Report on Cable Industry Prices* (rel. Dec. 27, 2006).

that these MVPDs are contractually bound to pay MASN in the contested areas for the duration of the Comcast-MASN contract (through 2016). My estimate of fair-market value is corroborated by two independent empirical analyses, as set forth in Parts V and VI.

#### QUALIFICATIONS

7. My name is Hal J. Singer. I am President and Managing Partner of Empiris, LLC. My areas of economic expertise are antitrust, industrial organization, and regulation. I have applied my expertise to several regulated industries, including telecommunications, video programming, insurance, and health care.

8. I earned M.A. and Ph.D. degrees in economics from the Johns Hopkins University and a B.S. *magna cum laude* in economics from Tulane University.

9. I have published a book chapter in *Access Pricing: Theory, Practice and Empirical Evidence* (Justus Haucap and Ralf Dewenter eds., Elsevier Press 2005) and in *Handbook of Research in Trans-Atlantic Antitrust* (Philip Marsden, ed., Edward Elgar Publishing 2006). I am also the co-author of the book *Broadband in Europe: How Brussels Can Wire the Information Society* (Kluwer/Springer Press 2005).

10. I have published scholarly articles in many economics and legal journals, including *American Economic Review Papers and Proceedings*, *Berkeley Technology Law Review*, *Canadian Journal of Law and Technology*, *Federal Communications Law Journal*, *Harvard Journal of Law and Technology*, *Hastings Law Journal*, *Journal of Business and Finance*, *Journal of Competition Law and Economics*, *Journal of Financial Transformation*, *Journal of Industrial Economics*, *Journal of Insurance Regulation*, *Journal of Network Industries*, *Journal of Regulatory Economics*, *Journal of Telecommunications and High Tech*

*Law, Review of Network Economics, Telecommunications Policy Journal, Topics in Economics Analysis and Policy, and Yale Journal on Regulation.*

11. Two of my articles are of particular relevance to this proceeding: “The Competitive Effects of a Cable Television Operator’s Refusal to Carry DSL Advertising,” *Journal of Competition Law and Economics* (Vol. 2, No. 2, pp. 301-31, 2006); and “Vertical Foreclosure in Video Programming Markets: Implications for Cable Operators,” *Review of Network Economics* (Vol. 6, 2007).

12. In regulatory proceedings, I have presented economic testimony in several forums, including the U.S. Federal Communications Commission (“FCC”), the U.S. Federal Trade Commission, the Antitrust Division of the U.S. Department of Justice, the U.S. National Highway Traffic and Safety Administration, the House of Commons of Canada, the Canadian Radio-television and Telecommunications Commission, and the U.S. Congressional Budget Office. My written testimony on the effect of telecom entry on cable television prices was cited extensively by the Department of Justice in a November 2008 report entitled *Voice, Video and Broadband: The Changing Competitive Landscape and Its Impact on Consumers*.<sup>4</sup>

13. I have served as an economic expert for the NFL Network and for MASN, which owns the television rights to live baseball games for the Baltimore Orioles and the Washington Nationals, in several carriage disputes. On June 2, 2008, the arbitrator in *MASN v. Time Warner*, Judge Daniel H. Margolis, ruled that Time Warner “did discriminate against MASN based on

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4. Department of Justice, *Voice, Video and Broadband: The Changing Competitive Landscape and Its Impact on Consumers*, Nov. 17, 2008, *available at* [http://www.usdoj.gov/atr/public/press\\_releases/2008/239479.htm](http://www.usdoj.gov/atr/public/press_releases/2008/239479.htm).

affiliation in not negotiating for carriage of MASN on an analog tier.”<sup>5</sup> In his decision, Judge Margolis cited my analysis on behalf of MASN on several occasions<sup>6</sup> in support of his decision that MASN’s offer price “accurately reflects the fair market value of the rights to carry MASN in its North Carolina television territory.”<sup>7</sup> In its October 30, 2008 *Order on Review* rejecting Time Warner’s appeal of the arbitrator’s decision, the Media Bureau cited my oral testimony during Phase II in support of the proposition that “the carriage decisions of four of the largest MVPDs operating in North Carolina—that serve the overwhelming majority of non-TWC subscribers to paid television service in North Carolina—are an appropriate reference point for assessing fair market value.”<sup>8</sup>

14. In addition to these carriage disputes, I have served as a testifying expert in several litigation matters. My experience as a testifying expert in litigation is summarized in my Curriculum Vitae, which is attached to this report. In addition to litigation, I have written expert testimony in regulatory proceedings and commissioned white papers for several firms and trade associations, including 1-800 CONTACTS, Advanced Medical Device Manufacturers Association (“AdvaMed”), Allegheny Communications, AT&T, Bell Canada, BellSouth, Broadband Roundtable, Cellular Telephone Industry Association (“CTIA”), Coventry First, General Motors, Harvest Partners, Fiber to the Home Council, Internet Innovation Alliance, Medical Device Manufacturers Association, National Association of Broadcasters, Qwest, SBC, TELUS, Verizon, and Walt Disney.

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5. *TCR Sports Broadcasting Holding, L.L.P., d/b/a Mid-Atlantic Sports Network v. Time Warner Cable Inc.*, Case No. 71-472-E-00697-07, June 2, 2008, at 22.

6. *Id.* at 19, 19 n.13, and 21.

7. *Id.* at 22.

8. *Order on Review* ¶ 47, n.186.

15. Before joining Empiris, I was president of Criterion Economics, an economic consulting firm based in Washington D.C. Prior to that, I worked as a senior economist at LECG, an economic consulting firm based in Emeryville, California. In addition, I have worked as an economist for the Securities and Exchange Commission and the Army Corps of Engineers, and I have taught microeconomics and international trade at the undergraduate level.

16. I file this report in my individual capacity. I have no financial stake in the outcome of this case.

#### **I. THE ECONOMIC THEORY OF EXCLUSIONARY CONDUCT**

17. A vertically integrated cable operator that excludes a rival supplier of sports programming acts anticompetitively to the extent that such activity leads to a reduction in consumer welfare. Because advertisers and viewers demand the service provided by RSNs, these two groups constitute the consumers potentially affected by Comcast's exclusionary conduct. As discussed above, economic theory indicates two ways by which exclusionary conduct can decrease consumer welfare. Under the first theory, exclusionary conduct can impose barriers to entry and expansion that make rivals smaller, causing them to be less efficient when markets exhibit economies of scale, scope, research, or when markets display network effects.<sup>9</sup> Under the second theory, exclusionary conduct may deprive rival programmers of the most efficient means of obtaining subscribers and advertisers. This second theory generates consumer harm even if

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9. Elhauge, *supra* at 253; Department of Justice, Competition and Monopoly: Single Firm Conduct Under Section 2 of the Sherman Act, June 2008, at 137 (“DOJ Section 2 Report”); Dennis Carlton, *A General Analysis of Exclusionary Conduct and Refusal to Deal-Why Aspen and Kodak Are Misguided*, 68 ANTITRUST LAW JOURNAL 659 (2001).

rivals are not deprived of economies of scale.<sup>10</sup> Both outcomes have the effect of raising a rival's costs and neither theory requires rival firms to exit the market.

**A. Theory 1: Preventing Rivals from Achieving Economies of Scale**

18. Economies of scale exist when the average cost of producing a good or service (in this case, sports programming) decreases with each additional unit of output. Economies of scale are a particular characteristic of markets—such as the market for the production of sports programming—where firms make large initial outlays of capital upon entering the market. The most significant outlay for an entrant in the RSN market is for programming rights of college or professional sports franchises. Having incurred the fixed costs associated with acquiring sports programming, each additional unit of output—in this case, each subscriber acquired—decreases the firm's average total costs as the upfront cost is spread over a greater output base. This allocation of fixed cost across a wider output base has nothing to do with the incremental or marginal cost of covering each additional subscriber. It is instead a measure of the cost to the firm of recouping its fixed costs. Preventing a rival from recovering its fixed costs in the long run will induce exit or “complete foreclosure.” But even when a rival can recover its fixed costs in the long run, preventing a rival from enjoying untapped scale economies can lead to higher prices. Free from any constraint on output, a firm will maximize profits by choosing a quantity at which marginal revenue equals marginal cost; when marginal costs are trivial, as is the case in most network industries, this condition implies that the firm increases output until marginal revenue is zero. Stated differently, the firm increases output by lowering price until the absolute value of the elasticity of demand is equal to or just greater than one. But if a firm in a network

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10. Krattenmaker & Salop, *supra* at 234-45. For a synthesis of the theories of discriminatory refusals to deal, see EINER ELHAUGE & DAMIEN GERADIN, *GLOBAL ANTITRUST LAW AND ECONOMICS* 498 (Foundation Press, 2007).

industry is constrained to produce at a level that is higher on its demand curve—that is, more elastic than the optimal price, the next-best solution is to produce at the constrained output level. Because the demand for the firm’s product is assumed to be downward-sloping (that is, the firm is assumed to have some degree of market power), a lower output level implies a higher price. Thus, when a firm would otherwise be in a position to exploit economies of scale further, “partial foreclosure” causes it to price along a more elastic portion of the demand curve, where a price decrease and the associated increase in output would increase the firm’s revenues and profits.

19. Applied here, Comcast’s foreclosure of MASN in the contested areas reduces the number of subscribers who receive MASN and thereby compels MASN to charge a higher per-subscriber price than the unconstrained profit-maximizing price. MASN experiences economies of scale over the portion of its average cost curve where it is decreasing. By construction, throughout this portion of the average cost curve, MASN’s marginal cost is less than its average cost and less than its marginal revenue. Because MASN is prohibited from pricing at a point where marginal revenue equals marginal cost, the next-best solution for MASN is to produce as much as possible subject to the constraint imposed by Comcast. As indicated by its desire to serve the contested areas, MASN would prefer to increase output, but is constrained from doing so by Comcast’s exclusion. Stated differently, it is reasonable to infer that, as a result of Comcast’s conduct, MASN is being forced to produce higher on its demand curve than is optimal. In summary, by reducing the output over which the upstream rival can spread its fixed costs, a vertically integrated cable operator such as Comcast can force its upstream rival to raise its price.

**B. Theory 2: Foreclosing Rivals from the Most Efficient Distribution Channel**

20. Anticompetitive exclusion under the second theory induces harm by depriving a vertically integrated cable operator's programming rivals of the most efficient means of selling advertising and programming. As a result, rivals are forced to use less efficient distribution platforms, including smaller MVPDs or, in other cases, less-penetrated tiers of the incumbent cable operator's system. This can deprive rivals of market share, as described above, but also raises rivals' costs at all levels of output. For example, rivals might incur incremental selling expenses in the form of larger advertising campaigns aimed at inducing subscribers to switch MVPDs in areas where the vertically integrated cable operator has foreclosed carriage. Even rivals that achieve the market share needed for economies of scale are still rendered less effective competitors, because at every level of output, their incremental or marginal costs are raised.

**II. THE ANTICOMPETITIVE NATURE OF COMCAST'S CONDUCT**

21. As both Congress and the FCC have acknowledged, cable operators like Comcast have significant market power in the downstream distribution market and these operators have both the incentive and ability to use vertical foreclosure strategies to preserve their power in the downstream distribution market and to extend their power into upstream programming markets. The Cable Act of 1992 explicitly recognized that, due to the lack of competition in the downstream distribution market, cable systems possessed "undue market power."<sup>11</sup> More than a decade after the passage of the Act, cable operators on average still control approximately 70

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11. Cable Television Consumer Protection and Competition Act of 1992, Public Law 102-385, Oct. 5, 1992, 106 Stat. 1460.

percent of MVPD households;<sup>12</sup> in some markets such as the Philadelphia DMA, cable operators (largely Comcast) control over 80 percent of MVPD households.<sup>13</sup> The 1992 Act was a response to the economic reality uncovered by economists in the late 1980s<sup>14</sup> that firms with significant market power could use vertical foreclosure strategies to leverage their monopoly power into adjoining, more competitive markets to the detriment of consumers. To discourage dominant MVPDs from using their downstream monopoly power to harm consumers in these ways, the FCC promulgated rules that prohibit discrimination “in the selection, terms, or conditions for carriage” and created a complaint process.<sup>15</sup>

22. The Commission has explicitly recognized that any carriage decision based solely on affiliation is likely to be anticompetitive, especially when it involves a vertically integrated cable operator like Comcast excluding an unaffiliated RSN like MASN. When approving the acquisition of Adelphia by Comcast and Time Warner in 2006, the Commission confirmed that dominant MVPDs still had the ability to jeopardize competition in upstream programming markets, especially with regard to the foreclosure of unaffiliated RSNs. In particular, the Commission found that the (shared) acquisition of Adelphia would increase Comcast’s incentive and ability to discriminate against unaffiliated RSNs.<sup>16</sup> The Commission singled out RSNs

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12. Thirteenth Annual Report, *Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming*, rel. Jan. 16, 2009, Appendix B, Table B-1 (showing cable operators with 68 percent of MVPD subscribers as of June 2006).

13. Television Bureau of Advertising, DMA Household Universe Estimates, Cable and/or ADS (Alternate Delivery Systems), July 2008 (compiled from Nielsen Media Research data), available at [http://www.tvb.org/nav/build\\_frameset.aspx](http://www.tvb.org/nav/build_frameset.aspx). The share of MVPD households controlled by cable operators in the Harrisburg and Tri-Cities DMAs are reasonably close to the national average of 70 percent. *Id.*

14. Krattenmaker & Salop, *supra* at 234-38; Whinston, *supra* at 837-60.

15. 47 C.F.R. § 76.1301(c).

16. *Adelphia Order* ¶¶ 114, 116, 189.

specifically because “the programming provided by RSNs is unique” and “is particularly desirable and cannot be replicated.”<sup>17</sup>

**A. Discrimination Based on Affiliation**

23. The Commission has stated that the central economic criterion for identifying when foreclosure of an RSN is anticompetitive is whether the exclusion is predicated on the RSN’s affiliation.<sup>18</sup> It is clear from the evidence brought to light in this and other similar proceedings that Comcast’s exclusion of MASN is based on MASN’s rivalry with Comcast’s family of affiliated RSNs, Comcast SportsNet.

24. The demand for MASN’s programming in the contested areas provides direct evidence that Comcast’s exclusion is based on MASN’s rivalry with Comcast SportsNet. Indeed, nearly every other MVPD in the contested areas, including Comcast’s in-region competitors DIRECTV and Dish Network, *voluntarily choose to carry MASN on their most-penetrated tiers at the same rates offered to Comcast.*<sup>19</sup> In particular, DIRECTV, Dish Network, Kuhn, Verizon and Armstrong carry MASN in Harrisburg; DIRECTV and Dish Network carry MASN in the Tri-Cities DMA; and DIRECTV, Dish Network, Cox, and NTELOS carry MASN in the Roanoke-Lynchburg DMA. The fact that so many of Comcast’s rivals carry MASN in the contested areas implies that Comcast’s exclusion of MASN is contaminated by Comcast’s ownership of a rival RSN (SportsNet).

25. In addition, MASN provides programming that caters specifically to the local preferences of viewers in the contested areas. For instance, MASN broadcasts the games of the

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17. *Id.* ¶ 189.

18. *See Order on Review* ¶ 24 (“In such cases, the MVPD is not precluded from treating unaffiliated programmers disparately from affiliates, so long as it can demonstrate that such treatment did not result from the programmer’s status as an unaffiliated entity.”).

19. *Designation Order* ¶ 116.

Harrisburg Senators, the AA affiliate of the Washington Nationals, in the Harrisburg DMA.<sup>20</sup> MASN also broadcasts many college sports games, including those of the Virginia Military Institute, Radford University, and Liberty University, all of which are located in the Roanoke-Lynchburg DMA.<sup>21</sup> This should increase demand for MASN's programming in the Roanoke-Lynchburg market and gives further reason to believe that Comcast has refused to carry MASN for reasons related to its ownership of a rival RSN.

26. The conclusion that Comcast's favoritism toward Comcast SportsNet Philadelphia, L.P. ("CSN-Philly") in the Harrisburg DMA is predicated on affiliation is further bolstered by the fact that CSN-Philly and MASN both feature Major League Baseball as their core programming. Moreover, because Comcast's affiliated sports networks operating in the contested areas also show professional basketball games (Washington Wizards, Philadelphia 76ers), the discrimination here is perfectly analogous—affiliated professional basketball versus unaffiliated professional baseball—to the discrimination addressed in the recent decision by the Media Bureau in MASN's recent dispute with Time Warner in North Carolina. There, the Media Bureau found that Time Warner's favoritism toward an affiliated network, News 14 (showing Charlotte Bobcats basketball games in North Carolina), and its refusal to carry MASN at all in North Carolina, constituted illegal discrimination on the basis of affiliation.<sup>22</sup> Specifically, MASN contended that "because TWC carried its affiliated RSN, News 14, on an analog tier in North Carolina, TWC's refusal to afford MASN similar treatment constitutes unlawful discrimination."<sup>23</sup> The Media Bureau agreed, explaining that TWC's delivery of Bobcats games

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20. Carriage Agreement Complaint, July 1, 2008, ¶ 14.

21. Declaration of James Cuddihy, June 24, 2008, ¶ 13.

22. *Order on Review* ¶ 29.

23. *Id.* ¶ 15.

on its own RSN to all of its subscribers in North Carolina's three largest markets, and its simultaneous refusal to carry MASN on any of its North Carolina cable systems, constituted illegal discrimination on the basis of affiliation.<sup>24</sup> It is worth noting that even if rival RSNs show different programming today, they are potential competitors for the same programming in the future. For example, when the television rights to the games of the Washington Wizards comes up, MASN will likely bid for it.

**B. Economies of Scale and “The Exclusive Dealing Case that You Ought to Worry About”**

27. The exclusion at issue in this matter is particularly worrisome because of the dramatic economies of scale inherent to the market for RSN programming. It is well-established that the exclusion of rivals is especially pernicious when an industry is characterized by economies of scale. In its recent release on anticompetitive single-firm conduct, the Department of Justice summarized the consensus view on the subject: “As one panelist put it, ‘The exclusive dealing case that you ought to worry about’ is where exclusivity deprives rivals of the ability to obtain economies of scale.”<sup>25</sup>

28. Economists have likewise recognized that most forms of video programming are subject to “extreme” economies of scale.<sup>26</sup> The economic logic was summarized nicely by Chen and Waterman in a recent article on the economics of media programming:

A large portion of the total cost of producing and distributing cable networks consists of the initial product cost, or the ‘first-copy’ cost. In comparison, the cost of distributing this video programming via satellite is negligible. Therefore, the size of the national audience that a certain video program is able to reach (and

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24. *Id.* ¶ 29.

25. *DOJ Section 2 Report* at 137.

26. See David Waterman, *The Economics of Media Programming*, in HANDBOOK OF MEDIA MANAGEMENT & ECONOMICS (2006).

thus can collect revenue from) is crucial to determining its average cost per subscriber.<sup>27</sup>

Because RSNs operate within a fixed geographic territory, it is particularly important that they achieve a high rate of market penetration. The Commission concurred in its recent *Order on Review*: “Because RSNs, unlike national networks, are regional in nature, they require access to the maximum number of subscribers within their footprints, including the RSN’s extended inner markets, in order to compete effectively.”<sup>28</sup> In other words, it is essential that RSNs have the opportunity to reach as many subscribers as possible so that they can benefit from the substantial scale economies inherent to the production of sports programming.

29. Because Comcast’s discriminatory conduct has eliminated MASN’s ability to reach approximately **[Begin Highly Confidential]** **[End Highly Confidential]** percent<sup>29</sup> of Comcast’s subscribers within MASN’s service territory, there is no question that MASN has been forced to operate with higher average costs. Indeed, it is clear from the discussion above that any conduct that prevents MASN from achieving the maximum penetration within its territory effectively raises its average total costs. Saddled with higher average total costs, MASN cannot compete for localized content, advertisers, and viewers as effectively as it could in a world in which MASN reached 100 percent of Comcast’s subscribers within MASN’s territory.

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27. See Dong Chen & David Waterman, Vertical Foreclosure in the U.S. Cable Television Market: An Empirical Study of Program Network Carriage and Positioning, Oct. 2005, at 6-7.

28. See *Order on Review* ¶ 31.

29. Comcast has approximately **[Begin Highly Confidential]** **[End Highly Confidential]** million households within MASN’s territory. As a result of Comcast’s refusal to carry MASN in the two DMAs, MASN reaches only **[Begin Highly Confidential]** **[End Highly Confidential]** million Comcast households in MASN’s territory.

**C. Raising Rivals' Costs by Denying RSNs Access to the Most Efficient Distribution Network**

30. Antitrust economics has shown that dominant firms can use various strategies that raise rivals' incremental costs to extend their monopoly power.<sup>30</sup> For instance, by foreclosing rivals from the most efficient distribution network for delivery of the relevant product, a monopolist can force rivals to incur higher costs at all levels of output. As a result of these higher marginal costs, rivals are forced to raise prices, allowing the monopolist to raise its prices as well and garner supra-competitive profits.

31. Comcast's refusal to carry MASN in the contested areas increases MASN's marginal cost of operation in two ways. *First*, because MASN cannot access Comcast's large, installed base of customers via Comcast's cable system, MASN's only competitive recourse is to induce subscribers to switch to a different MVPD. Accordingly, MASN would have to increase its promotional expenses to encourage switching, which would raise its incremental costs.

32. *Second*, in a two-sided market such as television programming, where programming networks rely on revenues from both advertisers and viewers, conduct that reduces revenue from one side of the market (advertisers) effectively increases the marginal cost of providing the service to the other side of the market (viewers). Conduct that decreases advertising revenues in a two-sided market effectively increases a supplier's costs, which leads to higher equilibrium prices. This principle is well recognized in the economic literature on two-sided markets.<sup>31</sup>

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30. Krattenmaker & Salop, *supra* at 267.

31. Amelia Fletcher, *Predatory Pricing in Two-Sided Markets: A Brief Comment*, 3 Competition Policy International, Spring 2007, at 222 ("In a two-sided market, the cost term needs instead to be interpreted as a form of opportunity cost, which comprises the marginal cost of serving the buyer side of the market minus any extra revenue that the extra sales on the buyer

33. Applying this economic logic to the instant case, Comcast can increase MASN's costs by decreasing MASN's advertising revenues. The simplest way to do so is to refuse to carry MASN or to carry MASN on an inferior tier. I understand that MASN's advertising revenues are critically linked to the number of subscribers it reaches. Thus, precluding MASN from reaching an additional [Begin Highly Confidential] [End Highly Confidential] viewers in the contested areas will necessarily raise MASN's marginal cost of providing sports programming to viewers. The result of Comcast's conduct is to reduce MASN's efficiency as a firm and the economic efficiency of the upstream and downstream markets as a whole.

34. Moreover, economic research has shown that gaps in a network's coverage area have grave consequences for advertising revenues. As Dong Chen and David Waterman explain in their article on vertical foreclosure in the cable television market:

Furthermore, for an advertisement-supported basic cable network, cost-per-thousand ad rates are an increasing function of the network's national audience reach, possibly because advertisers regard geographic gaps in the national audience coverage of a given network to be a serious disadvantage. In this case, foreclosure may not only increase programming costs per subscriber, but disproportionately reduce the network's advertising revenues. In turn, the rival network will be disadvantaged in its ability to offer a competitive quality of programming, and may be induced to exit the market altogether.<sup>32</sup>

Because cost-per-thousand ad rates are an increasing function of a regional network's reach, this source of harm applies equally to Comcast's foreclosure of MASN. Thus, MASN has necessarily been rendered a less efficient competitor as a result of Comcast's exclusionary conduct. As noted

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side of the market generate on the seller side of the market . . ."); Jean-Charles Rochet & Jean Tirole, *Two-Sided Markets: An Overview*, Institut d'Economie Industrielle Working Paper 25 (Mar. 12, 2004) ("Under pure usage pricing, the loss of a transaction on side  $i$  due to an increase in the per-transaction price  $p_i$  has an opportunity cost  $c - p_j$ , since the platform cost  $c$  of the transaction has to be defrayed by the payment  $p_j$  levied on the other side.").

32. See Chen & Waterman, *supra* at 7.

below, there is also substantial evidence in this case that carriage gaps can significantly impact advertising revenue.

**III. HARM TO MASN AND RIVAL MVPDS WILL REDOUND TO VIEWERS AND ADVERTISERS**

35. The economic rationale for why the exclusion of rival RSNs by a vertically integrated cable operator is likely to have anticompetitive consequences—that is, is likely to harm viewers and advertisers—is simple. By foreclosing a rival RSN, a vertically integrated cable operator is able to extend its downstream market power into the upstream sports programming market and to weaken its main source of competition in the downstream distribution market, DBS providers.<sup>33</sup> To the extent that discrimination against an unaffiliated RSN allows Comcast to secure the rights to valuable sports programming (once the upstream rival is forced to exit entirely or to surrender the rights to a particular sports team), Comcast can then deny those rights to rival MVPDs. The Commission has already concluded that access to regional sports programming constitutes a vital competitive input for DBS providers seeking to compete with cable operators.<sup>34</sup>

**A. Harm to Viewers of Sports Programming**

36. Comcast’s refusal to carry MASN in the contested areas causes harm to consumers in several ways. These include increased expenditures for former Comcast subscribers who choose to follow MASN on a rival MVPD and higher expenditures to watch Comcast-affiliated regional sports programming.

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33. Singer & Sidak, *supra* at 348-49.

34. *Adelphia Order* ¶ 145 (“We conclude that there is substantial evidence that a large number of consumers will refuse to purchase DBS service if the provider cannot offer an RSN.”).

37. Furthermore, switching costs harm *all* Comcast subscribers who value MASN, not merely those who switch from Comcast to a DBS provider. In particular, a Comcast customer in the contested areas who values MASN but does not want to incur the cost of switching to DBS also suffers injury. Consider a Comcast customer who values MASN at \$5 per month, but would incur a one-time switching cost of \$50 to convert to a DBS system. If MASN charges all MVPDs in the contested areas, including Comcast, \$2 per subscriber per month, and if all MVPDs fully pass on that cost to its subscribers, then the customer will switch to a DBS provider only if the present discounted value of the \$3 monthly surplus (equal to \$5 less \$2) exceeds \$50.<sup>35</sup> Every customer in the contested areas for which that value is positive but less than \$50 will suffer a loss in consumer welfare by Comcast's refusal to carry MASN.

38. Viewers are further harmed because Comcast's monopolization of the RSN market will necessarily lead to higher implicit costs for regional sports programming. By weakening MASN's ability to compete with Comcast's affiliated RSNs, CSN-Philly and Comcast SportsNet Mid-Atlantic ("CSN-MA"), Comcast has ensured that those affiliated RSNs have increased market power vis-à-vis DIRECTV and Dish Network and therefore an increased ability to raise license fees—especially in the contested areas. I understand that the Philadelphia Phillies (distributed by CSN-Philly) and the Orioles-Nationals (distributed by MASN) now share television rights (along with the Pittsburgh Pirates), and thus home team status, in the Harrisburg DMA.<sup>36</sup> Given the closeness of their programming lineups,<sup>37</sup> and given their shared territory, MASN would likely constrain the market power of CSN-Philly (especially within the Harrisburg

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35. For ease of exposition, I assume that the surplus associated with subscribing to cable or DBS is the same in all other dimensions.

36. *Complaint* ¶ 10.

37. *Id.* ¶ 19. See also <http://midatlantic.comcastsportsnet.com/pages/ncaa>.

DMA). Without MASN's price-disciplining effect, CSN-Philly could increase the license fees it charges to MVPDs. In turn, those higher license fees would harm viewers through higher subscription fees.

**B. Harm to Advertisers**

39. A second group of consumers that is adversely affected by Comcast's discriminatory conduct is advertisers. By refusing to carry MASN in the foreclosed DMAs, Comcast has depressed advertisers' demand for commercials on MASN, thereby undermining price competition between MASN and Comcast's affiliated RSNs for advertisers. CSN-MA, for example, currently enjoys a subscriber base of approximately **[Begin Highly Confidential]** **[End Highly Confidential]** million Comcast households within MASN's territory (equal to 100 percent of Comcast's subscribers within MASN's territory).<sup>38</sup> As a result of Comcast's refusal to carry MASN in the two DMAs, MASN reaches only **[Begin Highly Confidential]** **[End Highly Confidential]** million Comcast households in MASN's territory (equal to **[Begin Highly Confidential]** **[End Highly Confidential]** percent of Comcast's subscribers within MASN's territory).<sup>39</sup> The result is less overall competition because an advertiser who wants to reach all **[Begin Highly Confidential]** **[End Highly Confidential]** million Comcast subscribers via RSN programming has no means of doing so other than Comcast's affiliated RSNs.

40. This concern is not merely theoretical: I am aware of two specific incidents where Comcast's exclusion of MASN resulted in harm to MASN and to advertisers. Because of MASN's lack of coverage in the contested areas, at least two potential customers, **[Begin Highly**

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38. *Complaint* ¶ 47.

39. *Id.* ¶ 53.

**Confidential** [End Highly Confidential] and [Begin Highly Confidential] [End Highly Confidential], have decided not to place advertisements on the MASN network. The [Begin Highly Confidential] [End Highly Confidential] in the MASN coverage area participate in a regional buy-in program through which the myriad [Begin Highly Confidential] [End Highly Confidential] contribute to produce generic [Begin Highly Confidential] [End Highly Confidential] advertisements for distribution throughout the MASN footprint. Due to the gaps in MASN's coverage area resulting from Comcast's denial of carriage, however, the [Begin Highly Confidential] [End Highly Confidential] in those areas were unwilling to participate in the regional buy-in program, and, as a result, the consortium was not able to advertise on MASN.<sup>40</sup> Additionally, [Begin Highly Confidential] [End Highly Confidential] was deterred from advertising on MASN due to its lack of coverage in the Tri-Cities area. Although [Begin Highly Confidential] [End Highly Confidential] was interested in advertising on the network, the company decided that it would not go forward with the plan until the coverage gap was filled.<sup>41</sup>

41. As discussed in my previous filings, such coverage gaps are extremely damaging to MASN due to the two-sided nature of the market in which MASN operates. The loss of advertising revenue associated with these gaps effectively raises MASN's marginal cost of broadcasting programming to viewers, thereby vitiating the network's ability to compete with affiliated RSNs. It is also worth noting that the companies that wanted to advertise on MASN ([Begin Highly Confidential] [End Highly Confidential] and [Begin Highly

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40. Conversation with Jim Cuddihy on January 26, 2008.

41. *Id.*

**Confidential** [End Highly Confidential] and consumers are likely harmed as well. By reducing the options of advertisers seeking to reach specific audiences, Comcast increases its leverage in the marketplace through the creation of artificial scarcity in supply of advertising space. Moreover, as a matter of basic economic theory, Comcast's undue market power should translate directly into higher prices for the remaining advertising space and less information for consumers.

**IV. MARKET COMPARABLES PROVIDE THE BEST EVIDENCE OF MASN'S FAIR-MARKET VALUE**

42. My analysis of fair-market value follows the approach promulgated by the Media Bureau in its October 2008 *Order on Review in TCR Sports v. Time Warner*. In that *Order*, the Media Bureau determined that “the best and most persuasive evidence of fair market value is the objective price that [sports network] programming yields in the marketplace.”<sup>42</sup> As noted by the Media Bureau, the best price evidence is provided by “current or previous contracts between MVPDs and RSNs in which...[the MVPD does] not have an interest.”<sup>43</sup> As an economist, I fully agree that willingness to pay is the best and most reliable measure of fair market value.

43. Moreover, in its *Order on Review* of the arbitrator's decision in *TCR Sports v. Time Warner*, the Commission explained the importance of the voluntary rate paid for the subject programming by other MVPDs in assessing fair market value:

Contrary to TWC's assertions, we find that the carriage decisions of four of the largest MVPDs operating in North Carolina—that serve the overwhelming

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42. *Order on Review* ¶ 46.

43. *Id.* n.178 (citing *Adelphia Order*, 21 FCC Rcd at 8339, Appendix B.4.c.). I cite the most important factor, Factor 1. This factor was also enumerated in the Commission's order approving News Corp.'s acquisition of DIRECTV. Memorandum Opinion and Order, In the Matter of General Motors Corporation and Hughes Electronics Corporation, Transferors, and The News Corporation Limited, Transferee, For Authority to Transfer Control, MB Dkt. No. 03-124, released Jan. 14, 2004, at 82 (“*News Corp. MO&O*”).

majority of non-TWC subscribers to paid television service in North Carolina—*are an appropriate reference point for assessing fair market value.* We reject TWC’s assertion that MASN’s carriage on a widely available tier by DirecTV and Echostar [Dish Network] bear no significance because DBS operators possess different economic motivations from cable operators that are derived from differences in cost structure and technology. MASN presented testimony that the actions of these carriers—two of TWC’s most direct competitors in North Carolina—offer a more appropriate meter for gauging programming demand than those of smaller cable operators because they provide service throughout the state, rather than to scattered pockets of subscribers like the smaller cable operators that TWC cites.<sup>44</sup>

It follows that the carriage decisions of the largest MVPDs operating in the contested areas are “an appropriate reference point for assessing fair market value” here.

44. In this dispute, this valuation exercise is particularly straightforward because *all MVPDs that carry MASN in the contested areas pay the same rate.* The following table summarizes MASN’s rate card.

TABLE 1:MASN RATE CARD

**[Begin Highly Confidential]**

**[End Highly Confidential]**

The contested areas all fall in MASN’s “Extended Inner” region (highlighted in Table 1). It is worth noting that MVPDs in the “Extended Inner” region enjoy a **[Begin Highly Confidential]** **[End Highly Confidential]** percent discount relative to MVPDs in the “DC/Baltimore” region, under the theory that those viewers closest to the Washington Nationals and the Baltimore Orioles have the highest willingness to pay for MASN.

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44. *Order on Review* ¶ 47 (citations omitted) (emphasis added).

45. In Table 2, I list the MVPDs carrying MASN in the contested areas along with the rate they paid for MASN (per subscriber per month) in 2008.

TABLE 2: MVPDs CARRYING MASN IN THE CONTESTED AREAS,  
AND THE PRICE PER SUBSCRIBER PER MONTH PAID IN 2008

**[Begin Highly Confidential]**

**[End Highly Confidential]**

Given this simple fact pattern, the fair-market value that Comcast should be compelled to pay MASN is the rate that these MVPDs are contractually bound to pay MASN in the contested areas (that is, the “Extended Inner” rates on MASN’s rate sheet) for the duration of the Comcast-MASN contract (through 2016).

**V. MASN’S PROPOSED CARRIAGE TERMS COMPARE FAVORABLY TO THE TERMS ON WHICH COMCAST PURCHASES REGIONAL SPORTS PROGRAMMING IN THE CONTESTED AREAS AND THROUGHOUT COMCAST’S NATION-WIDE FOOTPRINT**

46. In further support of my conclusion that MASN’s proposed terms represent an offer consistent with the fair-market value for MASN programming in the contested areas, I compared MASN’s proposed terms to the terms on which Comcast carries affiliated and unaffiliated RSNs, both within the contested areas and throughout Comcast’s national footprint. My analysis is based on data derived from MASN’s own rate card and from affiliate contracts and other materials produced by Comcast in this proceeding. As I demonstrate below, MASN’s proposed terms compare favorably to the terms on which Comcast purchases regional sports programming.

47. To gauge the value of the programming offered by RSNs across the industry, industry experts (including those engaged in the negotiation of RSN affiliation agreements) often use benchmarks that can take account of variations in the precise mix of live sports programming offered by RSNs across the industry.<sup>45</sup> My analysis uses one such measure suggested by industry expert Mark Wyche: the per-subscriber per-major-pro-event (“PSPPE”) rate that an MVPD pays for RSN programming.

48. Table 3 presents the results of a PSPPE analysis comparing MASN, Comcast SportsNet Philadelphia, and Comcast SportsNet Mid-Atlantic in the contested areas. The second and third columns of Table 3 provide the contractual designation given to each particular region or zone serviced by each RSN and the corresponding geographic location, respectively. The next four columns report each RSN’s total number of live major professional games, including the mix of professional sports events reflected in each number, and the monthly per-subscriber fee charged by each RSN for analog carriage in the relevant DMA or portion thereof. The final column reports the PSPPE rate for each RSN in the relevant DMA or portion thereof.

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45. *See generally* Expert Report of Mark Wyche, Part IV.

TABLE 3: COMPARATIVE ANALYSIS OF MASN AND COMCAST AFFILIATED RSNs IN THE CONTESTED AREAS

[Begin Highly Confidential]

[End Highly Confidential]

49. Comparing MASN’s PSPPE rate to the PSPPE rate for Comcast’s own affiliated RSNs demonstrates that MASN’s proposed terms are a relative bargain. MASN’s PSPPE fee in the contested areas, [Begin Highly Confidential] [End Highly Confidential] of the PSPPE fee [Begin Highly Confidential] [End Highly Confidential] that Comcast charges for its Comcast SportsNet Philadelphia programming. Table 3 further shows that MASN’s PSPPE fee in the contested areas [Begin Highly Confidential] [End Highly Confidential] the rate Comcast charges for Comcast SportsNet Mid-Atlantic in the Harrisburg DMA [Begin Highly Confidential] [End Highly Confidential] and is [Begin Highly Confidential] [End Highly Confidential] than the fee charged by Comcast SportsNet Mid-Atlantic in

much of the Roanoke-Lynchburg DMA. In the remaining parts of the Roanoke-Lynchburg and in the Tri-Cities DMA, Comcast's PSPPE fee is **[Begin Highly Confidential]**

**[End Highly Confidential]**. In summary, MASN's proposed terms are a better value proposition than the terms on which Comcast offers its own affiliated RSN programming.

50. I have also performed a further PSPPE analysis that compares MASN's proposed carriage terms in the contested areas to the terms on which Comcast has agreed to carry affiliated and unaffiliated RSNs in other "Intermediate" viewing markets throughout Comcast's nationwide footprint. Table 4 presents the results of my analysis using the same basic approach I used in the analysis set forth in Table 3.

TABLE 4: ANALYSIS OF 2008 LICENSE FEES FOR SELECTED COMCAST-CARRIED RSNs IN  
"INTERMEDIATE" MARKET AREAS

**[Begin Highly Confidential]**

**[End Highly Confidential]**

51. In constructing the analysis set forth in Table 4, I defined “Intermediate” viewing markets as those contractual RSN zones for which the population-weighted distance from all counties within the zone to the nearest stadium or arena of a professional sports team carried by that RSN is between **[Begin Highly Confidential]** **[End Highly Confidential]** miles. This best captures viewing markets that, like MASN’s Region 4, are neither “inner” nor “outer” viewing markets. The terms on which Comcast has agreed to carry regional sports programming in these “Intermediate” zones provides an apt comparison to the terms on which MASN is seeking carriage on Comcast’s cable systems in the contested areas because the population-weighted distance in MASN’s Region 4 – which, as noted previously, encompasses the contested areas – is **[Begin Highly Confidential]** **[End Highly Confidential]** miles. Thus, MASN’s Region 4 lies roughly at the middle of the **[Begin Highly Confidential]** **[End Highly Confidential]** mile range.

52. The analysis set forth in Table 4 is based on 12 RSNs throughout Comcast’s national footprint for which Comcast provided affiliate agreements and related documents. Because several of those RSNs have more than one zone that meet my definition of an “Intermediate” viewing market, my analysis includes 18 observations. Including MASN’s Region 4 itself brings the total number of observations to 19. The initial columns to the left on Table 4 indicate the RSN at issue and the contractual designation given to each particular region or zone serviced by each RSN that I have determined is an “Intermediate” viewing market. The

middle columns of Table 4 provide the population-weighted distance from the various counties within the relevant viewing market to the nearest stadium or arena of a major professional sports team carried by that RSN and the monthly per-subscriber fee in each market. The right-hand columns report the total number of live major professional games and then calculate the resulting PSPPE rate.

53. Comparing MASN’s “Intermediate” market PSPPE rate to the “Intermediate” market rate Comcast agreed to pay for 12 other RSNs throughout its national footprint demonstrates once more that MASN’s proposed carriage terms compare favorably to the terms on which Comcast carries RSNs throughout its national footprint. MASN’s “Intermediate” PSPPE fee [Begin Highly Confidential] [End Highly Confidential] is exactly [Begin Highly Confidential] [End Highly Confidential] the average PSPPE fee [Begin Highly Confidential] [End Highly Confidential] that Comcast agreed to pay for RSN programming in “Intermediate” market areas throughout the United States. Only [Begin Highly Confidential] [End Highly Confidential] of the 18 “Intermediate” market areas of the 12 RSNs included in my analysis have a lower PSPPE fee than does MASN. In short, Comcast has repeatedly agreed to pay more for regional sports programming in “Intermediate” viewing markets than it would under MASN’s proposed carriage terms for the contested areas. MASN’s proposed carriage terms fall comfortably within the range of fair market value for regional sports programming.

**VI. REGRESSION ANALYSIS FURTHER DEMONSTRATES THAT MASN’S PROPOSED CARRIAGE TERMS COMPARE FAVORABLY TO THE TERMS ON WHICH COMCAST PURCHASES REGIONAL SPORTS PROGRAMMING**

54. The reasonableness of MASN’s proposed terms is also corroborated by a regression analysis that further examines the price that Comcast willingly pays for regional

sports programming throughout its national footprint. Regression analysis is one method that economists use to examine complex goods—like regional sports programming—that may differ in terms of certain characteristics (such as location) but are generally similar. Regression analysis is a powerful tool because it allows an economist to control for the effects of key variables in determining the underlying relationship of one or more independent variables (the number of live major professional events offered by an RSN or the demographics of an area) to a dependent variable (the per-subscriber fee that Comcast is willing to pay to carry a given RSN on its cable systems).

**A. The Estimation Methodology**

55. I have been asked by counsel for MASN to examine the pricing structure of regional sports programming to determine the fair-value of carrying MASN. Thus, I seek to estimate the relationship between subscriber fees for sports programming and market characteristics. Conceptually this sort of regression analysis is known as “hedonic-price” modeling. Employing this approach, I can use empirical results of my regression analysis to estimate the appropriate carriage fee in a given region based on observed market behavior. In the following section, I describe the hedonic-price model generally and my model of sports programming fees in particular.

**1. The Model of Subscriber Fees and Market Characteristics**

56. I model monthly subscriber fees for sports programming using a hedonic model. A hedonic model uses information on quantitative differences between products to estimate what portion of the total price can be attributed to each component of a given product.<sup>46</sup> My model

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46. See, e.g., Sherwin Rosen, *Hedonic Prices and Implicit Markets: Product Differentiation in Pure Competition*, 81 J. POL. ECON. 34-55, 34 (1974) (noting that “[h]edonic prices are defined

seeks to estimate the implicit sports-license fee associated with each of several characteristics of broadcast markets. Those characteristics, or “explanatory variables,” include the total number of major men’s professional sporting events (from Major League Baseball, the National Basketball Association, and the National Hockey League), the type of broadcast zone, the income, population, and population density within a particular broadcast zone, the average performance of the major professional sports teams carried by the RSN, and the distance between the broadcast zone and the home sports venue at which a professional team plays its games. I use an “out-of-sample” regression technique that includes the contract affiliation fees Comcast pays for a variety of RSNs. I also include the three MASN pricing zones that are not the subject of this dispute.<sup>47</sup> This model, the results of which I report in Section VI.B., constitutes my primary analysis. In addition, to ensure the robustness of my result, I supplement this analysis by estimating the same model on a sample that excludes all four MASN price zones. I report the results of this analysis in Appendix 3. I ultimately use these estimates to predict the monthly subscriber fee that MASN would receive if its affiliation fees were set objectively based on these factors.

**2. The Empirical Specification**

57. Empirically, my model can be written as:

$$Fee = f(sports, demographic, spatial)$$

Or, more specifically:

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as the implicit prices of attributes and are revealed to economic agents from observed prices of differentiated products and the specific amounts of characteristics associated with them.”).

47. That is, I include the observations for the three other MASN areas: (1) Zones 1-3 (the uniformly-priced area that includes Washington DC and Baltimore (“DC/Baltimore”), (2) Zone 5 (“Extended Inner”, encompassing western Virginia), and (3) Zone 6 (“North Carolina”).

$$\begin{aligned}
Fee = & \alpha + \beta_1 (Total\ Games) + \beta_2 (Income) + \beta_3 (Population) + \beta_4 (Pop\ Density) + \\
& \beta_5 (Distance) + \beta_6 (MLB\ Performance) + \beta_7 (NBA\ Performance) + \\
& \beta_8 (NHL\ Performance) + B_9 (Inner) + \varepsilon
\end{aligned}$$

where:

*Fee* is the monthly per-subscriber affiliate fee for an RSN zone;

*Total Games* is the number of Major League Baseball, National Basketball Association, and National Hockey League games available per year;

*Income* is the median household income in the zone;

*Population* is the population of the zone;

*Pop Density* is the population density of the zone;

*Distance* is the average population-weighted distance from the broadcast zone to the center of the city (or venue if specified in contract);

*MLB Performance* is the average winning percentage of the MLB team(s) carried by the RSN for the period 1999 to 2008;

*NBA Performance* is the average winning percentage of the NBA team(s) carried by the RSN for the period 1999 to 2008;

*NHL Performance* is the average percentage of total possible points received by the NHL team(s) carried by the RSN for the period 1999 to 2008, excluding the lock-out year of 2004;

*Inner* is a discrete indicator equal to 1 if the zone is classified as an “inner” viewing zone.

58. I estimate this model using the OLS regression technique with robust standard errors. This technique provides precise sampling and minimal variance relative to other linear and unbiased techniques.<sup>48</sup> These excellent properties have made OLS extremely popular throughout economics specifically and statistical analyses generally.<sup>49</sup>

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48. George G. Judge, W.E. Griffiths, R. Carter Hill, Helmut Lutkepohl, and Tsoung-Chao Lee, 15 THE THEORY AND PRACTICE OF ECONOMETRICS (John Wiley & Sons 1985) (1980) (“Given this covariance result, the Gauss-Markov theorem provides proof that out of the *class of*

**B. The Estimation Results**

59. To estimate my model, I obtained pricing, sports, demographic, and geospatial data for 19 RSNs throughout the United States.<sup>50</sup> These include RSNs that Comcast carries on cable systems within its national footprint, some of which are affiliated with Comcast. However, my dataset does *not* include all RSNs carried by Comcast. For instance, it excludes networks (1) for which Comcast did not supply sufficient data or (2) with imprecise pricing or geographic price zone delineations. In the following section, I describe my data and provide my estimation results. I also estimate the predicted MASN monthly subscriber fee if pricing were based solely on the factors in my model.

**1. Data Summary**

60. My pricing data come directly from individual contracts between Comcast and unaffiliated or Comcast-affiliated RSNs. These contracts, which vary in their complexity, were made available to me by counsel for MASN. All contracts, however, assign different carriage rates to different geographic areas, which are called “zones.” These zones can be delineated by state, county, television market,<sup>51</sup> or county subdivision. For example, Portland, Oregon-based

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*linear unbiased rules* for the statistical model (2.1.1) the least squares estimator is best, where best is defined in terms of minimum variance ... the least squares estimator is equal to or better in terms of sampling precision than all others in its class.”).

49. *Id.* (“This [superior sampling precision] is a beautiful result, which does much to explain the popularity of the least squares rule.”).

50. Specifically, these networks are: Altitude Sports & Entertainment; Comcast SportsNet (“CSN”) Bay Area; CSN-California; CSN-Mid Atlantic; CSN-Northwest; CSN-Philadelphia FSN-Arizona; FSN-Detroit; FSN-Florida; FSN-Kansas City; FSN-Ohio; FSN-Pittsburgh; FSN-Southwest (Dallas); FSN-West; FSN-West II; Mid-Atlantic Sports Network; (MASN); New England Sports Network (NESN); Sportsnet New York; and Yankees Entertainment and Sports (“YES”).

51. These areas are generally defined by Nielsen’s Designated Market Area (DMA) classification. In one rare case, however, a viewing market was defined in terms of Arbitron’s

Comcast SportsNet Northwest (“CSN-Northwest”) has three zones. CSN-Northwest receives [Begin Highly Confidential] [End Highly Confidential] per subscriber per month for its innermost “Zone 1”, which is comprised of parts of the states of Oregon and Washington. CSN-Northwest receives [Begin Highly Confidential] [End Highly Confidential] per subscriber per month for its “Zone 2”, which includes more distant areas of the states of Oregon and Washington. Finally, CSN-Northwest receives [Begin Highly Confidential] [End Highly Confidential] per subscriber per month for its “Zone 3” in Seattle and surrounding areas in Washington State. Although CSN-Northwest’s broadcast territory is comprised of [Begin Highly Confidential] [End Highly Confidential], many networks have three or four zones, and one network—[Begin Highly Confidential] [End Highly Confidential]—has nine zones. In most cases, only the zone including the city center or venue was classified as an “inner” zone.<sup>52</sup>

61. I also compiled sports programming data from a combination of the individual contracts supplied by counsel and from publicly available sources. These data detail the number of games for each team that may be televised under each contract. For example, an RSN may have broadcast rights for 161 MLB games, 41 NBA games, and 32 NHL games. Because some RSNs provide coverage for more than one team, I used the total number of MLB, NBA, and NHL games broadcast by each RSN.

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Area of Dominant Influence (“ADI”) classification, which is usually used to define radio markets.

52. Some RSNs also split their inner zones into “core” and “inner” zones or otherwise made minor distinctions for in-city areas. Thus I defined two inner zones for FSN-West, FSN-West II, FSN-Arizona, and FSN-Pittsburgh. Because Sunshine carries games for teams based in Tampa, Orlando, and Miami, multiple inner zones were defined for this network.

62. I used geospatial data from the 2000 U.S. Census to measure the distance from each sports venue to the center of each price zone. Specifically, I used latitude and longitude data to estimate the distance (in miles) from the geographic center of each county, zip code, or television market to the center of the city. In cases where zone distances are specified in terms of distance from the performing venue—such as the distance from Yankee Stadium—this distance was used instead.<sup>53</sup> I aggregated these distances into mean zonal distances by taking the population-weighted mean distance for each zone. My distance measure thus provides the distance from the population-weighted center of each zone to either the central city or the performing venue.

63. I similarly added demographic data derived from the 2000 U.S. Census to my dataset. Specifically, I include zonal population, median household income,<sup>54</sup> and population density.<sup>55</sup> These data were measured for the same geographic areas as the distance units. That is, if distance is measured by county, demographic data are similarly measured by county. Furthermore, the geographic unit of measurement—county, zip code, and so forth—is chosen to most closely mirror the defined boundaries of each price zone. Thus, using 2000 U.S. Census data, my model controls for the effects that income, population, and population density have on sports network fees.

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53. In both cases, however, I used the latitude and longitude of the zip code that encompasses the city center or the stadium.

54. Because I aggregate using population-weighting, my model actually includes the population-weighted mean of the median household income of the constituent zip codes or counties of a particular zone.

55. Zonal population density was expressed as the total zonal population divided by the total zonal land area (in square miles).

64. The dataset I use for this analysis includes a separate observation for each zone of each network. Altogether, this encompasses 55 data points. I report summary statistics for this dataset in Table 5.

TABLE 5: SUMMARY STATISTICS

	Mean	Standard Deviation	Minimum	Maximum
Fee (\$/sub/month)	\$1.48	\$0.80	\$0.16	\$3.54
Total Games	222	88	66	370
Population (000s)	3,896	3,461	68	20,100
Population Density (per mi <sup>2</sup> )	253	332	10	1893
Median Household Income (\$000s)	\$42.50	\$7.21	\$32.02	\$64.29
Distance to Venue (miles)	193	330	15	2,390
MLB Winning Percentage	0.50	0.04	0.41	0.59
NBA Winning Percentage	0.49	0.07	0.37	0.65
NHL Point Percentage	0.53	0.07	0.43	0.69
Inner Zone (discrete)	0.29	0.46	0	1

65. My data are broadly representative of sports networks nationwide. The mean fee-per-subscriber-per-month in my sample is approximately \$1.48; the networks show an average of 222 MLB, NBA, and NHL games per year. Approximately 3.9 million people live in the average zone, with an average population density of 253 persons per square mile and a median household income of approximately \$42,500. The population-weighted mean distance to the city center is 193 miles, reflecting the fact that most networks span multiple states.<sup>56</sup> Finally, approximately 29 percent of all zones in my sample are classified as “inner” zones (the remaining 71 percent are classified as “outer” zones).

**2. Regression Results**

66. I used the dataset described above to calculate the parameters of my model. Table 6 provides these results.

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56. Note that the maximum average zonal distance, 2,390 miles, is for carriage of Comcast SportsNet Bay Area in Hawaii.

TABLE 6: OLS PARAMETER ESTIMATES

[Begin Highly Confidential]

[End Highly Confidential]

67. As indicated by the R-squared statistic, the model explains approximately 48 percent of the variation in monthly subscriber fees (above and beyond that which could be explained by knowledge of the mean subscriber fee) for RSNs in my database.<sup>57</sup> The parameter estimates are also rather intuitive. For example, I find that, *ceteris paribus*, fees increase with additional sports games (the coefficient on total games is positive), and fees decrease as the distance to the venue increases. I also find that carriage fees decrease as population size increases, but increase as population density increases (although neither effect is statistically significant). Furthermore, “inner” zones command significantly higher fees than other zones. This effect is statistically significant at the five percent level. Finally, I find that affiliation fees increase as income levels increase, although this effect does not reach statistical significance.

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57. To verify my model, I used several statistical tests including a Variance Inflation Factor (VIF) test and Cameron & Trivendi’s IM-test.

68. I also estimated my model without any of the MASN zones. My results, which are generally consistent with the sample I use here, are reported in Appendix 3.

**3. Predicting the Market-Based Subscriber Fee for MASN in the Disputed Areas**

69. I use the parameter estimates derived from my hedonic-price model to predict the monthly subscriber fee Comcast would pay for each zone of each RSN if fees were set objectively and based solely on the factors in my model. Of particular interest was the relationship between actual and predicted fees for MASN. That is, I estimate the zone fee for MASN Zone 4 (which includes Harrisburg, Roanoke, and the Tri-Cities) such that MASN would receive remuneration comparable to what Comcast pays to carry RSNs, including its affiliated RSNs. Table 7 presents these results.

TABLE 7: MASN ACTUAL AND PREDICTED FEES, ZONE 4, 2008

**[Begin Highly Confidential]**

**[End Highly Confidential]**

70. My analysis indicates that the fee Comcast currently pays MASN for Zone 4 carriage rights (other than in the contested DMAs) is **[Begin Highly Confidential]** **[End Highly Confidential]** the predicted fee. I estimate that the Zone 4 fee for MASN should be approximately **[Begin Highly Confidential]** **[End Highly Confidential]** per subscriber per month. The actual fee of **[Begin Highly Confidential]** **[End Highly Confidential]** per subscriber per month **[Begin Highly Confidential]** **[End Highly Confidential]** but within the bounds of the 95 percent confidence interval predicted by the model (between **[Begin Highly Confidential]** **[End Highly Confidential]**

**Confidential]** and **[Begin Highly Confidential]** **[End Highly Confidential]** per subscriber per month). The implication of this finding is that MASN's Zone 4 fee can be justified based on objective, marketplace data.

71. My prediction is corroborated by the price that the model predicts for Zone 4 using a smaller sample that does not include any observations from MASN.<sup>58</sup> I find substantial economic evidence that the sports, spatial, market, and demographic characteristics of MASN Zone 4 support MASN's proposed 2008 subscriber fee of **[Begin Highly Confidential]** **[End Highly Confidential]** per subscriber per month. In fact, my analysis indicates that MASN's requested price is somewhat lower, all else equal, than the price Comcast willingly pays for comparable sports programming.

#### CONCLUSION

52. Economic analysis and the record evidence overwhelmingly demonstrate that Comcast's exclusion of MASN in the contested areas is based on affiliation and is anticompetitive. Nearly every major MVPD in the contested areas carries MASN, and they do so at the rate MASN seeks in this dispute. Because these MVPDs are similarly situated to Comcast except for their lack of ownership in the upstream regional sports programming market, their carriage agreements with MASN provide an appropriate benchmark with which to assess both the demand for MASN in the contested areas and the price that Comcast should pay for carriage. According to a standard benchmark used by industry experts to value RSNs, MASN's proposed terms are a relative bargain compared to the terms on which Comcast sells the regional sports programming of its own affiliated RSNs in the contested areas. Finally, I assess the

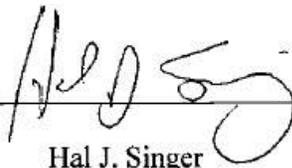
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58. See Appendix 3. This alternative analysis predicts that MASN Zone 4 should command a monthly per subscriber affiliation fee of **[Begin Highly Confidential]** **[End Highly Confidential]**, which is slightly above the prediction I report in the text in Section VI.B.

reasonableness of MASN's proposed terms by estimating the price that would arise from MASN's intrinsic characteristics—its product, its demographics, and its geography—but-for Comcast's conduct.

\* \* \*

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.



Handwritten signature of Hal J. Singer in black ink, written over a horizontal line.

Hal J. Singer

March 19, 2009

## APPENDIX 1: CURRICULUM VITAE

### Hal J. Singer

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#### EDUCATION

THE JOHNS HOPKINS UNIVERSITY, Ph.D., 1999; M.A. (Economics), 1996.

TULANE UNIVERSITY, B.S. *magna cum laude* (Economics), 1994. Dean's Honor Scholar (full academic scholarship). Senior Scholar Prize in Economics, 1994.

#### CURRENT EMPLOYMENT

EMPIRIS, L.L.C., Washington, D.C.: Managing Partner and President, 2008-present.

#### EMPLOYMENT HISTORY

CRITERION ECONOMICS, L.L.C., Washington, D.C.: President, 2004-2008. Senior Vice President, 1999-2004.

LECG, INC., WASHINGTON, D.C.: Senior Economist, 1998-99.

U.S. SECURITIES AND EXCHANGE COMMISSION, OFFICE OF ECONOMIC ANALYSIS, WASHINGTON, D.C.: Staff Economist, 1997-98.

THE JOHNS HOPKINS UNIVERSITY, ECONOMICS DEPARTMENT, BALTIMORE: Teaching Assistant, 1996-98.

#### AUTHORED BOOKS AND BOOK CHAPTERS

*Valuing Life Settlements as a Real Option*, co-authored with Joseph R. Mason, in *LONGEVITY TRADING AND LIFE SETTLEMENTS* (Vishaal Bhuyan ed., John Wiley & Sons 2009).

*An Antitrust Analysis of the World Trade Organization's Decision in the U.S.-Mexico Arbitration on Telecommunications Services*, co-authored with J. Gregory Sidak, in *HANDBOOK OF TRANS-ATLANTIC ANTITRUST* (Philip Marsden, ed. Edward Elgar 2006).

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2. The Effect of Brokered Deposits and Asset Growth on the Likelihood of Failure (prepared for Morgan Stanley, Citigroup, and UBS), co-authored with Joseph Mason and Jeffrey West (Dec. 17, 2008).
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4. Is Greater Price Transparency Needed in The Medical Device Industry? (prepared for Advanced Medical Technology Association), co-authored with Robert W. Hahn (Nov. 30, 2007).
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6. Improving Public Safety Communications: An Analysis of Alternative Approaches (prepared for the Consumer Electronics Association and the High Tech DTV Coalition), co-authored with Peter Cramton, Thomas S. Dombrowsky, Jr., Jeffrey A. Eisenach, and Allan Ingraham (Feb. 6, 2007).
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16. Letter Concerning Spectrum Auction 35 to the Honorable Michael K. Powell, Chairman, Federal Communications Commission, from Peter C. Cramton, Robert W. Crandall, Robert W. Hahn, Robert G. Harris, Jerry A. Hausman, Thomas W. Hazlett, Douglas G. Lichtman, Paul W. MacAvoy, Paul R. Milgrom, Richard Schmalensee, J. Gregory Sidak, Hal J. Singer, Vernon L. Smith, William Taylor, and David J. Teece (Aug. 16, 2002).

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1. *What Does an Economist Have to Say About the Calculation of Reasonable Royalties?*, presented at Law Seminars International Standard Setting and Patent Pools Conference, co-authored with Kyle Smith (Sept. 2008).
2. *Irrational Expectations: Can a Regulator Credibly Commit to Removing an Unbundling Obligation?*, AEI-Brookings Joint Center Related Publication No. 07-28, co-authored with Jeffrey A. Eisenach (Dec. 2007).
3. *An Antitrust Analysis of Google's Proposed Acquisition of DoubleClick*, AEI-Brookings Joint Center Related Publication No. 07-24, co-authored with Robert W. Hahn (Sept. 2007).
4. *Inter-City Competition for Retail Trade in North Texas: Can a TIF Generate Incremental Tax Receipts for the City of Dallas?*, co-authored with Thomas G. Thibodeau and Allan T. Ingraham (revise and resubmit to JOURNAL OF REAL ESTATE RESEARCH) (July 16, 2004).
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6. *How Common Are "Conflicts of Interests" in the Investment Banking Industry?*, co-authored with Charles W. Calomiris (Dec. 2003).
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2. *The Price Of Medical Technology: Are We Getting What We Pay For?* HEALTH AFFAIRS BRIEFING, Washington, D.C., Nov. 10, 2008.
3. *Standard Setting and Patent Pools*, LAW SEMINARS INTERNATIONAL, Arlington, VA., Oct. 3, 2008.
4. *The Changing Structure of the Telecommunications Industry and the New Role of Regulation*, INTERNATIONAL TELECOMMUNICATIONS SOCIETY BIENNIAL CONFERENCE, Montreal, Canada, June 26, 2008.
5. *The Debate Over Network Management: An Economic Perspective*, AMERICAN ENTERPRISE INSTITUTE CENTER FOR REGULATORY AND MARKET STUDIES, Washington, D.C., Apr. 2, 2008.
6. *Merger Policy in High-Tech Industries*, GEORGE MASON UNIVERSITY SCHOOL OF LAW, Washington, D.C., Feb. 1, 2008.
7. *Telecommunications Symposium*, U.S. DEPARTMENT OF JUSTICE ANTITRUST DIVISION, Washington, D.C., Nov. 29, 2007.
8. *Wireless Practice Luncheon*, FEDERAL COMMUNICATIONS BAR ASSOCIATION, Washington, D.C., Nov. 29, 2007.
9. *Association for Computing Machinery's Net Neutrality Symposium*, GEORGE WASHINGTON UNIVERSITY, Washington, D.C., Nov. 12, 2007.
10. *Regulators' AdvanceComm Summit*, NEW YORK LAW SCHOOL, New York, N.Y., Oct. 14, 2007.
11. *Annual Conference*, CAPACITY USA 2007, New York, N.Y., Jun. 26, 2007.
12. *William Pitt Debating Union*, UNIVERSITY OF PITTSBURGH, SCHOOL OF ARTS & SCIENCES, Pittsburgh, PA., Feb. 23, 2007.

13. *Annual Conference*, WIRELESS COMMUNICATIONS ASSOCIATION INTERNATIONAL, Washington, D.C., June 27, 2006.
14. *Annual Conference*, MEDICAL DEVICE MANUFACTURERS ASSOCIATION, Washington, D.C., June 14, 2006.
15. *Annual Conference*, ASSOCIATION FOR ADVANCED LIFE UNDERWRITING, Washington, D.C., May 1, 2006.
16. *Entrepreneur Lecture Series*, LAFAYETTE COLLEGE, Easton, PA., Nov. 14, 2005.

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1. *Is Greater Price Transparency Needed in the Medical Device Industry?*, HEALTH AFFAIRS (forthcoming 2008), co-authored with Robert W. Hahn and Keith Klovers.
2. *Foxes in the Henhouse: FCC Regulation through Merger Review*, MILKEN INSTITUTE REVIEW (First Quarter 2008), co-authored with J. Gregory Sidak.
3. *Don't Drink the CAFE Kool-Aid*, WALL STREET JOURNAL, Sept. 6, 2007, at A17, co-authored with Robert W. Crandall.
4. *The Knee-Jerk Reaction: Misunderstanding the XM/Sirius Merger*, WASHINGTON TIMES, Aug. 24, 2007, at A19, co-authored with J. Gregory Sidak.
5. *Net Neutrality: A Radical Form of Non-Discrimination*, REGULATION, Summer 2007.
6. *Telecom Time Warp*, WALL STREET JOURNAL, July 11, 2007, at A15, co-authored with Robert W. Crandall.
7. *Earmarked Airwaves*, WASHINGTON POST, June 27, 2007, at A19, co-authored with Robert W. Hahn.
8. *Not Neutrality*, NATIONAL POST, Mar. 29, 2007, at FP19.
9. *Should ATM Fees Be Regulated?*, NATIONAL POST, Mar. 8, 2007, at FP17, co-authored with Robert W. Crandall.
10. *Life Support for ISPs*, REGULATION, Fall 2005, co-authored with Robert W. Crandall.
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MEMBERSHIPS

American Economics Association

REVIEWER

JOURNAL OF COMPETITION LAW AND ECONOMICS

JOURNAL OF RISK MANAGEMENT AND INSURANCE REVIEW

JOURNAL OF REGULATORY ECONOMICS

MANAGERIAL AND DECISION ECONOMICS

TELECOMMUNICATIONS POLICY

PERSONAL INFORMATION

American citizen, born March 31, 1972. Married to Ingrid Arraut Singer. Two daughters: Alexis and Kayla. Resident of Oakton, Virginia.

February 11, 2009

## APPENDIX 2: MATERIALS RELIED UPON

### Academic Literature

Amelia Fletcher, *Predatory Pricing in Two-Sided Markets: A Brief Comment*, 3 Competition Policy International, Spring 2007

Austin Goolsbee & Amil Petrin, *The Consumer Gains from Direct Broadcast Satellites and Competition with Cable TV*, 72 ECONOMETRICA 351 (2004)

David Waterman, *The Economics of Media Programming*, in HANDBOOK OF MEDIA MANAGEMENT & ECONOMICS (2006)

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**Case Materials**

First Amendment to Affiliate Term Sheet Between TCR Sports Broadcasting Holding, L.L.P., dba Mid-Atlantic Sports Network and Comcast Corporation

COMMASN\_00006240

COMMASN\_00006242

COMMASN\_00006403

COMMASN\_00006404

COMMASN\_00005600

COMMASN\_00005842

MASN\_DPW\_00000010\_EF

MASN\_DPWZ\_0000005\_EPQ

MASN\_DPWZ\_0000007\_EPQ

MASN\_DPWz\_0000008\_EPQ

MASN\_DPW\_0000009\_EF

MASN\_DPW\_0000001\_EPQ

MASN\_DPW\_00000013\_EF

SEE 00043 - SEE 0045

COMMASN\_00006403

COMMASN\_00006432

Yes - Comcast Redacted Amendment No. 2. PDF

MASN\_COM001126-1137

MASN\_COM001210-1230

MASN\_COM001277-1305

MASN\_COM001231-1276

MASN\_COM001343-1352

MASN\_COM001379-1190

MASN\_COM001408-1418

COMMASN\_0005449

COMMASN\_0005500

COMMASN\_00006306

COMMASN\_00006244

COMMASN\_0000625

COMMASN\_00006403-4

COMMASN\_00005629-31

COMMASN\_00005549

COMMASN\_00005652

COMMASN\_00005600-00005661

COMMASN\_00005574 - 00005589

COMMASN\_00005560-1

COMMASN\_0005562

COMMASN\_00005817-0005819

COMMASN\_00005842

COMMASN\_00006403-32

**Laws and Regulations**

Cable Television Consumer Protection and Competition Act of 1992, Public Law 102-385, Oct. 5, 1992,  
106 Stat. 1460

47 C.F.R. § 76.1301(c)

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CSN California is the cable home for MLB's Oakland Athletics, the NBA's Sacramento Kings.[http://en.wikipedia.org/wiki/CSN\\_West](http://en.wikipedia.org/wiki/CSN_West)

Zone 3AR - State of Arkansas - 1-1-2008 Amendment to Term Sheet.PDF/Exhibit J

Fox Sports Kansas City; [http://en.wikipedia.org/wiki/Fox\\_Sports\\_Kansas\\_City](http://en.wikipedia.org/wiki/Fox_Sports_Kansas_City);Royals 142-game FSKC schedule; <http://msn.foxsports.com/regional/midwest>

FSN Ohio Team Pages: Blue Jackets(NHL), Cavaliers(NBA), Indians(MLB),  
;[http://cincinnati.reds.mlb.com/news/press\\_releases/press\\_release.jsp?ymd=20080307&content\\_id=2410937&vkey=pr\\_cin&fext=.jsp&c\\_id=cin](http://cincinnati.reds.mlb.com/news/press_releases/press_release.jsp?ymd=20080307&content_id=2410937&vkey=pr_cin&fext=.jsp&c_id=cin)

Reds(MLB);<http://msn.foxsports.com/regional/ohio?workingCategory=286>;[http://www.wkyc.com/news/news\\_article.aspx?storyid=81743&provider=gnews](http://www.wkyc.com/news/news_article.aspx?storyid=81743&provider=gnews);<http://www.prosportsdaily.com/forums/showthread.php?t=279949>

Time Warner; <http://www.timewarner.com/corp/newsroom/pr/0,20812,713890,00.html>

Devil Rays; <http://www.sunsportstv.com/default.jsp>; may need to include Tampa Bay Teams - Devil Rays, Magic, and Lightning, Miami Teams - Heat, Panthers & Marlins

Indians; <http://www.sportstimeohio.com/blogDetail.php?blgId=57>; -----games source

## Other Material

Conversation with Jim Cuddihy on January 26, 2008

U.S. Bureau of Labor Statistics, CPI Index.

**APPENDIX 3: ALTERNATIVE REGRESSION RESULTS**

I have also estimated my model on a sample that does not include observations for any MASN zones. This analysis is intended to explore the possibility that the prices Comcast pays in other MASN zones are “corrupted” by Comcast’s challenged conduct. If the prices are indeed “corrupted,” it would be appropriate to remove all MASN entries from the dataset. Removing all MASN observations leaves me with 52 usable 2008 observations. With these data, I estimated the same model as presented above in Section VI.B. The tables below present the results.

TABLE A1: DESCRIPTIVE STATISTICS OF ALTERNATIVE SAMPLE

	Mean	Standard Deviation	Minimum	Maximum
Fee (\$/sub/month)	\$1.48	\$0.80	\$0.16	\$3.54
Total Games	216	87	66	370
Population (000s)	3,819	3,447	68	20,100
Population Density (per mi <sup>2</sup> )	251	337	10	1,893
Median Household Income (\$000s)	\$42.51	\$7.27	\$32.02	\$64.29
Distance to Venue (miles)	197	338	15	2,390
MLB Winning Percentage	0.50	0.04	0.41	0.59
NBA Winning Percentage	0.49	0.07	0.37	0.65
NHL Point Percentage	0.53	0.07	0.43	0.69
Inner Zone (discrete)	0.29	0.46	0	1

TABLE A2: REGRESSION RESULTS USING ALTERNATIVE SAMPLE

[Begin Highly Confidential]

[End Highly Confidential]

TABLE A3: PREDICTED COMCAST-MASN PRICE IN ZONE 4

[Begin Highly Confidential]

[End Highly Confidential]

My results are broadly consistent with the model presented in the text. A model without *any* MASN observations produces similar statistics (an adjusted R-squared of 0.575 versus 0.580) and predicts that Comcast would pay a price of [Begin Highly Confidential] [End Highly Confidential] per subscriber per month to carry MASN in Zone 4 in 2008. This predicted price is [Begin Highly Confidential] [End Highly Confidential] than that estimated using the model presented in the text (which predicts a MASN Zone 4 price of [Begin Highly Confidential] [End Highly Confidential] per subscriber per month in 2008). As a result,

the results I presented in the text are conservative and likely understate the price that Comcast would be willing to pay for carriage of MASN in Zone 4 in 2008.

**CERTIFICATE OF SERVICE**

I, David F. Engstrom, hereby certify that, on March 19, 2009, copies of the foregoing document were served on the following:

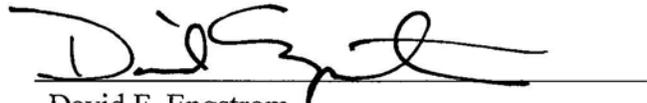
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I further certify that hardcopies of the foregoing will be served by hand on March 20, 2009, on the following.

The Honorable Richard L. Sippel  
(richard.sippel@fcc.gov)  
Chief Administrative Law Judge  
Federal Communications Commission  
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Washington, D.C. 20554

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