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March 28, 2007

BY HAND DELIVERY

The Honorable Kevin J. Martin
Chairman
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

Re: Consolidated Application for Authority to Transfer Control
in Connection With the Sirius/XM Merger (File Nos. SAT-
T/C-20070320-00053, SAT-T/C-20070320-00054, SES-T/C-
INTR2007-00693, and SES-T/C-INTR2007-00694)

Dear Chairman Martin:

The Consumer Coalition for Competition in Satellite Radio ("C3SR"),* by its attorney, hereby submits the attached economic study, entitled "Declaration of J. Gregory Sidak Concerning the Competitive Consequences of the Proposed Merger of Sirius Satellite Radio, Inc. and XM Satellite Radio Inc.," to assist the Commission in its early review of the above-referenced application.

The above-referenced consolidated application is grossly misleading because it equates satellite radio with virtually all other forms of audio entertainment for purposes of merger review. This is fundamentally at odds with the Commission's recent analysis of competition in satellite DARS based on an examination of the relevant market utilizing the DOJ/FTC Horizontal Merger Guidelines. Satellite DARS is considered by the Commission to be a separate market. **

*C3SR was founded by XM and Sirius subscribers concerned about the adverse impact of a satellite radio monopoly on consumer choice, program diversity, and pricing.

***Annual Report and Analysis of Competitive Market Conditions with Respect to Domestic and International Satellite Communications Services*, First Report, FCC 07-34 (released March 26, 2007). The FCC stated, "Although this Report is not an analysis of a proposed merger, the *Merger Guidelines* provide useful principles for the analysis of competition in satellite communications markets." *Id.* at ¶ 29.

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Among other things, the enclosed economic study confirms that the relevant market for antitrust analysis is satellite DARS, a distinct and separate product market. In addition, it evaluates the competitive effects of this merger to monopoly and the illusory consumer benefits touted by the merger parties. It rejects the proposed conditions offered by the merger parties as inadequate to protect consumer welfare.

The Commission has auctioned only two satellite DARS licenses. This proposed merger will result in all of the allocated satellite DARS spectrum being under common control by a single entity, will destroy competition, will harm existing satellite radio subscribers, and will reduce the overall quality of satellite radio service to the public. C3SR believes that competition in satellite radio is the only force that will lower prices, maximize content diversity, and ensure the highest-quality satellite radio service to the public.

For these reasons, C3SR believes the merger proposal results in a merger to monopoly in violation of the antitrust laws, contrary to the public interest, and in violation of the Commission's long-standing policy against spectrum monopolies. We respectfully request a meeting with you and your staff to discuss the enclosed economic study and our client's concerns.

Respectfully submitted,



Julian L. Shepard
Counsel to
Consumer Coalition for Competition
in Satellite Radio ("C3SR")

Enclosure
Certificate of Service

cc: The Honorable Michael J. Copps
The Honorable Jonathan S. Adelstein
The Honorable Deborah Taylor Tate
The Honorable Robert M. McDowell
The Honorable Alberto R. Gonzales

CERTIFICATE OF SERVICE

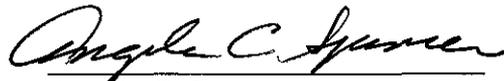
I, Angela C. Spencer, hereby certify that I have caused copies of the foregoing letter to be served via U.S. Mail, this 28th day of March , 2007, on the following parties listed below:

Patrick L. Donnelly
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Angela C. Spencer

Expert Declaration of J. Gregory Sidak
Concerning the Competitive Consequences of the Proposed Merger
of Sirius Satellite Radio, Inc. and XM Satellite Radio, Inc.
March 16, 2007

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INTRODUCTION

1. On February 19, 2007, Sirius Satellite Radio, Inc. (Sirius) and XM Satellite Radio, Inc. (XM) announced a “merger of equals” that would combine the only two U.S. satellite digital audio radio services (SDARS) providers into a single firm.¹ XM and Sirius announced their proposed merger notwithstanding existing Federal Communications Commission (FCC) rules that prevent the consolidation of the two SDARS licenses.²

2. I have been asked by counsel for the Consumer Coalition for Competition in Satellite Radio to prepare an expert declaration analyzing the likely competitive impact of the proposed merger of XM and Sirius.³ In particular, I have been asked to determine whether SDARS are a relevant product market for antitrust purposes, and I have been asked to assess the unilateral pricing effects of the proposed merger in the relevant product market. My analysis is based on information in the public domain as of noon on March 16, 2007.

3. In Part I, I ascertain the relevant product market that would be affected by the proposed merger. The *Merger Guidelines* establish a precise test by which to determine whether SDARS represent a distinct antitrust product market. I use a derivative of that test known as the

1. See, e.g., Sarah McBride, Dennis K. Berman & Amy Schatz, *Sirius and XM Agree to Merge: Despite Hurdles For Regulators, Deal Pits Competition Concerns Against New Technology*, WALL ST. J., Feb. 20, 2007, at A1.

2. Due to competitive concerns, the original satellite radio licensing rule provides that “eligible auction participants may acquire only one of the two licenses being auctioned.” See In re Matter of Establishment of Rules and Policies for the Digital Audio Radio Satellite Service in the 2310-2360 MHz Frequency Band, Report and Order, Memorandum Opinion and Order and Further Notice of Proposed Rulemaking, 12 F.C.C.R. 5754, 5786 ¶ 78 (1997). As the Commission explained:

Other audio delivery media are not, of course, perfect substitutes for satellite DARS. . . . We agree with commenters, that there should be more than one satellite DARS license awarded. Licensing at least two service providers will help ensure that subscription rates are competitive as well as provide for a diversity of programming voices.

Id.; see also Auction of Satellite Digital Audio Radio Service; Auction Notice and Filing Requirements For 2 DARS Licenses Scheduled for April 1, 1997, 62 Fed. Reg. 13009 (Mar. 19, 1997) (“Bidders may win only one license, and as such will be permitted to be active on only one license at a time.”).

3. The Consumer Coalition for Competition in Satellite Radio is a consumer group consisting of Sirius and XM subscribers. It is supported by the National Association of Broadcasters.

“critical elasticity” to determine whether a hypothetical monopoly provider of SDARS could profitably impose a small, nontransitory price increase. The outcome of that test implies that SDARS are a distinct product market. Next, I explain how indecency standards legislated by Congress and interpreted by the FCC have generated a market segmentation between broadcast content and subscription-based content. As a result, indecent video content has gravitated to cable networks and direct broadcast satellite (DBS), and indecent audio content has gravitated to SDARS. Indeed, there is no doubt that the most compelling content on SDARS would be deemed to be “indecent” if presented in a terrestrial broadcast environment. In 2004, the chief executive of XM said: “We want to be the HBO of radio.”⁴

4. I then review how the FCC, the Department of Justice, and the federal courts have assessed market definition in analogous subscriber-based programming markets. Notwithstanding the specific (indecent) content on SDARS, Congress, the FCC, the DOJ, and the federal courts have segmented general media programming between advertisement-based broadcast services and subscription-based services. The rulings by these agencies in analogous cases support my initial finding that SDARS are a distinct antitrust product market. In addition to applying the *Merger Guidelines* and reviewing agency decisions on related market definition, I assess market-based evidence on substitution possibilities to determine whether consumers perceive alternative audio services such as podcasts, mobile Internet radio, terrestrial-based advertiser-supported radio, and Hybrid Digital (HD) radio to be reasonably interchangeable with SDARS.

5. In Part II, I demonstrate that under the most reasonable product market definition, the proposed merger of XM and Sirius would be a merger to monopoly. Thus, under

4. See, e.g., Scott Woolley, *Freedom Of Speech On Satellite Radio*, FORBES.COM, Oct. 6, 2004, available at http://www.forbes.com/home/services/2004/10/06/cx_sw_1006stern.html.

the most reasonable market definition, the Herfindahl-Hirschman Index (HHI) in every local radio market in the United States would be 10,000 if the merger were approved. Even under a more expansive (and thus ill-conceived) product market definition that included HD signals, the proposed merger would increase HHI by more than 4,000 points in all but five of the 299 local radio markets. One could argue that the relevant product market should include, in addition to HD and SDARS signals, existing analog signals. Because the existing capacity of analog signals is small relative to the merged firms' capacity, and because the ownership of such signals is mildly concentrated, the result is not significantly different. In particular, under a more expansive market definition that included terrestrial analog and HD signals, the proposed merger would increase HHI by more than 3,000 points in all but thirteen local radio markets. Moreover, many U.S. households live beyond the current contours of the existing terrestrial signals (analog or HD). For these consumers, even under a more expansive market definition that included SDARS, HD signals, and analog terrestrial signals, the post-merger HHI would be a merger to monopoly. Finally, I analyze the anticompetitive effects of the proposed merger in the upstream programming market.

6. In Part III, I analyze the claim made by some merger proponents that, unless the proposed merger is approved, each SDARS provider would fail. The classic "shut down" rule in economics demonstrates that a firm exits the industry when its average variable cost exceeds price, which implies that the last unit sold makes a negative contribution to the firm's margins. In any network industry with significant fixed costs, average total cost will decline as the number of subscribers increases. Thus, the relevant question for evaluating a failing firm argument here is not whether each of the two SDARS providers is charging a price that exceeds its *current* average variable cost. Instead, the relevant question is whether each SDARS

provider is charging a price that exceeds its *expected* average variable cost given projected (higher) penetration rates. Because the average cost per subscriber of SDARS declines as penetration increases, it is conceivable that a price charged today that does not generate positive margins would nonetheless generate even large margins in the future. A review of reports by equity analysts demonstrates, however, that Sirius and XM are currently earning *positive* margins on their last subscribers. Moreover, SDARS penetration rates are expected to increase significantly, which will decrease average variable cost further and thereby generate even larger margins. Thus, the failing-firm argument is untenable in this context.

7. In Part IV, I demonstrate that the majority of merger-specific efficiencies identified by Sirius and XM would not redound to the benefit of consumers. Only \$10 million (8.7 percent) of the \$115 million in purported savings made possible by the merger would reduce the merged firms' marginal costs. Thus, the merger-specific synergies would not likely offset the predicted anticompetitive effects.

8. In Part V, I explain why the proposed conditions offered by the merger proponents would not remedy the likely anticompetitive effects. I also explain why the conditions represent a *de facto* regime of price cap regulation that is antithetical to the deregulatory movement at the FCC over the past decade. A price freeze at the current monthly price of \$12.95 would be welfare-reducing to the extent that the future price that emerges from continued oligopolistic competition between Sirius and XM in the absence of the proposed merger would naturally cause the equilibrium price to fall below \$12.95 per month. Even assuming it is possible to calculate the appropriate price level and duration of price controls for the merged firm, there is no FTC or DOJ precedent that supports such a requirement as part of an antitrust consent decree.

9. The merger proponents suggest implausibly that this merger bears no resemblance to the proposed DBS merger that was abandoned in the face of FCC skepticism in 2002.⁵ But the similarities are striking, and they have been detected by many respected industry observers.⁶ In the proposed DBS merger, most MVPD customers would have experienced a reduction in the number of suppliers from three (the incumbent cable operator, DIRECTV, and Echostar) to two, and the five million DBS subscribers in areas not passed by cable television systems would have experienced a reduction in the number of suppliers from two to one. Assuming generously that terrestrial radio serves the same role of the incumbent cable operator here, most radio customers would experience a reduction in the number of supplier from three to two, and those 22 million people age twelve and older who receive five or fewer stations would experience a reduction in the number of radio suppliers from two to one. For the same reason that the FCC was skeptical of the proposed satellite television merger, the proposed satellite radio merger should be rejected.

5. XM SATELLITE RADIO, INC., The Facts About What the NAB Is Saying (S.E.C. FORM SCHEDULE 14A), at 5, Mar. 6, 2007 (“While the FCC raised objections to the Echostar-DIRECTV merger in 2002, none of those objections applies in the case of the proposed XM-SIRIUS merger in 2007.”).

6. According to Professor Gerald Faulhaber, the former chief economist of the FCC, the two merger proposals are nearly identical:

I don't think that it [the proposed XM-Sirius merger] is different at all. In both cases, EchoStar and Direct TV were both fairly marginal financially and they made the argument, which potentially could have been compelling and wasn't, that 'Gee, as a single satellite company we can more effectively challenge the cable companies.' That was, in my view, a bogus argument. It was turned down at the FCC and turned down by the Justice Department as well, and I think events have shown that that was a good decision. Like Sirius and XM, they were both in some financial difficulties and they used this as an argument to say, 'We're not financially strong enough to challenge the cable companies.' I don't think that they were right then, I don't think that they're right now. I think that they are very similar. It's a duopoly looking to merge into a monopoly. That's where we are on this.

See Sirius and XM: Can Two Archrivals Sing the Same Tune?, KNOWLEDGE@WHARTON, Feb. 21, 2007, available at <http://knowledge.wharton.upenn.edu/createpdf.cfm?articleid=1667&CFID=3861947&CFTOKEN=62968861>.

QUALIFICATIONS

10. My name is J. Gregory Sidak. I am Visiting Professor of Law at Georgetown University Law Center; founder of Criterion Economics, L.L.C., an economic consulting firm in Washington, D.C. and Cambridge, Massachusetts; and founding U.S. editor of the *Journal of Competition Law & Economics*, an international peer-reviewed journal published by the Oxford University Press. My work concerns antitrust policy, the regulation of telecommunications and other network industries, intellectual property, and constitutional issues regarding economic regulation. At Georgetown, I teach courses on antitrust law and telecommunications regulation.

11. I was Deputy General Counsel of the FCC from 1987 to 1989, and Senior Counsel and Economist to the Council of Economic Advisers in the Executive Office of the President from 1986 to 1987. As an attorney in private practice with Covington & Burling in Washington, D.C., I worked on numerous antitrust cases and federal administrative, legislative, and appellate matters concerning telecommunications and other regulated industries. From 1992 through 2005, I was a resident scholar at the American Enterprise Institute for Public Policy Research (AEI), where I directed AEI's Studies in Telecommunications Deregulation and held the F.K. Weyerhaeuser Chair in Law and Economics. From 1993 to 1999, I was a Senior Lecturer at the Yale School of Management, where I taught a course on telecommunications regulation with Dean Paul W. MacAvoy.

12. I have written numerous books.⁷ I have also published approximately seventy scholarly articles in journals including the *American Economic Association Papers and*

7. See DAN MALDOOM, RICHARD MARSDEN, J. GREGORY SIDAK & HAL J. SINGER, *BROADBAND IN EUROPE: HOW BRUSSELS CAN WIRE THE INFORMATION SOCIETY* (Springer 2005); J. GREGORY SIDAK, *FOREIGN INVESTMENT IN AMERICAN TELECOMMUNICATIONS* (University of Chicago Press 1997); J. GREGORY SIDAK & DANIEL F. SPULBER, *DEREGULATORY TAKINGS AND THE REGULATORY CONTRACT: THE COMPETITIVE TRANSFORMATION OF NETWORK INDUSTRIES IN THE UNITED STATES* (Cambridge University Press 1997); J. GREGORY SIDAK & DANIEL F. SPULBER, *PROTECTING COMPETITION FROM THE POSTAL MONOPOLY* (AEI Press 1996); J. GREGORY SIDAK &

Proceedings, Antitrust Law Journal, Berkeley Technology Law Journal, California Law Review, Columbia Law Review, Contributions in Economic and Policy Research, Harvard International Law Journal, Journal of Competition Law & Economics, Journal of Network Industries, Journal of Political Economy, New York University Law Review, Review of Industrial Organization, Stanford Law Review, Supreme Court Economic Review, University of Chicago Law Review, Virginia Tax Review, Yale Law Journal, and Yale Journal on Regulation, as well as opinion essays in the *New York Times, Wall Street Journal*, and other business periodicals. I am the co-author of the chapter on remedies and the interface between antitrust and sector-specific regulation in the *Handbook of Telecommunications Economics*. I am ranked eighth among the top 1,500 legal authors on the Social Science Research Network (SSRN) in terms of number of downloads of scholarly papers. My writings have been translated into Japanese, Chinese, Korean, and Spanish.

13. I have testified before committees of the U.S. Senate and House of Representatives on regulatory and constitutional law matters. My writings on antitrust, regulation, and constitutional law have been cited by the Supreme Court of the United States, the lower federal and state supreme courts, state and federal regulatory commissions, the Supreme Court of Canada, and the European Commission.

14. I earned A.B. (1977) and A.M. (1981) degrees in economics and a J.D. (1981), all from Stanford University. I was a member of the *Stanford Law Review*. Following law school, I served as Judge Richard A. Posner's first law clerk on the U.S. Court of Appeals for the Seventh Circuit.

WILLIAM J. BAUMOL, TOWARD COMPETITION IN LOCAL TELEPHONY (MIT Press 1994); J. GREGORY SIDAK & WILLIAM J. BAUMOL, TRANSMISSION PRICING AND STRANDED COSTS IN THE ELECTRIC POWER INDUSTRY (AEI Press 1995).

15. My curriculum vitae and the materials upon which I have relied in preparing this declaration are provided in separate appendices to this report.

I. SUBSCRIPTION-BASED SATELLITE DIGITAL AUDIO RADIO SERVICES ARE A DISTINCT ANTITRUST PRODUCT MARKET

16. In a March 6, 2007 filing with the Securities and Exchange Commission (SEC), XM argued that the “audio entertainment market”—which purportedly includes “free ‘over-the-air’ AM, FM, and HD radio, Internet radio, music subscription services, iPods and other MP3 players, CD players, and cell phones, as well as satellite radio”—is the relevant product market for antitrust analysis of the merger effects.⁸ But that market definition is overly broad. A straightforward application of the *Merger Guidelines*’ test for market definition indicates that SDARS represent a distinct product market. Because consumers do not perceive alternative audio services to SDARS (such as advertiser-supported terrestrial radio broadcasts or podcasts) to be reasonably interchangeable with SDARS, the hypothetical price increase would likely be profitable, which implies that SDARS are a distinct product market for the purpose of antitrust analysis.

A. The Merger Guidelines and the Critical Share Framework

17. The pertinent question for establishing the existence of SDARS as a relevant product market is the following: Would a hypothetical monopoly provider of SDARS have the ability to increase its price five percent above the “competitive rate,” for a nontransitory period of time (usually assumed to be two years) without losing a sufficient share of customers to alternative audio services such that the price increase would be rendered unprofitable. If the

8. XM SATELLITE RADIO, INC., The Facts About What the NAB Is Saying (S.E.C. FORM SCHEDULE 14A), at 4, Mar. 6, 2007.

answer is “no,” then the product market must be expanded to include alternatives, such as advertiser-supported radio services. An antitrust market is defined as the narrowest group of products that would allow a hypothetical monopolist to profitably impose a “small-but-significant-and-non-transitory-increase-in-price” (SSNIP)—generally, a five-percent increase above the competitive price.⁹

18. Substitution to alternative audio services need only occur for a “critical share” of customers—that is, to a degree making a SSNIP unprofitable for the hypothetical provider of SDARS.¹⁰ Alternatively, one can solve for the critical own-price elasticity of demand such that the hypothetical monopoly provider of SDARS would be indifferent between raising and not raising prices above competitive rates.¹¹ If the actual own-price elasticity of demand for SDARS is greater (in absolute terms) than the critical own-price elasticity of demand, then the hypothetical monopoly distributor of SDARS could *not* profitably impose a SSNIP.

9. Department of Justice and Federal Trade Commission Horizontal Merger Guidelines, released Apr. 8, 1997, § 1.11.

10. For a more extensive discussion of critical share, see Jerry A. Hausman, Gregory Leonard & Christopher Velturo, *Market Definition Under Price Discrimination*, 64 ANTITRUST L.J. 367 (1996).

11. The comparison of profits can be expressed algebraically as

$$[1] (1.05 P_0 - c) Q_1 > (P_0 - c) Q_0,$$

where P_0 is the original price of SDARS and c is the marginal cost of producing SDARS. The own-price elasticity of demand for SDARS, ε , is the percentage decrease in the quantity of demand for SDARS for every one-percent increase in the price for SDARS. Constant elasticity demand (at least over the relevant portion of the demand curve) implies

$$[2] Q_1 / Q_0 = (P_1 / P_0) \varepsilon.$$

Substituting this definition of elasticity into equation [1] and canceling terms yields

$$[3] (1.05 P_0 - c) (P_1 / P_0) \varepsilon > (P_0 - c).$$

Dividing both sides by the new margin and taking logarithms yields

$$[4] \varepsilon \log[1.05] > \log[P_0 - c] - \log[1.05 P_0 - c].$$

Dividing both sides by $\log[1.05]$ yields the critical elasticity formula:

$$[5] \varepsilon > \{\log[P_0 - c] - \log[1.05 P_0 - c]\} / \log[1.05].$$

Alternatively, if the actual own-price elasticity of demand for SDARS is less (in absolute terms) than the critical own-price elasticity of demand, then the hypothetical monopoly distributor of SDARS could profitably impose a SSNIP, which would imply the existence of a separate product market for SDARS.

B. Application of the Critical Share Framework to the Proposed Merger of XM and Sirius

19. In this section, I compare the actual own-price elasticity of demand for SDARS with the critical own-price elasticity to determine whether SDARS represent a distinct product market for purposes of antitrust analysis.

1. Calculating the Critical Own-Price Elasticity of Demand

20. As demonstrated in the previous section, the critical own-price elasticity of demand can be approximated using current operating margins and an assumption of constant own-price elasticity of demand. I have reviewed analyst reports that seek to decompose XM's and Sirius's costs into a fixed component and a variable component. Using the incremental margins experienced by XM of 65 percent,¹² and the current monthly price of \$12.95 per month, the implied critical own-price elasticity of demand is -1.52 (equal to $\{\log[\$12.95 - \$4.53] - \log[(1.05 \times \$12.95) - \$4.53]\} / \log[1.05]$). To the extent that the current price does not reflect the "competitive price" due to an exercise of market power, then one should revise the current price downward. For example, if "competitive prices" were \$9.95 per month, and if marginal costs were held constant, then the critical own-price elasticity of demand would be -1.80 (equal to $\{\log[\$9.95 - \$4.53] - \log[(1.05 \times \$9.95) - \$4.53]\} / \log[1.05]$). As this example illustrates, any

12. Craig Moffett & Amelia Wong, *XMSR: Few Surprises, but Strong Second Quarter Affirms Positive Long Term Trends*, BERNSTEIN RESEARCH CALL, July 29, 2005 at 4 ("Satellite radio is a business with high upfront fixed costs; building and launching satellites, building a programming capability, and creating a ground based infrastructure. But the incremental margin generated by each subscriber is very high, in the range of 65%.") [hereinafter Moffett & Wong, *XMSR: Few Surprises*].

“bias” in the current price owing to market power makes it easier to infer the existence of a distinct product market for SDARS. That is, if the actual own-price elasticity of demand for SDARS is -1.3, then SDARS would constitute the relevant product market under an assumption of no market power (competitive price is \$12.95, critical elasticity is -1.52), as well as under an assumption of market power (competitive price is \$9.95, critical elasticity is -1.80).

2. Estimating the Actual Industry Own-Price Elasticity of Demand for Subscription-Based Satellite Radio

21. If the actual own-price elasticity of demand is less than -1.52 (in absolute terms), then SDARS represent a distinct product market according to the *Merger Guidelines*. The own-price elasticity of demand measures the availability of close substitutes: If there are few viable alternatives, then the own-price elasticity of demand is small in absolute terms. According to Bernstein Research, SDARS enjoy what economists call an “early mover’s advantage” over its potential rivals:

XM and Sirius also have a considerable head start on any new service, and their established brands, distribution relationships, promotional and marketing clout, high customer satisfaction and relatively inexpensive price points are *likely to limit the number of consumers who would choose a competing offering*.¹³

To the extent that SDARS consumers would be highly reluctant to switch to alternatives in response to a price increase, the own-price elasticity of demand for SDARS is likely to be less than 1.52 in absolute terms.

22. On April 2, 2005, XM increased its monthly price from \$9.99 to \$12.95 to bring its price in line with the price of Sirius—an increase of nearly 30 percent.¹⁴ In the two quarters following the price increase, XM realized subscriber growth of 13 percent (third quarter 2005)

13. Craig Moffett & Amelia Wong, *Satellite Radio: Limitations of Digital Radio Suggest Impact on Satellite Radio Will Likely Be Small*, BERNSTEIN RESEARCH CALL, Dec. 8, 2005, at 4 (emphasis added).

14. XM Satellite Radio raises monthly fee, *Chi Trib.*, Mar. 1, 2005, at 10 (“XM said it would raise the price of its basic service to \$12.95 per month from \$9.99 beginning April 2, matching Sirius’ monthly fee.”).

and 20 percent (fourth quarter 2005).¹⁵ The fact that subscriber growth continued at such a rapid pace in the presence of 30 percent price increase underscores the low elasticity of demand faced by SDARS providers.¹⁶ In addition to this direct evidence on the own-price industry elasticity of demand for SDARS, there is much indirect evidence that suggests that demand is highly inelastic. For example, the churn rate for SDARS is less than two percent, which Sirius says is the lowest among all subscription-based services.¹⁷ Bernstein Research noted in July 2005 that XM “saw no increase in churn, despite a 30 percent price increase taken at the start of the [second] quarter [of 2005].”¹⁸ Sirius’s chief executive attributes the low churn to the fact that “[Sirius’s] programming is so compelling, and so sticky, and so strong.”¹⁹ Another reason for the low churn rate is high switching costs for the closest available substitute. If an SDARS customer wishes to substitute to HD radio, he or she must purchase new hardware, which currently costs \$200—or roughly the equivalent of fifteen months of SDARS at the current monthly price of \$12.95.²⁰ According to Bernstein Research, the churn rate for Sirius was 1.4 percent in 2006, while the churn rate for XM’s self-paying customers was the same.²¹ The

15. XM RADIO, ANNUAL REPORT (SEC Form 10-K), at 1 (Mar. 16, 2006) (showing 6 million subscribers); XM RADIO, QUARTERLY REPORT (SEC FORM 10-Q), 18 (Nov. 07, 2005) (showing 5 million subscribers); XM RADIO, QUARTERLY REPORT (SEC 10-Q), at 19 (Aug. 5, 2005) (showing 4.4 million).

16. This price increase is direct evidence of XM’s market power, which is more reliable than inferential evidence based on market share calculations. Market shares do not make price increases; firms do.

17. *Howard’s way - Satellite radio*, THE ECONOMIST, Jan. 14, 2006 (citing an unnamed executive at Sirius).

18. Moffett & Wong, *XMSR: Few Surprises*, *supra* note 12, at 7.

19. *Howard’s way - Satellite radio*, THE ECONOMIST, Jan. 14, 2006 (quoting Mel Karmazin).

20. Heather Green & Tom Lowry, *Media The New Radio Revolution; From satellite to podcasts, programming is exploding—but the fight for profits will be ferocious*, BUS. WK., Mar. 14, 2005, at 32.

21. Craig Moffett & Amelia Wong, *Sirius (SIRI) and XM (XMSR): Back to First Principles . . . Lowering SIRI Target Price, but Reiterate Outperform*, BERNSTEIN RESEARCH, Feb. 21, 2006. Bernstein explains that the aggregate churn rate for XM is a composite of self-paid churn and the churn of subscribers coming off original equipment manufacturers’ promotional periods, which is not comparable to Sirius’s churn rate. Thus, customers who receive three months of free SDARS are more likely to cancel their subscription than a customer who selected the service voluntarily.

extremely low churn rate for SDARS suggests that substitution possibilities for SDARS customers are lacking, which implies highly inelastic demand.²²

23. In addition to low churn rates, another indicator of inelastic demand for SDARS is the high “conversion rate.”²³ The conversion rate is defined as the percentage of customers who sign a contract with an SDARS provider after sampling the service for three months free of charge. During 2003, XM was able to convert nearly three-quarters of all customers who were on a three-month free trial.²⁴ During 2004 through 2005, the conversion rate decreased to 60 percent,²⁵ yet was still impressive. The high conversion rate suggests that SDARS customers would not easily substitute toward another radio service in response to a small price increase for SDARS.

24. As I demonstrate below, the marquee content offered by SDARS is generally prohibited on terrestrial broadcast radio due to indecency standards. The demand for indecent content is widely considered to be price inelastic.²⁶ For example, evidence indicates that the demand for adult-oriented entertainment is highly price inelastic. Pay-per-view adult entertainment on cable systems, for instance, garners some of the highest profit margins of any programming. Some analysts claim margins for cable or direct broadcast satellite operators of

22. See, e.g., Craig Moffett & Amelia Wong, *XMSR: Few Surprises*, *supra* note 12, at 8 (“While the low churn suggests low price elasticity, cross-elasticity (i.e. choice between brands) remains unknown. On the margin, there are almost certainly some subscribers—in the retail channel—who previously chose XM over Sirius because of the difference in subscription cost.”).

23. See, e.g., Craig Moffett & Amelia Wong, *XM Satellite Radio (XMSR): Lowering Target Price to Reflect Conversion Rate Concerns; Maintain Outperform*, BERNSTEIN RESEARCH CALL, Feb. 17, 2006 (“Conversion Rate is the best indicator of cross-sectional consumer demand for satellite radio . . .”).

24. *Id.*

25. *Id.*

26. See, e.g., Dan M. Kahan, *Between Economics and Sociology: The New Path of Deterrence*, 95 MICH. L. REV. 2477, 2491 (1997) (explaining that the demand for pornography is inelastic because pornography is addictive).

up to 80 percent on each purchase.²⁷ Other studies show price-inelastic demand for indecent content on the Internet.²⁸ This inelastic demand means that most current consumers of indecent content are “inframarginal” consumers who will tolerate a price increase. Although such content may compete weakly against *Playboy* magazine and other indecent content consumed in the privacy of one’s home, indecent content delivered over the radio is distinguishable because it can be consumed in the car, while driving, and in remote geographic locations.

C. Subscriber-Based Programming Markets Have Been Recognized as Being Distinct from Broadcast Markets in Previous Regulatory and Antitrust Proceedings

25. In contrast to how it has regulated terrestrial broadcast radio and television, the FCC has consistently declined to extend indecency enforcement to subscriber-based services like SDARS or cable television. This regulatory asymmetry facilitates market division between satellite radio and terrestrial radio. In this section, I analyze the current state of indecency regulation and the demand for SDARS that would be vulnerable to indecency enforcement if aired over terrestrial broadcast radio. The FCC’s decision not to extend its indecency standards to SDARS has allowed for a market segmentation to occur between SDARS and terrestrial broadcast radio. This regulatory environment for indecent content shows no signs of changing over the time horizon relevant to the antitrust analysis of the proposed merger between Sirius and XM.

27. Frontline: American Porn: Interview With Dennis McAlpine, <http://www.pbs.org/wgbh/pages/frontline/shows/porn/interviews/mcalpine.html> (last visited Feb. 7, 2007).

28. NATIONAL RESEARCH COUNCIL, YOUTH, PORNOGRAPHY & THE INTERNET (Dick Thornburgh & Herbert S. Lin eds., 2003).

1. The FCC’s Indecency Standards Have Created an Economic Incentive for a Market Segmentation to Develop Between Advertiser-Based Programming and Subscriber-Based Programming

26. The FCC has the authority, under section 1464 of the U.S. criminal code, to regulate “obscene, indecent, or profane language” transmitted “by means of radio communication.”²⁹ Commission regulations bar the terrestrial broadcast of indecent content between the hours of 6 a.m. and 10 p.m.³⁰ The Commission defines indecency as material that, in context, depicts or describes “sexual or excretory activities or organs” and is “patently offensive” under “contemporary community standards” for the broadcast medium.³¹ The FCC is empowered to assess forfeiture penalties, and may initiate license revocation proceedings or deny license renewal for violations.³²

27. In recent years, one of the most significant Commission actions in response to indecent content concerned not a video image, but instead the audio portion of a national television broadcast. In January 2003, Bono, lead singer of the band U2, used profanity during a live broadcast of the Golden Globe Awards.³³ The Commission’s Enforcement Bureau initially found that no violation of law had occurred; it ruled that an isolated or fleeting expletive, used as an intensifying adjective rather than as a noun or verb, will not render a broadcast indecent.³⁴ The full Commission reversed the Enforcement Bureau in early 2004.³⁵ Several aspects of the Commission’s ruling are particularly salient to the application of indecency regulation to the

29. 18 U.S.C. § 1464 (2000).

30. 47 C.F.R. § 73.3999 (2006).

31. In re Industry Guidance on the Commission’s Case Law Interpreting 18 U.S.C. § 1464 and Enforcement Policies Regarding Broadcast Indecency, Policy Statement, 16 F.C.C.R. 7999, 8002 (2001).

32. 47 U.S.C. § 503(b)(2)(C) (2006); Obscenity, Indecency & Profanity, <http://www.fcc.gov/eb/oip/Welcome.html> (last visited Mar. 2, 2007).

33. In re Complaints Against Various Broadcast Licensees Regarding Their Airing of the “Golden Globe Awards” Program, Memorandum Opinion and Order, 18 F.C.C.R. 19,859 (2003).

34. *Id.* at 19,861.

35. *See* Complaints Against Various Broadcast Licensees Regarding Their Airing of the “Golden Globe Awards” Program, Memorandum Opinion and Order, 19 F.C.C.R. 4975 (2004).

terrestrial broadcast radio market. In particular, the Commission found that the “F-Word,” even when used as an intensifying adjective or insult, carries inherently sexual connotations and thus will *always* satisfy the first prong of the indecency analysis.³⁶ Second, the Commission expressly overturned prior law, finding that even isolated uses of the “F-Word” may violate the second “patently offensive” prong of indecency analysis.³⁷ The full Commission in *Golden Globe* also recognized a new and independent ground for liability: that the use of expletives, irrespective of their sexual or excretory connotation, may be a “profane” broadcast under section 1464.³⁸ This statutory interpretation by the FCC substantially expands potential liability for terrestrial radio broadcasters, especially for “shock jock” talk radio.

28. Since *Golden Globe*, the FCC has increased indecency enforcement against broadcasters. From 1995 to 2002, total annual notices of apparent liability (NALs) never exceeded \$100,000.³⁹ In 2003, NALs increased to \$440,000.⁴⁰ By 2004, they reached \$8 million.⁴¹ In 2006, NALs reached almost \$4 million.⁴² In addition, the Commission entered into three consent decrees in 2004, totaling almost \$3.5 million.⁴³ Significant actions during this period included a \$550,000 fine for broadcast of Janet Jackson’s performance during the Super Bowl XXXVIII Halftime Show, a \$1.2 million fine for an episode of *Married By America* on

36. *Id.* at 4979.

37. *Id.* at 4980.

38. *Id.* at 4981; see 18 U.S.C. § 1464 (2000) (prohibiting the broadcast of “obscene, indecent, or profane language”) (emphasis added).

39. See Indecency Complaints and NALs: 1993-2006, <http://www.fcc.gov/eb/oip/Stats.html> (last visited Feb. 4, 2007) [hereinafter *Indecency Complaints*]. The only other period of sizeable annual fines was in 1993 and 1994, when the Commission assessed liability totaling approximately \$1.2 million, largely due to several broadcasts by Howard Stern. *FCC Indecency Fines, 1970-2004*, WASH. POST, <http://www.washingtonpost.com/wp-srv/business/graphics/web-fcc970.html> (last visited Feb. 4, 2007).

40. *Indecency Complaints*, *supra* note 39.

41. *Id.*

42. *Id.*

43. Obscene, Profane & Indecent Broadcasts: Consent Decrees, <http://www.fcc.gov/eb/broadcast/CD.html> (last visited Feb. 6, 2007).

the Fox Television Network, and the \$3.6 million fine for an episode of *Without A Trace* on CBS—the largest in Commission history.⁴⁴

29. Broadcast radio has also faced sizeable fines as recently as April, 8, 2004, including a \$495,000 NAL against Clear Channel Communications for an episode of the *Howard Stern Show*, a \$755,000 NAL again against Clear Channel for a broadcast by radio host “Bubba the Love Sponge,” and \$357,000 in liability against Infinity Broadcasting for an episode of the *Opie & Anthony Show*.⁴⁵ Notably, *all* of these controversial radio hosts are now offered on satellite radio.⁴⁶ In late 2006, Congress passed the Broadcast Decency Enforcement Act, which raised potential fines to \$325,000 per violation, or per day for a continuing violation.⁴⁷ The legislation provides for a maximum fine of \$3 million for a continuing violation. Broadcasters have responded with tough internal indecency guidelines and have invested in time-delay technology that allows them to censor potentially indecent broadcasts.⁴⁸

30. SDARS, however, are not subject to these—or any other—indecency rules. In 2001, the FCC drew analogies to its experience with direct broadcast satellite (DBS) service. In determining the applicability of the Communications Act’s provisions on foreign ownership to SDARS during a hearing involving Sirius (then known as Satellite CD Radio), the FCC concluded:

We agree . . . that the issues regarding foreign ownership for DBS and SDARS are virtually identical and thus we affirm the Bureau’s determination that Section 310(b) of the Communications Act does not apply to subscription SDARS licenses because the

44. *Id.*; *FCC Indecency Fines*, *supra* note 39. The complaints focused on a simulated group-sex scene at a high-school party.

45. Sarah McBride, *Clear Channel Dumps Stern After Big Fine*, WALL ST. J., Apr. 9, 2004, at B1.

46. Opie and Anthony also broadcast a censored version of their show on CBS Radio.

47. Pub. L. No. 109-235, 120 Stat. 491 (2006).

48. See Frank Ahrens, *Six-Figure Fines For Four-Letter Words Worry Broadcasters*, WASH. POST., July 11, 2006, at A1; David Hinckley, *Local Radio: We’re Good With FCC Rules*, N.Y. DAILY NEWS, July 10, 2006, at 82.

service offered is neither broadcast, common carrier, aeronautical en route or aeronautical fixed service.⁴⁹

Thus, the FCC made clear that XM and Sirius do not fit within the existing regulatory pigeonhole of radio broadcasting. Rather, SDARS is a distinctly different medium.

31. In 2004, Mt. Wilson FM Broadcasters asked the Commission to apply the indecency rules to SDARS. The Commission declined to do so, saying that, “[c]onsistent with existing case law, the Commission does not impose regulations regarding indecency on services lacking the indiscriminate access to children that characterizes broadcasting.”⁵⁰ Clearly, any extension of the regulations to subscriber-based radio would be highly vulnerable to constitutional challenge.⁵¹ In upholding the constitutionality of legislation permitting the regulation of indecent broadcast content, the Supreme Court has, since the *Pacifica* decision in 1978, focused on the following governmental interests: pervasiveness of the media, its unique accessibility to children, and the fact that unwilling listeners or viewers can happen upon indecent material while tuning their radios or televisions.⁵² Compared to terrestrial broadcast radio, satellite radio is less pervasive because it is a subscription-based service. Satellite radio also affords far more listener control than does terrestrial broadcast radio. In addition to requiring consumers to affirmatively subscribe to the content, both XM and Sirius have measures in place that empower users to decide when they will encounter adult material. XM, for instance, denotes stations that frequently feature explicit language with an “XL” and allows

49. In the Matter of Satellite CD Radio, Inc., Memorandum Opinion and Order, FCC Dkt. No. 01-335, 16 F.C.C.R. 21458, 21460 (2001).

50. Letter from W. Kenneth Ferree, Media Bureau Chief, FCC, to Saul Levine, President of Mt. Wilson FM Broadcasters, 19 F.C.C.R. 24,069 (Dec. 14, 2004) (citing *In re Applications of Harriscope of Chicago, Inc.*, 3 F.C.C.R. 757, 760 n.2 (1988)).

51. See Robert Corn-Revere, *Can Broadcast Indecency Regulations Be Extended to Cable Television and Satellite Radio?*, 30 S. ILL. U. L.J. 243, 271 (2006).

52. See *FCC v. Pacifica Foundation*, 438 U.S. 726, 748-49 (1978).

users to block them.⁵³ Sirius permits channel blocking and requires listeners to opt-in to receive *Playboy Radio*.⁵⁴

32. Courts assessing the applicability of existing indecency statutes and regulations to SDARS would likely analogize the service to cable television. Unlike its First Amendment decisions concerning the broadcast media, the Supreme Court’s decisions concerning the constitutionality of content-based cable regulations have applied strict scrutiny.⁵⁵ If the Court recognizes voluntary channel blocking—offered by both Sirius and XM—as a less restrictive alternative to content restrictions, then the application of existing broadcast-based indecency regulation to SDARS would surely be held to be unconstitutional.

2. A Significant Portion of the Demand for Satellite Digital Audio Radio Is for Content That Would Be Deemed Indecent in a Broadcast Environment

33. Surveys of XM’s and Sirius’s channel offerings show a selection of programming that frequently contains explicit discussion of sexual or excretory activities or organs, or extensive profanity. Table 1 lists the relevant channels.

TABLE 1: SATELLITE RADIO CHANNELS FEATURING INDECENT OR PROFANE CONTENT

<i>XM Satellite Radio “XL” Channels</i>	<i>Sirius Channels*</i>
The Boneyard: 80s Hard Rock	Octane: Hard Rock
XM Liquid Metal: Heavy Metal	Shade 45: Uncut Hip-Hop
Squizz: New Hard Rock	Howard 100: Howard Stern
Fungus: Punk, Hardcore & Ska	Howard 101: Bubba the Love Sponge, Scott Farrell and Uncensored Talk ⁵⁶
The Rhyme: Classic Hip Hop/Rap	Raw Dog: Uncensored Comedy
Raw: New Uncut Hip Hop	Maxim Radio
XM Comedy: Uncensored Comedy	Cosmo Radio
Laugh Attack: Uncensored Comedy	Playboy Radio
The Virus: Opie & Anthony/Ron & Fez	Faction: Action Sports-Themed

53. XM Parental Controls, <http://www.xmradio.com/parentalcontrols/index.jsp> (last visited Feb. 3, 2007). Sirius permits channel blocking and requires listeners to opt-in to receive Playboy Radio.

54. Sirius Satellite Radio, www.sirius.com (last visited Mar. 3, 2007) (see link at bottom).

55. *United States v. Playboy Entertainment Group*, 529 U.S. 803, 813 (2000) (applying strict scrutiny to cable content-based regulation) (citing *Sable Communications v. FCC*, 492 U.S. 115, 126 (1989) (applying strict scrutiny in challenge to content-based regulation of landline telephone service)).

56. Stern may program several Sirius channels; two are currently on the air. *See* SIRIUS SATELLITE RADIO, UNSCHEDULED MATERIAL EVENTS (SEC FORM 8-K), § 8.01 (Oct. 6, 2004).

Note: * Sirius does not label its adult-oriented channels. This list includes those described on Sirius's channel lineup as "uncut" or "uncensored." I have also included Maxim and Cosmo Radio, both of which frequently feature sexually explicit discussion.

As Table 1 shows, a significant number of popular channels on both XM and Sirius contain indecent or profane material.

34. In contrast to XM and Sirius, terrestrial radio broadcasters have been self-censoring material that, before the FCC's the increase in indecency enforcement, would almost certainly have been aired unedited. For example, radio stations have pulled or edited Lou Reed's "Walk on the Wild Side" and Steve Miller's "Jet Airliner"—iconic rock songs that radio broadcasters has aired unedited for more than a generation.⁵⁷ Other stations have instituted zero-tolerance policies for on-air talent, prompting some personalities to take out "indecency insurance."⁵⁸ Only fourteen of 300 public television stations aired an unedited version of a documentary on the war in Iraq, in which soldiers swore while under fire.⁵⁹ During the 2006 Super Bowl halftime show, the Rolling Stones were bleeped twice by the network, once during "Start Me Up" (a song previously played uncensored on broadcast radio since its release in 1981) and again during a new song, "Rough Justice."⁶⁰

35. Strong evidence indicates that indecent content attracts a significant portion of the paying audience for SDARS. For instance, XM's CEO has identified the *Opie & Anthony Show* and XM's comedy channels as among its most popular.⁶¹ *Playboy Radio*, which requires subscribers to opt-in, reportedly drew more than one million customers to Sirius over three

57. Paul Davidson, *Indecent or Not? TV, Radio Walk Fuzzy Line*, USA TODAY, June 3, 2005, at 1B.

58. Frank Ahrens, *Six-Figure Fines for Four-Letter Words Worry Broadcasters*, WASH. POST., July 11, 2006, at A1.

59. *PBS Issues Indecency Guidelines in Response to FCC Fines*, PUBLIC BROADCASTING REP., June 23, 2006.

60. Michael Heaton, *Indecency the Old-Fashioned Way*, CLEVELAND PLAIN DEALER, Feb. 17, 2006, at 60.

61. Dan Caterinicchia, *Elliot Wakes to Subpoena*, WASH. TIMES, June 28, 2006, at C8; *see also* Sarah McBride & Julia Angwin, *Tough House: Broadcast Lags Satellite in Radio Race for Laughs*, WALL ST. J., Sept. 24, 2005, at 13.

months.⁶² Equity analysts have documented the growth in Sirius subscriptions following the addition of Howard Stern to its lineup.⁶³ Stern, who precipitated numerous FCC indecency enforcement actions in the past,⁶⁴ left terrestrial radio in 2006 after signing a five-year, \$500 million contract with Sirius.⁶⁵ Stern specifically cited the freedom from indecency regulations on satellite radio as the reason for his decision to switch to a different distribution platform for his show.⁶⁶

36. In the approximately two years since Stern announced that he would leave terrestrial radio, Sirius's subscriber base increased from less than 700,000 to more than 6 million.⁶⁷ Analysts attribute between one and two million of these subscribers to Stern himself.⁶⁸ Sirius paid Stern bonuses totaling \$219 million in 2006 and \$83 million in 2007 after Sirius exceeded the subscription targets specified in Stern's contract.⁶⁹ In 2006, Sirius announced its acquisition of the rights to more than 23,000 hours of Stern programming, which it intends to air unedited.⁷⁰ In its annual report filed in March 2006 with the Securities and Exchange Commission, XM specifically identified Stern as a possible competitive threat.⁷¹ In their SEC filings, both XM and Sirius have identified their uncensored programs as marquee content.⁷²

62. *Playboy Clicks With On-Demand Fare*, VARIETY, July 10, 2006, at 16.

63. *See, e.g., Cesca Antonelli, Sirius Radio Passes 3 Million Subscribers*, CHI. TRIB., Dec. 28, 2005, at 3 (citing Citigroup analyst Ellen Furukawa).

64. Editorial, *Stern Action*, CLEVELAND PLAIN DEALER, Jan. 6, 1993, at 4B ("When FCC Chairman Al Sikes was diagnosed with prostate cancer, Stern replied with characteristic dignity: 'I pray for his death.'").

65. *See, e.g., Antonelli, supra* note 63.

66. Jacques Steinberg, *Stern Likes His New Censor: Himself*, N.Y. TIMES, Jan. 9, 2007, at E1.

67. Alana Semuels, *Sirius Gives Stern, Agent \$83 million Stock Bonus*, L.A. TIMES, Jan. 10, 2007, at 1.

68. *Id.*; Gene G. Marcial, *Stern Is the Draw At Sirius Satellite Radio*, BUS. WK., Apr. 10, 2006, at 104.

69. *Stern's \$82M Anniversary*, NEWSDAY, Jan. 10, 2007, at A10.

70. Press Release, Sirius Satellite Radio, Howard Stern Marks First Year of the Radio Revolution on Sirius Satellite Radio (Jan. 9, 2007).

71. XM RADIO, ANNUAL REPORT (SEC FORM 10-K), at 23 (Mar. 3, 2006).

72. *See id.* at 1; SIRIUS SATELLITE RADIO, ANNUAL REPORT (SEC FORM 10-K), at 3 (Mar. 16, 2005).

3. Congress, the FCC, the DOJ, and the Federal Courts Have Segmented General Media Programming between Advertisement-Based Broadcast Services and Subscription-Based Services

37. The FCC, the DOJ, and the federal courts have identified factors that implicitly or explicitly segment media programming product markets between advertisement-based broadcast and subscription-based services, and those factors apply equally to television and radio.⁷³ In proposed mergers and acquisitions among broadcast radio station operators, the DOJ has regarded broadcast radio as a separate and relevant product market.⁷⁴

38. As modern subscription-based programming evolved, Congress recognized its competitive implications, as evidenced in the Cable Television Consumer Protection and Competition Act of 1992.⁷⁵ The Act's findings reflected Congress' position that cable television in general constituted a separate product when compared to broadcast television, so much so that cable's existence threatened that of broadcast: "As a result of the growth of cable television, there has been a marked shift in market share from broadcast television to cable television services."⁷⁶ The Act recognized that the broadcast medium could not effectively compete with the emerging and increasingly popular multichannel subscription-based services, declaring that "without the presence of another multichannel video programming distributor, a cable system faces no local competition. The result is undue market power for the cable operator as compared

73. *See, e.g.,* Turner Broadcasting Sys., Inc. v. FCC, 520 U.S. 180 (1997) (analyzing local cable operations as a distinct product market); Viacom Int'l Inc. v. Time Inc., 785 F. Supp. 371 (S.D.N.Y. 1992) (distinguishing between subscription-based services and broadcast television for market definition purposes); In the Matter of Subscription Video, 2 F.C.C.R. 1001, 1005 (1987) (holding that subscription-based services did not fall under the Communication Act's definition of "broadcasting").

74. *See, e.g.,* United States v. Clear Channel Communications, Inc., Competitive Impact Statement, 2 (Nov. 15, 2000), *concerning* United States v. Clear Channel Communications, Inc., 2001 WL 34038532 (D.D.C. 2001).

75. *Id.* at § 521 (2000).

76. *Id.* at § 521(a)(13). Moreover, the FCC reiterated the notion of separate markets in enacting specific and distinct regulations for MVPD and cable television providers. *See* 47 C.F.R. § 76 (2006).

to that of consumers and video programmers.”⁷⁷ The regulatory remedy that Congress created was a “must carry” provision that requires cable providers to devote channel capacity to local broadcast television stations.⁷⁸ In effect, the must carry provision creates a legislatively mandated duty to deal to preserve the existence of television broadcasters as suppliers of local content. Such an arrangement inherently involves two distinct product markets—one (the market for origination of local content) that Congress feared could not survive without being assured access to the other (the market for multichannel video program distribution). In this merger case, broadcast radio is analogous to broadcast television, and SDARS is analogous to cable television. The analogy does not imply that the two separate markets (terrestrial radio and SDARS) will interact in the same way that broadcast and cable television have, but merely that the separate markets exist for similar reasons, and a monopoly in either threatens consumer welfare.

39. The FCC was prepared to make key distinctions that separated SDARS from terrestrial radio, drawing direct analogies from its experience with subscription-based television. In a 1987 proceeding “to determine what criteria may be used by the Commission to determine whether a communications service should be treated as ‘broadcasting’ under the Communications Act,”⁷⁹ the FCC found that “the definition of ‘broadcasting’ . . . was intended to differentiate between services intended to be received by an indiscriminate public and those intended only for specific receive points,”⁸⁰ and that “transmissions designed to be available

77. *Id.* at § 521(a)(2).

78. *Id.* at § 521. Congress found: “As a result of the economic incentive that cable systems have to delete, reposition, or not carry local broadcast signals, coupled with the absence of a requirement that such systems carry local broadcast signals, the economic viability of free local broadcast television and its ability to originate quality local programming will be seriously jeopardized.” *Id.* at § 521(a)(16).

79. In the Matter of Subscription Video, 2 F.C.C.R. 1001, 1003, ¶ 20 (1987).

80. *Id.* at 1005.

only to paying subscribers clearly demonstrate the intent of the licensee.”⁸¹ Thus, the FCC found that subscription-based television service was not a form of broadcasting, and so the subscription-based service was not subject to existing regulations governing broadcast media: “[I]n all cases, the purveyor and its audience are engaged in a private contractual relationship. That relationship, enforced by the need for special equipment and/or decoders, obviates the need for the traditional broadcast type regulation that has been developed over the past 40 years.”⁸²

40. In 1997, the FCC authorized two licensees, Sirius and XM, “to launch and operate satellites to provide SDARS.”⁸³ From the beginning, the FCC treated SDARS differently from terrestrial radio broadcasting. In a portion of its 2001 notice for granting licenses to XM and Sirius, the FCC highlighted the exclusivity of the two companies that would occupy a reserved portion of the spectrum, making no reference to terrestrial radio: “There are only two SDARS providers authorized to provide service in the DARS spectrum band, XM Radio, Inc. and Sirius Satellite Radio, Inc.”⁸⁴ This exclusivity implies that entry by a third SDARS provider would be costly.

41. When Clear Channel proposed to merge with AMFM in 2000, the DOJ issued a competitive impact statement, declaring:

Clear Channel and AMFM are two of the three largest operators of broadcast radio stations in the United States. Clear Channel’s and AMFM’s radio stations compete head-to-head against one another *for the business of local and national companies seeking to advertise* on radio stations in many cities throughout the United States, including

81. *Id.*

82. *Id.* at 1006.

83. See Request For Further Comment on Selected Issues Regarding the Authorization of Satellite Digital Audio Radio Service Terrestrial Repeater Networks, Public Notice, DA 01-2570, 1 (Nov. 1, 2001), available at http://www.fcc.gov/ftp/Bureaus/International/Public_Notices/2001/pnin1232.doc.

84. *Id.*

Allentown, Pennsylvania; Denver, Colorado; Harrisburg, Pennsylvania; Houston, Texas; and Pensacola, Florida.⁸⁵

The DOJ specifically found the relevant product market to be radio-based advertising.⁸⁶ Thus, even if SDARS had existed as a viable force at the time, it would not have been included in the relevant product market.

D. Subscriber-Based Satellite Digital Audio Radio Is Distinct from Other Audio Services, Including Non-Radio-Based Products

42. Some commentators have argued that the relevant product market for purposes of analyzing this merger should contain an array of services in addition to SDARS.⁸⁷ However, those arguments are not pervasive as a matter of antitrust analysis. The weak substitution possibilities for current SDARS customers imply that a hypothetical monopoly provider of SDARS could profitably impose a SSNIP. Sirius' own website includes a press release that emphasizes that, from the consumer perspective, its SDARS product bears little resemblance to terrestrial radio:

Currently, SIRIUS utilizes its satellite broadcast technology to transmit 100 digital 'streams' of entertainment that include 60 streams of 100% commercial-free music, and 40 streams of news, sports, and entertainment for \$12.95 per month. Unlike today's radio channels, these digital streams from SIRIUS can also carry video signals or other data.⁸⁸

85. *United States v. Clear Channel Communications, Inc., Competitive Impact Statement*, 2 (Nov. 15, 2000), concerning *United States v. Clear Channel Communications, Inc.*, 2001 WL 34038532 (D.D.C. 2001).

86. *Id.*

87. See, e.g., Adam Thierer, *XM + Sirius = Good Deal (for the Companies and Consumers)*, The Progress & Freedom Foundation Progress Snapshot, Release 3.4, Feb. 2007 ("At a minimum, the 'relevant market' in this merger review should include all the potential sources of audible information / entertainment that are competing for our ears, including: free, over-the-air terrestrial radio broadcast stations; compact discs (or other stored media); iPods and MP3 players; digital music stores; podcasts; online file sharing; Internet radio stations and other services (such as Pandora); the 'Music Choice' cable radio service; and other portable media entertainment / communications devices and services.").

88. Sirius News Release, January 8, 2003 (available at <http://investor.sirius.com/ReleaseDetail.cfm?ReleaseID=154702&cat=&newsroom>).

Similar claims can be found on XM's website.⁸⁹ This press release emphasizes the absence of commercials, ubiquity, and large number of channels as the characteristics that distinguish SDARS from terrestrial radio broadcasts. Through such statements, XM and Sirius manifest their own belief that consumers view SDARS as significantly different from terrestrial radio.

1. Consumers View Subscriber-Based Satellite Digital Audio Radio as Distinct from Advertiser-Supported Terrestrial Radio

43. It is a mistake to think that SDARS subscribers would substitute to a "free" terrestrial radio broadcasting in response to a SSNIP. Instead, the effective price for given subscriber of advertiser-supported radio is roughly equal to the product of (1) the value of that subscriber's time (as measured by the subscriber's wage rate) and (2) the commercial time to which that subscriber would be exposed as a terrestrial radio listener. Not surprisingly, evidence suggests that advertiser-supported terrestrial radio is able to compete only weakly with SDARS by reducing commercial time. For example, at the end of 2004, Clear Channel decided to cut its ad time and reduce the length of commercial spots from 60 seconds to 30 seconds in an attempt to "win back listeners, boost ratings, and in turn lead to higher ad rates."⁹⁰ According to Forrester Research, the success of SDARS partly reflects listeners' desire to avoid advertising.⁹¹

44. Even for SDARS subscribers who are willing to endure commercials, the number of terrestrially delivered radio stations available in any given geographic market is severely constrained relative to the number of channels available on SDARS. In 2000, there were only 47 terrestrial radio stations as listed by Arbitron broadcasting in New York City; in many

89. XM Corporate Information (available at <http://www.xmradio.com/about/corporate-information.xmc>) ("XM's 2007 lineup includes more than 170 digital channels of choice from coast to coast: the most music in satellite radio, including 69 commercial-free music channels and exclusive live concerts and original programming, plus premier sports, talk, comedy, children's and entertainment programming; and 21 channels of the most advanced traffic and weather information.").

90. Tom Lowry, *Antenna Adjustment; Clear Channel is pulling apart its empire as it scrambles to compete in a changed media world*, BUS. WK., June 20, 2005, at 64.

91. *Why radio is worth watching*, THE ECONOMIST, June 11, 2005, at 15 (citing analyst Ted Schadler).

metropolitan areas outside the largest 50 markets (such as Jacksonville, Louisville, and Oklahoma City) there are 30 or fewer terrestrial radio stations as listed by Arbitron.⁹² Bernstein Research believes that digital terrestrial radio “poses little threat to the growth in satellite radio subscriptions” because it “cannot address four key factors that drive consumer adoption of satellite radio: commercial-free music; a large range of channels in a variety of formats; exclusive programming; and satellite radio’s distribution advantage as the auto OEMs [original equipment manufacturer].”⁹³

45. Unlike SDARS, advertiser-supported terrestrial radio stations lack a ubiquitous footprint. XM’s nationwide service can reach nearly 100 million listeners age twelve and over who are beyond the range of the largest 50 markets as measured by Arbitron.⁹⁴ XM estimates that, of these 100 million listeners, 36 million live beyond the largest 276 Arbitron markets.⁹⁵ XM also estimates 22 million people age twelve and older receive five or fewer stations.⁹⁶ A significant percentage of radio listeners, such as truckers (who numbered roughly 3 million in 2004),⁹⁷ routinely travel through two or more Arbitron radio markets on a frequent basis.⁹⁸ Those consumers clearly would not perceive terrestrial service to be a reasonable substitute SDARS.

46. Finally, as explained below, much of the marquee content on SDARS would be considered indecent if delivered via broadcast radio. In other words, by regulatory constraint

92. XM SATELLITE RADIO, INC., ANNUAL REPORT (S.E.C. FORM 10-K), at 1, Mar. 15, 2001 (citing American Radio, Spring 2000 Ratings Report, Duncan’s American Radio, 2000).

93. Craig Moffet & Amelia Wong, *Satellite Radio: Limitations of Digital Radio Suggest Impact on Satellite Radio will Likely Be Small*, BERNSTEIN RESEARCH CALL, Dec. 8, 2005, at 1.

94. XM SATELLITE RADIO, INC., ANNUAL REPORT (SEC FORM 10-K), at 2, Mar. 15, 2001.

95. *Id.* (citing census data and The Arbitron Company Fall 1999 Market Rankings).

96. *Id.* (citing The Satellite Report 1999, C. E. Unterberg, Towbin).

97. Interstate Connections, About Us, available at <http://www.icrocks.com/ic/about.asp?id=57> (citing trucker statistics from Randall Publishing surveys and Truckers News and Overdrive Magazine).

98. XM SATELLITE RADIO, INC., ANNUAL REPORT (SEC FORM 10-K), at 4, Mar. 15, 2001.

consumers cannot turn to terrestrial radio broadcast to receive such content. Regulation constrains demand substitutability between terrestrial radio and SDARS. Not only does satellite radio offer a much broader range of content, far fewer commercials, integration with other communications technology, often better quality sound, and national coverage, it also offers content that is *unavailable* on terrestrial radio—namely material that would invite indecency enforcement if aired over terrestrial broadcast radio outside the safe harbor period permitted by the FCC.

2. Subscriber-Based Satellite Digital Audio Radio Is Distinct from HD Radio

47. HD radio is a technology that allows for digital transmission of AM and FM terrestrial broadcasts on the same frequencies on which they are currently broadcast.⁹⁹ For several reasons, HD radio is not likely to constrain the pricing of SDARS. First, like analog radio, HD radio suffers from a limited national footprint. *BusinessWeek* has projected that only 2,500 of the nation's 13,000 commercial radio stations will be digital by 2010.¹⁰⁰ Because not all terrestrial stations have launched HD service, the footprint of HD signals is a subset of the footprint of terrestrial radio.

48. Second, HD radio currently lacks unique or compelling content.¹⁰¹ In its current form it is merely a parallel broadcast of analog terrestrial radio signals. HD radio is also subject to the same indecency standards as conventional broadcast radio, which prevents HD radio from

99 See *What is HD Radio*, iBiquity Digital Corporation Website (last visited Mar. 9, 2007), at http://www.ibiquity.com/hd_radio.

100. Heather Green & Tom Lowry, *Media the New Radio Revolution; From satellite to podcasts, programming is exploding—but the fight for profits will be ferocious*, BUS. WK., Mar. 14, 2005, at 32.

101. For example, According to Robert Unmacht of the media consultancy IM3 Partners, Clear Channel's digital offerings are not comparable to SDARS offerings: "The programming is not compelling enough yet to get somebody to buy [an HD] receiver." Tom Lowry, *From Vanilla To Full Metal Racket; Clear Channel is racing into the Digital Age with an array of high-def niche channels*, BUS. WK., May 1, 2006, at 42.

offering indecent content. Moreover, much of the marquee content available on SDARS is under exclusive contracts with XM or Sirius.

49. Third, HD radio requires high upfront costs for consumers. HD receivers currently cost at least \$200.¹⁰² Thus, potential marginal SDARS customers would have to incur a nontrivial switching cost as a penalty for substituting to HD radio. High switching costs imply that it is more likely a price increase will be profitable because fewer consumers would switch in response to the price increase in the presence of switching costs.

50. The opinion that SDARS are distinct from HD radio services is corroborated by industry analysts, who believe that HD radio is not a viable alternative to SDARS:

Seven terrestrial radio companies announced yesterday that they had formed a partnership to accelerate the rollout of digital radio (based on the “HD Radio” format developed by Ibiquity). Although we believe that this is a step in the right direction for digital radio, we continue to believe *that digital terrestrial radio poses little threat to the growth in satellite radio subscriptions.*¹⁰³

Bernstein Research also explains that HD radio cannot compete effectively with SDARS due to satellite radio’s distribution advantage with automobile manufacturers.¹⁰⁴ Finally, Bernstein Research notes that the entry barriers for radio stations are significant, which should also limit substitution possibilities. In particular, the average HD conversion costs were \$100,000 in 2005.¹⁰⁵ As of December 2005, only 600 stations of a total of more than 13,000 radio stations (4.6 percent) had been upgraded to the HD radio transmission format.¹⁰⁶ By the end of 2006, only 1,300 stations (10 percent) were expected to have converted to digital.¹⁰⁷

102. Heather Green & Tom Lowry, *Media The New Radio Revolution; From satellite to podcasts, programming is exploding—but the fight for profits will be ferocious*, BUS. WK., Mar. 14, 2005, at 32.

103. Craig Moffett & Amelia Wong, *Satellite Radio: Limitations of Digital Radio Suggest Impact on Satellite Radio Will Likely Be Small*, BERNSTEIN RESEARCH CALL, Dec. 8, 2005, at 1-2 (emphasis added).

104. *Id.*

105. *Id.*

106. *Id.*

107. *Id.*

3. Subscriber-Based Satellite Digital Audio Radio Is Distinct from Podcasts Delivered over an iPod

51. Podcasts are broadcasts downloaded to an MP3 Player for later use.¹⁰⁸ Unlike SDARS, podcasts are not delivered in real-time. SDARS are superior for consumers whose time is too scarce to continually load new songs onto an iPod and create new playlists. The programming on SDARS is constantly updated. Second, the docking technology for iPods in automobiles is cumbersome and prone to interference. In contrast, the SDARS device is built into the car or installed by a dealer. According to Bernstein Research, the “cross-price elasticity of demand between the two platforms [podcasts and SDARS] is likely overstated, and satellite radio has a number of advantages over iPods in cars. In our view, the two are likely to be more complementary.”¹⁰⁹ Former FCC Chief Economist Dr. Gerald Faulhaber explains the critical difference between an iPod and satellite radio:

With satellite radio, they do programming; they’re real programmers. They offer a choice of formats. With iPod, you’re picking your own music and that’s fine but it’s a different experience. They also do not have the personalities on iPod that they do on XM and Sirius radio.¹¹⁰

Based on those differences, Professor Faulhaber concludes that “the iPod is a very different service than Satellite radio.”¹¹¹

4. Subscriber-Based Satellite Digital Audio Radio Is Distinct from Mobile Internet Radio

52. Mobile Internet radio provides for programming delivered over the Internet and to the end-user through a mobile phone. Mobile Internet radio is not a close consumer substitute

108. See *Podcasting and iTunes: Frequently Asked Questions*, Apple iTunes Website (last visited Mar. 9, 2007), at <http://www.apple.com/itunes/store/podcastsfaq.html>.

109. Craig Moffett, Amelia Wong & Judah Rifkin, *Satellite Radio IQ Preview: All Eyes Are on Conversion Rates, SAC, and iPods*, BERNSTEIN RESEARCH, Apr. 25, 2006.

110. Sirius and XM: Can Two Archrivals Sing the Same Tune?, KNOWLEDGE@WHARTON, Feb. 21, 2007, available at <http://knowledge.wharton.upenn.edu/createpdf.cfm?articleid=1667&CFID=3861947&CFTOKEN=62968861> (quoting Dr. Gerald Faulhaber, Wharton Business and Public Policy Professor).

111. *Id.*

to SDARS for at least three reasons. First, Internet radio lacks the ubiquity of SDARS. Mobile Internet radio requires a connection to the Internet, most often through a cellular telephone network. Current cellular networks lack the ubiquity of SDARS for even the most basic voice services, let alone 3G data services.¹¹² Indeed, analysts predict that wireless networks will never have service areas that are comparable to SDARS.¹¹³

53. Second, the quality of mobile Internet radio is significantly inferior to SDARS. A Harvard Business School case study concluded that mobile Internet radio had noticeably inferior audio quality.¹¹⁴ In an article in *PC Magazine*, Bill Machrone, vice president of technology at Ziff Davis Publishing, also questioned the quality of internet radio.¹¹⁵ In contrast, SDARS received high customer satisfaction levels.¹¹⁶ Accordingly, analysts have been skeptical of the near-term economic viability of mobile Internet radio.¹¹⁷

54. Third, mobile Internet radio is more expensive than SDARS because mobile Internet radio combines the direct cost of a subscription and, in most cases, the consumer's imputed time cost of listening to commercials. A network connection for in-car Internet radio is expensive. As of February 23, 2007, the cheapest monthly data connection capable of

112. See, e.g., Cingular Wireless Coverage Viewer, available at <http://www.cingular.com/coverageviewer/>.

113. Sarmad Ali, *Technology—The 10 Biggest Problems With Wireless & How to Fix Them—Missed calls, dead zones, surprise charges; What are Cellphone Companies Doing About Them.*, WALL ST. J., Oct. 21, 2006, at R1.

114. Thomas Eisenmann & Alastair Brown, *Satellite Radio*, HARVARD BUSINESS SCHOOL CASE STUDY, Nov. 20, 2003, at 7. The case study does not attempt to quantify the difference in quality.

115. Bill Machrone, *Internet Radio: Failed Promise?*, PC MAGAZINE, Sept. 9, 2003, at <http://www.pcmag.com/article2/0,4149,1268106,00.asp> (“RealAudio’s lower bit rates often sound as if they were recorded in a huge steel drum, with a hollow, boomy quality. Windows Media is bass-heavy, which is ideal if you like a funky groove. MP3 sounds the most neutral to me, but each player has a unique sound, too. A given MP3 sample will sound somewhat different when played on MusicMatch, RealOne, Windows Media Player, or Winamp. The differences are subtle but noticeable.”).

116. Craig Moffett & Amelia Wong, *Satellite Radio II: The Competition Between XM and Sirius; Like Coke and Pepsi, Expect Market Shares to Converge*, BERNSTEIN RESEARCH CALL, Jun. 29, 2005, at 20 (“In the end, both services have very high consumer satisfaction scores (XM at around 90%, Sirius 95%) and very low churn rates, so consumers appear to be quite satisfied with the quality of the listening experience at both services, despite the difference in network architecture.”).

117. Eisenmann & Brown, *supra* note 114, at 7 (citing John L. Stone, *Sirius Upside Potential*, LADENBURG THALMANN & CO. INC., Aug. 15, 2001, at 16).

supporting Internet radio from Cingular Wireless was \$44.99.¹¹⁸ In addition to the out-of-pocket costs of connecting to Internet radio, “free” Internet radio relies on advertisements for revenue.¹¹⁹ Moreover, all wireless operators limit the amount of downloading per month, even under their “unlimited” plans.¹²⁰ As I explained above, advertisements impose a real cost on consumers and should not be viewed as costless.

55. An examination of a proposed Internet radio offering from Sprint-Nextel reveals the inferiority of mobile Internet radio to SDARS. In September 2005, Sprint-Nextel announced a joint venture with RealNetworks to offer six music channels including 1970s and Country (similar in format to SDARS) and at least one streaming radio station for \$16.95 a month (equal to a \$6.95 service fee with a minimum \$10 data plan.)¹²¹ In contrast, SDARS offer over 100 channels of music at \$12.95 a month.

5. The Market Definition Proposed by XM and Sirius Would Call into Question the Constitutionality of All Existing Regulation of Broadcast Content or Industry Structure

56. Regarding the relevant product market, XM and Sirius argue that their merged company would compete directly with terrestrial AM/FM radio, recordable portable media like the iPod, streamed content to mobile phones, and “next generation” wireless technologies.¹²² However, if these media are as substitutable as XM and Sirius assert, then the constitutionality of all broadcast regulation is in doubt.

118. See Cingular Data Connect Plans, available at <http://www.cingular.com/cell-phone-service/cell-phone-plans/data-connect-plans.jsp>. (I use the cost of an unlimited data package to approximate the amount of bandwidth needed to approximate normal radio usage.)

119. See, Heather Green, et al., *The New Radio Revolution; From Satellite to Podcasts, Programming is Exploding—but the fight for profits will be ferocious*, BUS. WK., Mar. 14, 2005.

120. See, e.g., Verizon Terms of Service (available at <http://www.verizonwireless.com/b2c/store/controller?item=planFirst&action=viewPlanDetail&catId=409>); AT&T Terms of Service (available at: http://onlinestorez.AT&T.com/cell-phone-service/wirelessphone-plans/cell-phone-plans.jsp?WT.svl=2206800007&q_catid=2206800007).

121. Nick Wingfield, *RealNetworks, Sprint Will Offer Radio Via Phones*, WALL ST. J., Sept. 19, 2006.

122. XM Satellite Radio Holdings, Inc., Proxy Statement Pursuant to Section 14(a) of the Securities Exchange Act of 1934 (Schedule 14A) (Feb. 21, 2007) (reprinting Feb. 20, 2007, conference call transcript).

57. Broadcasting is more heavily regulated than other media. The FCC has justified that heavier regulation (and lower First Amendment protection) on the basis of four factors: the pervasiveness of broadcast speech,¹²³ the scarcity of the broadcast spectrum,¹²⁴ the governmental interest in preserving viewpoint diversity over the airwaves,¹²⁵ and the traditional goal of fostering localism in broadcasting.¹²⁶ If, however, all aurally delivered media are totally indistinguishable from each other—as XM and Sirius claim—and this merger is permitted to proceed on that basis, then it will have been approved on a rationale that would make the inferior First Amendment status of broadcasting untenable. All content and structural regulation of the broadcast industry would be constitutionally indefensible. In short, XM and Sirius cannot have it both ways. They may not continue to reap the benefits of asymmetric regulatory burden borne by terrestrial radio broadcasters, but simultaneously claim that SDARS compete so directly with broadcast radio and other media as to justify broadening the scope of the relevant product market.

II. THE COMPETITIVE EFFECTS OF THE PROPOSED XM-SIRIUS MERGER

58. Under the most reasonable market definition, the proposed merger of XM and Sirius would be a merger to monopoly—that is, the post-merger HHI would be 10,000 in every local market in the United States. Even under a more expansive (and thus ill-conceived) market

123. *FCC v. Pacifica Found.*, 438 U.S. 726, 748 (1978) (“We have long recognized that each medium of expression presents special First Amendment problems [T]he broadcast media have established a uniquely pervasive presence in the lives of all Americans.”).

124. *Red Lion Broadcasting Co. v. FCC*, 395 U.S. 367, 388 (1969) (“Where there are substantially more individuals who want to broadcast than there are frequencies to allocate, it is idle to posit an unbridgeable First Amendment right to broadcast comparable to the right of every individual to speak, write, or publish.”).

125. *Id.* at 389 (“There is nothing in the First Amendment which prevents the Government from requiring a licensee to share his frequency with others and to conduct himself as a proxy or fiduciary with obligations to present those views and voices which are representative of his community and which would otherwise, by necessity, be barred from the airwaves.”).

126. *Turner Broadcasting Sys., Inc. v. FCC*, 520 U.S. 180, 189 (1997) (upholding content-neutral must-carry obligations on cable providers because of important government interest in preserving “the benefits of free, over-the-air local broadcast television”).

definition that included HD signals, the proposed merger would increase HHI by more than 4,000 points in all but five local radio markets. Under a more expansive market definition that included terrestrial analog and HD signals, the proposed merger would increase HHI by more than 3,000 points in all but thirteen local radio markets.

A. The Proposed Merger Would Constitute a Merger to Monopoly Under the Most Reasonable Market Definition

59. As I demonstrated above, SDARS represent a distinct product market. Hence, the proposed merger of the only two SDARS providers would constitute a merger to monopoly, and the post-merger HHI would be 10,000 in every local market in the United States. Because a monopolist charges more for a service than do oligopolists, the post-merger price would be higher (assuming no decrease in the merged firm's marginal cost). A monopolist maximizes its profits by choosing a price such that the price-cost margin is equal to the inverse of the *industry* elasticity of demand. Unless they are coordinating, oligopolists pursue pricing strategies that generate below-monopoly prices. For example, under a differentiated product Bertrand model, a firm maximizes its profits by choosing a price such that the price-cost margin is equal to the inverse of the *firm's* elasticity of demand. Because the firm elasticity of demand is always greater (in absolute terms) than the industry elasticity (consumers lose substitution possibilities at the industry level), the monopoly price will exceed the oligopoly price under Bertrand differentiated product competition. Using the new empirical industrial organization (NEIO) approach,¹²⁷ one can estimate the post-merger margins, which are likely to significantly exceed the pre-merger margins.¹²⁸

127. See, e.g., Timothy F. Bresnahan, *Empirical Methods for Industries with Market Power*, in 2 HANDBOOK OF INDUSTRIAL ORGANIZATION (Richard Schmalensee & Robert Willig eds., North Holland 1989); PAUL W. MACAVOY, *THE FAILURE OF ANTITRUST AND REGULATION TO ESTABLISH COMPETITION IN LONG-DISTANCE TELEPHONE SERVICE* 102 (MIT Press 1996). For an application of this method in the airline industry, see J.A.

60. The above discussion presumes a static framework of analysis. The *Merger Guidelines* do consider entry as a possible price-constraining effect if “entry would be timely, likely, and sufficient in its magnitude, character and scope to deter or counteract the competitive effects of concern.”¹²⁹ But the experience of the existing SDARS suppliers implies that new entry would not impose any price discipline within the next two years. XM and Sirius were founded in the early 1990s, but did not offer SDARS until September 2001.¹³⁰ Both XM and Sirius had to overcome significant fixed costs of establishing a nationwide radio network,

Brander & A. Zhang, *Market Conduct in the Airline Industry: An Empirical Investigation*, 21 RAND J. ECON. 569 (1990).

128. Under the NEIO model, the pre-merger margins can be written as:

$$[1] \quad R_{\text{pre-merger}} = HHI (1 + p) / E,$$

where R is the Ramsey markup, HHI is the seller concentration index, p is the conduct parameter, and E is the own-price elasticity of demand for satellite digital audio radio services (SDARS). Solving for E in equation gives [1]

$$[2] \quad E = HHI (1 + p) / R_{\text{pre-merger}}.$$

After the merger, the single SDARS supplier chooses its price according to the classic monopoly pricing rule, or

$$[3] \quad R_{\text{post-merger}} = 1 / E.$$

Substituting [2] into [3] yields

$$[4] \quad R_{\text{post-merger}} = R_{\text{pre-merger}} / HHI (1 + p).$$

Substituting a pre-merger gross margin of 65 percent and a pre-merger HHI of 0.5131 into [4] yields

$$[4'] \quad R_{\text{post-merger}} = R_{\text{pre-merger}} / 0.5131 (1 + p) = 1.9489 R_{\text{pre-merger}} / (1 + p)$$

Under Cournot, p is 0, which implies that the merger would nearly double margins, increasing them by roughly 95 percent. (Because the largest possible Ramsey margin is 100 percent, the actual margin increase under Cournot would be closer to 54 percent.) The *smallest* possible value of p is -1 , which implies that the merger would have an enormous (and non-quantifiable) price effect. But p equal to -1 is impossible, because that would imply pre-merger margins of 0 percent, which are clearly refuted by the Bernstein data. The *largest* possible value of p is $(1 - HHI) / HHI$, or 0.9489, which implies that the merger would not increase margins at all ($1.9489 / 1.9489$). But p equal to 0.9489 implies that the merging parties have been colluding. In summary, the merger proponents cannot claim perfect competition ($p = -1$) as a defense (this value is contradicted by the data, and post-merger margins would explode). Nor can they claim perfect collusion ($p = 0.9489$) as a defense.

129. *Merger Guidelines*, *supra* note 9, § 3.0.

130. Charles Babington & Thomas Heath, *Satellite Radio Firms Plan To Merge; XM, Sirius Face Antitrust Hurdles*, WASH. POST, Feb. 20, 2007, at A01.

including the acquisition of spectrum and programming. Moreover, because there is physically no other spectrum allocated for SDARS, the acquisition of spectrum by an entrant would entail not just buying spectrum, but also convincing the FCC to allocate additional spectrum for an additional SDARS provider.

B. Even Under a More Expansive Market Definition That Included HD Radio, the Proposed Merger Would Increase Seller Concentration Ratios to Unacceptably High Levels

61. A more expansive product market would include both SDARS and HD radio, although this ignores the shortcomings I describe in section I.D. of including alternatives to SDARS in the market definition. Using this overly broad product market, I have calculated the HHI of market concentration for each of the 299 Arbitron local markets on both a pre-merger and post-merger basis.¹³¹ The *Merger Guidelines* consider a post-merger HHI above 1,800 to be highly concentrated and set enforcement thresholds of 50 and 100 points for the increase in HHI resulting from a merger.¹³² Mergers that raise the HHI by more than 50 points raise “significant competitive concerns,” and mergers that raise the HHI by more than 100 points are presumed to “create or enhance market power or facilitate its exercise.”¹³³

62. BIA Financial Network (BIAfn), a leading provider of financial data to the media, technology, telecommunications, and radio industries,¹³⁴ tabulates the number of stations that have been upgraded to HD and the fraction of the population covered in each Arbitron market. In what follows, I assume that the HD signal reaches 100 percent of the population in

131. The HHI is the sum of the squares of the individual market shares of all market participants. The higher the HHI, the greater the market concentration. *See, e.g.,* DENNIS W. CARLTON & JEFFREY M. PERLOFF, MODERN INDUSTRIAL ORGANIZATION 247 (Addison Wesley 3rd ed. 2000).

132. *Merger Guidelines, supra* note 9, § 1.51c.

133. *Id.*

134. Additional information about BIAfn can be downloaded at http://www.bia.com/about_overview_main.asp.

the Arbitron market.¹³⁵ According to BIAfn, there were 23 HD signals in the Washington, D.C. Arbitron market in 2006. Clear Channel owned seven, Bonneville International Corp. owned four, Citadel/ABC owned three, Radio One, Inc. owned three, CBS Radio owned two, and the remaining four stations were owned by American University, Howard University, Greater Washington Educational Telecomm Association, Inc., and Red Zebra Broadcasting.

63. When calculating market shares for an HHI analysis, one must choose between revenue shares and capacity shares. The *Merger Guidelines* suggest using capacity shares rather than revenue shares whenever capacity represents the best indicator of the firms' "future competitive significance."¹³⁶ Given the nascent state of SDARS and HD radio, and given the fact that SDARS and HD radio derive revenue from different and incomparable sources (SDARS generates subscription revenues while HD Radio hopes to generate advertising revenues), revenue shares are inferior here. To the extent that HD radio is not yet generating advertising revenues, the use of revenue shares would understate HD radio's future competitive significance in the purported "digital radio" market. Even if HD radio were generating advertising revenue, it would extremely burdensome for the antitrust authorities to collect advertising revenue by HD radio supplier for each of the 299 Arbitron radio markets. For these reasons, I rely on capacity shares when constructing the HHI here. It bears emphasis that the decision between capacity shares and revenue shares does not even arise if one correctly perceives the product market to be SDARS exclusively.

135. This assumption is highly conservative. For example, the coverage area in the Washington, D.C. market is roughly 4.5 million. Of the 23 HD signals there, five signals reach fewer than 4 million people (21.7 percent), four signals reach fewer than 3 million people (17.4 percent), and two signals reach fewer than 2 million people (8.7 percent). Nevertheless, I assume that all 23 HD signals reach the entire population of Washington, D.C.

136. *Merger Guidelines*, *supra* note 9, § 1.41 ("Market shares will be calculated using the best indicator of firms' future competitive significance. Dollar sales or shipments generally will be used if firms are distinguished primarily by differentiation of their products. Unit sales generally will be used if firms are distinguished primarily on the basis of their relative advantages in serving different buyers or groups of buyers. Physical capacity or reserves generally will be used if it is these measures that most effectively distinguish firms.").

64. I treat each station as a unit of capacity, and I include the 170 channels owned by XM¹³⁷ and the 133 channels owned by Sirius¹³⁸ in the total capacity of the purported HD-SDARS market in Washington, D.C. The total capacity of SDARS and HD signals combined is 326 channels. Thus, the pre-merger HHI in Washington, D.C. is 4392,¹³⁹ the post-merger HHI is 8647,¹⁴⁰ and the increase in the HHI is 4254. The exercise is repeated for each local market.

65. Table 2 presents the results of the HHI analysis for the local markets that would be most seriously harmed by the proposed merger. A complete list of HHI calculations for all 300 Arbitron radio markets appears as Appendix 1.

TABLE 2: PRE-MERGER AND POST-MERGER HHIS BY ARBITRON MARKET, RANKED BY SIZE OF INCREASE (PURPORTED MARKET IS SDARS AND HD RADIO)

<i>Market Names</i>	<i>Number of Affected Markets</i>	<i>Pre-Merger HHI</i>	<i>Post-Merger HHI</i>	<i>Delta HHI</i>
Baton Rouge, LA; Daytona Beach, FL; Melbourne-Titusville-Cocoa, FL; Chattanooga, TN; Portsmouth-Dover-Rochester, NH; Reno, NV; Canton, OH; Fayetteville, NC; Reading, PA; Shreveport, LA; Beaumont-Port Arthur, TX; Appleton-Oshkosh, WI; Fayetteville, AR; Palm Springs, CA; Atlantic City-Cape May, NJ; Newburgh-Middletown, NY; Trenton, NJ; Quad Cities, IA-IL; Salisbury-Ocean City, MD; Eugene-Springfield, OR; Rockford, IL; Huntington-Ashland, WV-KY; Utica-Rome, NY; Poughkeepsie, NY; Wilmington, NC; Concord, NH; San Luis Obispo, CA; New Bedford-Fall River, MA; South Bend, IN; Lubbock, TX; Kalamazoo, MI; Green Bay, WI; Columbus, GA; Johnstown, PA; Dothan, AL; Danbury, CT; Richland-Kennewick-Pasco, WA; Waco, TX; Rocky Mount-Wilson, NC; Clarksville-Hopkinsville, TN-KY; Olean, NY; Florence, SC; Bangor, ME; Champaign, IL; Elmira-Corning, NY; Ft. Walton Beach, FL; Tuscaloosa, AL;	74	5,041	9,934	4,893

137. Downloaded from the XM website on Feb. 20, 2007 at <http://www.xmradio.com/onxm/full-channel-listing.xmc>.

138. Downloaded from the Sirius website on Feb. 20, 2007 at <http://www.sirius.com/servlet/ContentServer?pagename=Sirius/CachedPage&c=ChannelLineup&cid=1139320914821>.

139. Equal to $(7/326)^2 + (4/326)^2 + (3/326)^2 + (3/326)^2 + (2/326)^2 + 4 \times (1/326)^2 + (170/326)^2 + (133/326)^2$.

140. Equal to $(7/326)^2 + (4/326)^2 + (3/326)^2 + (3/326)^2 + (2/326)^2 + 4 \times (1/326)^2 + (303/326)^2$.

<i>Market Names</i>	<i>Number of Affected Markets</i>	<i>Pre-Merger HHI</i>	<i>Post-Merger HHI</i>	<i>Delta HHI</i>
Marion-Carbondale, IL; Bryan-College Station, TX; Bloomington, IL; Pittsburg, KS; Lafayette, IN; Wheeling, WV; Parkersburg-Marietta, WV-OH; State College, PA; Columbia, MO; Meadville-Franklin, PA; Florence-Muscle Shoals, AL; Grand Junction, CO; Wichita Falls, TX; Montpelier-Barre-St Johnsbury, VT; Augusta-Waterville, ME; Valdosta, GA; Albany, GA; Elkins-Buckhannon-Weston, WV; Sioux City, IA; Rapid City, SD; Harrisonburg, VA; Lawton, OK; Bismarck, ND; Beckley, WV; Mason City, IA; Great Falls, MT; Casper, WY				
Wilkes Barre-Scranton, PA; Akron, OH; Wilmington, DE; Bakersfield, CA; Greenville-New Bern-Jacksonville, NC; York, PA; Lexington-Fayette, KY; Ft. Wayne, IN; New Haven, CT; Morristown, NJ; Lancaster, PA; Roanoke-Lynchburg, VA; Jackson, MS; Oxnard-Ventura, CA; Bridgeport, CT; Corpus Christi, TX; Stamford-Norwalk, CT; Ann Arbor, MI; Montgomery, AL; Fredericksburg, VA; Savannah, GA; New London, CT; Lincoln, NE; Morgantown-Clarksburg-Fairmont, WV; Charleston, WV; Manchester, NH; Topeka, KS; Yakima, WA; Santa Barbara, CA; Sunbury-Selinsgrove-Lewisburg, PA; St. Cloud, MN; Redding, CA; Waterloo-Cedar Falls, IA; Pueblo, CO; Hamptons-Riverhead, NY; Mankato-New Ulm-St Peter, MN; Cookeville, TN; Grand Forks, ND-MN; Brunswick, GA	39	5,008	9,869	4,861
Monmouth-Ocean, NJ; Mobile, AL; Lafayette, LA; Boise, ID; Huntsville, AL; Ft. Collins-Greeley, CO; Burlington-Plattsburgh, VT-NY; Asheville, NC; Amarillo, TX; Frederick, MD; Duluth-Superior, MN-WI; Cedar Rapids, IA; Fargo-Moorhead, ND-MN; Rochester, MN; Billings, MT	15	4,967	9,805	4,829
Nassau-Suffolk, NY; Middlesex-Somerset-Union, NJ; Gainesville-Ocala, FL; Worcester, MA; Lansing-East Lansing, MI; Pensacola, FL; Flint, MI; Springfield, MO; Peoria, IL; Evansville, IN; Portland, ME; Wausau-Stevens Point, WI; Anchorage, AK; Cape Cod, MA; Charlottesville, VA; Kalispell-Flathead Valley, MT; Charleston, SC; Tyler-Longview, TX; Medford-Ashland, OR; Joplin, MO	20	4,943	9,741	4,797

As Table 2 shows, the increase in the HHI in 74 local markets (the first row) would be 4,893. The reason why the change in the HHI is the same for those 74 markets is that each market had just one HD station as of February 2007. The same is true for the next cluster of markets. For example, a change in HHI of 4,861 for 39 local markets (the second row in Table 2) is caused by a common pre-merger market structure: two HD channels that were owned by distinct entities. Appendix 1 shows that in all but two of the 299 Arbitron local radio markets (Chicago and Los Angeles),¹⁴¹ the increase in HHI would exceed 4,000 points.

66. One could argue that the relevant product market should include, in addition to HD and SDARS signals, existing analog signals. Appendix 2 shows the resulting pre- and post-merger HHIs by Arbitron market. Because the existing capacity of analog signals is small relative to the merged firms' capacity, and because the ownership of such signals is mildly concentrated, the results are not significantly different from those reported in Table 2. For example, in the Washington, D.C. market, by adding analog signals to the overly expansive market definition of HD and SDARS, the pre-merger HHI would decrease from 4392 to 3292, the post-merger HHI would decrease from 8647 to 6457, and the change in HHI would decrease from 4254 to 3165. Thus, even adding analog signals to the market would not alter the likely competitive effects of the proposed merger.

67. Moreover, many U.S. households live beyond the current contours of the existing terrestrial signals (analog or HD). According to several analyst reports, twenty-two million U.S. radio listeners—nearly 10 percent of the population—had access to five or fewer terrestrial

141. The increases in HHI in Chicago and Los Angeles would be 3843 and 3799, respectively.

radio channels;¹⁴² 1.6 million people have access to one radio station;¹⁴³ and one million people receive no radio stations at all.¹⁴⁴ For these one million consumers, even under a more expansive market definition that included SDARS, HD signals, and analog terrestrial signals, the post-merger HHI would be the maximum possible (10,000)—that is, the proposed merger for those consumers would be a merger to monopoly.

C. The Proposed Merger Would Confer Monopsony Power over Content Providers, Thereby Reducing the Output of SDARS Radio Content

68. The proposed merger would have anticompetitive effects in the upstream programming market. XM and Sirius can be regarded as distributors of SDARS programming. Because indecent radio programming cannot be distributed easily through other means (certainly not by terrestrial radio broadcasters), XM and Sirius are currently duopsonists in the upstream radio programming market who will merge to monopsony. For example, Howard Stern likely earned more on Sirius than he could have earned on broadcast radio, where his content was censored and thus forced to compete with other decent content. Similarly, Opie & Anthony earned more on XM radio than they could have earned on broadcast radio. It is highly unlikely that these programmers could have negotiated as good a deal as they did with a combined XM-Sirius.

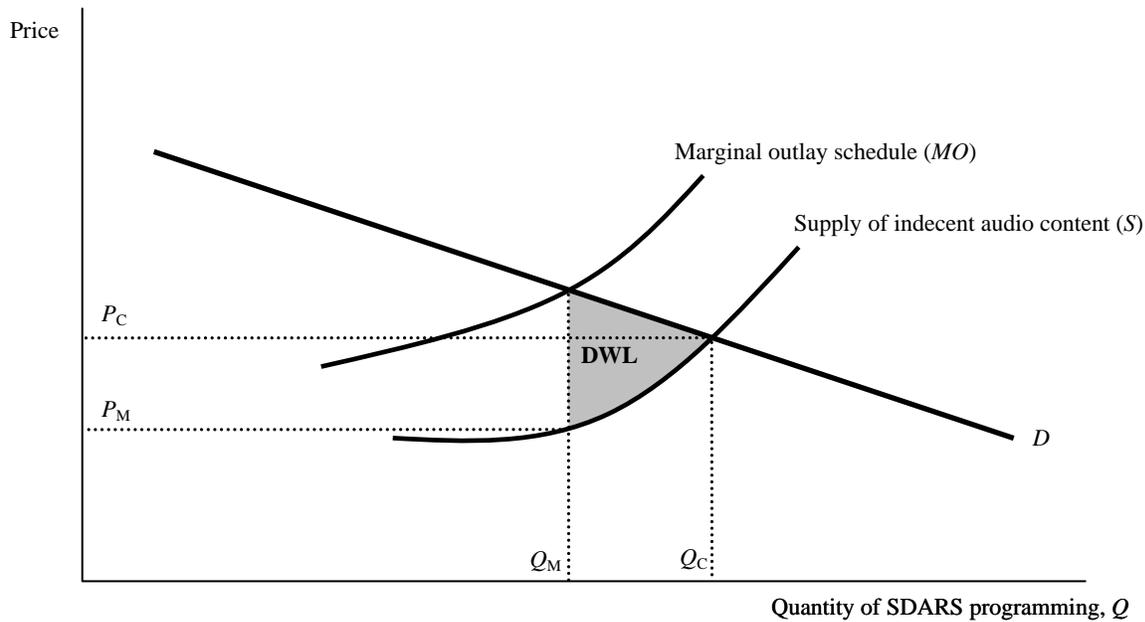
142. Thomas Eisenmann & Alastair Brown, *Satellite Radio*, HARVARD BUSINESS SCHOOL CASE STUDY, Nov. 20, 2003, at 12 (citing Peter Friedland & Michaela Crouch. *Initiating Coverage of Satellite Radio*, W R HAMBRECHT EQUITY RESEARCH, Oct. 21, 2003, at 4.)

143. *Id.* (citing Ty P. Carmichael Jr., *XM Satellite Radio Inc.*, CREDIT SUISSE FIRST BOSTON, Apr. 6, 2001, at 14.)

144. *Id.*

69. A monopsonist is a single buyer.¹⁴⁵ As a price setter, the monopsonist can reduce output, and thus can eliminate the surplus that consumers would have enjoyed at higher output levels. Figure 1 shows how SDARS programming would be reduced by a combined XM-Sirius.

FIGURE 1: DEADWEIGHT LOSS (DWL) FROM MONOPSONY



As Figure 1 shows, XM and Sirius demand a level of programming (Q_M) that is determined by the intersection of the demand curve (D) and the combined firm’s marginal outlay schedule (MO). By contrast, the level of SDARS programming that is demanded in a competitive market (Q_C) with no downstream market power is equal to the intersection of the industry demand curve (D) and the supply curve (S). Because MO is higher than S , and because D is downward sloping, Q_M will always be less than Q_C —that is, the level of indecent content will be lower when buying power is consolidated into the hands of a single firm. Additionally, the price for

145. See, e.g. *Weyerhaeuser Company v. Ross-Simmons Hardwood Lumber Co., Inc.* 127 S.Ct. 1069, 1075 (“The reduction in input prices will lead to ‘a significant cost saving that more than offsets the profit[s] that would have been earned on the output.’ If all goes as planned, the predatory bidder will reap monopsonistic profits that will offset any losses suffered in bidding up input prices.”); see also, DENNIS CARLTON & JEFFREY PERLOFF, *MODERN INDUSTRIAL ORGANIZATION* 107 (Addison Wesley 3rd ed. 2000).

indecent content paid by a merged XM-Sirius (P_M) is equal the industry supply evaluated at Q_M , which is less than the price paid to programmers in an competitive market (P_C). Figure 1 also shows the reduction in consumer welfare or “deadweight loss” that is created by monopsony. In summary, the proposed merger would not only harm consumers by increasing the price of SDARS, it would also reduce the quantity of SDARS programming, which would create additional consumer welfare losses. One possible form of a reduction in quantity here would be a reduction in the variety of SDARS programming. Because consumers value variety, such a reduction would decrease consumer welfare.

III. XM AND SIRIUS WILL REACH MINIMUM VIABLE SCALE INDEPENDENTLY

70. Some merger proponents claim that one or both SDARS providers will fail unless the firms merge.¹⁴⁶ The merging parties have distanced themselves from the “failing firm” argument in public, perhaps to assure shareholders in the event that the merger is denied. The classic “shut down” rule in economics is that a firm exits the industry whenever its average variable cost exceeds price,¹⁴⁷ which implies that the last unit sold made a negative contribution to the firm’s margins. But Sirius and XM are currently earning positive margins on their last subscribers. Moreover, SDARS penetration rates are expected to increase significantly, which will decrease average variable cost further and thereby generate even larger margins.

146. See, e.g., Douglas McIntyre & Jon Ogg, *How Sirius & XM Would Look As a Merged Company*, 24/7WALLSTREET.COM, Feb. 19, 2007, available at http://www.247wallst.com/2007/02/how_sirius_xm_w.html (“If . . . both companies have growth issues and a potential survival issue and then all of a sudden neither can run profitably, then they would have a better case of pressing the DOJ & FCC to approve a merger.”).

147. See, e.g., WILLIAM J. BAUMOL & ALAN S. BLINDER, *MICROECONOMICS: PRINCIPLES AND POLICY* 216 (Dryden Press 7th ed. 2000) (The firm is assumed to charge a uniform price to all customers).

A. Is Satellite Digital Audio Radio a Natural Monopoly?

71. Minimum viable scale (MVS) is the smallest service volume at which its short-run average variable cost equal the price currently charged for the relevant service.¹⁴⁸ By contrast, a firm's minimum efficient scale (MES) is the smallest output it can produce such that its long-run average total cost is minimized.¹⁴⁹ By advocating a merger to monopoly, XM and Sirius are effectively arguing that the SDARS market is a natural monopoly.¹⁵⁰ MVS is the more relevant cost concept for assessing a natural monopoly. A necessary condition for a natural monopoly is that the average total cost declines over the relevant range of output.¹⁵¹ Figure 2 shows the relevant cost curves for a hypothetical provider of SDARS.

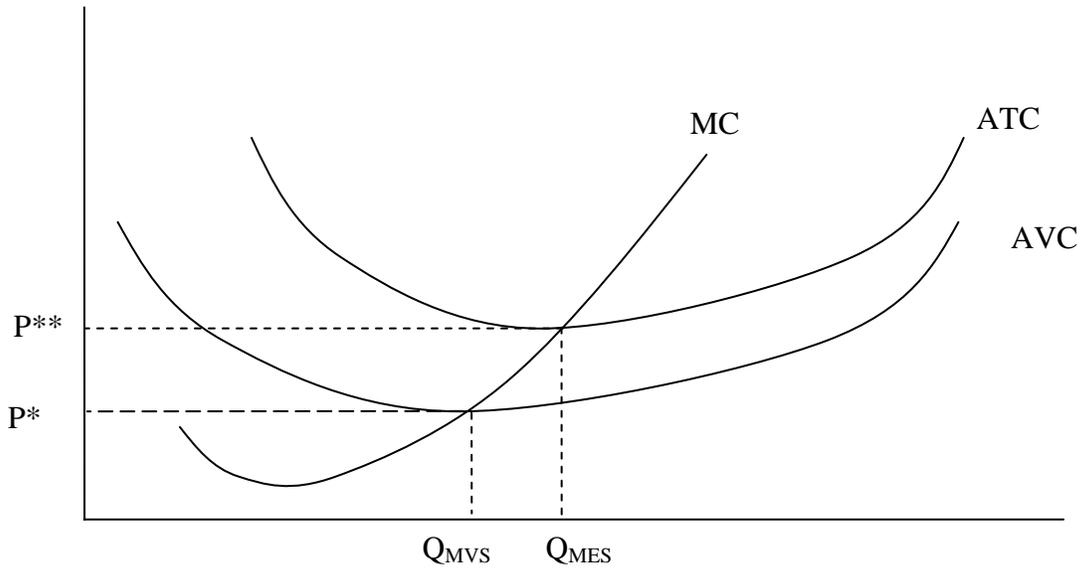
148. See, e.g., *Request for Additional Information and Documentary Material: Issued to Weebyewe Corporation*, FEDERAL TRADE COMMISSION, available at <http://www.ftc.gov/bc/modelguide.htm>.

149. DENNIS CARLTON & JEFFREY PERLOFF, *MODERN INDUSTRIAL ORGANIZATION* 41 (Addison Wesley 3rd ed. 2000) ("The size of the MES plant, especially in relation to the overall market, is useful for judging how many firms could operate in a market.").

150. See Adam Thierer, *XM + Sirius = Good Deal (for the Companies and Consumers)*, The Progress & Freedom Foundation Progress Snapshot, Release 3.4, Feb. 2007 ("And the cost of signing big name talent (Howard Stern, Oprah) and big sports leagues (NFL, MLB, Nascar) has added up to big-time debt. Merging the two companies could help bring those costs down over time by making those programs available to a broader subscriber base.").

151. See, e.g., WILLIAM J. BAUMOL & ALAN S. BLINDER, *MICROECONOMICS: PRINCIPLES AND POLICY* 259 (Dryden Press 7th ed. 2000).

FIGURE 2: MINIMUM EFFICIENT SCALE AND MINIMUM VIABLE SCALE



As Figure 2 shows, at a price of P^* , the firm would have to achieve output of at least Q_{MVS} to make a positive contribution to its fixed costs. Q_{MES} is the smallest output a firm can produce such that its average total cost (ATC) is minimized. Also note that ATC begins to increase in this example, which is not consistent with a natural monopoly. In the sections that follow, I analyze the actual cost of both SDARS providers. In particular, I assess whether XM and Sirius can independently achieve MVS given projected penetration rates and projected costs.

B. Satellite Digital Audio Radio Service Subscribers Are Projected to Increase Significantly Over the Next Two Years

72. A clear consensus among industry analysts points towards higher penetration rates for SDARS providers. Bear Stearns expects that by the end of 2007 XM will have 9.2 to 9.3 million subscribers and Sirius will have 8.1 to 8.2 million for a combined 17 million subscribers,¹⁵² a 70 percent increase from a combined 10 million subscribers in March 2006.¹⁵³

152. Eric Savitz, *Satellite Radio: Bear Stearns Trims Subscriber Forecast; Sees Big Upside In Merger Scenario*, BARRON'S ONLINE, Jan. 23, 2007.

153. *XM Passes 6.5 Million Subscribers*, BETANEWS, Apr. 3, 2006, available at http://www.betanews.com/article/XM_Passes_65_Million_Subscribers/1144085014.

Standard & Poor's predicts that Sirius subscribers will reach 9.8 million by the end of 2007.¹⁵⁴ In 2005, *The Economist* magazine predicted that the number of satellite customers was expected to double each year.¹⁵⁵ In the same year, Lehman Brothers projected nearly 35 million SDARS subscribers by 2010.¹⁵⁶ In 2006, Bernstein predicted a market of 44 million satellite subscribers by 2010, divided more or less equally between the two providers.¹⁵⁷ Bernstein also estimated that satellite radio penetration of automobile manufacturers would increase to between 70 and 80 percent by 2010, an increase from 21 percent in 2005.¹⁵⁸ Indeed, XM itself has forecast significant increases in penetration. XM expects to add more than 3.1 million subscribers in 2007, and 5.0 million cars will be sold annually by 2008 that have XM factory-installed.¹⁵⁹

C. Both Sirius and XM Are Expected to Realize Positive Earnings in 2007

73. Given the high fixed costs associated with providing SDARS—Sirius alone spent over \$850 million acquiring programming by March 2005¹⁶⁰—the two SDARS providers will be able to enjoy greater economies of scale as SDARS penetration rates increase. Thus, each additional SDARS customer will make a greater contribution to margins, as a smaller percentage of the monthly subscription fee will go towards paying down the fixed costs associated with programming, infrastructure, and spectrum licenses. As I demonstrate below, *existing* penetration levels are sufficient to generate positive margins given the current costs of

154. Gene G. Marcial, *Stern Is the Draw At Sirius Satellite Radio*, BUS. WK., Apr. 10, 2006, at 104 (citing Standard & Poors' Tuna Amobi).

155. *Why radio is worth watching*, THE ECONOMIST, June 11, 2005.

156. Heather Green & Tom Lowry, *MEDIA THE NEW RADIO REVOLUTION; From satellite to podcasts, programming is exploding—but the fight for profits will be ferocious*, BUS. WK., Mar. 14, 2005, at 32.

157. *Howard's way—Satellite radio*, THE ECONOMIST, Jan. 14, 2006.

158. Craig Moffett & Amelia Wong, *Satellite Radio: Upgrading Sirius to Outperform; We Expect SIRI to Beat Consensus and Guidance*, BERNSTEIN RESEARCH CALL, Feb 8, 2006 (citing Sanford C. Bernstein projections).

159. Craig Moffett & Amelia Wong, *XMSR: Analyst Day Highlights Bullish Longer-Term OEM Trends and Stronger Product Line-Up*, BERNSTEIN RESEARCH CALL, Jan. 9, 2006.

160. Tom Lowry, *The Next Generation; For today's media execs, digital is where the action is*, BUS. WK., Mar. 7, 2005, at 88.

XM and Sirius. And XM and Sirius have ample sources of liquidity to fund their debt obligations.¹⁶¹

74. Some commentators have pointed to the financial struggles of the merging parties as a justification for the merger.¹⁶² But news of *prior* losses—for example, XM and Sirius combined lost over \$1 billion in 2005¹⁶³—has no bearing on the company’s ability to make positive margins on a going-forward basis. Those losses were incurred before the two SDARS providers were able to pay down their significant fixed costs. In trying to assess whether the two providers will be independently viable on a going-forward basis, the key question is: At what penetration levels does price exceed average variable cost?

75. Several analyst reports demonstrate that the two SDARS providers will enjoy positive earnings before interest, taxes, depreciation, and amortization (EBITDA) on each new subscriber by the end of 2007. According to a *Business Week* analysis of the industry in 2005, despite the fact that SDARS providers were losing money at that time, the SDARS “subscription approach [was] expected to pay off in a couple of years,” and the two SDARS

161. See XM SATELLITE RADIO, INC., ANNUAL REPORT (S.E.C. FORM 10-K), at 50 (Mar. 1, 2007) (“Our principal sources of liquidity are our existing cash and cash equivalents and cash receipts for pre-paid subscriptions. We also have access to significant liquidity through our new bank revolving credit facility and our GM credit facility, as amended in April 2006 (both of which are now fully available following incentivized conversion of a portion of our outstanding 10% senior secured discount convertible notes due 2009 in October 2006.”); SIRIUS SATELLITE RADIO, INC., ANNUAL REPORT (S.E.C. FORM 10-K), at 43 (Mar. 1, 2007) (“Based upon our current plans, we believe that our cash, cash equivalents and marketable securities will be sufficient to cover our estimated funding needs through cash flow breakeven, the point at which our revenues are sufficient to fund expected operating expenses, capital expenditures, working capital requirements, interest and principal payments and taxes.”).

162. See, e.g., Adam Thierer, *XM + Sirius = Good Deal (for the Companies and Consumers)*, The Progress & Freedom Foundation Progress Snapshot, Release 3.4, Feb. 2007 (“As a consumer, I want to see satellite radio continue to expand and innovate. But most of all I just want to make sure it survives. I think this merger can help make that happen. Some might say the two companies will continue to do just fine on their own without a merger. But if you look at the financials, you know that’s not true.”).

163. *Satellite Radio Red Ink*, BUS. WK., Mar. 6, 2006, at 30.

providers were “expected to turn a profit” by 2008.¹⁶⁴ According to an analyst from JP Morgan, XM will produce free-cash flow (that conservatively includes capital expenditures) of \$188 million in 2007, \$528 million in 2008, \$923 million in 2009 and \$1.4 billion in 2010.¹⁶⁵ In 2006, two Bernstein analysts explained that “investor attention has focused on merger speculation with Sirius. *But a merger is not required to support a strong investment case, in our view.*”¹⁶⁶ Bernstein went on to predict “long-run steady-state cash flow margins in the range of 35 to 40 percent.”¹⁶⁷ Figure 3 shows Bernstein’s estimated variable contribution margin (equal to the difference between price per customer and average variable cost divided by price per customer) and EBITDA margin (equal to variable contribution margin less payments towards non-variable costs such as capital expenditures scaled by the price per customer) for XM from 2003 to 2010.

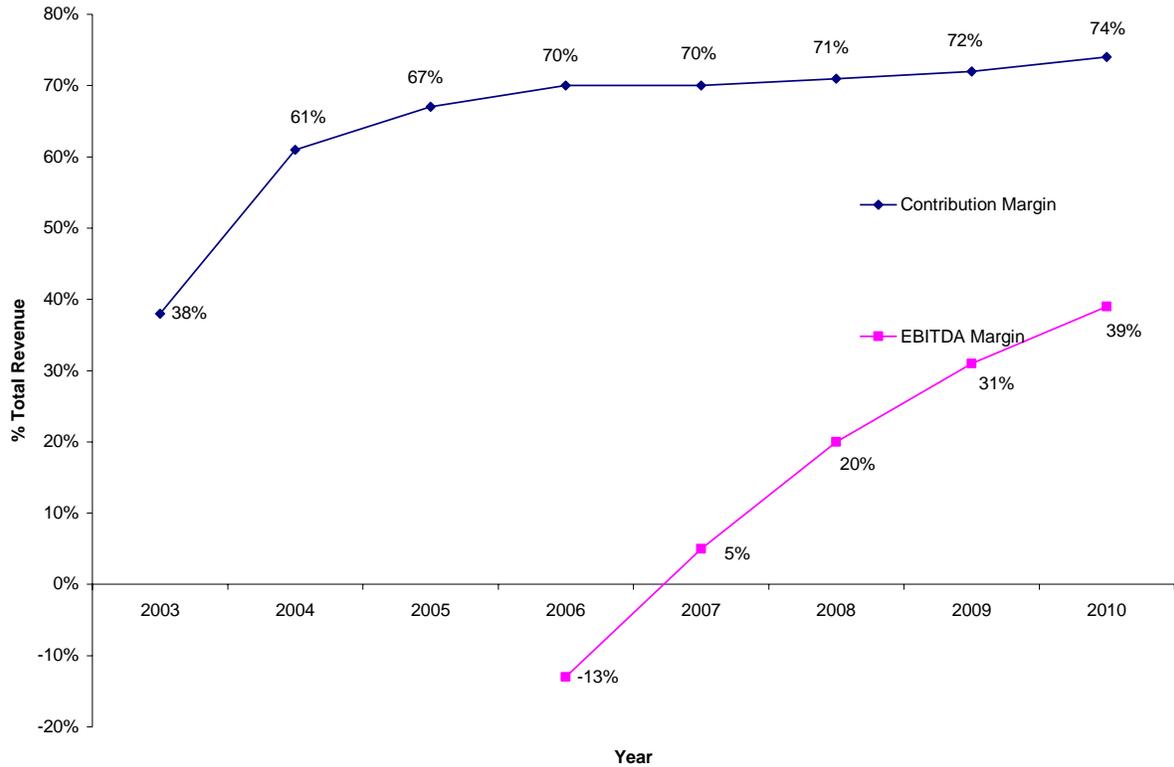
164. Heather Green & Tom Lowry, *MEDIA THE NEW RADIO REVOLUTION; From satellite to podcasts, programming is exploding—but the fight for profits will be ferocious*, BUS. WK., Mar. 14, 2005, at 32.

165. Andrew Bary, *Don’t Bet on Howard*, BARRON’S, Jan. 23, 2006, at 20 (citing JP Morgan analyst).

166. Craig Moffett & Judah Rifkin, XM Satellite Radio (XMSR): Clearer Skies Ahead, BERNSTEIN RESEARCH, July 5, 2006 (emphasis added).

167. *Id.*

FIGURE 3: XM VARIABLE CONTRIBUTION AND EBITDA MARGINS, 2003-2010



Source: Craig Moffett & Amelia Wong, *XMSR: Few Surprises, but Strong Second Quarter Affirms Positive Long Term Trends*, BERNSTEIN RESEARCH CALL, Jul. 29, 2005, at 4.

As Figure 3 shows, XM’s contribution margin nearly doubles from 38 percent in 2003 to 70 percent in 2007. As Bernstein notes, this high variable contribution exceeds “that of cable television or satellite video, where variable programming expenses consume as much as 40 percent of revenues.”¹⁶⁸ Thus, the SDARS platform has a much higher degree of operating leverage, allowing rapid margin improvement as subscribers increase. Bernstein projects long-run EBITDA margins of roughly 40 percent by 2010.¹⁶⁹ The margin data presented in Figure 3 clearly refutes the merger proponents’ “failing firm” justification for the merger.

168. Craig Moffett & Amelia Wong, *XMSR: Few Surprises, but Strong Second Quarter Affirms Positive Long Term Trends*, BERNSTEIN RESEARCH CALL, Jul. 29, 2005, at 4.

169. *Id.*

IV. THE MAJORITY OF EFFICIENCIES IDENTIFIED BY THE MERGING PARTIES WOULD NOT BENEFIT CONSUMERS

76. Because of the serious competitive consequences of mergers to monopoly, such mergers rarely if ever can be justified by promises of greater efficiency.¹⁷⁰ At the very least, the merger applicants must demonstrate extraordinary efficiencies that would “enhance the merged firm’s ability and incentive to compete, which may result in lower prices, improved quality, or new products.”¹⁷¹ The U.S. Court of Appeals for the D.C. Circuit stressed in its *Heinz* decision in 2001 that claims of greater efficiencies must be verifiable through evidentiary showings that are “more than mere speculation and promises about post-merger behavior.”¹⁷² Moreover, the efficiencies must be ones that neither firm could ever achieve independently. If the claimed efficiencies are not merger-specific, then “the merger’s asserted benefits can be achieved without the concomitant loss of a competitor.”¹⁷³ In 2000, the FCC reiterated this same economic principle under its interpretation of the public interest standard in the Communications Act: “Claimed efficiencies . . . must be merger-specific, and, therefore, efficiencies that could be achieved through means less harmful to the public interest than the proposed merger cannot be considered true benefits of the merger.”¹⁷⁴

77. To an economist, the claimed efficiency must reduce the merged firms’ marginal costs, as reductions in fixed costs do not affect the pricing decision of a profit-maximizing

170. *Merger Guidelines*, *supra* note 9, at § 4 (“Efficiencies almost never justify a merger to monopoly or near-monopoly”); *Heinz*, 246 F.3d at 720.

171. *Merger Guidelines*, *supra* note 9, at § 4.

172. *Heinz*, 246 F.3d at 721.

173. *Id.* at 721-22 (citing 4A PHILLIP E. AREEDA, HERBERT HOVENKAMP & JOHN L. SOLOW, ANTITRUST LAW ¶ 973 n.19 (1998)).

174. Application of GTE Corporation, Transferor, and Bell Atlantic Corporation, Transferee; For Consent to Transfer Control of Domestic and International Sections 214 and 310 Authorizations and Application to Transfer Control of a Submarine Cable Landing License, Memorandum Opinion and Order, CC Dkt. No. 98-184, 15 F.C.C.R. 14,032, 14,141-42 (2000).

firm.¹⁷⁵ Analysts who cover the SDARS industry consider the following costs to be variable: (1) customer service and billing expenses (estimated between \$1 and \$1.50 per customer per month); (2) performance rights fees paid to societies that represent musicians and composers (estimated between 5.5 and 7 percent of revenue in 2007); and (3) revenue sharing with certain content providers and OEM partners (estimated at 18 percent of revenue).¹⁷⁶ By contrast, the following costs are considered to be fixed: (1) programming costs (other than music royalties); (2) recurring fixed payments for XM’s network operations (satellite ground stations, repeater maintenance, and “roof real estate” leases); (3) programming and network operations; (4) R&D expenses; and (5) corporate general and administrative overheads.¹⁷⁷

78. Table 3 shows the purported merger-specific savings that have claimed by the merging parties.

TABLE 3: ALLEGED MERGER-SPECIFIC SAVINGS FROM PROPOSED XM-SIRIUS MERGER

<i>Alleged Merger-Specific Savings</i>	<i>Savings</i>	<i>Variable or Fixed</i>
Customer billings	\$10 million	Variable
Sales, marketing, and customer acquisition	\$75 million	Fixed
General and administrative	\$30 million	Fixed
Decreased Programming	NA	Fixed
Total	\$115 million	

Source: Douglas McIntyre & Jon Ogg, *How Sirius & XM Would Look As a Merged Company*, 24/7WALLSTREET.COM, Feb. 19, 2007, available at http://www.247wallst.com/2007/02/how_sirius_xm_w.html.

As Table 3 shows, the vast majority of the merger-specific savings are reductions in fixed costs. Assuming that “customer billings” is a variable cost, only 8.6 percent of the documented total merger-specific savings could offset the expected increases in prices. The reduction in variable cost would amount to a savings of \$0.05 per customer per month (equal to \$10 million per year divided by 17 million subscribers divided by twelve months) or a 1.1 percent reduction in XM’s

175. *Merger Guidelines*, *supra* note 9, at § 4 (“In a unilateral effects context (see Section 2.2), marginal cost reductions may reduce the merged firm’s incentive to elevate price.”).

176. Thomas Eisenmann & Alastair Brown, *Satellite Radio*, HARVARD BUSINESS SCHOOL CASE STUDY, Nov, 20, 2003, at 5.

177. *Id.*

monthly marginal cost per customer. In March 2007, XM and Sirius projected that the presented discounted value of future savings from the proposed merger would be between \$5 and \$6 billion.¹⁷⁸ Many analysts have reacted to these claimed efficiencies with extreme skepticism.¹⁷⁹

79. The relevant inquiry is whether this 1.1 percent reduction in marginal cost would be sufficient to maintain pre-merger prices of \$12.95 per month. Assume that before the merger, the SDARS providers currently compete according to Bertrand differentiated products (choosing price such that the Ramsey markup equals the inverse of the *firm-specific* elasticity of demand). Assume that after the merger, the merged firm sets its price under the classic monopoly pricing rule (choosing price such that the Ramsey markup equals the inverse of the *industry* elasticity of demand). If the industry elasticity of demand for SDARS is 95 percent of the firm-specific elasticity of demand facing XM, then the merged firm's marginal cost would have to fall by 9.7 percent to maintain the pre-merger price (because the merged firm is now choosing the Ramsey markup such that it equals the inverse of the industry elasticity of demand). If the industry elasticity is 90 percent of the firm-specific elasticity of demand, then the merged firm's marginal cost would have to fall by 20.6 percent to maintain the pre-merger price. Finally, if the industry elasticity is 85 percent of the firm-specific elasticity of demand, then the merged firm's marginal cost would have to fall by 32.7 percent to maintain the pre-merger price. Thus, even if the merged firm recognized the 1.1 percent savings in variable costs depicted in Table 3, the post-merger price for SDARS would exceed the pre-merger price so

178. Michael Rapoport, *Cost-Cutting Claims Raise Static for Satellite Radio*, CHICAGO TRIBUNE, Mar. 4, 2007, at *1 available at <http://www.chicagotribune.com/business/chi-0703040396mar04,0,3404142.story?coll=chi-business-hed>.

179. For example, Thomas Eagan, an Oppenheimer & Co. analyst, said that although XM and Sirius may be able to cut costs for their non-exclusive programming like music, the "big-ticket programming is going to be tougher." Jeff Wlodarczak, a Wachovia Securities analyst, described the merging parties' claimed \$7 billion in synergies as being "extremely unrealistic." *Id.*

long as the industry elasticity of demand was less than or equal to 95 percent of the firm-specific elasticity of demand.

V. THE CONDITIONS OFFERED BY THE MERGER PROPONENTS WOULD NOT PRESERVE CONSUMER WELFARE

80. In testimony before the House Judiciary Committee on February 28, 2007, Sirius CEO Mel Karmazin offered to keep prices for end users below the current monthly price of \$12.95, and he appeared willing to offer some form of tiered service:

But you know what? Maybe you're concerned that you don't want to deal with the economics. I'm telling you today that we are committed, we are committed to not raising prices and committed to in fact lowering the price. So if the consumer is going to be able to have more choice, guaranteed no price increase and be able to have an option—more flexibility for a lower price—we think that we would meet the standard of absolutely saying that this merger is in the public interest.¹⁸⁰

By offering “more flexibility,” the second condition implies that the merged parties would offer a smaller bundle of channels at a price below \$12.95. On March 6, 2007—less than one week after he testified before the House Judiciary Committee—Mr. Karmazin clarified his proposed merger condition, explaining that “that he meant to say two things: subscribers wanting to keep their existing service would not face a price increase, and listeners who wanted the best of both services would pay less than the combined rate of \$25.90.”¹⁸¹ Another merger proponent, Gigi Sohn, who chairs the Public Knowledge advocacy group in Washington, D.C., suggested that the merger be approved subject to the following three conditions:

First, the new company should make available to its consumers a la cart and tier programming choices. Second, the new company should ensure program diversity by making available 5 percent of its capacity for noncommercial, educational, informational programming. This would resemble Section 335 of the Communications Act, which requires DBS providers to reserve 4 percent to 7 percent of their channel

180. Antitrust Task Force Subcommittee, House Committee on the Judiciary, Competition and the Future of Digital Music, Feb. 28, 2007, at 13-14 (2007) (statement of Mr. Mel Karmazin, CEO of Sirius Satellite Radio) (transcribed by CQ Transcription) [hereinafter *Antitrust Task Force Hearings*].

181. Steven Labaton, *F.C.C. Chief Questioning Radio Deal*, N.Y. TIMES, Mar. 7, 2007, at C6.

capacities for such uses. Third, the new company should be prohibited from raising prices for three years after the merger is approved.¹⁸²

Ms. Sohn's first and third proposed conditions, relating to a price freeze and tiered service, appear to mirror those offered by Mr. Karmazin at the hearing. By contrast, her second proposed condition relating to educational programming was not sponsored by a party to the proposed merger, and it was not designed to address the merger-related price effects. Thus, I do not address her second condition here. Because Mr. Karmazin rejected any notion of a smaller tier of SDARS priced below \$12.95, I do not address the implications of such a condition here.

A. The Merger Proponents' Proposed Remedies Are Likely to Reduce Welfare

81. The proposed conditions offered by the merger proponents would not remedy the anticompetitive effects described above, and they represent a *de facto* regime of price cap regulation that is antithetical to the deregulatory movement at the FCC over the past decade. A price freeze at the current monthly price of \$12.95 would reduce consumer welfare to the extent that the future price that would naturally emerge from continued oligopolistic competition between Sirius and XM in the absence of the proposed merger would fall below \$12.95 per month. As penetration rates increase and the merging parties independently achieve greater economies of scale, there will be significant pressure for each SDARS provider unilaterally to decrease its price. For example, under Bertrand competition between two firms with different marginal costs, the equilibrium price is one penny below the marginal cost of the higher-priced firm. In its filing with the Securities and Exchange Commission announcing the proposed merger, XM acknowledged the relationship between economies of scale and prices: "A larger number of subscribers will itself permit *lower prices* because the increased number of

182. *Antitrust Task Force Hearings*, *supra* note 180, at 6-7 (2007) (statement of Ms. Gigi Sohn, President and Founder of Public Knowledge).

subscribers (and thus receivers) will drive down production costs and lower distribution costs.”¹⁸³ It bears emphasis that these economies of scale are *not* merger-specific—that is, each SDARS provider would experience these economies of scale in the absence of the merger with the anticipated increase in SDARS subscribers. Thus, it is highly likely that the price freeze under a merger to monopoly would exceed the but-for duopoly price. Consequently, this merger condition would do nothing to protect consumer welfare.

82. Mr. Karmazin’s offer to freeze the monthly price at \$12.95 also fails to consider the fact that the SDARS providers offer a two-part tariff to end users. The first part of the tariff is the (subsidized) price of equipment. The second part is the monthly service fee. Committing to freeze one of the two parts of the two-part tariff provides no protection for end users. Stated differently, if the merged entity wants to preserve revenues per subscriber, then it can simply eliminate the subsidy on the equipment. Thus, setting aside the problem of lower but-for prices, a true price freeze would have to apply across all dimensions of the tariff. Mr. Karmazin has made no such offer.

83. Finally, price-cap regulation of the kind envisioned by the merger proponents is antithetic to the deregulatory movement that began with the passage of the Telecommunications Act of 1996. Representative Sensenbrenner remarked that XM’s price-cap proposal reminded him of “an old regulated gas company.”¹⁸⁴ With very few exceptions, the FCC does not regulate prices for retail services in telecommunications. End user prices for nearly all communications services—including cable television, wireless telephony, and long-distance services—are

183. XM SATELLITE RADIO, INC., The Facts About What the NAB Is Saying (S.E.C. FORM SCHEDULE 14A), at 6, Mar. 6, 2007 (emphasis added).

184. *Antitrust Task Force Hearings*, *supra* note 180, at 6-7 (Rep. Sensenbrenner added: “And I don’t think that’s the kind of model that we policy makers want to sign off on because we’ve already rejected that in other areas where regulated utilities have been.”).

constrained by competitive forces. The vast majority of the remaining price regulation imposed by the FCC relates to wholesale prices charged to rivals (for example, access prices) or to suppliers (for example, program carriage). To impose price cap regulation on a currently unregulated service would be akin to rewinding the evolutionary path of regulation and embracing the natural monopoly model.

84. With respect to Mr. Karmazin's second proposed condition relating to bundled rebates, pledging that a subscriber of both services will not be charged the sum of the stand-alone costs is a paltry concession when the *raison d'être* of the merger is that it supposedly increases efficiency. If the merger proponents are correct about the alleged efficiencies, the economies of scale owing to the merger would be sufficiently large such that the cost of the combined package of XM and Sirius would be far below the sum of the current stand-alone costs of Sirius and XM.

B. No FTC or DOJ Precedent Supports a Price Freeze as Part of an Antitrust Consent Decree

85. Even assuming it is possible to calculate the appropriate price level and duration of price controls for the merged firm, no FTC or DOJ precedent supports such a requirement as part of an antitrust consent decree. To the contrary, both antitrust enforcement agencies have expressly stated they are not in the business of price regulation. Former Assistant Attorney General Hewitt Pate has said that the Antitrust Division is composed of "law enforcers, not regulators."¹⁸⁵ The FTC has declined offers to condition merger approval on price regulation and has stated that such arrangements "do not preserve competition within any possible

185. R. Hewitt Pate, Assistant Att'y Gen'l, Antitrust Division, U.S. Dept of Justice, Senate Committee on the Judiciary *Antitrust Enforcement in the Agricultural Marketplace* Oct. 30 (2003), available at <http://www.usdoj.gov/atr/public/testimony/201430.htm>; see also Pamela Jones Harbour, *A Check-Up of Selected Health Care Activity at the Federal Trade Commission*, ABA Antitrust Section Spring Meeting (March 30, 2005) (noting the DOJ does not accept price regulation as a means of solving competitive concerns in antitrust review of mergers).

meaning” of the Clayton and Sherman Acts.¹⁸⁶ This view has not differed between Republican and Democratic administrations.

86. In *Butterworth Health Corp. v. FTC*, one of the very few reported cases where the merging parties argued for price regulation to remedy the enforcement agency’s concerns over price increases, the FTC explicitly declined such an agreement.¹⁸⁷ Though the court denied the FTC’s request for a preliminary injunction,¹⁸⁸ it noted that the parties’ “community commitment”—the parties’ formal, signed agreement not to raise prices in that case—was not likely to succeed in its mission.¹⁸⁹ Specifically, the court stated it is “difficult to conceive of any commitment of this nature that would provide failsafe assurances. . . .”¹⁹⁰

87. Other courts have agreed that guarantees against price increases and appeals for price regulation should not be entertained as merger conditions. In *FTC v. Cardinal Health*, the District Court for the District of Columbia was not persuaded by the parties’ representation that they would pass on cost savings to consumers and otherwise not increase the prices they charged.¹⁹¹ Taking the analysis one step further, the district court observed that “the mere fact that such representations [have] to be made strongly supports the fears of impermissible monopolization.”¹⁹² *Cardinal Health* effectively ratified the antitrust enforcement agencies’ rejection of price-cap regulation as a component of antitrust consent decrees. The FTC and the

186. Reply Brief for Plaintiff Appellant FTC at 5, *FTC v. Butterworth Health Corp.*, Case No. 1:96-CV-49 (6th Cir. 1997); see also Mary Lou Steptoe & David Balto, *Finding the Right Prescription: The FTC’s Use of Innovative Merger Remedies*, 10 ANTITRUST 16 (Fall 1995) (“The FTC has consistently rejected these proposals on the grounds that it is not a price-regulatory agency, compliance is difficult to monitor, and competition is the proper driving force for pricing decisions.”).

187. *Butterworth Health Corp. v. FTC*, 946 F. Supp. 1285 (W.D.Mich. 1996).

188. The denial of preliminary injunction turned, in a large part, on the court’s observation that “nonprofit hospitals may be treated differently under the antitrust laws.” *Id.* at 1298.

189. See *id.*

190. *Id.*

191. *FTC v. Cardinal Health, Inc.*, 12 F. Supp. 2d 34, 67 (D.D.C. 1998).

192. *Id.*

DOJ have for decades held the view that prices are best disciplined by competition—not by price-caps or price regulation.¹⁹³ The rule to be drawn from *Butterworth* and *Cardinal Health* is that courts and enforcement agencies are not regulators.¹⁹⁴

CONCLUSION

88. The relevant product market for assessing the proposed merger's competitive effects is the SDARS market. This conclusion is corroborated by analyses performed by the FCC, the Department of Justice, and the federal courts in analogous subscriber-based programming markets. My review of market-based evidence of alternative audio services such as podcasts, mobile Internet radio, terrestrial-based advertiser-supported radio, and HD radio demonstrates that these alternatives are not reasonably interchangeable with SDARS. Thus, under the most reasonable product market definition, the proposed merger of XM and Sirius would be a merger to monopoly. Even under a more expansive product market definition that included terrestrial HD and analog signals, the proposed merger would increase HHI by more than 3,000 points in all but thirteen local radio markets. My review of reports by equity analysts demonstrates that Sirius and XM are currently earning *positive* margins on their last subscribers, which implies that the failing-firm argument is untenable in this context. Finally, the merging firms have failed to provide convincing evidence that the merger would reduce the combined firm's marginal cost sufficiently such that the post-merger price would not exceed the pre-merger price. For these reasons, the proposed merger should be rejected.

193. See, e.g., Richard G. Parker, Senior Deputy Director, Bureau of Competition, FTC, *Trends in Merger Enforcement and Litigation*, Annual Briefing for Corporate Counsel (Sept. 16, 1998), at <http://www.ftc.gov/speeches/other/parker.htm> (noting a previous merger attempt by parties in the *Cardinal Health* case was blocked and prices fell in the years following the injunction).

194. See Stephen Calkins, *In Praise of Antitrust Litigation*, 72 ST. JOHN'S L. REV. 1, 9 (1998) ("If any lesson has been well-learned by economists and even politicians, it is that regulation is a poor substitute for competition.").

**APPENDIX 1: PRE- AND POST-MERGER HHIS FOR PURPORTED
MARKET OF SDARS AND HD RADIO**

<i>Market Name</i>	<i>Market Rank</i>	<i>Pre-Merger HHI</i>	<i>Post-Merger HHI</i>	<i>Change in HHI</i>
Baton Rouge, LA	77	5,041	9,934	4,893
Daytona Beach, FL	86	5,041	9,934	4,893
Melbourne-Titusville-Cocoa, FL	94	5,041	9,934	4,893
Chattanooga, TN	107	5,041	9,934	4,893
Portsmouth-Dover-Rochester, NH	116	5,041	9,934	4,893
Reno, NV	123	5,041	9,934	4,893
Canton, OH	128	5,041	9,934	4,893
Fayetteville, NC	129	5,041	9,934	4,893
Reading, PA	130	5,041	9,934	4,893
Shreveport, LA	132	5,041	9,934	4,893
Beaumont-Port Arthur, TX	133	5,041	9,934	4,893
Appleton-Oshkosh, WI	134	5,041	9,934	4,893
Fayetteville, AR	135	5,041	9,934	4,893
Palm Springs, CA	137	5,041	9,934	4,893
Atlantic City-Cape May, NJ	139	5,041	9,934	4,893
Newburgh-Middletown, NY	140	5,041	9,934	4,893
Trenton, NJ	141	5,041	9,934	4,893
Quad Cities, IA-IL	143	5,041	9,934	4,893
Salisbury-Ocean City, MD	145	5,041	9,934	4,893
Eugene-Springfield, OR	150	5,041	9,934	4,893
Rockford, IL	154	5,041	9,934	4,893
Huntington-Ashland, WV-KY	157	5,041	9,934	4,893
Utica-Rome, NY	160	5,041	9,934	4,893
Poughkeepsie, NY	163	5,041	9,934	4,893
Wilmington, NC	166	5,041	9,934	4,893
Concord, NH	169	5,041	9,934	4,893
San Luis Obispo, CA	172	5,041	9,934	4,893
New Bedford-Fall River, MA	177	5,041	9,934	4,893
South Bend, IN	178	5,041	9,934	4,893
Lubbock, TX	183	5,041	9,934	4,893
Kalamazoo, MI	184	5,041	9,934	4,893
Green Bay, WI	185	5,041	9,934	4,893
Columbus, GA	186	5,041	9,934	4,893
Johnstown, PA	191	5,041	9,934	4,893
Dothan, AL	193	5,041	9,934	4,893
Danbury, CT	196	5,041	9,934	4,893
Richland-Kennewick-Pasco, WA	199	5,041	9,934	4,893
Waco, TX	201	5,041	9,934	4,893
Rocky Mount-Wilson, NC	202	5,041	9,934	4,893
Clarksville-Hopkinsville, TN-KY	203	5,041	9,934	4,893
Olean, NY	215	5,041	9,934	4,893
Florence, SC	216	5,041	9,934	4,893
Bangor, ME	220	5,041	9,934	4,893
Champaign, IL	222	5,041	9,934	4,893
Elmira-Corning, NY	224	5,041	9,934	4,893
Ft. Walton Beach, FL	226	5,041	9,934	4,893
Tuscaloosa, AL	234	5,041	9,934	4,893
Marion-Carbondale, IL	239	5,041	9,934	4,893
Bryan-College Station, TX	240	5,041	9,934	4,893
Bloomington, IL	241	5,041	9,934	4,893
Pittsburg, KS	242	5,041	9,934	4,893
Lafayette, IN	245	5,041	9,934	4,893
Wheeling, WV	248	5,041	9,934	4,893

<i>Market Name</i>	<i>Market Rank</i>	<i>Pre-Merger HHI</i>	<i>Post-Merger HHI</i>	<i>Change in HHI</i>
Parkersburg-Marietta, WV-OH	249	5,041	9,934	4,893
State College, PA	254	5,041	9,934	4,893
Columbia, MO	255	5,041	9,934	4,893
Meadville-Franklin, PA	256	5,041	9,934	4,893
Florence-Muscle Shoals, AL	258	5,041	9,934	4,893
Grand Junction, CO	264	5,041	9,934	4,893
Wichita Falls, TX	265	5,041	9,934	4,893
Montpelier-Barre-St Johnsbury, VT	266	5,041	9,934	4,893
Augusta-Waterville, ME	268	5,041	9,934	4,893
Valdosta, GA	269	5,041	9,934	4,893
Albany, GA	270	5,041	9,934	4,893
Elkins-Buckhannon-Weston, WV	272	5,041	9,934	4,893
Sioux City, IA	275	5,041	9,934	4,893
Rapid City, SD	276	5,041	9,934	4,893
Harrisonburg, VA	277	5,041	9,934	4,893
Lawton, OK	282	5,041	9,934	4,893
Bismarck, ND	285	5,041	9,934	4,893
Beckley, WV	294	5,041	9,934	4,893
Mason City, IA	295	5,041	9,934	4,893
Great Falls, MT	296	5,041	9,934	4,893
Casper, WY	299	5,041	9,934	4,893
Wilmington, DE	75	5,009	9,870	4,861
Greenville-New Bern-Jacksonville, NC	89	5,009	9,870	4,861
York, PA	103	5,009	9,870	4,861
Morristown, NJ	112	5,009	9,870	4,861
Roanoke-Lynchburg, VA	115	5,009	9,870	4,861
Sunbury-Selinsgrove-Lewisburg, PA	214	5,009	9,870	4,861
St. Cloud, MN	218	5,009	9,870	4,861
Pueblo, CO	253	5,009	9,870	4,861
Mankato-New Ulm-St Peter, MN	274	5,009	9,870	4,861
Wilkes Barre-Scranton, PA	69	5,008	9,869	4,861
Akron, OH	74	5,008	9,869	4,861
Bakersfield, CA	78	5,008	9,869	4,861
Lexington-Fayette, KY	104	5,008	9,869	4,861
Ft. Wayne, IN	106	5,008	9,869	4,861
New Haven, CT	110	5,008	9,869	4,861
Lancaster, PA	114	5,008	9,869	4,861
Jackson, MS	118	5,008	9,869	4,861
Oxnard-Ventura, CA	120	5,008	9,869	4,861
Bridgeport, CT	121	5,008	9,869	4,861
Corpus Christi, TX	136	5,008	9,869	4,861
Stamford-Norwalk, CT	146	5,008	9,869	4,861
Ann Arbor, MI	147	5,008	9,869	4,861
Montgomery, AL	151	5,008	9,869	4,861
Fredericksburg, VA	153	5,008	9,869	4,861
Savannah, GA	158	5,008	9,869	4,861
New London, CT	173	5,008	9,869	4,861
Lincoln, NE	174	5,008	9,869	4,861
Morgantown-Clarksburg-Fairmont, WV	175	5,008	9,869	4,861
Charleston, WV	182	5,008	9,869	4,861
Manchester, NH	190	5,008	9,869	4,861
Topeka, KS	194	5,008	9,869	4,861
Yakima, WA	200	5,008	9,869	4,861
Santa Barbara, CA	211	5,008	9,869	4,861
Redding, CA	228	5,008	9,869	4,861
Waterloo-Cedar Falls, IA	251	5,008	9,869	4,861

<i>Market Name</i>	<i>Market Rank</i>	<i>Pre-Merger HHI</i>	<i>Post-Merger HHI</i>	<i>Change in HHI</i>
Hamptons-Riverhead, NY	260	5,008	9,869	4,861
Cookeville, TN	287	5,008	9,869	4,861
Grand Forks, ND-MN	289	5,008	9,869	4,861
Brunswick, GA	298	5,008	9,869	4,861
Monmouth-Ocean, NJ	51	4,976	9,805	4,829
Mobile, AL	90	4,976	9,805	4,829
Lafayette, LA	102	4,976	9,805	4,829
Boise, ID	105	4,977	9,806	4,829
Huntsville, AL	113	4,977	9,806	4,829
Ft. Collins-Greeley, CO	125	4,976	9,805	4,829
Burlington-Plattsburgh, VT-NY	138	4,976	9,805	4,829
Asheville, NC	159	4,976	9,805	4,829
Amarillo, TX	195	4,976	9,805	4,829
Frederick, MD	197	4,976	9,805	4,829
Duluth-Superior, MN-WI	204	4,976	9,805	4,829
Cedar Rapids, IA	213	4,976	9,805	4,829
Fargo-Moorhead, ND-MN	223	4,976	9,805	4,829
Rochester, MN	232	4,977	9,806	4,829
Billings, MT	259	4,976	9,805	4,829
Nassau-Suffolk, NY	18	4,944	9,742	4,798
Charleston, SC	88	4,945	9,743	4,798
Worcester, MA	111	4,944	9,742	4,798
Pensacola, FL	124	4,944	9,742	4,798
Springfield, MO	142	4,944	9,742	4,798
Tyler-Longview, TX	148	4,945	9,743	4,798
Peoria, IL	149	4,944	9,742	4,798
Evansville, IN	162	4,944	9,742	4,798
Portland, ME	167	4,944	9,742	4,798
Wausau-Stevens Point, WI	170	4,944	9,742	4,798
Anchorage, AK	171	4,944	9,742	4,798
Cape Cod, MA	189	4,944	9,742	4,798
Medford-Ashland, OR	210	4,945	9,743	4,798
Charlottesville, VA	231	4,944	9,742	4,798
Joplin, MO	238	4,945	9,743	4,798
Middlesex-Somerset-Union, NJ	39	4,944	9,742	4,798
Gainesville-Ocala, FL	83	4,944	9,742	4,798
Lansing-East Lansing, MI	122	4,944	9,742	4,798
Flint, MI	127	4,944	9,742	4,798
Kalispell-Flathead Valley, MT	262	4,944	9,742	4,798
Riverside-San Bernardino, CA	25	4,912	9,679	4,767
San Jose, CA	35	4,912	9,679	4,767
Des Moines, IA	92	4,913	9,679	4,767
Augusta, GA	109	4,913	9,680	4,767
La Crosse, WI	230	4,913	9,679	4,767
Knoxville, TN	71	4,912	9,679	4,767
Columbia, SC	91	4,912	9,679	4,767
Modesto, CA	108	4,912	9,678	4,767
Youngstown-Warren, OH	117	4,912	9,679	4,767
Lebanon-Rutland-White River Junction, NH-VT	179	4,912	9,679	4,767
Ft. Myers-Naples-Marco Island, FL	62	4,882	9,618	4,736
Allentown-Bethlehem, PA	68	4,881	9,617	4,736
Stockton, CA	81	4,880	9,616	4,736
Springfield, MA	84	4,881	9,617	4,736
Toledo, OH	87	4,883	9,619	4,736
Kansas City, MO-KS	30	4,851	9,556	4,706
Louisville, KY	54	4,850	9,555	4,706

<i>Market Name</i>	<i>Market Rank</i>	<i>Pre-Merger HHI</i>	<i>Post-Merger HHI</i>	<i>Change in HHI</i>
New Orleans, LA	57	4,850	9,555	4,706
Harrisburg-Lebanon-Carlisle, PA	79	4,849	9,555	4,706
Raleigh-Durham, NC	43	4,818	9,493	4,675
Puerto Rico	13	4,819	9,494	4,675
El Paso, TX	76	4,819	9,494	4,675
Little Rock, AR	85	4,820	9,495	4,675
Colorado Springs, CO	97	4,819	9,494	4,675
San Diego, CA	17	4,790	9,435	4,645
Tulsa, OK	65	4,790	9,436	4,645
Monterey-Salinas-Santa Cruz, CA	80	4,788	9,434	4,645
Austin, TX	42	4,760	9,375	4,616
Greensboro-Winston Salem-High Point, NC	45	4,760	9,376	4,616
McAllen-Brownsville-Harlingen, TX	58	4,759	9,375	4,616
Fresno, CA	66	4,760	9,376	4,616
Wichita, KS	98	4,759	9,375	4,616
Memphis, TN	49	4,760	9,376	4,616
Albuquerque, NM	70	4,761	9,377	4,616
Syracuse, NY	82	4,758	9,374	4,616
Baltimore, MD	21	4,728	9,314	4,586
Columbus, OH	37	4,729	9,315	4,586
Providence-Warwick-Pawtucket, RI	38	4,729	9,315	4,586
Norfolk-Virginia Beach-Newport News, VA	41	4,728	9,315	4,586
Jacksonville, FL	47	4,730	9,316	4,586
Greenville-Spartanburg, SC	60	4,730	9,316	4,586
Omaha-Council Bluffs, NE-IA	72	4,730	9,316	4,586
Nashville, TN	44	4,699	9,256	4,557
Richmond, VA	55	4,700	9,257	4,557
Madison, WI	95	4,699	9,256	4,557
Las Vegas, NV	32	4,698	9,256	4,557
West Palm Beach-Boca Raton, FL	46	4,700	9,257	4,557
Oklahoma City, OK	48	4,700	9,257	4,557
Hartford-New Britain-Middletown, CT	50	4,699	9,256	4,557
Tucson, AZ	61	4,698	9,256	4,557
Pittsburgh, PA	24	4,669	9,198	4,529
Buffalo-Niagara Falls, NY	52	4,670	9,198	4,529
Dayton, OH	59	4,671	9,200	4,529
Grand Rapids, MI	67	4,641	9,141	4,500
Phoenix, AZ	15	4,641	9,141	4,500
Charlotte-Gastonia-Rock Hill, NC-SC	33	4,640	9,140	4,500
Birmingham, AL	56	4,641	9,141	4,500
Albany-Schenectady-Troy, NY	63	4,643	9,143	4,500
Sacramento, CA	27	4,612	9,083	4,472
Milwaukee-Racine, WI	36	4,612	9,084	4,472
Minneapolis-St. Paul, MN	16	4,585	9,029	4,444
Salt Lake City-Ogden-Provo, UT	31	4,583	9,027	4,444
Portland, OR	23	4,585	9,029	4,444
Rochester, NY	53	4,559	8,975	4,416
Cleveland, OH	26	4,527	8,915	4,389
San Antonio, TX	29	4,530	8,918	4,389
Orlando, FL	34	4,530	8,919	4,389
Indianapolis, IN	40	4,526	8,914	4,389
Tampa-St. Petersburg-Clearwater, FL	19	4,503	8,864	4,361
Cincinnati, OH	28	4,502	8,863	4,361
St. Louis, MO	20	4,472	8,807	4,334
Washington, DC	8	4,392	8,647	4,255
Houston-Galveston, TX	6	4,339	8,542	4,203

<i>Market Name</i>	<i>Market Rank</i>	<i>Pre-Merger HHI</i>	<i>Post-Merger HHI</i>	<i>Change in HHI</i>
Boston, MA	11	4,312	8,490	4,178
Philadelphia, PA	7	4,287	8,439	4,152
Detroit, MI	10	4,289	8,442	4,152
New York, NY	1	4,259	8,387	4,127
Seattle-Tacoma, WA	14	4,261	8,388	4,127
Miami-Ft. Lauderdale-Hollywood, FL	12	4,236	8,338	4,103
San Francisco, CA	4	4,238	8,341	4,103
Atlanta, GA	9	4,184	8,238	4,054
Denver-Boulder, CO	22	4,163	8,192	4,029
Dallas-Ft. Worth, TX	5	4,137	8,143	4,005
Chicago, IL	3	3,974	7,817	3,844
Los Angeles, CA	2	3,927	7,726	3,799

**APPENDIX 2: PRE- AND POST-MERGER HHIS FOR PURPORTED
MARKET OF SDARS, ANALOG RADIO, AND HD RADIO**

<i>Market Name</i>	<i>Market Rank</i>	<i>Pre-Merger HHI</i>	<i>Post-Merger HHI</i>	<i>Change in HHI</i>
Lewiston-Auburn, ME	280	4976	9805	4829
Sussex, NJ	247	4913	9680	4767
Battle Creek, MI	261	4881	9617	4736
Sebring, FL	288	4882	9618	4736
Morristown, NJ	112	4818	9493	4675
Reading, PA	130	4818	9493	4675
Sheboygan, WI	278	4819	9494	4675
New Bedford-Fall River, MA	177	4757	9373	4616
Danbury, CT	196	4758	9373	4616
Ithaca, NY	284	4759	9374	4616
Rocky Mount-Wilson, NC	202	4728	9314	4586
Jonesboro, AR	291	4728	9315	4586
Beckley, WV	294	4730	9316	4586
Middlesex-Somerset-Union, NJ	39	4698	9255	4557
Ann Arbor, MI	147	4698	9255	4557
Laredo, TX	205	4698	9255	4557
Santa Fe, NM	236	4697	9255	4557
Bridgeport, CT	121	4697	9254	4557
Stamford-Norwalk, CT	146	4698	9255	4557
Las Cruces, NM	227	4698	9255	4557
Wichita Falls, TX	265	4699	9256	4557
Decatur, IL	281	4699	9256	4557
Altoona, PA	267	4671	9200	4529
New Haven, CT	110	4669	9197	4529
Frederick, MD	197	4668	9197	4529
Hilton Head, SC	219	4669	9198	4529
Muskegon, MI	233	4671	9200	4529
Bloomington, IL	241	4669	9197	4529
Pueblo, CO	253	4639	9139	4500
Brunswick, GA	298	4641	9141	4500
Canton, OH	128	4639	9139	4500
Fredericksburg, VA	153	4639	9139	4500
Killeen-Temple, TX	156	4640	9140	4500
New London, CT	173	4640	9140	4500
Winchester, VA	225	4640	9140	4500
Augusta-Waterville, ME	268	4641	9141	4500
Watertown, NY	279	4640	9140	4500
Lawton, OK	282	4640	9140	4500
Akron, OH	74	4610	9082	4472
Lakeland-Winter Haven, FL	96	4610	9082	4472
Trenton, NJ	141	4609	9081	4472
Rockford, IL	154	4611	9083	4472
Clarksville-Hopkinsville, TN-KY	203	4612	9084	4472
Cookeville, TN	287	4612	9084	4472
Waco, TX	201	4611	9083	4472
York, PA	103	4582	9025	4444
Manchester, NH	190	4581	9025	4444
Sarasota-Bradenton, FL	73	4583	9027	4444
Lancaster, PA	114	4580	9024	4444
Lufkin-Nacogdoches, TX	252	4582	9026	4444
Jackson, TN	290	4583	9027	4444
Mason City, IA	295	4584	9028	4444
Casper, WY	299	4584	9028	4444

<i>Market Name</i>	<i>Market Rank</i>	<i>Pre-Merger HHI</i>	<i>Post-Merger HHI</i>	<i>Change in HHI</i>
Meadville-Franklin, PA	256	4560	8976	4416
Daytona Beach, FL	86	4553	8969	4416
Cedar Rapids, IA	213	4554	8971	4416
Lake Charles, LA	229	4557	8973	4416
Tuscaloosa, AL	234	4556	8972	4416
Hamptons-Riverhead, NY	260	4553	8969	4416
Elkins-Buckhannon-Weston, WV	272	4553	8969	4416
Sioux City, IA	275	4555	8971	4416
Cheyenne, WY	292	4554	8970	4416
Meridian, MS	297	4555	8971	4416
Lincoln, NE	174	4527	8916	4389
Stockton, CA	81	4525	8913	4389
Newburgh-Middletown, NY	140	4525	8913	4389
Hagerstown-Chambersburg-Waynesboro, MD-PA	165	4526	8915	4389
Topeka, KS	194	4526	8914	4389
Muncie-Marion, IN	212	4526	8915	4389
Lima, OH	250	4528	8917	4389
Columbus-Starkville-West Point, MS	273	4528	8917	4389
Mankato-New Ulm-St Peter, MN	274	4527	8915	4389
Bismarck, ND	285	4529	8917	4389
San Angelo, TX	286	4527	8915	4389
Grand Forks, ND-MN	289	4527	8916	4389
Eau Claire, WI	244	4501	8863	4361
Ft. Pierce-Stuart-Vero Beach, FL	99	4499	8860	4361
Erie, PA	168	4499	8861	4361
Merced, CA	180	4498	8860	4361
Kalamazoo, MI	184	4499	8860	4361
Santa Maria-Lompoc, CA	207	4498	8859	4361
Santa Barbara, CA	211	4498	8859	4361
Ft. Walton Beach, FL	226	4499	8860	4361
Rochester, MN	232	4499	8861	4361
Dubuque, IA	235	4500	8862	4361
LaSalle-Peru, IL	246	4499	8860	4361
State College, PA	254	4499	8860	4361
Columbia, MO	255	4500	8862	4361
Florence-Muscle Shoals, AL	258	4499	8860	4361
Williamsport, PA	271	4499	8861	4361
Harrisonburg, VA	277	4499	8860	4361
Bluefield, WV	283	4503	8864	4361
Great Falls, MT	296	4499	8860	4361
Santa Rosa, CA	119	4498	8860	4361
Wilmington, DE	75	4470	8804	4334
Visalia-Tulare-Hanford, CA	100	4468	8803	4334
Portsmouth-Dover-Rochester, NH	116	4472	8807	4334
Green Bay, WI	185	4472	8806	4334
Chico, CA	198	4473	8807	4334
Marion-Carbondale, IL	239	4473	8808	4334
Bryan-College Station, TX	240	4472	8806	4334
Lafayette, IN	245	4471	8805	4334
Wheeling, WV	248	4472	8806	4334
Texarkana, TX-AR	263	4472	8806	4334
Montpelier-Barre-St Johnsbury, VT	266	4471	8805	4334
Albany, GA	270	4475	8809	4334
Melbourne-Titusville-Cocoa, FL	94	4470	8804	4334
Grand Junction, CO	264	4472	8807	4334

<i>Market Name</i>	<i>Market Rank</i>	<i>Pre-Merger HHI</i>	<i>Post-Merger HHI</i>	<i>Change in HHI</i>
Oxnard-Ventura, CA	120	4445	8752	4308
Poughkeepsie, NY	163	4446	8754	4308
Pittsburg, KS	242	4443	8751	4308
Valdosta, GA	269	4444	8752	4308
Binghamton, NY	181	4418	8699	4281
Johnstown, PA	191	4417	8699	4281
St. Cloud, MN	218	4418	8699	4281
Champaign, IL	222	4416	8697	4281
Waterloo-Cedar Falls, IA	251	4416	8697	4281
Worcester, MA	111	4415	8696	4281
Columbus, GA	186	4422	8703	4281
Laurel-Hattiesburg, MS	209	4418	8700	4281
Panama City, FL	237	4419	8700	4281
Parkersburg-Marietta, WV-OH	249	4418	8700	4281
Monroe, LA	257	4418	8700	4281
Rapid City, SD	276	4417	8698	4281
Charleston, WV	182	4393	8648	4255
Redding, CA	228	4391	8646	4255
Charlottesville, VA	231	4391	8646	4255
Flint, MI	127	4391	8646	4255
Appleton-Oshkosh, WI	134	4390	8645	4255
Biloxi-Gulfport-Pascagoula, MS	144	4392	8647	4255
Terre Haute, IN	206	4390	8645	4255
Bowling Green, KY	208	4389	8644	4255
Sunbury-Selinsgrove-Lewisburg, PA	214	4391	8646	4255
Alexandria, LA	221	4390	8645	4255
Abilene, TX	243	4391	8646	4255
The Florida Keys, FL	293	4390	8644	4255
Fayetteville, NC	129	4364	8593	4229
Beaumont-Port Arthur, TX	133	4363	8592	4229
Quad Cities, IA-IL	143	4365	8594	4229
Asheville, NC	159	4363	8592	4229
South Bend, IN	178	4363	8592	4229
Richland-Kennewick-Pasco, WA	199	4365	8594	4229
Montgomery, AL	151	4365	8594	4229
Florence, SC	216	4369	8598	4229
Bangor, ME	220	4365	8594	4229
Joplin, MO	238	4371	8600	4229
Ft. Collins-Greeley, CO	125	4337	8540	4203
Saginaw-Bay City-Midland, MI	131	4337	8540	4203
Palm Springs, CA	137	4338	8541	4203
Bend, OR	217	4337	8541	4203
Kalispell-Flathead Valley, MT	262	4337	8540	4203
Peoria, IL	149	4313	8491	4178
Tallahassee, FL	164	4312	8490	4178
Tupelo, MS	188	4311	8489	4178
La Crosse, WI	230	4315	8493	4178
Savannah, GA	158	4313	8491	4178
Wilmington, NC	166	4314	8491	4178
Olean, NY	215	4311	8489	4178
Monmouth-Ocean, NJ	51	4286	8438	4152
Pensacola, FL	124	4282	8435	4152
Concord, NH	169	4287	8439	4152
Cape Cod, MA	189	4284	8437	4152
Medford-Ashland, OR	210	4289	8441	4152
San Luis Obispo, CA	172	4286	8438	4152

<i>Market Name</i>	<i>Market Rank</i>	<i>Pre-Merger HHI</i>	<i>Post-Merger HHI</i>	<i>Change in HHI</i>
Fargo-Moorhead, ND-MN	223	4286	8439	4152
Huntington-Ashland, WV-KY	157	4263	8391	4127
San Jose, CA	35	4257	8385	4127
Baton Rouge, LA	77	4261	8389	4127
Lubbock, TX	183	4260	8388	4127
Lansing-East Lansing, MI	122	4235	8338	4103
Shreveport, LA	132	4238	8340	4103
Myrtle Beach, SC	161	4236	8339	4103
Elmira-Corning, NY	224	4237	8339	4103
Fayetteville, AR	135	4236	8338	4103
Evansville, IN	162	4233	8336	4103
Odessa-Midland, TX	187	4236	8338	4103
Yakima, WA	200	4236	8338	4103
Nassau-Suffolk, NY	18	4208	8286	4078
Allentown-Bethlehem, PA	68	4210	8288	4078
Mobile, AL	90	4209	8287	4078
Modesto, CA	108	4209	8287	4078
Macon, GA	155	4214	8292	4078
Ft. Smith, AR	176	4210	8288	4078
Youngstown-Warren, OH	117	4215	8293	4078
Dothan, AL	193	4207	8285	4078
Amarillo, TX	195	4185	8239	4054
Billings, MT	259	4184	8238	4054
Utica-Rome, NY	160	4187	8241	4054
Springfield, MO	142	4160	8190	4029
Wausau-Stevens Point, WI	170	4161	8190	4029
Morgantown-Clarksburg-Fairmont, WV	175	4159	8188	4029
Duluth-Superior, MN-WI	204	4162	8191	4029
Ft. Wayne, IN	106	4134	8140	4005
Reno, NV	123	4136	8142	4005
Victor Valley, CA	126	4138	8144	4005
Eugene-Springfield, OR	150	4136	8142	4005
Anchorage, AK	171	4139	8144	4005
Columbia, SC	91	4091	8050	3958
Lafayette, LA	102	4088	8046	3958
Boise, ID	105	4090	8049	3958
Chattanooga, TN	107	4085	8043	3958
Jackson, MS	118	4088	8046	3958
Harrisburg-Lebanon-Carlisle, PA	79	4063	7998	3935
Springfield, MA	84	4064	7999	3935
Colorado Springs, CO	97	4066	8001	3935
Lexington-Fayette, KY	104	4065	8000	3935
Corpus Christi, TX	136	4062	7997	3935
Atlantic City-Cape May, NJ	139	4069	8003	3935
Flagstaff-Prescott, AZ	152	4064	7999	3935
Portland, ME	167	4066	8001	3935
Toledo, OH	87	4044	7956	3912
Charleston, SC	88	4046	7958	3912
Spokane, WA	93	4044	7956	3912
Huntsville, AL	113	4043	7954	3912
Riverside-San Bernardino, CA	25	4016	7905	3889
Des Moines, IA	92	4022	7911	3889
Tyler-Longview, TX	148	3999	7865	3866
Honolulu, HI	64	3975	7819	3844
Johnson City-Kingsport-Bristol, TN-VA	101	3969	7812	3844
Traverse City-Petoskey, MI	192	3975	7819	3844

<i>Market Name</i>	<i>Market Rank</i>	<i>Pre-Merger HHI</i>	<i>Post-Merger HHI</i>	<i>Change in HHI</i>
Omaha-Council Bluffs, NE-IA	72	3956	7777	3821
Wichita, KS	98	3956	7777	3821
Augusta, GA	109	3953	7774	3821
McAllen-Brownsville-Harlingen, TX	58	3936	7735	3799
Burlington-Plattsburgh, VT-NY	138	3925	7725	3799
Salisbury-Ocean City, MD	145	3935	7734	3799
West Palm Beach-Boca Raton, FL	46	3913	7691	3777
Ft. Myers-Naples-Marco Island, FL	62	3903	7681	3777
Gainesville-Ocala, FL	83	3907	7684	3777
Roanoke-Lynchburg, VA	115	3904	7682	3777
Buffalo-Niagara Falls, NY	52	3886	7641	3756
Bakersfield, CA	78	3861	7595	3734
Hartford-New Britain-Middletown, CT	50	3839	7552	3713
Lebanon-Rutland-White River Junction, NH-VT	179	3840	7553	3713
El Paso, TX	76	3842	7555	3713
Baltimore, MD	21	3818	7509	3691
New Orleans, LA	57	3798	7468	3670
Tucson, AZ	61	3778	7427	3650
Little Rock, AR	85	3776	7426	3650
Madison, WI	95	3779	7428	3650
Knoxville, TN	71	3750	7379	3629
Austin, TX	42	3763	7392	3629
Tulsa, OK	65	3760	7389	3629
Kansas City, MO-KS	30	3742	7350	3608
Dayton, OH	59	3742	7351	3608
Syracuse, NY	82	3740	7349	3608
Richmond, VA	55	3719	7307	3588
Providence-Warwick-Pawtucket, RI	38	3710	7298	3588
Louisville, KY	54	3719	7307	3588
Wilkes Barre-Scranton, PA	69	3714	7302	3588
Raleigh-Durham, NC	43	3694	7262	3568
Albuquerque, NM	70	3683	7231	3548
Monterey-Salinas-Santa Cruz, CA	80	3670	7218	3548
Greenville-Spartanburg, SC	60	3658	7187	3528
Grand Rapids, MI	67	3654	7182	3528
Greenville-New Bern-Jacksonville, NC	89	3651	7179	3528
Jacksonville, FL	47	3639	7147	3509
San Diego, CA	17	3615	7104	3489
Cleveland, OH	26	3616	7106	3489
Milwaukee-Racine, WI	36	3615	7104	3489
Columbus, OH	37	3612	7101	3489
Norfolk-Virginia Beach-Newport News, VA	41	3610	7100	3489
Oklahoma City, OK	48	3595	7065	3470
Birmingham, AL	56	3577	7027	3451
Las Vegas, NV	32	3572	7023	3451
Orlando, FL	34	3586	7037	3451
Fresno, CA	66	3534	6947	3413
Indianapolis, IN	40	3532	6945	3413
Sacramento, CA	27	3518	6913	3394
Charlotte-Gastonia-Rock Hill, NC-SC	33	3498	6874	3376
Greensboro-Winston Salem-High Point, NC	45	3500	6875	3376
Memphis, TN	49	3487	6844	3357
Rochester, NY	53	3455	6776	3321
Albany-Schenectady-Troy, NY	63	3451	6772	3321
Tampa-St. Petersburg-Clearwater, FL	19	3440	6743	3303
Cincinnati, OH	28	3430	6733	3303

<i>Market Name</i>	<i>Market Rank</i>	<i>Pre-Merger HHI</i>	<i>Post-Merger HHI</i>	<i>Change in HHI</i>
Phoenix, AZ	15	3373	6623	3250
Minneapolis-St. Paul, MN	16	3374	6625	3250
San Antonio, TX	29	3385	6635	3250
Portland, OR	23	3324	6523	3199
Nashville, TN	44	3311	6510	3199
Washington, DC	8	3292	6457	3165
Pittsburgh, PA	24	3197	6280	3083
Salt Lake City-Ogden-Provo, UT	31	3150	6185	3035
Denver-Boulder, CO	22	3144	6163	3019
Miami-Ft. Lauderdale-Hollywood, FL	12	3138	6157	3019
St. Louis, MO	20	3055	5998	2943
Detroit, MI	10	3035	5948	2913
Houston-Galveston, TX	6	3005	5889	2884
San Francisco, CA	4	2991	5861	2869
Philadelphia, PA	7	2979	5849	2869
New York, NY	1	2879	5650	2771
Seattle-Tacoma, WA	14	2829	5545	2717
Puerto Rico	13	2769	5420	2651
Dallas-Ft. Worth, TX	5	2700	5289	2588
Atlanta, GA	9	2694	5282	2588
Boston, MA	11	2627	5154	2527
Los Angeles, CA	2	2505	4895	2390
Chicago, IL	3	2105	4110	2004

APPENDIX 3: MATERIALS RELIED UPON

Analyst Reports

Andrew Bary, *Don't Bet on Howard*, BARRON'S, Jan. 23, 2006, at 20.

Craig Moffett & Amelia Wong, *Satellite Radio II: The Competition Between XM and Sirius; Like Coke and Pepsi, Expect Market Shares to Converge*, BERNSTEIN RESEARCH CALL, Jun. 29, 2005.

Craig Moffett & Amelia Wong, *XMSR: Few Surprises, but Strong Second Quarter Affirms Positive Long Term Trends*, BERNSTEIN RESEARCH CALL, July 29, 2005.

Craig Moffett & Amelia Wong, *Satellite Radio: Limitations of Digital Radio Suggest Impact on Satellite Radio Will Likely Be Small*, BERNSTEIN RESEARCH CALL, Dec. 8, 2005.

Craig Moffett & Amelia Wong, *XMSR: Analyst Day Highlights Bullish Longer-Term OEM Trends and Stronger Product Line-Up*, BERNSTEIN RESEARCH CALL, Jan. 9, 2006.

Craig Moffett & Amelia Wong, *Satellite Radio: Upgrading Sirius to Outperform; We Expect SIRI to Beat Consensus and Guidance*, BERNSTEIN RESEARCH CALL, Feb 8, 2006.

Craig Moffett & Amelia Wong, *XM Satellite Radio (XMSR): Lowering Target Price to Reflect Conversion Rate Concerns; Maintain Outperform*, BERNSTEIN RESEARCH CALL, Feb. 17, 2006

Craig Moffett & Amelia Wong, *Sirius (SIRI) and XM (XMSR): Back to First Principles . . . Lowering SIRI Target Price, but Reiterate Outperform*, BERNSTEIN RESEARCH CALL, Feb. 21, 2006.

Craig Moffett, Amelia Wong & Judah Rifkin, *Satellite Radio IQ Preview: All Eyes Are on Conversion Rates, SAC, and iPods*, BERNSTEIN RESEARCH CALL, Apr. 25, 2006.

Craig Moffett & Judah Rifkin, *XM Satellite Radio(XMSR): Clearer Skies Ahead*, BERNSTEIN RESEARCH CALL, July 5, 2006.

Eric Savitz, *Satellite Radio: Bear Stearns Trims Subscriber Forecast; Sees Big Upside In Merger Scenario*, BARRON'S ONLINE, Jan. 23, 2007.

Academic Publications

DENNIS CARLTON & JEFFREY PERLOFF, *MODERN INDUSTRIAL ORGANIZATION* 107 (Addison Wesley 3rd ed. 2000).

Jerry A. Hausman, Gregory Leonard & Christopher Velluro, *Market Definition Under Price Discrimination*, 64 ANTITRUST L.J. 367 (1996).

JERRY A. HAUSMAN & J. GREGORY SIDAK, *THE FAILURE OF GOOD INTENTIONS: IS REGULATION OR COMPETITION THE FUTURE OF AMERICAN TELECOMMUNICATIONS?* (forthcoming Cambridge University Press 2007).

Lou Steptoe & David Balto, *Finding the Right Prescription: The FTC's Use of Innovative Merger Remedies*, 10 ANTITRUST 16 (Fall 1995).

NATIONAL RESEARCH COUNCIL, *YOUTH, PORNOGRAPHY & THE INTERNET* (Dick Thornburgh & Herbert S. Lin eds., 2003).

RICHARD A. POSNER, FRANK H. EASTERBROOK & J. GREGORY SIDAK, *ANTITRUST LAW: CASES AND MATERIALS* (forthcoming 3d ed. West Publishing 2007).

Robert Corn-Revere, *Can Broadcast Indecency Regulations Be Extended to Cable Television and Satellite Radio?*, 30 S. ILL. U. L.J. 243, 271 (2006).

Stephen Calkins, *In Praise of Antitrust Litigation*, 72 ST. JOHN'S L. REV. 1, 9 (1998).

Thomas Eisenmann & Alastair Brown, *Satellite Radio*, HARVARD BUSINESS SCHOOL CASE STUDY, Nov. 20, 2003, at 7.

News Stories

Alana Semuels, *Sirius Gives Stern, Agent \$83 million Stock Bonus*, L.A. TIMES, Jan. 10, 2007, at 1.

Cesca Antonelli, *Sirius Radio Passes 3 Million Subscribers*, CHI. TRIB., Dec. 28, 2005, at 3 (citing Citigroup analyst Ellen Furukawa).

Dan Caterinicchia, *Elliot Wakes to Subpoena*, WASH. TIMES, June 28, 2006, at C8.

David Hinckley, *Local Radio: We're Good With FCC Rules*, N.Y. DAILY NEWS, July 10, 2006, at 82.

Editorial, *Stern Action*, CLEVELAND PLAIN DEALER, Jan. 6, 1993, at 4B.

FCC Indecency Fines, 1970-2004, WASH. POST, <http://www.washingtonpost.com/wp-srv/business/graphics/web-fcc970.html> (last visited Feb. 4, 2007).

Frank Ahrens, *Six-Figure Fines For Four-Letter Words Worry Broadcasters*, WASH. POST., July 11, 2006, at A1.

Gene G. Marcial, *Stern Is the Draw At Sirius Satellite Radio*, BUSINESSWEEK, Apr. 10, 2006, at 104.

Heather Green & Tom Lowry, *Media the New Radio Revolution; From satellite to podcasts, programming is exploding—but the fight for profits will be ferocious*, BUSINESSWEEK, Mar. 14, 2005, at 32.

Howard's way - Satellite radio, THE ECONOMIST, Jan. 14, 2006.

Jacques Steinberg, *Stern Likes His New Censor: Himself*, N.Y. TIMES, Jan. 9, 2007, at E1.

Michael Heaton, *Indecency the Old-Fashioned Way*, CLEVELAND PLAIN DEALER, Feb. 17, 2006, at 60.

Nick Wingfield, *RealNetworks, Sprint Will Offer Radio Via Phones*, WALL ST. J., Sept. 19, 2006.

Paul Davidson, *Indecent or Not? TV, Radio Walk Fuzzy Line*, USA TODAY, June 3, 2005, at 1B.

PBS Issues Indecency Guidelines in Response to FCC Fines, PUBLIC BROADCASTING REPORT, June 23, 2006.

Playboy Clicks With On-Demand Fare, VARIETY, July 10, 2006, at 16.

Sarah McBride, Dennis K. Berman & Amy Schatz, *Sirius and XM Agree to Merge, Despite Hurdles For Regulators, Deal Pits Competition Concerns Against New Technology*, WALL ST. J., Feb. 20, 2007, at A1.

Sarah McBride & Julia Angwin, *Tough House: Broadcast Lags Satellite in Radio Race for Laughs*, WALL ST. J., Sept. 24, 2005, at 13.

Sarmad Ali, *Technology—The 10 Biggest Problems With Wireless & How to Fix Them—Missed calls, dead zones, surprise charges; What are Cellphone Companies Doing About Them.*, WALL ST. J., Oct. 21, 2006, at R1.

Satellite Radio Red Ink, BUSINESSWEEK, Mar. 6, 2006, at 30.

Scott Woolley, *Freedom Of Speech On Satellite Radio*, FORBES.COM, Oct. 6, 2004, (available at http://www.forbes.com/home/services/2004/10/06/cx_sw_1006stern.html).

Stern's \$82M Anniversary, NEWSDAY, Jan. 10, 2007, at A10.

Tom Lowry, *Antenna Adjustment; Clear Channel is pulling apart its empire as it scrambles to compete in a changed media world*, BUSINESSWEEK, June 20, 2005, at 64.

Tom Lowry, *From Vanilla To Full Metal Racket; Clear Channel is racing into the Digital Age with an array of high-def niche channels*, BUSINESSWEEK, May 1, 2006, at 42.

Tom Lowry, *The Next Generation; For today's media execs, digital is where the action is*, BUSINESSWEEK, Mar. 7, 2005, at 88.

Why radio is worth watching, THE ECONOMIST, June 11, 2005.

Websites

BIA Overview, *available at* http://www.bia.com/about_overview_main.asp.

Cingular Data Connect Plans, *available at* <http://www.cingular.com/cell-phone-service//cell-phone-plans/data-connect-plans.jsp>.

Cingular Wireless Coverage Viewer, *available at* <http://www.cingular.com/coverageviewer/>.

Frontline: American Porn: Interview With Dennis McAlpine, *available at* <http://www.pbs.org/wgbh/pages/frontline/shows/porn/interviews/mcalpine.html> (last visited Feb. 7, 2007).

Indecency Complaints and NALs: 1993-2006, *available at* <http://www.fcc.gov/eb/oip/Stats.html> (last visited Feb. 4, 2007).

Obscene, Profane & Indecent Broadcasts: Consent Decrees, *available at* <http://www.fcc.gov/eb/broadcast/CD.html> (last visited Feb. 6, 2007).

Obscenity, Indecency & Profanity, *available at* <http://www.fcc.gov/eb/oip/Welcome.html> (last visited Feb. 6, 2007).

Sirius Satellite Radio, *available at* www.sirius.com (last visited Feb. 3, 2007) (see link at bottom).

XM Parental Controls, *available at* <http://www.xmradio.com/parentalcontrols/index.jsp> (last visited Feb. 3, 2007).

SEC Filings

SIRIUS SATELLITE RADIO, ANNUAL REPORT (SEC FORM 10-K), at 3 (Mar. 16, 2005).

SIRIUS SATELLITE RADIO, UNSCHEDULED MATERIAL EVENTS (SEC FORM 8-K), § 8.01 (Oct. 6, 2004).

XM RADIO, ANNUAL REPORT, (SEC FORM 10-K), at 23 (Mar. 3, 2006).

XM SATELLITE RADIO, INC., ANNUAL REPORT (S.E.C. FORM 10-K), at 2 (Mar. 15, 2001)

FCC Filings

Complaints Against Various Broadcast Licensees Regarding Their Airing of the “Golden Globe Awards” Program, Memorandum Opinion and Order, 19 F.C.C.R. 4975 (2004).

In the Matter of Satellite CD Radio, Inc., *F.C.C. Memorandum Opinion and Order*, ¶ 4 (Nov. 30, 2001).

In the Matter of Subscription Video, 2 F.C.C.R. 1001, 1003 (1987).

In re Complaints Against Various Broadcast Licensees Regarding Their Airing of the “Golden Globe Awards” Program, Memorandum Opinion and Order, 18 F.C.C.R. 19,859 (2003).

In re Industry Guidance on the Commission’s Case Law Interpreting 18 U.S.C. § 1464 and Enforcement Policies Regarding Broadcast Indecency, Policy Statement, 16 F.C.C.R. 7999, 8002 (2001).

Letter from W. Kenneth Ferree, Media Bureau Chief, FCC, to Saul Levine, President of Mt. Wilson FM Broadcasters, 19 F.C.C.R. 24,069 (Dec. 14, 2004) (citing In re Applications of Harriscope of Chicago, Inc., 3 F.C.C.R. 757, 760 n.2 (1988)).

Request For Further Comment on Selected Issues Regarding the Authorization of Satellite Digital Audio Radio Service Terrestrial Repeater Networks, *Public Notice*, DA 01-2570, 1 (Nov. 1, 2001), *available at* http://www.fcc.gov/ftp/Bureaus/International/Public_Notices/2001/pnin1232.doc.

Press Releases

Press Release, Sirius Satellite Radio, Howard Stern Marks First Year of the Radio Revolution on Sirius Satellite Radio (Jan. 9, 2007).

Sirius News Release, January 8, 2003 (available at <http://investor.sirius.com/ReleaseDetail.cfm?ReleaseID=154702&cat=&newsroom>).

Court Cases

Butterworth Health Corp. v. FTC, 946 F. Supp. 1285 (W.D.Mich. 1996).

FTC v. Cardinal Health, Inc., 12 F. Supp. 2d 34, 67 (D.D.C. 1998).

FCC v. Pacifica Foundation, 438 U.S. 726, 748-49 (1978).

Sunbelt Television, Inc. v. Jones Intercable, Inc., 795 F.Supp. 333, 336 (C.D.Cal. 1992).

Turner Broadcasting System, Inc. v. Federal Communications Commission, 520 U.S. 180 (1997).

United States v. Clear Channel Communications, Inc., *Competitive Impact Statement*, 2 (Nov. 15, 2000), *concerning* United States v. Clear Channel Communications, Inc., 2001 WL 34038532 (D.D.C. 2001).

United States v. Playboy Entertainment Group, 529 U.S. 803, 813 (2000) (citing *Sable Communications v. FCC*, 492 U.S. 115, 126 (1989)).

Viacom Intern. Inc. v. Time Inc., 785 F. Supp. 371 (S.D.N.Y. 1992).

Court Filings

Brief for Plaintiff Appellant FTC at 5, *FTC v. Butterworth Health Corp.*, Case No. 1:96-CV-49 (6th Cir. 1997).

FTC

Department of Justice and Federal Trade Commission Horizontal Merger Guidelines, released Apr. 8, 1997, § 1.11.

Request for Additional Information and Documentary Material: Issued to Weebyewe Corporation, FEDERAL TRADE COMMISSION, available at <http://www.ftc.gov/bc/modelguide.htm>.

Speeches

Pamela Jones Harbour, *A Check-Up of Selected Health Care Activity at the Federal Trade Commission*, ABA Antitrust Section Spring Meeting (March 30, 2005).

R. Hewitt Pate, Assistant Att'y Gen'l, Antitrust Division, U.S. Dept of Justice, Senate Committee on the Judiciary *Antitrust Enforcement in the Agricultural Marketplace* Oct. 30 (2003), available at <http://www.usdoj.gov/atr/public/testimony/201430.htm>.

Richard G. Parker, Senior Deputy Director, Bureau of Competition, FTC, *Trends in Merger Enforcement and Litigation*, Annual Briefing for Corporate Counsel (Sept. 16, 1998), at <http://www.ftc.gov/speeches/other/parker.htm>.

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STANFORD UNIVERSITY, J.D., 1981; A.M. (Economics), 1981; A.B. with honors and distinction (Economics), 1977. Associate Editor, *Stanford Law Review*. Myers Prize in Economics, 1977.

C U R R E N T E M P L O Y M E N T

GEORGETOWN UNIVERSITY LAW CENTER, Washington, D.C.: Visiting Professor of Law, 2005-present.

JOURNAL OF COMPETITION LAW & ECONOMICS, published by the Oxford University Press, Oxford, United Kingdom: Founding editor, 2004-present.

CRITERION ECONOMICS, L.L.C., Washington, D.C.: Founder, 1999-present.

E M P L O Y M E N T H I S T O R Y

AMERICAN ENTERPRISE INSTITUTE FOR PUBLIC POLICY RESEARCH, Washington, D.C.: Resident Scholar and F.K. Weyerhaeuser Fellow in Law and Economics Emeritus, 2002-05. Director, AEI Studies in Telecommunications Deregulation, 1992-95. F.K. Weyerhaeuser Fellow in Law and Economics, 1995-2002. Resident Scholar, 1992-95.

YALE SCHOOL OF MANAGEMENT, New Haven, Connecticut: Senior Lecturer, 1993-99.

COVINGTON & BURLING, Washington, D.C.: Associate, 1989-92.

FEDERAL COMMUNICATIONS COMMISSION, Washington, D.C.: Deputy General Counsel, 1987-89.

COUNCIL OF ECONOMIC ADVISERS, EXECUTIVE OFFICE OF THE PRESIDENT, Washington, D.C.: Senior Counsel and Economist, 1986-87.

THE BOSTON CONSULTING GROUP, INC., Los Angeles: Management Consultant, 1984-86.

O'MELVENY & MYERS, Los Angeles: Associate, 1982-84.

U.S. COURT OF APPEALS FOR THE SEVENTH CIRCUIT, Chicago: Law Clerk to Judge Richard A. Posner, 1981-82.

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NTT DoCoMo, Tokyo, Japan: Member, U.S. Advisory Board, 2002-2006.

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GLOBAL COMPETITION LAW CENTRE, COLLEGE OF EUROPE, Bruges, Belgium: Senior Fellow, 2004-present.

A U T H O R E D B O O K S

Broadband in Europe: How Can Brussels Wire the Information Society, co-authored with Dan Maldoom, Richard Marsden, and Hal J. Singer (Springer 2005).

Deregulatory Takings and the Regulatory Contract: The Competitive Transformation of Network Industries in the United States (Cambridge University Press 1997), co-authored with Daniel F. Spulber. Chinese translation: Horizon Media Co. Ltd. forthcoming 2007.

Foreign Investment in American Telecommunications (University of Chicago Press 1997).

Protecting Competition from the Postal Monopoly (AEI Press 1996), co-authored with Daniel F. Spulber.

Transmission Pricing and Stranded Costs in the Electric Power Industry (AEI Press 1995), co-authored with William J. Baumol.

Toward Competition in Local Telephony (MIT Press & AEI Press 1994), co-authored with William J. Baumol. Korean translation: Korea Information Society Development Institute 1996.

E D I T E D B O O K S

Competition and Regulation in Telecommunications: Examining Germany and America (J. Gregory Sidak, Christoph Engel & Günter Knieps, editors, Kluwer Academic Press 2000).

Is the Telecommunications Act of 1996 Broken? If So, How Can We Fix It? (J. Gregory Sidak, editor, AEI Press 1999).

Governing the Postal Service (J. Gregory Sidak, editor, AEI Press 1994).

J O U R N A L A R T I C L E S

Patent Damages and Real Options: How Judicial Characterization of Non-Infringing Alternatives Reduces Incentives to Innovate, 22 BERKELEY TECHNOLOGY LAW JOURNAL (forthcoming 2007), co-authored with Jerry A. Hausman and Gregory K. Leonard.

Does Video Delivered Over a Telephone Network Require a Cable Franchise?, 59 FEDERAL COMMUNICATIONS LAW JOURNAL (forthcoming 2007), co-authored with Robert W. Crandall and Hal J. Singer.

A Consumer-Welfare Approach to Network Neutrality Regulation of the Internet, 2 JOURNAL OF COMPETITION LAW & ECONOMICS 349 (2006).

When Does an Optional Tariff Not Lead to a Pareto Improvement? The Ambiguous Effects of Self-Selecting Nonlinear Pricing When Demand Is Interdependent or Firms Do Not Maximize Profit, 2 JOURNAL OF COMPETITION LAW & ECONOMICS 285 (2006), co-authored with John C. Panzar.

Did Mandatory Unbundling Achieve Its Purpose? Empirical Evidence from Five Countries, 1 JOURNAL OF COMPETITION LAW & ECONOMICS 173 (2005), co-authored with Jerry A. Hausman.

The Quasi War Cases—and Their Relevance to Whether “Letters of Marque and Reprisal” Constrain Presidential War Powers, 27 HARVARD JOURNAL OF LAW & PUBLIC POLICY 465 (2005).

The Future of the Postal Monopoly: American and European Perspectives After the Presidential Commission and Flamingo Industries, 28 WORLD COMPETITION 163 (2005), co-authored with Damien Geradin.

Überregulation without Economics: The World Trade Organization’s Decision in the U.S.-Mexico Arbitration on Telecommunications Services, 57 FEDERAL COMMUNICATIONS LAW JOURNAL 1 (2004), co-authored with Hal J. Singer.

Do States Tax Wireless Services Inefficiently? Evidence on the Price Elasticity of Demand, 24 VIRGINIA TAX REVIEW 249 (2004), co-authored with Allan T. Ingraham.

Why Do the Poor and the Less-Educated Pay More for Long-Distance Calls?, CONTRIBUTIONS IN ECONOMIC AND POLICY RESEARCH, vol. 3, issue 1, article 3 (2004), co-authored with Jerry A. Hausman, available at <http://www.bepress.com/bejeap/contributions/vol3/iss1/art3/>.

Should Regulators Set Rates to Terminate Calls on Mobile Networks?, 21 YALE JOURNAL ON REGULATION 261 (2004), co-authored with Robert W. Crandall.

Competition Law for State-Owned Enterprises, 71 ANTITRUST LAW JOURNAL 479 (2003), co-authored with David E. M. Sappington.

An Economic Theory of Censorship, 11 SUPREME COURT ECONOMIC REVIEW 81 (2003).

Remedies and the Institutional Design of Regulation in Network Industries, 2003 MICHIGAN STATE DCL LAW REVIEW 741 (2003).

Interim Pricing of Local Loop Unbundling in Ireland: Epilogue, 4 JOURNAL OF NETWORK INDUSTRIES 119 (2003), co-authored with Hal J. Singer.

The Failure of Good Intentions: The WorldCom Fraud and the Collapse of American Telecommunications After Deregulation, 20 YALE JOURNAL ON REGULATION 207 (2003).

Mandatory Unbundling, UNE-P, and the Cost of Equity: Does TELRIC Pricing Increase Risk for Incumbent Local Exchange Carriers?, 20 YALE JOURNAL ON REGULATION 389 (2003), co-authored with Allan T. Ingraham.

Incentives for Anticompetitive Behavior by Public Enterprises, 22 REVIEW OF INDUSTRIAL ORGANIZATION 183 (2003), co-authored with David E. M. Sappington.

The Price of Experience: The Constitution After September 11, 2001, 19 CONSTITUTIONAL COMMENTARY 37 (2002).

Does Bell Company Entry into Long-Distance Telecommunications Benefit Consumers?, 70 ANTITRUST LAW JOURNAL 463 (2002), co-authored with Jerry A. Hausman and Gregory K. Leonard.

The Empirical Case Against Asymmetric Regulation of Broadband Internet Access, 17 BERKELEY TECHNOLOGY LAW JOURNAL 953 (2002), co-authored with Robert W. Crandall and Hal J. Singer.

The Pig in the Python: Is Lumpy Capacity Investment Used and Useful?, 23 ENERGY LAW JOURNAL 383 (2002), co-authored with William J. Baumol.

Exporting Telecommunications Regulation: The U.S.-Japan Negotiations on Interconnection Pricing, 43 HARVARD INTERNATIONAL LAW JOURNAL 317 (2002), co-authored with Jeffrey H. Rohlfs.

Is Structural Separation of Incumbent Local Exchange Carriers Necessary for Competition?, 19 YALE JOURNAL ON REGULATION 335 (2002), co-authored with Robert W. Crandall.

How Can Regulators Set Nonarbitrary Interim Rates? The Case of Local Loop Unbundling in Ireland, 3 JOURNAL OF NETWORK INDUSTRIES 273 (2002), co-authored with Hal J. Singer.

The Legislator-in-Chief, 44 WILLIAM & MARY LAW REVIEW 1 (2002), co-authored with Vasan Kesavan.

Capital Subsidies, Profit Maximization, and Acquisitions by Partially Privatized Telecommunications Carriers, 26 TELECOMMUNICATIONS POLICY 287 (2002).

Why Did the U.S. Telecommunications Industry Collapse?, 28 INFOCOM REVIEW 17 (2002) (in Japanese).

The Efficient Allocation of Proceeds from a Utility's Sale of Assets, 22 ENERGY LAW JOURNAL 233 (2001), co-authored with Paul W. MacAvoy.

Acquisitions by Partially Privatized Firms: The Case of Deutsche Telekom and VoiceStream, 54 FEDERAL COMMUNICATIONS LAW JOURNAL 1 (2001).

Antitrust Divestiture in Network Industries, 68 UNIVERSITY OF CHICAGO LAW REVIEW 1 (2001), co-authored with Howard A. Shelanski.

Mr. Justice Nemo's Social Statics, 79 TEXAS LAW REVIEW 737 (2001).

An Antitrust Rule for Software Integration, 18 YALE JOURNAL ON REGULATION 1 (2001).

Cable Modems and DSL: Broadband Internet Access for Residential Customers, 91 AMERICAN ECONOMIC ASSOCIATION PAPERS AND PROCEEDINGS 302 (2001), co-authored with Jerry A. Hausman and Hal J. Singer.

True God of the Next Justice, 18 CONSTITUTIONAL COMMENTARY 9 (2001).

Residential Demand for Broadband Telecommunications and Consumer Access to Unaffiliated Internet Content Providers, 18 YALE JOURNAL ON REGULATION 129 (2001), co-authored with Jerry A. Hausman and Hal J. Singer.

Are Public Enterprises the Only Credible Predators?, 67 UNIVERSITY OF CHICAGO LAW REVIEW 271 (2000), co-authored with David E. M. Sappington.

Innovation, Investment, and Unbundling, 17 YALE JOURNAL ON REGULATION 1 (2000), co-authored with Thomas M. Jorde and David J. Teece.

A Consumer-Welfare Approach to Mandatory Unbundling of Telecommunications Networks, 109 YALE LAW JOURNAL 417 (1999), co-authored with Jerry A. Hausman.

What Is Wrong with American Telecommunications?, MULTIMEDIA UND RECHT, Mar. 1999, at 15, co-authored with Paul W. MacAvoy, reprinted in COMPETITION AND REGULATION IN TELECOMMUNICATIONS: EXAMINING GERMANY AND AMERICA (J. Gregory Sidak, Christoph Engel & Günter Knieps, editors, Kluwer Academic Press 2000).

A General Framework for Competitive Analysis in Wireless Telecommunications, 50 HASTINGS LAW JOURNAL 1639 (1999), co-authored with David J. Teece and Hal J. Singer.

Essential Facilities, 51 STANFORD LAW REVIEW 1185 (1999), co-authored with Abbott B. Lipsky, Jr. Spanish translation republished as *Facilidades esenciales*, 27 IUS ET VERITAS 126 (2004).

The Petty Larceny of the Police Power, 86 CALIFORNIA LAW REVIEW 655 (1998) (review essay).

Deregulation and Managed Competition in Network Industries, 15 YALE JOURNAL ON REGULATION 117 (1998), co-authored with Daniel F. Spulber.

Cyberjam: The Law and Economics of Internet Congestion of the Telephone Network, 21 HARVARD JOURNAL OF LAW & PUBLIC POLICY 337 (1998), co-authored with Daniel F. Spulber.

Network Access Pricing and Deregulation, 6 INDUSTRIAL AND CORPORATE CHANGE 757 (1997), co-authored with Daniel F. Spulber.

Givings, Takings, and the Fallacy of Forward-Looking Costs, 72 NEW YORK UNIVERSITY LAW REVIEW 1068 (1997), co-authored with Daniel F. Spulber.

The Tragedy of the Telecommons: Government Pricing of Unbundled Network Elements Under the Telecommunications Act of 1996, 97 COLUMBIA LAW REVIEW 1081 (1997), co-authored with Daniel F. Spulber.

Monopoly and the Mandate of Canada Post, 14 YALE JOURNAL ON REGULATION 1 (1997), co-authored with Daniel F. Spulber.

Deregulatory Takings and Breach of the Regulatory Contract, 71 NEW YORK UNIVERSITY LAW REVIEW 851 (1996), co-authored with Daniel F. Spulber.

Pricing of Services Provided to Competitors by the Regulated Firm, 3 HUME PAPERS ON PUBLIC POLICY, No. 3, at 15 (1995), co-authored with William J. Baumol.

Stranded Costs, 18 HARVARD JOURNAL OF LAW & PUBLIC POLICY 835 (1995), co-authored with William J. Baumol.

The Line-Item Veto Amendment, 80 CORNELL LAW REVIEW 1498 (1995).

Competition and Regulatory Policies for Interactive Broadband Networks, 68 SOUTHERN CALIFORNIA LAW REVIEW 1203 (1995), co-authored with Robert W. Crandall.

The Pricing of Inputs Sold to Competitors: Rejoinder and Epilogue, 12 YALE JOURNAL ON REGULATION 177 (1995), co-authored with William J. Baumol.

The Pricing of Inputs Sold to Competitors, 11 YALE JOURNAL ON REGULATION 171 (1994), co-authored with William J. Baumol.

Telecommunications in Jericho, 81 CALIFORNIA LAW REVIEW 1209 (1993) (review essay).

War, Liberty, and Enemy Aliens, 67 NEW YORK UNIVERSITY LAW REVIEW 1402 (1992).

Why Did President Bush Repudiate the "Inherent" Line-Item Veto?, 9 JOURNAL OF LAW & POLITICS 39 (1992), co-authored with Thomas A. Smith.

The Inverse Coase Theorem and Declarations of War, 41 DUKE LAW JOURNAL 325 (1991).

To Declare War, 41 DUKE LAW JOURNAL 27 (1991).

Takeover Premiums, Appraisal Rights, and the Price Elasticity of a Firm's Publicly Traded Stock, 25 GEORGIA LAW REVIEW 783 (1991), co-authored with Susan E. Woodward.

Corporate Takeovers, the Commerce Clause, and the Efficient Anonymity of Shareholders, 84 NORTHWESTERN UNIVERSITY LAW REVIEW 1092 (1990), co-authored with Susan E. Woodward.

Four Faces of the Item Veto: A Reply to Tribe and Kurland, 84 NORTHWESTERN UNIVERSITY LAW REVIEW 437 (1990), co-authored with Thomas A. Smith.

The President's Power of the Purse, 1989 DUKE LAW JOURNAL 1162.

The Recommendation Clause, 77 GEORGETOWN LAW JOURNAL 2079 (1989).

The "New Payola" and the American Record Industry: Transactions Costs and Precautionary Ignorance in Contracts for Illicit Services, 10 HARVARD JOURNAL OF LAW & PUBLIC POLICY 521 (1987), co-authored with David E. Kronemyer.

Debunking Predatory Innovation, 83 COLUMBIA LAW REVIEW 1121 (1983).

A Framework for Administering the 1916 Antidumping Act: Lessons from Antitrust Economics, 18 STANFORD JOURNAL OF INTERNATIONAL LAW 377 (1982).

Antitrust Preliminary Injunctions in Hostile Tender Offers, 30 KANSAS LAW REVIEW 491 (1982).

The Deterrent Effect of Antitrust Enforcement, 89 JOURNAL OF POLITICAL ECONOMY 429 (1981), co-authored with Michael K. Block and Frederick C. Nold.

Rethinking Antitrust Damages, 33 STANFORD LAW REVIEW 329 (1981) (student note).

The Cost of Antitrust Deterrence: Why Not Hang a Price Fixer Now and Then?, 68 GEORGETOWN LAW JOURNAL 1131 (1980), co-authored with Michael K. Block.

CHAPTERS IN BOOKS

European and American Approaches to Antitrust Remedies and the Institutional Design of Regulation in Telecommunications, in THE HANDBOOK OF TELECOMMUNICATIONS ECONOMICS, volume 2 (Martin Cave, Sumit Kumar Majumdar & Ingo Vogelsang, eds. North-Holland 2006), co-authored with Damien Geradin.

Remedies in Network Industries—A View from the United States, in REMEDIES IN NETWORK INDUSTRIES: EC COMPETITION LAW VS. SECTOR-SPECIFIC REGULATION 255 (Damien Geradin ed., Intersentia 2004).

Competition Law for State-Owned Enterprises, in COMPETING WITH THE GOVERNMENT: ANTICOMPETITIVE BEHAVIOR AND PUBLIC ENTERPRISES (Rick Geddes ed., Hoover Institution Press 2004), co-authored with David E. M. Sappington.

The Failure of Good Intentions: The Collapse of American Telecommunications After Six Years of Deregulation, in SUCCESS AND FAILURES IN REGULATING AND DEREGULATING UTILITIES: EVIDENCE FROM THE UK, EUROPE AND THE USA 1 (Colin Robinson ed., Edward Elgar 2004).

What Is Wrong with American Telecommunications?, in COMPETITION AND REGULATION IN TELECOMMUNICATIONS: EXAMINING GERMANY AND AMERICA (J. Gregory Sidak, Christoph Engel & Günter Knieps, editors, Kluwer Academic Press 2000), co-authored with Paul W. MacAvoy.

The Dismal Science of Law, 1992 PUBLIC INTEREST LAW REVIEW 121 (book review of DANIEL A. FARBER & PHILIP P. FRICKEY, LAW AND PUBLIC CHOICE: A CRITICAL INTRODUCTION (1991)).

The Economic Perspective on Broadcasting Regulation, in THE NATIONAL ECONOMISTS CLUB READER 15 (Richard T. Gill ed. 1991).

Two Factors That Reduce Record Company Profitability, 1987 ENTERTAINMENT, PUBLISHING AND THE ARTS HANDBOOK 371, co-authored with David E. Kronemyer.

Risk and Responsibility, in 1987 ECONOMIC REPORT OF THE PRESIDENT 179, co-authored with Stephen J. DeCanio, Arlene S. Holen, and Susan E. Woodward.

The Structure and Performance of the U.S. Record Industry, 1986 ENTERTAINMENT, PUBLISHING AND THE ARTS HANDBOOK 263, co-authored with David E. Kronemyer.

NEWSPAPER AND MAGAZINE ARTICLES

Network Neutrality: Should Congress Require Broadband Providers to Treat Similar Types of Internet Traffic Equally?, CONGRESSIONAL DIGEST, vol. 86, no. 2, at 57 (Feb. 2007).

The F.C.C.'s Duty, NEW YORK TIMES, Oct. 8, 2002, at A31.

Should Consumers Pay the "Stranded Costs" of Utility Companies?, INSIGHT, Nov. 9, 1998, at 24.

Voters Should Back State's Besieged Law on Retail Competition, BOSTON SUNDAY HERALD, May 24, 1998, at 25.

Avoiding America's Regulatory Mistakes in Hong Kong's Telecoms Market, HONG KONG ECONOMIC JOURNAL, Aug. 29, 1997 (in Cantonese).

Telecommunications: America's Investment Xenophobia, JOURNAL OF COMMERCE, Aug. 22 1997, at 8A

The line-item veto: two views; Next stop: Supreme Court, JOURNAL OF COMMERCE, Aug. 20, 1997, at 9A.

Antitrust and the Federal Software Commission, JOBS & CAPITAL, vol. 6, at 18 (winter 1997).

Stranded Cost Recovery Benefits Consumers, REGULATION, 1996 no. 2, at 12 (1996), co-authored with William J. Baumol.

Let Utilities Recover Stranded Costs, WALL STREET JOURNAL, June 17, 1996, at A15, co-authored with William J. Baumol.

Competition and the Postal Service, THE AMERICAN ENTERPRISE, vol. 7, no. 3, at 74 (May/June 1996).

When Competition Amounts to Taking, NATIONAL LAW JOURNAL, Apr. 1, 1996, at A19.

Post Office Monopoly: Unfair Market Practice, NATIONAL LAW JOURNAL, Oct. 23, 1995, at A23.

The Unregulated Infobahn, JOBS & CAPITAL, vol. 4, at 28 (summer 1995), co-authored with Robert W. Crandall, reprinted in Australia in POLICY, vol. 11, no. 2, at 9 (winter 1995).

Stranded Cost Recovery: Fair and Reasonable, PUBLIC UTILITIES FORTNIGHTLY, May 15, 1995, at 20, co-authored with William J. Baumol.

Telecommunications: Unleashing the Industry, THE AMERICAN ENTERPRISE, vol. 5, no. 5, at 42 (Sept./Oct. 1994).

Don't Stifle Global Merger Mania, WALL STREET JOURNAL, July 6, 1994, at A18.

Telecommunications: The Big Picture, ROLL CALL, June 27, 1994, at 4 (supp.).

Broadcast News, THE AMERICAN ENTERPRISE, vol. 3, no. 2, at 70 (Mar./Apr. 1992).

The Veto Power: How Free Is the President's Hand?, THE AMERICAN ENTERPRISE 58, vol. 2, no. 2 (Mar./Apr. 1991), co-authored with Thomas A. Smith.

Spending Riders Would Unhobble the Executive, WALL STREET JOURNAL, November 2, 1989, at A18, col. 3.

How Congress Erodes the Power of the Presidency: The Appropriations Muzzle, WALL STREET JOURNAL, Feb. 6, 1989, at A8, col. 3.

Marketplace Solution to Midair Collisions, WALL STREET JOURNAL, Mar. 2, 1987, at 20, col. 3.

M I S C E L L A N E O U S P U B L I C A T I O N S

The Economics of Mail Delivery: A Comment, in GOVERNING THE POSTAL SERVICE 14 (J. Gregory Sidak, ed., AEI Press 1994).

The Appropriations Power and the Necessary and Proper Clause, 68 WASHINGTON UNIVERSITY LAW QUARTERLY 651 (1990) (questioner for symposium panel discussion).

W O R K I N G P A P E R S

The Optimal Price Floor for a Multiproduct State-Owned Enterprise (Mar. 2005).

T E S T I M O N Y , R E P O R T S ,
A N D B R I E F S *AMICUS CURIAE*

Cross Examination Testimony of J. Gregory Sidak on behalf of the Newspaper Association of America, Postal Rate Commission, Postal Rate and Fee Change, 2006, Dkt. No. R2006-1 (Nov. 29, 2006).

Rebuttal Testimony of J. Gregory Sidak on behalf of the Newspaper Association of America, Postal Rate Commission, Postal Rate and Fee Change, 2006, Dkt. No. R2006-1 (filed Nov. 20, 2006).

Direct Testimony of J. Gregory Sidak on behalf of the Newspaper Association of America, Postal Rate Commission, Postal Rate and Fee Change, 2006, Dkt. No. R2006-1 (filed Sept. 5, 2006).

VIDEO GAMES: SERIOUS BUSINESS FOR AMERICA'S ECONOMY, co-authored with Robert W. Crandall (2006) (commissioned by the Entertainment Software Association).

Testimony of J. Gregory Sidak on Net Neutrality, Committee on Commerce, Science, and Transportation, United States Senate, Feb. 7, 2006.

Cross Examination Testimony of J. Gregory Sidak on behalf of Public Service Electric and Gas Company on the Appropriation of Non-Regulated, Generation-Related Merger Synergies and Asset Transfer Proceeds to Fund Rate Reductions, In the Matter of the Joint Petition of Public Service Electric and Gas Company and Exelon Corporation for Approval of a Change in Control of Public Service Electric and Gas Company, and Related Authorizations, New Jersey Board of Public Utilities, BPU Dkt. No. EM05020106, OAL Dkt. No. PUC-1874-05, JP-36 (Jan. 11, 2006).

Rebuttal Testimony of J. Gregory Sidak on behalf of Public Service Electric and Gas Company on the Appropriation of Non-Regulated, Generation-Related Merger Synergies and Asset Transfer Proceeds to Fund Rate Reductions, In the Matter of the Joint Petition of Public Service Electric and Gas Company and Exelon Corporation for Approval of a Change in Control of Public Service Electric and Gas Company, and Related Authorizations, New Jersey Board of Public Utilities, BPU Dkt. No. EM05020106, OAL Dkt. No. PUC-1874-05, JP-36 (filed Dec. 12, 2005).

Cross Examination Testimony of J. Gregory Sidak on behalf of Videsh Sanchar Nigam Limited, In the Matter of Flag Telecom Group Limited, Claimant, Videsh Sanchar Nigam Limited, Respondent, Case No. 13 638/JNK/EBS, International Court of Arbitration, International Chamber of Commerce, The Hague (Nov. 18, 2005).

Reply Declaration of J. Gregory Sidak and Hal J. Singer on behalf of TCR Sports Broadcasting Holding, L.L.P., In the Matter of Applications for Consent to the Assignment and/or Transfer of Control of Licenses Adelfia Communications Corporation, (and subsidiaries, debtors-in-possession), Assignors, to Time Warner Cable Inc. (subsidiaries), Assignees; Adelfia Communications Corporation, (and subsidiaries, debtors-in-possession), Assignors and Transferors, to Comcast Corporation (subsidiaries), Assignees and Transferees; Comcast Corporation, Transferor, to Time Warner Inc., Transferee; Time Warner Inc., Transferor to Comcast Corporation, Transferee, Federal

Communications Commission, MB Dkt. No. 05-192 (filed Nov. 14, 2005) (filed on behalf of the holding company for the Baltimore Orioles baseball team).

Expert Report of J. Gregory Sidak on behalf of eircom P.L.C., in Market Requirements Document: Local Loop Unbundling: High Level Statement of Requirements Document, ComReg: 05/04, Commission for Communications Regulation, Republic of Ireland (filed Oct. 24, 2005).

Declaration of J. Gregory Sidak and Hal J. Singer on behalf of the Power Mobility Coalition in *Power Mobility Coalition v. Leavitt*, Case No. 1:05CV02027 (filed D.D.C. Oct. 13, 2005) (in support of plaintiff's motion for preliminary injunction concerning proposed changes in Medicare rules concerning patient reimbursement for power mobility devices).

Expert Report of J. Gregory Sidak on behalf of Telstra Corporation Ltd., In the Matter of Assessment of Telstra's Unconditioned Local Loop Service and Line Sharing Service Monthly Charge Undertakings, Australian Competition and Consumer Commission (filed Sept. 23, 2005).

Expert Report of J. Gregory Sidak on behalf of Videsh Sanchar Nigam Limited, In the Matter of Flag Telecom Group Limited, Claimant, Videsh Sanchar Nigam Limited, Respondent, Case No. 13 638/JNK/EBS, International Court of Arbitration, International Chamber of Commerce, The Hague (filed Sept. 16, 2005).

Supplemental Testimony of J. Gregory Sidak on behalf of PECO Energy Company, Joint Application of PECO Energy Company and Public Service Electric and Gas Company for Approval of the Merger of Public Service Enterprise Group Incorporated with and into Exelon Corporation, Pennsylvania Public Utility Commission, Dkt. No. A-110550F0160 (filed Aug. 26, 2005).

Rebuttal Testimony of J. Gregory Sidak on behalf of PECO Energy Company, Concerning the Appropriation of Non-Regulated, Generation-Related Merger Synergies and Asset Sale Proceeds to Fund Rate Reductions by PECO Energy Company, Joint Application of PECO Energy Company and Public Service Electric and Gas Company for Approval of the Merger of Public Service Enterprise Group Incorporated with and into Exelon Corporation, Pennsylvania Public Utility Commission, Dkt. No. A-110550F0160 (filed July 29, 2005).

Declaration of J. Gregory Sidak and Hal J. Singer on behalf of TCR Sports Broadcasting Holding, L.L.P., In the Matter of Applications for Consent to the Assignment and/or Transfer of Control of Licenses Adelphia Communications Corporation, (and subsidiaries, debtors-in-possession), Assignors, to Time Warner Cable Inc. (subsidiaries), Assignees; Adelphia Communications Corporation, (and subsidiaries, debtors-in-possession), Assignors and Transferors, to Comcast Corporation (subsidiaries), Assignees and Transferees; Comcast Corporation, Transferor, to Time Warner Inc., Transferee; Time Warner Inc., Transferor to Comcast Corporation, Transferee, Federal Communications Commission, MB Dkt. No. 05-192 (filed July 21, 2005) (filed on behalf of the holding company for the Baltimore Orioles baseball team).

Deposition of J. Gregory Sidak, *RLH Industries, Inc. v. SBC Communications, Inc.*, Case No. 02 CC 16869, Superior Court of California for the County of Orange (Sept. 2, 2004) (expert testimony for SBC Communications in antitrust litigation).

A Critical Review of Europe Economics' Proposed Model for Estimating Operating Costs for a Hypothetically Efficient Irish Telecommunications Carrier (prepared for eircom P.L.C. for submission to the Commission for Communications Regulation, Republic of Ireland, Mar. 2004), co-authored with Jerry A. Hausman.

Competition in Broadband Provision and Its Implications for Regulatory Policy (prepared on behalf of the Brussels Round Table (Alcatel, BT, Deutsche Telekom, Ericsson, France Telecom, Siemens, Telefónica de España, and Telecom Italia) for submission to the European Commission, Oct. 15, 2003), co-authored with Dan Maldoom, Richard Marsden, and Hal J. Singer.

Expert Report of J. Gregory Sidak, Arbitration Between Levicom International Holdings BV, Levicom Investments Curaçao NV, Claimants, and Tele2 Sverige AB, Tele2 AB, Respondents, Arbitration No: 2392, London Court of International Arbitration (filed July 25, 2003).

Declaration of J. Gregory Sidak on behalf of the National Association of Broadcasters, Application of General Motors

Corporation, Hughes Electronics Corporation, Transferors, and The News Corporation Limited, Transferee, For Authority to Transfer Control, Federal Communications Commission, MB Dkt. No. 03-124 (filed June 20, 2003).

Is State Taxation of the Wireless Industry Counterproductive? (prepared for Verizon Wireless Apr. 2, 2003).

Improving the U.S. Postal Service as a Public Service Government Agency (prepared for the Newspaper Association of America for submission to the Presidential Commission on the United States Postal Service, Apr. 2003).

An Economic Assessment of the Industry Advisory Group's Final Report to the Commission for Communications Regulation on Interim Pricing for Local Loop Unbundling in Ireland (prepared for eircom P.L.C. for submission to the Commission for Communications Regulation, Republic of Ireland, Feb. 14, 2003).

Declaration of J. Gregory Sidak on behalf of Qwest Corporation, In the Matter of the Complaint of the Minnesota Department of Commerce Against Qwest Corporation Regarding Unfiled Agreements, Minnesota Public Utilities Commission, Dkt. No. P-421/C-02-197 (filed Nov. 8, 2002).

Telecommunications and Trade Promotion Authority: Meaningful Market Access Goals for Telecommunications Services in International Trade Agreements: Hearing before the Subcommittee on Commerce, Trade, and Consumer Protection of the Committee on Energy and Commerce, U.S. House of Representatives, 107th Cong., 2d Sess. (Oct. 9, 2002).

The Economic Benefits of Permitting Winning Bidders to Opt Out of Auction 35 (prepared for Verizon Communications, Aug. 26, 2002).

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).

Reply Declaration of J. Gregory Sidak on behalf of the National Association of Broadcasters, Application of EchoStar Communications Corporation, General Motors Corporation, Hughes Electronics Corporation, Transferors, and EchoStar Communications Corporation, Transferee, For Authority to Transfer Control, Federal Communications Commission, CS Dkt. No. 01-348 (filed Apr. 24, 2002).

Declaration of J. Gregory Sidak on behalf of the National Association of Broadcasters, Application of EchoStar Communications Corporation, General Motors Corporation, Hughes Electronics Corporation, Transferors, and EchoStar Communications Corporation, Transferee, For Authority to Transfer Control, Federal Communications Commission, CS Dkt. No. 01-348 (filed Feb. 4, 2002).

Replying Affidavit of J. Gregory Sidak, *eircom P.L.C. v. Director of Telecommunications Regulation*, No. 2001 No. 539 JR, High Court of the Republic of Ireland (filed on behalf of *eircom plc*; Dec. 12, 2001).

Declaration of Robert W. Crandall and J. Gregory Sidak on behalf of SBC Communications Inc., In the Matter of SBC Petition for Expedited Ruling that It Is Non-Dominant in Its Provision of Advanced Services and for Forbearance from Dominant Carrier Regulation of Those Services, Federal Communications Commission (filed Oct. 1, 2001).

Declaration of J. Gregory Sidak and Hal J. Singer on behalf of The Walt Disney Company, *et al.*, In the Matter of Nondiscrimination in the Distribution of Interactive Television Services over Cable, Notice of Inquiry, Federal Communications Commission, CS Dkt. No. 01-7 (filed May 11, 2001).

Expert Report of J. Gregory Sidak, *Arista Records, Inc. v. MP3Board, Inc.*, No. 00 Civ. 4660 (SAS) (S.D.N.Y. filed Mar. 28, 2001) (report on behalf of various record companies in copyright infringement litigation).

Declaration of J. Gregory Sidak on behalf of Deutsche Telekom AG, In the Matter of VoiceStream Wireless Corporation and Powertel, Inc., Transferors, and Deutsche Telekom AG, Transferee, Federal Communications Commission, IB Dkt. No. 00-187 (filed Jan. 8, 2001).

Foreign Government Ownership of American Telecommunications Companies, Hearings before the Subcommittee on Telecommunications, Trade, and Consumer Protection of the Committee on Commerce, U.S. House of Representatives, 106th Cong., 2d Sess. 101 (Sept. 7, 2000) (testimony on behalf of Deutsche Telekom AG).

Declaration of J. Gregory Sidak on behalf of U S WEST Communications, Inc., *U S WEST Communications, Inc. v. United States*, No. 00-43, U.S. Court of Federal Claims (filed May 17, 2000).

Declaration of J. Gregory Sidak on behalf of United Parcel Service, In the Matter of Predatory Pricing Complaint Against Deutsche Post AG, Commission of the European Communities Directorate-General, Competition, Bruxelles (filed Feb. 11, 2000).

Ex Parte Reply Declaration of Jerry A. Hausman and J. Gregory Sidak on behalf of GTE Corporation, In the Matter of Applications for Consent to the Transfer of Control of Licenses, MediaOne Group, Inc., Transferor, To AT&T Corp., Transferee, Federal Communications Commission, CS Dkt. No. 99-251 (filed Nov. 1, 1999).

Declaration of Daniel L. Rubinfeld and J. Gregory Sidak on behalf of GTE Corporation, In the Matter of Applications for Consent to the Transfer of Control of Licenses, MediaOne Group, Inc., Transferor, To AT&T Corp., Transferee, Federal Communications Commission, CS Dkt. No. 99-251 (filed Aug. 23, 1999).

Reply Affidavit of Jerry A. Hausman and J. Gregory Sidak, appended to Comments of BellSouth Corporation *in* Implementation of the Local Competition Provisions in the Telecommunications Act of 1996, Second Further Notice of Proposed Rulemaking, Federal Communications Commission, CC Dkt. No. 96-98 (filed June 10, 1999).

Declaration of J. Gregory Sidak on behalf of Telecom Eireann, In the Matter of Local Loop Unbundling, Consultation Paper, Document No. ODTR 99/21, Office of the Director of Telecommunications Regulation, Republic of Ireland (filed June 8, 1999).

Affidavit of Jerry A. Hausman and J. Gregory Sidak, appended to Comments of the United States Telephone Association *in* Implementation of the Local Competition Provisions in the Telecommunications Act of 1996, Second Further Notice of Proposed Rulemaking, Federal Communications Commission, CC Dkt. No. 96-98 (filed May 26, 1999).

Affidavit of Thomas M. Jorde, J. Gregory Sidak, and David J. Teece, appended to Comments of the United States Telephone Association *in* Implementation of the Local Competition Provisions in the Telecommunications Act of 1996, Second Further Notice of Proposed Rulemaking, Federal Communications Commission, CC Dkt. No. 96-98 (filed May 26, 1999).

Prepared Statement of J. Gregory Sidak, Local Broadcast Ownership: An En Banc Hearing, Federal Communications Commission (Feb. 12, 1999).

Opinion of Law Concerning Initial Comments of Various Parties in *Direct Access to the INTELSAT System*, filed on behalf of Comsat Corporation in Direct Access to the INTELSAT System, Notice of Proposed Rulemaking, Federal Communications Commission, IB Dkt. No. 98-192 (filed Jan. 29, 1999).

Declaration of J. Gregory Sidak and David J. Teece on behalf of GTE Corporation in 1998 Biennial Regulatory Review of Spectrum Aggregation Limits for Wireless Telecommunications Carriers, Cellular Telecommunications Industry Association's Petition for Forbearance From the 45 MHz CMRS Spectrum Cap, Amendment of Parts 20 and 24 of the Commission's Rules of Broadband PCS Competitive Bidding and the Commercial Mobile Radio Service Spectrum Cap Implementation of Sections 3(n) and 332 of the Communications Act Regulatory Treatment of Mobile Services, Notice of Proposed Rulemaking, Federal Communications Commission, WT Dkt. Nos. 98-205, 96-59, GN Dkt. No. 93-252 (filed Jan. 25, 1999).

Declaration of Robert W. Crandall and J. Gregory Sidak on behalf of Bell Atlantic Corporation and GTE Corporation, In the Matter of GTE Corporation, Transferor, and Bell Atlantic Corporation, Transferee, For Consent to Transfer of Control, Federal Communications Commission, CC Dkt. No. 98B184 (filed Dec. 23, 1998).

Opinion of Law Concerning the Constitutionality of the Commission's Proposal to Require Level 3 Direct Access to Space Segment Capacity on the INTELSAT System, filed on behalf of Comsat Corporation in Direct Access to the INTELSAT System, Notice of Proposed Rulemaking, Federal Communications Commission, IB Dkt. No. 98-192 (filed Dec. 22, 1998).

Direct Testimony and Cross Examination Testimony of J. Gregory Sidak on behalf of Public Service Company of New Mexico, Application of and Complaint by Residential Electric, Inc. *v.* Public Service Company of New Mexico, Case No. 2867, Application of Residential Electric, Inc. for a Certificate of Public Convenience and Necessity, Case No. 2868, New Mexico Public Utility Commission (Nov. 17, 1998).

Affidavit of J. Gregory Sidak on behalf of Public Service Company of New Mexico, Application of and Complaint by Residential Electric, Inc. *v.* Public Service Company of New Mexico, Case No. 2867, Application of Residential Electric, Inc. for a Certificate of Public Convenience and Necessity, Case No. 2868, New Mexico Public Utility Commission (filed Nov. 9, 1998).

Affidavit of Joseph Gregory Sidak on behalf of Hong Kong Telephone Company Limited, *Hong Kong Telephone Company Limited v. Office of the Telecommunications Authority*, High Court of the Hong Kong Special Administrative Region, Court of First Instance (filed Sept. 22, 1998).

Cross Examination Testimony of J. Gregory Sidak on behalf of the Edison Electric Institute in *Public Service Company of New Hampshire v. New Hampshire Electric Cooperative, Inc.*, Federal Energy Regulatory Commission, Dkt. No. EL96-53-002 (Sept. 10, 1998).

Prefiled Direct Testimony of J. Gregory Sidak on behalf of the Edison Electric Institute in *Public Service Company of New Hampshire v. New Hampshire Electric Cooperative, Inc.*, Federal Energy Regulatory Commission, Dkt. No. EL96-53-002 (filed Aug. 27, 1998).

Affidavit of J. Gregory Sidak on behalf of PECO Energy Company, *Omnipoint Corporation v. PECO Energy Company*, Federal Communications Commission, No. PA 97B002 (filed Aug. 5, 1998).

Affidavit of J. Gregory Sidak, appended to comments of the Newspaper Association of America, *in* 1998 Biennial Regulatory Review of the Commission's Broadcast Ownership Rules and Other Rules Adopted Pursuant to Section 202 of the Telecommunications Act of 1996, Notice of Inquiry, Federal Communications Commission, MM Docket No. 98-35 (filed July 21, 1998).

A Report to the Minister for Communications, the Information Economy, and the Arts on the State of Competition in Australian Telecommunications Services One Year after Deregulation (June 30, 1998) (prepared for Telstra Corporation Ltd.)

Affidavit of J. Gregory Sidak, appended to Comments of Telstra Corporation Ltd. *in* Declaration of Local Telecommunications Services, Australian Competition and Consumer Commission (May 21, 1998).

Opinion of Law Concerning the Commission's Authority to Permit the Acquisition by CanWest Global Communications Corporation of More Than 25 Percent of the Stock of an American Broadcast Licensee, Letter to William E. Kennard, Chairman, Federal Communications Commission (May 11, 1998).

Testimony of J. Gregory Sidak, *Bell Atlantic v. United States*, Case No. 96CV-8657 (E.D. Pa.) (Mar. 18, 1998) (investment tax credit refund litigation).

Deposition of J. Gregory Sidak, *Bell Atlantic v. United States*, Case No. 96CV-8657 (E.D. Pa.) (Mar. 3, 1998) (investment tax credit refund litigation).

Affidavit of J. Gregory Sidak, appended to Comments of the United States Telephone Association *in* Jurisdictional Separations Reform and Referral to the Federal-State Joint Board, Notice of Proposed Rulemaking, Federal Communications Commission, CC Docket No. 80-286 (filed Dec. 10, 1997), *and in* Amendment to Uniform System of Accounts for Interconnection, Notice of Proposed Rulemaking, Federal Communications Commission, CC Docket No. 97-212 (filed Dec. 10, 1997).

Cross Examination Testimony of J. Gregory Sidak on behalf of PECO Energy Company, Application of PECO Energy Company for Approval of Its Restructuring Plan Under Section 2806 of the Public Utility Code, Regarding the Enron Choice Plan, Pennsylvania Public Utility Commission, Dkt. Nos. R-00973953, P-00971265 (Nov. 17, 1997).

Prefiled Testimony of J. Gregory Sidak, Application of PECO Energy Company for Approval of Its Restructuring Plan Under Section 2806 of the Public Utility Code, Regarding the Enron Choice Plan, Pennsylvania Public Utility Commission, Dkt. Nos. R-00973953, P-00971265 (filed Nov. 7, 1997).

Prefiled Testimony of J. Gregory Sidak on behalf of El Paso Electric Company, City of Las Cruces, New Mexico, Federal Energy Regulatory Commission, Dkt. No. SC97-2-000 (filed Oct. 3, 1997).

Reply Comments of J. Gregory Sidak, Rules and Policies on Foreign Participation in the U.S. Telecommunications Market, Order and Notice of Proposed Rulemaking, Federal Communications Commission, IB Dkt. No. 97-142 (filed Aug. 11, 1997).

Prefiled Rebuttal Testimony of J. Gregory Sidak, Regarding an Economic Analysis of the Appropriate Standard of Conduct That Should Govern the Relationship Between PECO's Regulated Wire Business and Its Competitive, Unregulated Generation and Other Businesses and An Economic and Constitutional Analysis of the Justness and Reasonableness of PECO's Full Recovery of Its Stranded Costs, Application of PECO Energy Company for Approval of Its Restructuring Plan Under Section 2806 of the Public Utility Code, Dkt. No. R-00973953, Pennsylvania Public Utility Commission (filed July 18, 1997).

Statement of J. Gregory Sidak on behalf of Hong Kong Telephone Company Concerning Interconnect Access Charging Principles, Submission on the Hong Kong Local Interconnect Charging Regime, OFTA Review of Statement No. 7, Carrier-to-Carrier Charging, Office of Telecommunications Authority, Hong Kong (filed May 13, 1997).

Hearings on H.R. 22, The Postal Reform Act of 1997, Subcommittee on the Postal Service of the House Committee on Government Reform and Oversight, 105th Congress, 1st Session (Apr. 16, 1997).

Prefiled Testimony of J. Gregory Sidak, Regarding an Economic and Constitutional Analysis of the Justness and Reasonableness of PECO's Full Recovery of Its Stranded Costs, Application of PECO Energy Company for Approval of Its Restructuring Plan Under Section 2806 of the Public Utility Code, Dkt. No. R-00973953, Pennsylvania Public Utility Commission (filed Mar. 26, 1997).

Affidavit of J. Gregory Sidak and Daniel F. Spulber, appended to Comments of the United States Telephone Association *in* Usage of the Public Switched Network by Information Service and Internet Access Providers, Notice of Inquiry, Federal Communications Commission, CC Dkt. No. 96-263 (filed Mar. 24, 1997).

Reply Affidavit of J. Gregory Sidak and Daniel F. Spulber, appended to Reply Comments of the United States Telephone Association *in* Access Charge Reform; Price Cap Performance Review for Local Exchange Carriers; Transport Rate Structure and Pricing; Usage of the Public Switched Network by Information Service and Internet Access Providers, Notice of Proposed Rulemaking, Third Report and Order, and Notice of Inquiry, Federal Communications Commission, CC Dkt. Nos. 96-262, 94-1, 91-213, 96-263 (filed Feb. 14, 1997).

Affidavit of J. Gregory Sidak and Daniel F. Spulber, appended to Comments of the United States Telephone Association *in* Access Charge Reform; Price Cap Performance Review for Local Exchange Carriers; Transport Rate Structure and Pricing; Usage of the Public Switched Network by Information Service and Internet Access Providers, Notice of Proposed Rulemaking, Third Report and Order, and Notice of Inquiry, Federal Communications Commission, CC Dkt. Nos. 96-262, 94-1, 91-213, 96-263 (filed Jan. 29, 1997).

Testimony of J. Gregory Sidak on behalf of GTE South Inc., Petition of AT&T Communications of the South Central States, Inc., for Arbitration of Certain Terms and Conditions of a Proposed Agreement with GTE South Inc. Concerning Interconnection and Resale Under the Telecommunications Act of 1996, Case No. 96-478, Public Service Commission of Kentucky (Jan. 14, 1997).

Cross Examination Testimony of J. Gregory Sidak on behalf of GTE North Inc., In the Matter of Sprint Communications Company L.P.'s Petition for Arbitration of Interconnection Rates, Terms, Conditions and Related Arrangements with GTE North Inc., Case No. 96-10210-TP-ARB, Public Utilities Commission of Ohio (Nov. 21, 1996).

Testimony of J. Gregory Sidak on behalf of GTE South Inc., Petition of MCI, Public Service Commission of Kentucky (Nov. 12, 1996).

Direct Testimony of J. Gregory Sidak on behalf of GTE North Inc., Petition of Sprint, Public Utilities Commission of Pennsylvania (Nov. 7, 1996).

Direct Testimony of J. Gregory Sidak on behalf of GTE Midwest Inc., Petition of MCI, Public Utilities Commission of Indiana (Nov. 1, 1996).

Direct Testimony of J. Gregory Sidak on behalf of GTE Midwest Inc., *AT&T Communications of the Midwest Inc. v. GTE Midwest Inc.*, Iowa Utilities Board, Dkt. No. ARB-96-3 (Oct. 15, 1996).

Direct Testimony of J. Gregory Sidak on behalf of GTE North Inc., Petition of AT&T, Public Utilities Commission of Pennsylvania (filed Sept. 9, 1996).

Affidavit of J. Gregory Sidak, appended to Memorandum of Law in Support of Petition of the Energy Association of New York State in *Energy Association of New York State v. Public Service Commission of the State of New York*, Index No. 5830-96 (filed Supreme Ct. N.Y., County of Albany, Sept. 18, 1996).

Rebuttal Testimony of J. Gregory Sidak on behalf of Central Power and Light Company in Application of Central Power and Light Company for Authority to Change Rates, Competitive Issues Phase, Public Utility Commission of Texas, SOAH Dkt. No. 473-95-1563, PUCT Dkt No. 14965 (filed Aug. 1, 1996).

Reply Affidavit of J. Gregory Sidak, appended to Reply Comments of the United States Telephone Association in Allocation of Costs Associated with Local Exchange Carrier Provision of Video Programming Services, Federal Communications Commission, CC Dkt. No. 96-112 (filed June 12, 1996).

Affidavit of J. Gregory Sidak, appended to Comments of the United States Telephone Association in Allocation of Costs Associated with Local Exchange Carrier Provision of Video Programming Services, Federal Communications Commission, CC Dkt. No. 96-112 (filed May 31, 1996).

Affidavit of Michael J. Doane, J. Gregory Sidak, and Daniel F. Spulber, appended to Reply Comments of GTE Service Corporation in Implementation of the Local Competition Provisions in the Telecommunications Act of 1996, Federal Communications Commission, CC Dkt. No. 96-98 (filed May 30, 1996).

An Empirical Analysis of the Efficient Component-Pricing Rule and Sections 251 and 252 of the Telecommunications Act of 1996, appended to Comments of GTE Service Corporation in Implementation of the Local Competition Provisions in the Telecommunications Act of 1996, Federal Communications Commission, CC Dkt. No. 96-98 (filed May 16, 1996), co-authored with Michael J. Doane and Daniel F. Spulber.

Technological, Environmental and Financial Issues Raised by Increasingly Competitive Electricity Markets, Hearings before the Subcommittee on Energy and Power of the House Committee on Commerce, 104th Congress, 2d Session (Mar. 28, 1996). *Monopoly and the Mandate of Canada Post*, in Submission of the Director of Investigation and Research, Competition Bureau, to Canada Post Corporation Mandate Review Committee (Ottawa, Feb. 15, 1996).

Reply Comments of J. Gregory Sidak, Market Entry and Regulation of Foreign-affiliated Entities, Notice of Proposed Rulemaking, Federal Communications Commission, IB Dkt. No. 95-22 (filed May 12, 1995).

Comments of J. Gregory Sidak, Market Entry and Regulation of Foreign-affiliated Entities, Notice of Proposed Rulemaking, Federal Communications Commission, IB Dkt. No. 95-22 (filed Apr. 11, 1995).

The Line-Item Veto Amendment: Hearings before the Subcommittee on the Constitution of the Senate Judiciary Committee, 104th Congress, 1st Session (Jan. 24, 1995).

Competition and Regulatory Policies for Interactive Broadband Networks, in *Competition Policy, Regulation and the Information Economy: Submission of the Director of Investigation and Research, Bureau of Competition Policy, to the Canadian Radio-television and Telecommunications Commission, Public Notice CRTC 1994-130, Order in Council P.C. 1994-1689* (Ottawa, Jan. 16, 1995), co-authored with Robert W. Crandall.

Line Item Veto: The President's Constitutional Authority: Hearing before the Subcommittee on the Constitution of the Senate Judiciary Committee, 103d Congress, 2d Session (June 15, 1994).

Opinion of Law Concerning Legislation to Reform the Cost-Justification Defense to Discrimination in the Sale of Telecommunications Services, Letter to Ms. Deena Shiff, General Manager, Corporate Affairs, Telstra Corporation Limited, Sydney, New South Wales, Australia (Jan. 13, 1994) (distributed to the Australian Parliament).

Brief of *Amicus Curiae* J. Gregory Sidak, Association of American Physicians and Surgeons, Inc. *v.* Hillary Rodham Clinton, 997 F.2d 898 (D.C. Cir. 1993), filed Apr. 5, 1993.

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