Journal of Competition Law & Economics, 4(3), 697–751
doi:10.1093/joclec/nhn019
Advance Access publication 20 June 2008

EVALUATING MARKET POWER WITH TWO-SIDED DEMAND AND PREEMPTIVE OFFERS TO DISSIPATE MONOPOLY RENT: LESSONS FOR HIGH-TECHNOLOGY INDUSTRIES FROM THE ANTITRUST DIVISION'S APPROVAL OF THE XM–SIRIUS SATELLITE RADIO MERGER

J. Gregory Sidak & Hal J. Singer***

ABSTRACT

Can the standard merger analysis of the Department of Justice's and Federal Trade Commission's Horizontal Merger Guidelines accommodate mergers in high-technology industries? In its April 2007 report to Congress, the Antitrust Modernization Commission (AMC) answered that question in the affirmative. Still, some antitrust lawyers and economists advocate exceptions to the rules for particular transactions. In the proposed XM–Sirius merger, for example, proponents argue that the Merger Guidelines be relaxed to accommodate their transaction because satellite radio is a nascent, high-technology industry characterized by "dynamic demand." We argue that the AMC correctly refrained from recommending high-tech exceptions for defining markets in merger proceedings. Merger proponents naturally seek to expand the relevant product market as much as possible. But if alternative products are included in the relevant market without a showing of significant cross-price elasticities—that is, without evidence of buyer substitution between the two products in response to a relative change in prices—then market definition is unbounded. The XM–Sirius merger also follows a recent trend of prosecutorial inaction in merger reviews. The Antitrust Division's use of a higher standard for intervention than the incipiency standard

* Founder, Criterion Economics, L.L.C.; President, International Institute for Competition Law and Economics. E-mail: jgsidak@aol.com.

** President, Criterion Economics, L.L.C. E-mail: hal@criterioneconomics.com. We have served as economic consultants to the Consumer Coalition for Competition in Satellite Radio, which has opposed the proposed merger of XM and Sirius and has received funding from the National Association of Broadcasters. This article draws from declarations filed before the Federal Communication Commission in the XM–Sirius merger proceeding. We have updated that analysis to take into account the Antitrust Division's rationale for not challenging the merger. Copyright 2008 by J. Gregory Sidak and Hal J. Singer. All rights reserved.

© The Authors (2008). Published by Oxford University Press. All rights reserved.
For Permissions, please email: journals.permissions@oxfordjournals.org
The online version of this article has been published under an open access model. Users are entitled to use, reproduce, disseminate, or display the open access version of this article for non-commercial purposes provided that: the original authorship is properly and fully attributed; the Journal and Oxford University Press (or the society) are attributed as the original place of publication with the correct citation details given; if an article is subsequently reproduced or disseminated not in its entirety but only in part or as a derivative work this must be clearly indicated. For commercial re-use, please contact journals.permissions@oupjournals.org

in Section 7 of the Clayton Act increases the risk of false negatives. Finally, the XM–Sirius merger exemplifies the use of preemptive offers of merger conditions by the merger parties to gain political favor and to allocate postmerger rents to influential third-party intervenors. The most significant preemptive concessions were XM's and Sirius's offer to freeze the monthly subscription price at the premerger monthly rate of $12.95 and to offer a variety of new tiered program packages that XM and Sirius characterized as "à-la-carte." These offers presumably were intended to neutralize the traditional antitrust concerns that a merger among direct competitors leads to higher prices and to win the support of certain vital constituencies. To the contrary, we argue that the offer to freeze prices could reduce welfare and that the Federal Communications Commission and the Department of Justice lack the authority to create a rate-regulated monopoly for satellite radio. Furthermore, because the "à-la-carte" offering would not hold constant other nonprice factors, consumer surplus could fall.

I. INTRODUCTION

Can the standard merger analysis of the Department of Justice's and Federal Trade Commission's *Horizontal Merger Guidelines* accommodate mergers in high-technology industries? The suitability of applying the *Merger Guidelines* to high-technology products was affirmed in the April 2007 report to Congress by the Antitrust Modernization Commission (AMC), which found that "[n]o substantial changes to merger enforcement policy are necessary to account for industries in which innovation, intellectual property, and technological change are central features."[1] Despite this finding, some antitrust lawyers and economists argue that the sheer dynamism of a particular industry defies standard market definition analysis. An example is the proposed merger of XM Satellite Radio Holdings Inc. (XM) and Sirius Satellite Radio Inc. (Sirius), the only U.S. licensed providers of satellite digital audio radio services (SDARS).[2] The horizontal combination of the only two SDARS providers would constitute a merger to monopoly—if SDARS constitutes a relevant antitrust product market.

The conflict between standard antitrust analysis and a more "dynamic" approach advocated by XM and Sirius is most apparent when defining the relevant product market. The *Merger Guidelines* specify the kind of evidence that can inform market definition: "Market definition focuses *solely* on demand substitution factors—i.e., possible consumer responses."[3] Applied here, to expand the product market beyond satellite radio (the narrowest

[1] Antitrust Modernization Commission, *Report and Recommendation* 9 (April 2007), *available at* http://www.amc.gov/report_recommendation/amc_final_report.pdf.

[2] *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 (November 1, 2001), *available at* http://www.fcc.gov/ftp/Bureaus/International/Public_Notices/2001/pnin1232.doc.

[3] Department of Justice and Federal Trade Commission, Horizontal Merger Guidelines, revised April 8, 1997, at § 1.0 (emphasis added).

possible set of products), one must demonstrate that satellite radio subscribers shift their demand between satellite radio and other forms of audio entertainment (for example, terrestrial radio) *in response to a relative change in prices* of those services.[4] XM and Sirius failed to demonstrate any evidence of buyer substitution in response to changes in relative prices. Through their economists, XM and Sirius argued that such evidence was hard to find due to the fact that satellite radio prices had not changed between 2005 and 2007. More importantly, they argued that dynamic demand considerations in the satellite radio industry frustrated the accepted demand-side test for market definition. The vast majority of XM's and Sirius's inferences were based on supply-side information, which the *Merger Guidelines* exclude when defining product markets, except in rare cases in which decisions by sellers can serve as a proxy for how buyers would react to a relative change in prices.[5] The fact that entrepreneurs may be designing new audio devices in their garages does not inform the ultimate question of whether, over the next two years, satellite radio customers would substitute away from satellite radio to another audio device in response to a relative change in prices.

Defining markets and measuring postmerger market power are two sides of the same coin. If outside products constrain the price of the merged entity, then the market should be expanded and the merged firm will lack market power. Section 7 of the Clayton Act and the judicial decisions embracing the *Merger Guidelines* are the alternative to concocting new theories to permit the latest merger to pass muster. They also have the dual virtues of being the law and being correct. As the Department of Justice (DOJ) and the Federal Trade Commission (FTC) reaffirmed in March 2006: "The core concern of the antitrust laws, including as they pertain to mergers between rivals, is the creation or enhancement of market power . . . . The Guidelines set forth the analytical framework and standards, *consistent with the law and with economic learning*, that the Agencies use to assess whether an anticompetitive outcome is likely. The unifying theme of that assessment is that mergers should not be permitted to create or enhance market power or to facilitate its exercise."[6] In that regard, the "Guidelines'

[4] *Id.* at § 1.11 ("In considering the likely reaction of buyers to a price increase, the Agency will take into account all relevant evidence, including, but not limited to, the following: (1) evidence that buyers have shifted or have considered shifting purchases between products in response to relative changes in price or other competitive variables; (2) evidence that sellers base business decisions on the prospect of buyer substitution between products in response to relative changes in price or other competitive variables; (3) the influence of downstream competition faced by buyers in their output markets; and (4) the timing and costs of switching products.").

[5] *Id.* at § 1.0 ("Supply substitution factors—i.e., possible production responses—are considered elsewhere in the Guidelines in the identification of firms that participate in the relevant market and the analysis of entry.").

[6] U.S. Department of Justice and Federal Trade Commission, Commentary on the Horizontal Merger Guidelines, Introduction (March 2006), available at http://www.usdoj.gov/atr/public/guidelines/215247.htm (emphasis added) [hereinafter *Merger Guidelines Commentary*].

analytic framework has proved both robust and sufficiently flexible to allow the Agencies properly to account for the particular facts presented in each merger investigation."[7]

Section 7 of the Clayton Act prohibits any merger, "the effect of [which] may be substantially to lessen competition, or to tend to create a monopoly."[8] The Division explained that it decided not to challenge the XM–Sirius merger "because the evidence did not show that the merger would enable the parties to profitably increase prices to satellite radio customers for several reasons."[9] However, two of the four factors that the Division then listed are unrelated to the ability of a merged firm to raise price, such as "a lack of competition between the parties in important segments even without the merger" and "efficiencies likely to flow from the transaction that could benefit consumers." Thus, the Division's competitive-effects conclusion had to rest on two other factors: "the competitive alternative services available to consumers" and "technological change that is expected to make those alternatives increasingly attractive over time."[10]

The way in which XM and Sirius addressed the issue of competitive alternatives through a novel approach to market definition was not the only occasion in which the merger review process was undermined. The merger is also a case study of the strategic use of preemptive concessions to influence political constituencies. The proposed merger of XM and Sirius attracted the attention of many diverse interest groups that sought to extract valuable concessions that would benefit their constituents—but not

[7] *Id.* Statement of the Department of Justice Antitrust Division on Its Decision to Close Its Investigation of XM Satellite Radio Holdings Inc.'s Merger with Sirius Satellite Radio Inc. (Mar. 24, 2008) [hereinafter *DOJ Decision to Close Investigation*] (emphasis added).

[8] 15 U.S.C. § 18.

[9] *Id.* Statement of the Department of Justice Antitrust Division on Its Decision to Close Its Investigation of XM Satellite Radio Holdings Inc.'s Merger with Sirius Satellite Radio Inc. (Mar. 24, 2008) [hereinafter *DOJ Decision to Close Investigation*] (emphasis added).

[10] The Division's analysis is misguided in other important respects. The Division concluded that competition for *existing* customers is over because there is no evidence of switching. *DOJ Decision to Close Investigation*, *supra* note 9. Yet, a disinclination on the part of consumers to switch is true of any durable good. Moreover, evidence developed in the investigation indeed showed a propensity to switch in response to unilateral quality-adjusted price changes. Also, the two SDARS carriers compete for all types of customers through the development of new content offerings.

The Division further concluded that competition for potential customers is limited in both the auto and retail channels. DOJ Decision to Close Investigation, supra note 9. The facts belie this conclusion as well. Regarding the automobile OEM channel, although carmakers have indeed entered into exclusive agreements with SDARS providers, dealers are nevertheless free to install alternative SDARS systems. Switching costs relative to the price of a new car are trivial. Survey evidence developed in the investigation also indicated that 22 percent of customers had the device professionally installed after the purchase of a vehicle. Regarding the retail channel, XM and Sirius provided no evidence to show demand-side substitution from other audio devices. Moreover, although exclusive content may cause some customers to perceive XM and Sirius as imperfect substitutes, it is impossible to identify those price-insensitive customers; it is the marginal customer who constrains prices. A merger to monopoly would eliminate that constraint.

necessarily satellite radio consumers—in return for endorsing the transaction. The merger parties could consent to these preemptive concessions only if they expected the profits earned as a regulated monopolist to exceed the current duopoly profits plus the costs of the concessions.

The merger application[11] submitted to the Federal Communications Commission (FCC) can best be viewed as an invitation by XM and Sirius for the federal government and various third parties to partake in "rent extraction." That invitation was predicated on XM's and Sirius's creation of an entirely new price-regulated monopoly. In contrast to rent creation, rent extraction connotes the dissipation through government policy of either publicly created monopoly rents or privately created quasi-rents.[12] Regulation can function as a process by which economic rents are created, perpetuated, and threatened with dissipation (and thus extracted by third parties).

Given the certainty that the proposed merger would create monopoly rent, politically sophisticated interest groups came out of the woodwork to dissipate that rent. They did so by conditioning their endorsement or approval of the proposed merger on the receipt of a share of the expected monopoly rent. Being astute about how the game of rent creation and rent extraction is played, XM and Sirius offered to award claims on their future monopoly rent, beginning with several concessions that their merger application portrayed—erroneously in our view—as "merger-specific benefits." Because XM and Sirius were the residual claimant to the monopoly rent that the merger would create, they stood to profit from consenting to these commitments to dissipate rent up until the point at which the value of the concessions exceeds the value of the expected monopoly rent.

In this article, we analyze in greater detail these issues of market definition and preemptive conditions. We begin, in Section II, by comparing the incipiency standard under Section 7 of the Clayton Act with the standard that the Antitrust Division has used when announcing its decisions not to prosecute mergers. The Division's decision to refrain from challenging the XM–Sirius merger, while consistent with the Division's recent reluctance to prosecute mergers, nevertheless deviates from the statutory language of Section 7 and the applicable case law interpreting it. That deviation weakens merger review.

In Section III, we examine whether satellite digital audio radio service (SDARS) is a relevant product market for antitrust purposes. The *Merger Guidelines*[13] impose specific rules with regard to the type of evidence that may be considered for market definition and how to draw the contours of

[11] Consolidated Application for Authority to Transfer Control of XM Radio Inc. and Sirius Satellite Radio Inc., In the Matter of XM Satellite Radio Holdings Inc., Transferor and Sirius Satellite Radio Inc., Transferee, MB Dkt No. 07–57, filed March 20, 2007.

[12] *See* FRED S. MC CHESNEY, MONEY FOR NOTHING: POLITICIANS, RENT EXTRACTION, AND EXTORTION (1997); Fred S. McChesney, *Rent Extraction and Rent Creation in the Economic Theory of Regulation*, 16 J. LEGAL STUD. 101 (1987).

[13] *Merger Guidelines*, *supra* note 3, § 1.0.

a product market. An application of those rules implies that SDARS is a distinct product market. In particular, the demand for SDARS appears to be insensitive to price increases based on (1) the fact that XM did not lose subscribers when it raised prices in 2005 and (2) the low churn rate for SDARS.

This finding is bolstered by other analyses. First, indecency standards legislated by Congress and interpreted by the FCC have segmented the market 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. In 2004, the chief executive of XM said: “We want to be the HBO of radio.”[14] Since that comment was made, the most compelling content on SDARS has indeed been content that would be deemed “indecent,” and thus unlawful, if presented in a terrestrial broadcast environment. We next 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.

We then analyze the novel concept of “dynamic demand,” advanced by XM’s and Sirius’s economic consultants. Because SDARS providers face this so-called “dynamic demand,” XM and Sirius argued that the small-but-significant-and-nontransitory-increase-in-price (SSNIP) test must be altered to account for long-run profit considerations. Despite their extensive experience in merger cases, the lawyers and economists representing XM and Sirius failed to cite a single instance in which a court or an agency altered the SSNIP test in this way. Indeed, in the last six high-profile mergers reviewed by the FCC, the SSNIP test was applied without any alteration. Through their economists, XM and Sirius also relied on the concept of “dynamic demand spillover” to motivate an unprecedented efficiency justification, including the claim, which we refute, that the merger of XM and Sirius would accelerate investment in interoperable radios. However, it is not consistent to argue on the one hand that the other types of audio entertainment compete with SDARS, but on the other that the merger solves the problem of “dynamic demand spillover.”

In Section IV, we analyze the likely competitive effects of the proposed merger of XM and Sirius. We show that the proposed merger would likely increase prices relative to a world in which the merger is not consummated. Because a monopolist charges more for a service than do oligopolists, the postmerger price would necessarily be higher (assuming no decrease in the merged firm’s marginal cost). Moreover, this anticompetitive unilateral effect is not limited to the incremental out-of-pocket costs that subscribers would need to pay to get programming. It also should take account of the

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

costs associated with enduring additional commercials, a planned strategy of XM and Sirius conditional on their obtaining merger approval. The proposed merger would also adversely affect the market for audio programming. Because a combined SDARS provider would have monopsony power over content, the amount of content should decline. 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. Section IV concludes with an analysis of the antitrust significance of the National Association of Broadcaster's (NAB's) opposition to the merger.

In Section V, we review the proposed conditions offered preemptively by the merger proponents. The preemptive conditions took the form of conduct remedies. We begin by reviewing the DOJ's guidelines on merger remedies generally and the use of conduct remedies in particular. Despite the DOJ's general criticism of conduct remedies, the FCC was willing in at least one previous merger to serve as a platform for the exchange of rents via conduct remedies. We explain why these preemptive offers, although attractive to certain political constituencies, would not remedy the likely anticompetitive effects of the proposed merger. The biggest preemptive concession was XM's and Sirius's offer to freeze the monthly subscription price at the premerger monthly rate of $12.95 and to offer a variety of new tiered program packages that XM and Sirius generously describe as "à-la-carte." We explain why these 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 merger would naturally cause the equilibrium price to fall below $12.95 per month. Even assuming that 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.[15] Section V concludes by reviewing other preemptive concessions made by XM and Sirius.

II. THE ANTITRUST DIVISION'S DEVIATION FROM THE INCIPIENCY STANDARD SPECIFIED IN SECTION 7 OF THE CLAYTON ACT

Section 7 of the Clayton Act prohibits mergers in which "the effect of such acquisition may be substantially to lessen competition, or to tend to create a

[15] For a more extensive discussion, see Farrell Malone & J. Gregory Sidak, *Should Antitrust Consent Decrees Regulate Post-Merger Pricing?,* 3 J. COMPETITION L. & ECON. 471 (2007).

monopoly."[16] The Supreme Court construes Section 7 to seek "to arrest the anticompetitive effects of market power in their incipiency," such that "the core question is whether a merger may substantially lessen competition"—a question that "necessarily requires a prediction of the merger's impact on competition, present and future."[17] It is important to distinguish the statute's controlling standard, embodied in the phrase "may substantially lessen competition," from the five-step analysis required by the Merger Guidelines.[18] Under the Merger Guidelines, the Antitrust Division or FTC makes a prosecutorial decision on the basis of its evaluation of whether a proposed combination is "*likely* to create or enhance market power or to facilitate its exercise."[19] The methodology of the Merger Guidelines is intended to ensure that the government does not deter transactions that are competitively beneficial or neutral.[20] However, the Guidelines are not meant to act as an insurmountable bar to government action. Some might argue, however, that in recent years the Antitrust Division's horizontal merger review process has had such an effect.

The last time the Antitrust Division sued to block a horizontal merger was the unsuccessful lawsuit in 2004 to block Oracle's acquisition of PeopleSoft.[21] One possible explanation for the Antitrust Division's reluctance to litigate may stem from its defeat in *Oracle*, in which the Division alleged that the combination of two of the three providers of high-function enterprise software[22] "would likely have" several anticompetitive effects.[23] Upon entering judgment

[16] 15 U.S.C. § 18.

[17] FTC v. Proctor & Gamble, 386 U.S. 568, 577 (1967).

[18] Horizontal Merger Guidelines, § 0.2. Although the Merger Guidelines provide a persuasive framework for evaluating transactions, reviewing courts retain the freedom to tailor the analytical and evidentiary approach to suit specific case needs. Moreover, the government does not bind itself to the framework whenever it litigates to block a merger. *Id.* at § 0.1.

[19] *Id.* at § 0.2 (emphasis added).

[20] *Id.* at § 0.1.

[21] Complaint, United States v. Oracle Corp., No. 04–0807 (N.D. Cal. San Francisco Div. Feb. 26, 2004) [hereinafter *Oracle Complaint*]; *see also* U.S. Department of Justice: Antitrust Division, Press Releases available at http://www.usdoj.gov/atr/public/press_releases/2008/index08.htm (last visited April 17, 2008).

[22] *Oracle Complaint, supra* note 21, at ¶ 31.

[23] *Id.* at ¶ 40. The complaint alleged, in paragraph 40: "(a) Competition in the development, provision, sale and support of high function HRM software and high function FMS software in the relevant product and geographic markets would be eliminated or substantially lessened; (b) actual and future competition between Oracle and PeopleSoft, and between these companies and others, in the development, provision, sale and support of high function HRM software and high function FMS software would be eliminated or substantially lessened; (c) prices for high function HRM software and high function FMS software would likely increase to levels above those that would prevail absent the merger; (d) innovation and quality of high function HRM software and high function FMS software would likely decrease to levels below those that would prevail absent the merger, and; (e) quality of support for high function HRM software and high function FMS software would likely decrease to levels below those that would prevail absent the merger." *Id.*

for the defendants, the court said that in such a case the Antitrust Division "must show that a pending acquisition is reasonably likely to cause anticompetitive effects."[24] The *Oracle* court noted that the Supreme Court emphasized in *Brown Shoe Co. v. United States* that "Congress used the words '*may* be substantially to lessen competition' to indicate that its concern was with probabilities, not certainties."[25] The *Oracle* court also quoted Judge Posner's statement in *Hospital Corp. of America v. FTC* that "Section 7 does not require proof that a merger or other acquisition [will] cause higher prices in the affected market. All that is necessary is that the merger create an appreciable danger of such consequences in the future."[26] The *Oracle* court thus emphasized that liability under Section 7 arises from a reasonable probability, rather than the certainty, of a substantial lessening of competition. Notwithstanding the lower evidentiary requirements of that incipiency standard, the Antitrust Division in *Oracle* failed to prove its theory of market definition, and that failure in turn prevented the Division from establishing the evidentiary presumption, under *United States v. Phila. Nat'l Bank*, that the merger would be unlawful.[27] The Division's failure to shift the burden of proof to the merging parties effectively derailed its case.[28]

In each of eleven mergers between 2004 and March 2008, the Antitrust Division concluded that the transaction was not likely to reduce competition, and therefore the agency did not sue to block the merger.[29] One can

[24] United States v. Oracle Corp., 331 F. Supp. 2d 1098, 1109 (N.D. Cal. 2004) (quoting United States v. Penn Olin Chem. Co., 378 U.S. 158, 171 (1964) ["a section 7 violation is established when the 'reasonable likelihood' of a substantial lessening of competition in the relevant market is shown"]).

[25] *Oracle*, 331 F. Supp. 2d at 1110 (quoting Brown Shoe Co. v. United States, 370 U.S. 294, 323 [1962]) (emphasis added by the *Brown Shoe* court).

[26] *Id.* (quoting Hospital Corp. of Am. v. FTC, 807 F.2d 1381, 1389 [7th Cir. 1986] [Posner, J.]).

[27] *Id.* at 1158.

[28] One commenter suggests that the decision in *Oracle* is partly attributable to a trend of increased deference to high-tech business conduct and heightened reluctance on the part of courts to interfere with technological development. *See* Yane Svetiev, *Antitrust Governance: The New Wave of Antitrust*, 38 LOY. U. CHI. L.J. 593 (2007).

[29] *See* Department of Justice: Antitrust Division, Press Releases available at http://www.usdoj.gov/atr/public/press_releases/2008/index08.htm (last visited April 17, 2008). The relevant transactions that the Antitrust Division has reviewed and declined to challenge since 2004 are: Chicago Mercantile Exchange and CBOT (2007); Smithfield and Premium Standard Farms (2007); AT&T and BellSouth (2006); MediaNews and Contra Costa and San Jose Mercury News (2006); Maytag and Whirlpool (2006); Instinet Group and NASDAQ (2005); New York Stock Exchange and Archipelago Holdings (2005); Sprint and Nextel (2005); America West and U.S. Air (2005); Arch Wireless and Metrocall (2004); United Health and Oxford Health (2004); and Anthem and Wellpoint (2004). Of course, several transactions have cleared the review process of the Antitrust Division upon agreement by the parties to divest specific holdings. *See, e.g.*, Press Release, Department of Justice: Antitrust Division, Justice Department Requires Mill Divestitures in Proposed Merger of Altivity and Graphic Packaging, available at http://www.usdoj.gov/atr/public/press_releases/2008/230790.htm (March 5, 2008).

debate whether or not the Division's leadership during the 2004–2008 period was more risk-averse than before the defeat in *Oracle*. Regardless of the answer, the statutory threshold for action to block a merger obviously did not change. Neither did the controlling case law. The Division retains the legal authority to challenge a merger that creates a reasonable possibility of lessening competition. Put more forcefully, the Antitrust Division's faithful execution of the law requires it not to nullify the incipiency principle in Section 7 through a policy of prosecutorial discretion that inclines toward inaction.

When it announced its decision not to challenge the XM–Sirius merger, the Antitrust Division invoked a different legal standard than the incipiency standard in Section 7: "After a careful and thorough review of the proposed transaction, the Division concluded that the evidence does not demonstrate that the proposed merger of XM and Sirius *is likely* to substantially lessen competition, and that the transaction therefore is not likely to harm consumers."[30] By elevating the level of certainty of competitive harm required to justify intervention, the Antitrust Division provided itself a way to avoid challenging the merger. The "likelihood" standard that the Division uses is convenient for government litigators who fear the embarrassment of losing big cases.[31] A sure way to avoid such losses for the Division in court is not to file lawsuits, ostensibly on the ground that the facts of a given case do not warrant intervention. Although most discussions of error costs in antitrust law concern false positives, this risk-aversion on the part of government antitrust litigators, particularly in the context of horizontal merger enforcement, raises the serious prospect that false negatives are plausible. This standard of prosecutorial discretion significantly weakens merger review.

III. MARKET DEFINITION

In a March 6, 2007 filing with the Securities and Exchange Commission (SEC), XM argued that the "audio entertainment market"—which

[30] Statement of the Department of Justice Antitrust Division on Its Decision to Close Its Investigation of XM Satellite Radio Holdings Inc.'s Merger with Sirius Satellite Radio Inc. (March 24, 2008) [hereinafter *DOJ Decision to Close Investigation*] (emphasis added).

[31] The Antitrust Division's elevated standard of competitive harm cannot be bootstrapped from a principle of prosecutorial discretion to a legitimate statutory interpretation of Section 7 that is entitled to judicial deference. Under *Chevron*, an agency is entitled to deference on reasonable interpretations of its ambiguous statute. Chevron, Inc. v. Natural Res. Def. Council, Inc., 467 U.S. 837, 842–845 (1984). The Clayton Act, however, is not ambiguous in this respect. There is a clear linguistic and logical distinction between "may" and "is likely to." The two formulations are not subject to confusion. Congress chose the former, more speculative standard. Judicial interpretation of Section 7's incipiency standard comports with the plain language of the statute, as illustrated by Judge Posner's decision in *Hospital Corp. of America,* 807 F.2d at 1389. Consequently, the argument that a court should defer to the Division's interpretation of Section 7 would collapse on *Chevron*'s first prong.

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.[32] 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. The question then becomes whether the *Merger Guidelines* can accommodate market definition for a merger in a high-technology industry.

A. The Role of Demand-Side and Supply-Side Evidence in Product Market Definition

Economists agree what constitutes horizontal competition between two products, *A* and *B*.[33] Product *B* should be included in the same market as product *A* if product *B* significantly constrains the price of product *A*. Such discipline can occur if, in response to an increase in the price of *A*, there is (1) a significant decline in the demand for *A* as consumers switch from *A* to *B* ("demand substitution"), or (2) a significant increase in the supply of *A* as firms switch production from *B* to *A* ("supply substitution"). Because supply substitution is less likely to occur in a timely fashion, it is appropriate for the *Merger Guidelines* to place more emphasis on demand substitution, which has a better chance of disciplining prices.

The *Merger Guidelines* direct that demand-side evidence shall be used to define product markets.[34] This approach was reaffirmed in the recent *Commentary on the Merger Guidelines* released by the Department of Justice and the FTC.[35] Numerous courts have used the *Merger Guidelines* to define product markets in this manner, and in this sense one can confidently say

[32] XM Satellite Radio, Inc., The Facts About What the NAB Is Saying (S.E.C. Form Schedule 14A), at 4, March 6, 2007.

[33] *See*, *e.g.*, Dennis W. Carlton & Jeffrey M. Perloff, Modern Industrial Organization 612 (Addison Wesley 3rd ed. 2000).

[34] *Merger Guidelines*, *supra* note 3, § 1.0 ("Market definition focuses *solely* on demand substitution factors—i.e., possible consumer responses. Supply substitution factors—i.e., possible production responses—are considered elsewhere in the Guidelines in the identification of firms that participate in the relevant market and the analysis of entry.") (emphasis added).

[35] *Merger Guidelines Commentary*, *supra* note 6, at § 1 ("Product market definition depends critically upon demand-side substitution—i.e., consumers' willingness to switch from one product to another in reaction to price changes. The Guidelines' approach to market definition reflects the separation of demand substitutability from supply substitutability—i.e., the ability and willingness, given existing capacity, of firms to substitute from making one product to producing another in reaction to a price change. Under this approach, demand substitutability is the concern of market delineation, while supply substitutability and entry are concerned with current and future market participants.").

that these statements of prosecutorial discretion have become part of the judicially created law interpreting Section 7 of the Clayton Act.[36]

Although demand-side evidence is preferred to supply-side evidence under the *Merger Guidelines*, not all demand-side information is relevant. What matters most is evidence that buyers have altered (or would consider altering) their purchase decisions among products in response to relative changes in price.[37] In the absence of direct evidence of buyer substitution, supply-side evidence may be used as a proxy for the preferences of buyers, but only to the extent that "sellers base business decisions on the prospect of buyer substitution between products in response to relative changes in price or other competitive variables."[38] The term "other competitive variables" presumably connotes nonprice factors that could induce buyer substitution outside the purported product market.[39] Stated differently, the *Merger Guidelines* dictate that supply-side evidence shall be considered in market definition *only* if suppliers' conduct is reflective of the reactions of consumers within the purported product market to a relative change in price or some "other competitive variables" as defined above. Thus, supplier decisions that are based on input costs or production technology are to be ignored. In addition, supplier decisions based on the expected reaction of *buyers* outside the purported market are also to be ignored.[40]

Moreover, the term "other competitive variables" must be interpreted narrowly to mean variables that reflect the demand for a product or collection of products, and not supply-side factors such as repositioning or entry. Otherwise, any supply-side information could be considered, which would undermine the broader purpose of Section 1.0 to focus on demand-side responses for purposes of market definition.

In an effort to support the proposition that SDARS customers would substitute to alternative audio sources in response to a price increase—that is, in an effort to expand the product market beyond SDARS—XM and Sirius largely relied on anecdotes of what suppliers of MP3 players, mobile

[36] *See* FTC v. Arch Coal, Inc., 329 F. Supp. 2d 109, 120 (D.D.C. 2004); United States v. Oracle Corp., 331 F. Supp. 2d 1098, 1108 (N.D. Cal. 2004); United States v. Sungard Data Systems, Inc., 172 F. Supp. 2d 172, 182 (D.D.C. 2001); FTC v. Swedish Match, 131 F. Supp. 2d 151, 160 (D.D.C. 2000); FTC v. Cardinal Health, Inc., 12 F. Supp. 2d. 34, 46 (D.D.C. 1998). *See also* United States v. Microsoft Corp., 253 F.3d 34, 51 (D.C. Cir. 2001); CF Indus., Inc. v. Surface Transp. Bd., 255 F.3d 816, 823 n. 13 (D.C. Cir. 2001); United States v. Engelhard Corp., 126 F.3d 1302, 1304 (11th Cir. 1997); United States v. VISA U.S.A., Inc., 163 F. Supp. 2d 322, 335 (S.D.N.Y. 2001).

[37] *Merger Guidelines*, *supra* note 3, § 1.11.

[38] *Id.*

[39] A Westlaw search produces no cases that contain the words "other competitive variables" and "Merger Guidelines." There is no specific or extensive discussion of what that phrase means in any antitrust treatise.

[40] It is not relevant to the market definition exercise to ask, for example, whether a teetotaler considers whiskey to be a substitute for water.

telephones, terrestrial radio, and mobile Internet radio providers have been doing, allegedly in response to entry by SDARS providers.[41] But these supply-side arguments say nothing about how consumers would react to a small but significant nontransitory increase in the price of SDARS. Because XM and Sirius bore the burden of proof, their repeated failure to introduce relevant evidence on this point led one to conclude that no such evidence exists.[42]

To support the proposition that supply-side evidence should inform market definition, XM and Sirius (through their economists) cited Jonathan Baker's recent article on the subject.[43] Closer inspection of that article, however, reveals that Baker's analysis would likely reject the use of supply-side evidence to define the relevant product market in this proceeding. Indeed, Baker argues that the *Merger Guidelines* approach to market definition, which largely ignores supply-side evidence, is "preferable" to the methods employed by "some U.S. courts" that consider supply substitution:

> Since the mid-1970s, some U.S. courts have also employed market definition to account for a second economic force, supply substitution. These courts expand markets even though a group of products and locations would appear to form a valuable monopoly after accounting for buyer substitution to outside alternatives, when the monopoly would

41 *See*, *e.g.*, Steven C. Salop, Steven R. Brenner, Lorenzo Coppi & Serge X. Morisi, Economic Analysis of the Competitive Effects of the Sirius–XM Merger, July 24, 2007 [hereinafter *CRA Report*]. It is conceivable, of course, that the conduct cited by the CRA Report had nothing to do with entry by SDARS providers. More important, there is little if anything in the CRA Report about what XM or Sirius has done in response to the supply-side activities of these other suppliers.

42 The Merger Guidelines framework does not explicitly allocate burdens of proof and production with respect to specific issues. *Merger Guidelines*, *supra* note 3, § 0.1. However, a reviewing court must ultimately consider "whether the effect of the merger 'may be substantially to lessen competition' in the relevant market." *See* United States v. Philadelphia Nat'l Bank, 374 U.S. 321, 363–6 (1963). An initial showing of evidence that a merger "produces a firm controlling an undue percentage share of the relevant market, and results in a significant increase in the concentration" permits an inference that the effect of the merger "is so inherently likely to lessen competition substantially that it must be enjoined in the absence of evidence clearly showing that the merger is not likely to have such anticompetitive effects." *Id.* at 363. *See also* PHILLIP AREEDA & HERBERT HOVENKAMP, ANTITRUST LAW ¶ 905'h, at 191 (Supp. 1998). This showing involves proof of market structure, market behavior, and factors such as the likelihood of entry, buyer concentration and sophistication, product durability, product differentiation, sales methods, presence or absence of vertical integration, and history of coordination. *Id.* The Merger Guidelines also note that merging parties must meet the burden of proof regarding any claimed efficiencies argued to arise from the merger. *Merger Guidelines Commentary*, *supra* note 6, at § 4 ("In litigation, the parties have the burden on any efficiencies claim (Guidelines § 0.1 n.5), and it is to their advantage to present efficiency claims (including supporting documents and data) to the reviewing Agency as early as possible."). Thus, in the case of a merger to monopoly, in which the market shares and market concentration reach maximum values, proponents face an extremely high probative duty.

43 *See* Jonathan B. Baker, *Market Definition: An Analytical Overview*, 74 ANTITRUST L.J. 129, 141 (2007).

> likely not be profitable after also accounting for the incentive of outside sellers to begin producing and selling within the candidate market. The Merger Guidelines instead account for supply substitution in steps of merger analysis that take place after market definition, either in the identification of market participants or the evaluation of entry conditions. Accordingly, the argument as to whether to incorporate supply substitution in market definition is not about whether to recognize this economic force in antitrust analysis; it is over what stage of the analytical process at which to do so. *The approach taken by the Merger Guidelines is preferable because it can be both difficult and confusing to ask one analytical step, market definition, to account for two economic forces, demand and supply substitution.*[44]

Baker provides an example of how supply substitution could inform market definition, but he warns that "a number of conceptual and practical pitfalls must be avoided" when doing so.[45] His example involves producers of insulated aluminum conductor quickly and inexpensively switching a portion of their production capacity to the production of copper conductor. In other words, Baker's example involves entry into the same product by producers in related industries. In their merger filings, XM and Sirius did not argue that terrestrial radio broadcasters, or any alternative audio providers for that matter, were contemplating acquiring spectrum and offering satellite radio services. Thus, the supply-side evidence offered by XM and Sirius would not be consistent with Baker's interpretation of the *Merger Guidelines*.

There is no principled reason to abandon the unambiguous prescription of the *Merger Guidelines* to focus solely on demand-side factors when defining the relevant product market. Doing so would invite obfuscation of the determinative economic issues in this proceeding and disserve consumers in a wider range of telecommunications markets by creating a precedent that would confound proper antitrust analysis in future mergers. Indeed, in the last six high-profile mergers reviewed by the FCC, supply-side evidence did not inform market definition.[46] This is not to say that supply-side evidence

[44] *Id.* at 133–4 (emphasis added).

[45] *Id.* at 135.

[46] Verizon Communications Inc. and MCI, Inc., Memorandum Opinion & Order, 20 F.C.C.R. 18,433, 18,463–64 ¶¶ 57–8 (2005) [hereinafter *Verizon-MCI MO&O*]; AT&T Inc. and BellSouth Corporation Application for Transfer of Control, Memorandum Opinion & Order, 22 F.C.C.R. 5662, 5711–14 ¶¶ 90–95 (2007) [hereinafter *AT&T-BellSouth MO&O*]; Applications of AT&T Wireless Services, Inc. and Cingular Wireless Corporation, Memorandum Opinion & Order, 19 F.C.C.R. 21,522, 21,557 ¶ 71 (2004) [hereinafter *AT&T-Cingular MO&O*]; SBC Communications Inc. and AT&T Corp., Memorandum Opinion & Order, 20 F.C.C.R. 18,290, 18,341–6, 18,357 ¶¶ 90, 92, 94–6, 100, 125 (2005) [hereinafter *SBC-AT&T MO&O*]; Applications of Nextel Communications, Inc. and Sprint Corporation, Memorandum Opinion & Order, 20 F.C.C.R. 13,967, 13,984, 13,991 ¶¶ 39, 58 (2005) [hereinafter *Nextel-Sprint MO&O*]; 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.,

serves no purpose in merger analysis. Once the relevant market has been properly defined in accordance with the *Merger Guidelines* (based exclusively on demand-side evidence), supply-side factors can be used to identify firms that participate in the relevant market (and their shares) and to evaluate the likelihood and extent of entry.

B. Demand-Side Evidence in the XM–Sirius Merger Proceeding

In this section, we analyze the demand-side evidence that was introduced in the public record during the XM–Sirius merger proceeding.

1. How Sensitive Are Satellite Digital Radio Subscribers to Price Increases?

If the actual own-price elasticity of demand is less than the critical level, 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*.[47]

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 the critical level.

Several pieces of evidence suggest that the elasticity of demand for SDARS is not highly sensitive. 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.[48] In the two quarters following the price increase, XM realized subscriber growth of 13 percent (third quarter 2005) and 20 percent (fourth quarter 2005).[49] The fact that subscriber growth

---

Transferee; Time Warner Inc., Transferor, to Comcast Corporation, Transferee, Memorandum Opinion & Order, 21 F.C.C.R. 8203, 8234–35 ¶¶ 59, 62 (2006) [hereinafter *Comcast–Adelphia MO&O*].

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

[48] *XM Satellite Radio Raises Monthly Fee*, CHI TRIB., March 1, 2005, at 10 ("XM said it would raise the price of it basic service to $12.95 per month from $9.99 beginning April 2, matching Sirius' monthly fee.").

[49] XM RADIO, ANNUAL REPORT (SEC Form 10-K), at 1 (March 16, 2006) (showing 6 million subscribers); XM RADIO, QUARTERLY REPORT (SEC FORM 10-Q), 18 (November 07,

continued at such a rapid pace in the presence of 30 percent price increase underscores the low elasticity of demand faced by SDARS providers.[50]

Second, the churn rate for SDARS is less than two percent, which Sirius says is the lowest among all subscription-based services.[51] 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]."[52] Sirius's chief executive attributed the low churn to the fact that "[Sirius's] programming is so compelling, and so sticky, and so strong."[53] Another reason for the low churn rate is high switching costs for the closest available substitute. If a 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.[54] 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.[55] The extremely low churn rate for SDARS suggests that substitution possibilities for SDARS customers are lacking, which implies highly inelastic demand.[56]

In addition to low churn rates, another indicator of inelastic demand for SDARS is the high "conversion rate."[57] The conversion rate is defined as

---

2005) (showing 5 million subscribers); XM RADIO, QUARTERLY REPORT (SEC 10-Q), at 19 (August 5, 2005) (showing 4.4 million).

50 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.

51 *Howard's way—Satellite radio*, THE ECONOMIST, January 14, 2006 (citing an unnamed executive at Sirius).

52 Craig Moffett & Amelia Wong, *XMSR: Few Surprises, but Strong Second Quarter Affirms Positive Long Term Trends,* BERNSTEIN RESEARCH CALL, July 29, 2005 at 7.

53 *Howard's way—Satellite radio*, THE ECONOMIST, January 14, 2006 (quoting Mel Karmazin).

54 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., March 14, 2005, at 32.

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

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

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

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.[58] During 2004 through 2005, the conversion rate decreased to 60 percent,[59] 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.

As we 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.[60] 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 up to 80 percent on each purchase.[61] Other studies show price-inelastic demand for indecent content on the Internet.[62] 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.

Previous Regulatory and Antitrust Proceedings Regarding Subscriber-based Programming Markets

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, we 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

---

February 17, 2006 ("Conversion Rate is the best indicator of cross-sectional consumer demand for satellite radio.").

58 *Id.*

59 *Id.*

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

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

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

extend its indecency standards to SDARS has allowed for a market segmentation to occur between SDARS and terrestrial broadcast radio.[63]

a. The FCC's Indecency Standards

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."[64] Commission regulations bar the terrestrial broadcast of indecent content between the hours of 6 a.m. and 10 p.m.[65] 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.[66] The FCC is empowered to assess forfeiture penalties, and may initiate license revocation proceedings or deny license renewal for violations.[67]

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.[68] 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.[69] The full Commission reversed the Enforcement Bureau in early 2004.[70] Several aspects of the Commission's ruling are particularly salient to the application of indecency regulation to the 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

[63] Economists recognize that regulation may have the effect of segmenting a market for purposes of proper antitrust analysis. *See, e.g.*, Niels Haldrup, Peter Møllgaard & Claus Kastberg Nielsen, *Sequential Versus Simultaneous Market Delineation: The Relevant Antitrust Market for Salmon*, 4 J. COMPETITION L. & ECON. (forthcoming 2008) (analyzing whether regulation causes Norwegian salmon to be in a different antitrust market from Scottish salmon).

[64] 18 U.S.C. § 1464 (2000).

[65] 47 C.F.R. § 73.3999 (2006).

[66] 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).

[67] 47 U.S.C. § 503(b)(2)(C) (2006); Obscenity, Indecency & Profanity, http://www.fcc.gov/eb/oip/Welcome.html (last visited March 2, 2007).

[68] 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).

[69] *Id.* at 19,861.

[70] *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).

prong of the indecency analysis.[71] 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.[72] 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.[73] This statutory interpretation by the FCC substantially expands potential liability for terrestrial radio broadcasters, especially for "shock jock" talk radio.

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.[74] In 2003, NALs increased to $440,000.[75] By 2004, they reached $8 million.[76] In 2006, NALs reached almost $4 million.[77] In addition, the Commission entered into three consent decrees in 2004, totaling almost $3.5 million.[78] 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 the Fox Television Network, and the $3.6 million fine for an episode of *Without A Trace* on CBS—the largest in Commission history.[79]

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*.[80] Notably, *all* of these controversial radio hosts are now offered on satellite radio.[81] In late 2006, Congress passed the Broadcast Decency

[71] *Id.* at 4979.

[72] *Id.* at 4980.

[73] *Id.* at 4981; *see* 18 U.S.C. § 1464 (2000) (prohibiting the broadcast of "obscene, indecent, *or profane* language") (emphasis added). The Second Circuit subsequently vacated the FCC's order in the Bono case and remanded the proceeding to the agency. *See* Fox Television Stations, Inc. v. FCC, 489 F.3d 444 (2d Cir. 2007).

[74] *See* Indecency Complaints and NALs: 1993–2006, http://www.fcc.gov/eb/oip/Stats.html (last visited February 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 February 4, 2007).

[75] *Indecency Complaints*, *supra* note 74.

[76] *Id.*

[77] *Id.*

[78] Obscene, Profane & Indecent Broadcasts: Consent Decrees, http://www.fcc.gov/eb/broadcast/CD.html (last visited February 6, 2007).

[79] *Id.*; *FCC Indecency Fines*, *supra* note 74. The complaints focused on a simulated group-sex scene at a high-school party.

[80] Sarah McBride, *Clear Channel Dumps Stern After Big Fine*, WALL ST. J., April 9, 2004, at B1.

[81] Opie and Anthony also broadcast a censored version of their show on CBS Radio.

Enforcement Act, which raised potential fines to $325,000 per violation, or per day for a continuing violation.[82] 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.[83]

SDARS providers, however, are not subject to these—or any other—indecency rules. The FCC has repeatedly refused to extend its indecency regime to subscription-based programming, such as direct broadcast satellite (DBS) service.[84] In evaluating DBS, the FCC concluded that the rationales justifying regulation of indecent content distributed over traditional broadcast television do not apply. Indeed, DBS is more closely analogous to cable television than it is to broadcast television. As such, the regulation of content delivered through subscription-based multichannel video platforms draws separate treatment by the FCC and heightened First Amendment scrutiny by reviewing courts.

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 service offered is neither broadcast, common carrier, aeronautical en route or aeronautical fixed service.[85]

Thus, the FCC made clear that XM and Sirius did not fit within the existing regulatory pigeonhole of radio broadcasting. Rather, SDARS is a distinctly different medium, warranting separate application of content-based regulation.

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."[86] Clearly, any extension of the regulations to subscriber-based radio would be highly vulnerable to

[82] Pub. L. No. 109–235, 120 Stat. 491 (2006).

[83] *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.

[84] *Id.* at 45 (citing In re Applications of Harriscope of Chicago, Inc., Memorandum Opinion and Order, 3 F.C.C.R. 757, 760 n. 2 [1988]).

[85] 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).

[86] 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 (December 14, 2004) (citing In re Applications of Harriscope of Chicago, Inc., 3 F.C.C.R. 757, 760 n. 2 [1988]).

constitutional challenge.[87] 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.[88] 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 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 users to block them.[89] Sirius permits channel blocking and requires listeners to opt-in to receive *Playboy Radio.*[90]

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.[91] 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.

b. Would a Significant Portion of the Satellite Digital Audio Radio Content Be Deemed Indecent in a Broadcast Environment?

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

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,

[87] *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).

[88] *See* FCC v. Pacifica Foundation, 438 U.S. 726, 748–9 (1978).

[89] XM Parental Controls, http://www.xmradio.com/parentalcontrols/index.jsp (last visited February 3, 2007).

[90] Sirius Satellite Radio, www.sirius.com (last visited March 3, 2007) (see link at bottom).

[91] 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]).

Table 1. Satellite radio channels featuring indecent or profane content

XM satellite radio "XL" channels	Sirius channels[a]
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[92]
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

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

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 had aired unedited for more than a generation.[93] Other stations have instituted zero-tolerance policies for on-air talent, prompting some personalities to take out "indecency insurance."[94] 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.[95] 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."[96]

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

[92] 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 (October 6, 2004).

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

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

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

[96] Michael Heaton, *Indecency the Old-Fashioned Way*, CLEVELAND PLAIN DEALER, February 17, 2006, at 60.

its most popular.[97] *Playboy Radio*, which requires subscribers to opt-in, reportedly drew more than 1 million customers to Sirius over three months.[98] Equity analysts have documented the growth in Sirius subscriptions following the addition of Howard Stern to its lineup.[99] Stern, who precipitated numerous FCC indecency enforcement actions in the past,[100] left terrestrial radio in 2006 after signing a five-year, $500 million contract with Sirius.[101] 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.[102]

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.[103] Analysts attribute between 1 and 2 million of these subscribers to Stern himself.[104] 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.[105] In 2006, Sirius announced its acquisition of the rights to more than 23,000 hours of Stern programming, which it intends to air unedited.[106] In its annual report filed in March 2006 with the Securities and Exchange Commission, XM specifically identified Stern as a possible competitive threat.[107] In their SEC filings, both XM and Sirius identified their uncensored programs as marquee content.[108]

c. *The Treatment of Advertisement-based Broadcast Services and Subscription-based Services by Other Federal Agencies and Courts*

The FCC, the DOJ, and the federal courts have identified factors that implicitly or explicitly segment media programming product markets

[97] 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., September 24, 2005, at 13.

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

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

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

[101] *See*, *e.g.*, Antonelli, *supra* note 99.

[102] Jacques Steinberg, *Stern Likes His New Censor: Himself*, N.Y. TIMES, January 9, 2007, at E1.

[103] Alana Semuels, *Sirius Gives Stern, Agent $83 Million Stock Bonus*, L.A. TIMES, January 10, 2007, at 1.

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

[105] *Stern's $82M Anniversary*, NEWSDAY, January 10, 2007, at A10.

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

[107] XM RADIO, ANNUAL REPORT (SEC FORM 10-K), at 23 (March 3, 2006).

[108] *See id.* at 1; SIRIUS SATELLITE RADIO, ANNUAL REPORT (SEC FORM 10-K), at 3 (March 16, 2005).

between advertisement-based broadcast and subscription-based services, and those factors apply equally to television and radio.[109] In proposed mergers and acquisitions among broadcast radio station operators, the DOJ has regarded broadcast radio as a separate and relevant product market.[110]

As modern subscription-based programming evolved, Congress recognized its competitive implications, as evidenced in the Cable Television Consumer Protection and Competition Act of 1992.[111] 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."[112] 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 to that of consumers and video programmers."[113] The regulatory remedy that Congress created was a "must carry" provision that requires cable providers to devote channel capacity to local broadcast television stations.[114] 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

[109] *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").

[110] *See, e.g.*, United States v. Clear Channel Communications, Inc., No. 1:00CV02063, 2001 WL 34038532 (D.D.C. Feb. 27, 2001). Competitive Impact Statement, 2 (November 15, 2000), *concerning* United States v. Clear Channel Communications, Inc., 2001 WL 34038532 (D.D.C. 2001).

[111] *Id.* at 47 U.S.C. § 521 (2000).

[112] *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).

[113] *Id.* at § 521(a)(2).

[114] *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).

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 market threatens consumer welfare.

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,"[115] 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,"[116] and that "transmissions designed to be available only to paying subscribers clearly demonstrate the intent of the licensee."[117] 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."[118]

In 1997, the FCC authorized two licensees, Sirius and XM, "to launch and operate satellites to provide SDARS."[119] 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."[120] This exclusivity implies that entry by a third SDARS provider would be costly.

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

[115] In the Matter of Subscription Video, 2 F.C.C.R. 1001, 1003, ¶ 20 (1987).
[116] *Id.* at 1005.
[117] *Id.*
[118] *Id.* at 1006.
[119] *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 (November 1, 2001), *available at* http://www.fcc.gov/ftp/Bureaus/International/Public_Notices/2001/pnin1232.doc.
[120] *Id.*

> stations in many cities throughout the United States, including Allentown, Pennsylvania; Denver, Colorado; Harrisburg, Pennsylvania; Houston, Texas; and Pensacola, Florida.[121]

The DOJ specifically found the relevant product market to be radio-based advertising.[122] Thus, even if SDARS had existed as a viable force at the time, it would not have been included in the relevant product market.

3. Do Satellite Digital Audio Radio Subscribers Perceive Other Forms of Audio Services to be Close Substitutes?

Some commentators to the XM–Sirius merger proceeding argued that the relevant product market for purposes of analyzing the merger should contain an array of services in addition to SDARS.[123] 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's own website included a press release that emphasized 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.[124]

Similar claims could be found on XM's website.[125] This press release emphasized the absence of commercials, ubiquity, and large number of channels as the characteristics that distinguish SDARS from terrestrial radio broadcasts.

[121] United States v. Clear Channel Communications, Inc., No. 1:00CV02063, 2001 WL 34038532 (D.D.C. Feb. 27, 2001). *Competitive Impact Statement*, 2 (Nov. 15, 2000), *concerning* United States v. Clear Channel Communications, Inc., 2001 WL 34038532 (D.D.C. 2001).

[122] *Id.*

[123] *See, e.g.,* Adam Thierer, *XM+ Sirius=Good Deal (for the Companies and Consumers)*, The Progress & Freedom Foundation Progress Snapshot, Release 3.4, February 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.").

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

[125] 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.").

Through such statements, XM and Sirius manifested their own belief that consumers view SDARS as significantly different from terrestrial radio.

a. Advertiser-supported Terrestrial Radio

It is a mistake to think that SDARS subscribers would substitute to "free" terrestrial radio broadcasting in response to a SSNIP. Instead, the effective price for a given subscriber of advertiser-supported radio is the reduction in utility associated with having to endure commercials. 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 to 30 seconds in an attempt to "win back listeners, boost ratings, and in turn lead to higher ad rates."[126] According to Forrester Research, the success of SDARS partly reflects listeners' desire to avoid advertising.[127]

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 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.[128] 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]."[129]

Unlike SDARS, advertiser-supported terrestrial radio stations lack a ubiquitous footprint. XM's nationwide service can reach nearly 100 million listeners age 12 and over who are beyond the range of the largest 50 markets as measured by Arbitron.[130] XM estimated that, of these 100 million listeners, 36 million live beyond the largest 276 Arbitron markets.[131] XM also estimated that 22 million people age 12 and older receive five or fewer stations.[132]

[126] 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.

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

[128] XM SATELLITE RADIO, INC., ANNUAL REPORT (S.E.C. FORM 10-K), at 1, March 15, 2001 (citing American Radio, Spring 2000 Ratings Report, Duncan's American Radio, 2000).

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

[130] XM SATELLITE RADIO, INC., ANNUAL REPORT (SEC FORM 10-K), at 2, March 15, 2001.

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

[132] *Id.* (citing The Satellite Report 1999, C. E. Unterberg, Towbin).

A significant percentage of radio listeners, such as truckers (who numbered roughly 3 million in 2004),[133] routinely travel through two or more Arbitron radio markets on a frequent basis.[134] Those consumers clearly would not perceive terrestrial service to be a reasonable substitute for SDARS.

Much of the marquee content on SDARS would be considered indecent if delivered via broadcast radio. In other words, by regulatory constraint 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.

Finally, new survey data suggest that satellite radio subscribers do not perceive terrestrial radio to be a close substitute for satellite radio. In June 2007, Wilson Research Strategies conducted a survey of current satellite radio subscribers at the request of the NAB. The survey polled 501 current SDARS subscribers on a range of questions on their reasons for subscribing and their demographic characteristics.[135] The survey results suggest that a significant number of satellite radio subscribers (1) are less likely to have a sufficient amount of terrestrial radio service by virtue of their geographic location, (2) value certain attributes of satellite radio that are not available on terrestrial radio, and (3) do not perceive MP3 players to be substitutes for satellite radio.

The survey data confirm that a majority of satellite radio subscribers reside in a small city, town, or rural area. Because local radio coverage declines with the size of the local population, this fact suggests that satellite radio subscribers reside in areas of below-average terrestrial radio coverage. The majority (58 percent) indicated that they lived away from a large city.[136] This finding suggests that many XM and Sirius subscribers would be vulnerable to an increase in the price of satellite radio.

The survey data suggest that satellite subscribers value SDARS for qualities that are unavailable on terrestrial radio. These qualities include commercial-free music, uninterrupted signal, and greater number of channels. According to the survey, 87 percent of respondents listed commercial-free music as an

[133] 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).

[134] XM SATELLITE RADIO, INC., ANNUAL REPORT (SEC FORM 10-K), at 4, March 15, 2001.

[135] Press Release, Wilson Research Strategies, Survey of Satellite Radio Subscribers (July 8, 2007), available at http://www.w-r-s.com/press/WRS_NAB Sat Radio Survey_Press Release_070710.pdf.

[136] *Id.*

"important" reason for subscribing; 77 percent of satellite subscribers cited "uninterrupted signal nationwide" as an "important" reason for subscribing; and another 77 percent identified "number of channels" as an "important" reason for subscribing.[137] Because these features are not available on terrestrial radio, it is reasonable to infer that terrestrial radio does not constrain the price of satellite radio.

Finally, the survey shows that a majority (53 percent) of satellite subscribers own or use an MP3 player.[138] Thus, most satellite subscribers are aware of MP3 players and do not perceive them as a substitute for satellite radio, because they continue to subscribe to XM or Sirius. Satellite subscribers more likely view MP3 players and satellite radio as distinct products used for different purposes.

b. HD Radio

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.[139] 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 2500 of the nation's 13,000 commercial radio stations will be digital by 2010.[140] Because not all terrestrial stations have launched HD service, the footprint of HD signals is a subset of the footprint of terrestrial radio.

Second, HD radio currently lacks unique or compelling content.[141] 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 offering indecent content. Moreover, much of the marquee content available on SDARS is under exclusive contracts with XM or Sirius.

Third, HD radio requires high upfront costs for consumers. HD receivers currently cost at least $200.[142] Thus, potential marginal SDARS

[137] *Id.*
[138] *Id.*
[139] *See What is HD Radio*, iBiquity Digital Corporation Website (last visited March 9, 2007), at http://www.ibiquity.com/hd_radio
[140] 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., March 14, 2005, at 32.
[141] 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.
[142] 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., March 14, 2005, at 32.

customers would have to incur a nontrivial switching cost as a penalty for substituting to HD radio. High switching costs imply that a SSNIP by a hypothetical monopoly provider of SDARS is more likely to be profitable.

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*.[143]

Bernstein Research also explains that HD radio cannot compete effectively with SDARS due to satellite radio's distribution advantage with automobile manufacturers.[144] 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.[145] 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.[146] By the end of 2006, only 1300 stations (10 percent) were expected to have converted to digital.[147]

c. *Podcasts Delivered over an iPod*

Podcasts are broadcasts downloaded to an MP3 player for later use.[148] Unlike SDARS, podcasts are not delivered in real time. SDARS are superior for consumers whose time is too scarce to 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

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

[144] *Id.*

[145] *Id.*

[146] *Id.*

[147] *Id.*

[148] *See Podcasting and ITunes: Frequently Asked Questions*, Apple iTunes Website (last visited March 9, 2007), at http://www.apple.com/itunes/store/podcastsfaq.html.

to be more complementary."[149] 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.[150]

Based on those differences, Gerald Faulhaber concludes that "the iPod is a very different service than Satellite radio."[151]

d. Mobile Internet Radio

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 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.[152] Indeed, analysts predict that wireless networks will never have service areas that are comparable to SDARS.[153]

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.[154] In an article in *PC Magazine*, Bill Machrone, vice president of technology at Ziff Davis Publishing, also questioned the quality of internet radio.[155] In contrast,

[149] Craig Moffett, Amelia Wong & Judah Rifkin, *Satellite Radio 1Q Preview: All Eyes Are on Conversion Rates, SAC, and iPods,* BERNSTEIN RESEARCH, April 25, 2006.

[150] Sirius and XM: Can Two Archrivals Sing the Same Tune?, KNOWLEDGE@WHARTON, February 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).

[151] *Id.*

[152] *See, e.g.*, Cingular Wireless Coverage Viewer, available at http://www.cingular.com/coverageviewer/.

[153] Sarmad Ali, *Technology—The 10 Biggest Problems With Wireless & How to Fix Them—Missing Calls, Dead Zones, Surprise Charges; What Are Cellphone Companies Doing About Them.*, WALL ST. J., October 21, 2006, at R1.

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

[155] Bill Machrone, *Internet Radio: Failed Promise?*, PC MAGAZINE, September 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

SDARS received high customer satisfaction levels.[156] Accordingly, analysts have been skeptical of the near-term economic viability of mobile Internet radio.[157]

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 supporting Internet radio from Cingular Wireless was $44.99.[158] In addition to the out-of-pocket costs of connecting to Internet radio, "free" Internet radio relies on advertisements for revenue.[159] Moreover, all wireless operators limit the amount of downloading per month, even under their "unlimited" plans.[160] As we explained above, advertisements impose a real cost on consumers and should not be viewed as costless.

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).[161] In contrast, SDARS offer over 100 channels of music at $12.95 a month.

e. *Music Services Available on Wireless Telephones*

XM and Sirius recounted the latest offers by other mobile telephone providers to argue that wireless telephones should be included in the relevant

---

different when played on MusicMatch, RealOne, Windows Media Player, or Winamp. The differences are subtle but noticeable.").

[156] 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, June 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.").

[157] Eisenmann & Brown, *supra* note 154, at 7 (citing John L. Stone, *Sirius Upside Potential,* LADENBURG THALMANN & CO. INC., August 15, 2001, at 16).

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

[159] *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., March 14, 2005.

[160] *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).

[161] Nick Wingfield, *RealNetworks, Sprint Will Offer Radio Via Phones*, WALL ST. J., September 19, 2006.

product market.[162] However, SDARS customers are not likely to perceive these offerings to be close substitutes to SDARS. To borrow one obvious example, it is not clear how a sports program downloaded onto a Verizon VCast mobile phone could be played over the speaker in one's car. XM and Sirius failed to link Verizon's VCast or any of these offerings to anticipated demand-side substitution among SDARS subscribers in response to price changes. Stated differently, XM and Sirius cannot reject the hypothesis that these offerings came about completely independently of how the wireless carriers perceive the demand response of SDARS customers. Instead, it seems far more likely that these carriers were motivated by a desire to capture ancillary revenues in the upstream content markets, primarily music downloads. In other words, Verizon's VCast is a closer substitute to the iPod than it is to SDARS.

Moreover, at the current prices sought by wireless carriers for audio content, it is highly doubtful that SDARS customers perceive these mobile telephone offerings to be close substitutes. A mobile voice subscriber to Sprint[163] or AT&T[164] must subscribe to an unlimited data package—priced between $20 and $50 per month, depending on the carrier—*to avoid paying for data usage charges while listening to audio content over his mobile telephone*. Setting aside the nontrivial incremental price for an unlimited data plan, Sprint offers ten commercial-free stations for $15 per month or 40 commercial-free stations for $20.[165] By comparison, XM and Sirius each offer over 120 commercial-free stations for $12.99. A Sprint subscriber paying $20 per month for audio content would need to incur an additional $6.95 (a total of $26.95) to receive 20 Sirius channels. Because a Sirius subscriber already receives these channels and more in his satellite radio subscription, he would never be willing to substitute to Sprint's audio entertainment service for a *higher* price ($26.95 plus the unlimited data charge versus $12.95). Similarly, setting aside the price for an unlimited data plan, an AT&T customer must pay $8.99 per month to receive a small subset (25) of XM's channels. It is not credible that an XM customer would pay significantly more than $12.99 per month to forgo over 100 XM channels and the ability to listen to XM radio in his car.

Although Verizon offers MLB games (at $6.95 per month) and music downloads (at $1 per download) through its VCast service, Verizon does not offer a package of commercial-free stations for a monthly fee. Again, an XM subscriber, who receives MLB games under his current subscription for $12.99 per month, would not be willing to switch to Verizon VCast only to pay for an unlimited data plan ($50 per month) plus $6.95 per month for

[162] *CRA Report, supra* note 41, at 21–25.
[163] *Id.* at 22 n. 61.
[164] *Id.* at 24 n. 74.
[165] *Id.* at 22.

Table 2. Audio content provided by mobile wireless operators

Wireless provider	Price of unlimited data plan (A)	Price of audio content plan (number of channels) (B)	Incremental price of XM or Sirius plan (number of channels/provider) (C)	Total price of mobile telephone package (A + B + C)	Price of XM or Sirius for an SDARS customer
AT&T	$19.99[a]	$8.99 (50)[b]	$8.99[c] (25 of XM)	$28.98–$37.97	$12.99
T-Mobile	$29.99[D]	NA	NA	NA	$12.99
Alltel	$10.00[e]	$6.99 (40)[e]	$7.99 (20 of XM)[f]	$16.99–$24.98	$12.99
Sprint-Nextel	$0.00	$20.00 (50)[g]	$6.95 (20 of Sirius)[g]	$26.95	$12.99
Verizon	$44.99[h]	NA	NA	NA	$12.99

Sources: [a]AT&T website (referring to MediaMax 200 Plan); available at http://www.wireless.att.com/cell-phone-service/services/; [b]AT&T Media Mall, available at http://mediamall.wireless.att.com/sf/storefront/endUserHTMLGetPhoneNumberAndCoupon.jsp?st=jt&dc=CF88&prodId=CF25577&refcode=&SKU=CF25577a36077v24; [c]Andrew D. Smith, *Apple iPhone's Rivals: Do They Measure Up?*, SEATTLE TIMES, June 9, 2007 at E6. [d]T-Mobile website, available at http://www.t-mobile.com/shop/plans/Default.aspx?plancategory= 7#Internet + Only; [E]Alltel Website: Axcess TV & Radio, available at http://www.alltell.com/axcess/tv_radio.html; [f]Sprint website: Services; [g]Sprint website: Digital Lounge, available at https://manage.sprintpcs.com. [h]Verizon Wireless website (equal to the cost of cheapest voice plus data plan, $79.99, minus the cost of the cheapest voice only plan, $39.99), available at http://www.verizonwireless.com/b2c/store/.

MLB and forgo over 120 channels. Table 2 summarizes these alternative audio entertainment offerings provided by mobile wireless operators.

As Table 2 shows, the monthly price differential between an SDARS subscription and any of the audio content offerings from mobile telephone operators is substantial, ranging from $4 (Alltel) to $24.98 (AT&T). It bears emphasis that two of the largest mobile telephone operators, Verizon and T-Mobile, do not even offer a base plan with a fixed number of audio channels. If these are the best options facing SDARS customers, then the unilateral price effects of the merger would be severe indeed.

C. "Dynamic Demand" Arguments

Through their economists, XM and Sirius introduced a novel, theoretical concept called "dynamic demand" that would obscure market definition analysis and supposedly legitimate an unprecedented efficiency defense that is not cognizable under the *Merger Guidelines*.

1. *Effect on the SSNIP Test*

XM and Sirius claimed that the standard SSNIP test used for market definition is inappropriate here because it ignores the long-term profitability considerations faced by SDARS providers:

> We will explain why the "small but significant and nontransitory increase in price" *(ssnip)* test for market definition from the antitrust agencies' Horizontal Merger Guidelines must take into account the dynamic nature of demand and the important role of longer-term profit-maximization for Sirius and XM.[166]

Presumably, XM and Sirius would alter the standard SSNIP calculus—namely, a comparison of short-term profits before and after a price increase—by including additional terms for the hypothetical monopolist's long-term profits. XM and Sirius failed to cite any instance in which a court or an agency altered the SSNIP test in this way. Indeed, in the last six high-profile mergers reviewed by the Commission, the SSNIP test was applied without any alterations.[167] XM and Sirius failed to provide an economic basis for its recommendation that the FCC deviate from the *Merger Guidelines* in such a fundamental way.

XM's and Sirius's novel "dynamic demand" analysis is wholly theoretical. Nowhere did the merger parties articulate the conditions that would have had to exist for the analysis to be applicable, let alone whether such conditions were in fact present. The "dynamic demand" concept provided no basis to claim that the postmerger dynamically optimal price will not be higher. There is no precedent for deviating from the *Merger Guidelines* by incorporating a concept that would vitiate the standard SSNIP test.[168]

2. The "Dynamic-Demand-Spillover" Problem

XM and Sirius further postulated that competition between the two satellite radio providers creates a significant impediment (a "dynamic demand spillover") to lower prices and better quality that would be eliminated by this merger. This "dynamic demand spillover" encourages free riding by XM and Sirius, which allegedly undermines each provider's incentive to engage in "demand-enhancing investments, such as mounting advertising campaigns, improving the quality of its products and services, and investing in low penetration prices."[169] But the merger parties failed to provide an analysis of how

[166] *CRA Report*, *supra* note 41, at 10.

[167] *Verizon-MCI MO&O*, *supra* note 46, at 18,449, 18,465–6, 18,494; *AT&T-BellSouth MO&O*, *supra* note 46, at 5678, 5700, 5729–31; *AT&T-Cingular MO&O*, *supra* note 46, at 21,558, 21,561; *SBC-AT&T MO&O*, *supra* note 46, at 18,307, 18,322, 18,324, 18,352–3; *Nextel-Sprint MO&O*, *supra* note 46, at 13,989–90; *Comcast-Adelphia MO&O*, *supra* note 46, at 8269 (2006).

[168] There is no mention of the phrase "dynamic demand" in the Federal Trade Commission's and Department of Justice's *Commentary on the Merger Guidelines*, released in May 2006. No witness (including Professor Salop) relied on the phrase "dynamic demand" in his or her testimony before the Antitrust Modernization Committee. Moreover, the AMC did not mention the phrase, let alone endorse the concept of altering the SSNIP test when evaluating mergers in dynamic industries.

[169] *CRA Report*, *supra* note 41, at 62. In addition to efficiency defenses relating to product quality, XM and Sirius offered efficiency arguments relating to (1) reduced content acquisition costs (Part IV.F.), (2) reduced automobile OEM distribution costs (Part IV.G.), and (3) reduced retail distribution costs (Part IV.H.). Setting aside the issue of deadweight

many resources (if any) were being held back by XM and Sirius due to this hypothesized free-rider problem. They also failed to provide an analysis of how much consumers would benefit from continued rivalry between XM and Sirius.

Moreover, XM's and Sirius's "dynamic demand spillover" conjecture was inconsistent with its market definition position. It was not consistent for XM and Sirius to argue on the one hand that the other types of audio entertainment compete with SDARS, but on the other that the merger would solve the problem of "dynamic demand spillover."[170] XM and Sirius have neglected to consider that, after the merger, the alternative audio entertainment devices that allegedly compete with SDARS will still be able to free ride on the "demand-enhancing" investments made by a combined XM–Sirius. Alternatively, if the "dynamic demand spillover" is truly specific to the two SDARS providers (such that there is no spillover to other audio entertainment services), then one must conclude that those alternatives are not in the same product market. Stated differently, if there is a newly created incentive after the merger to engage in penetration pricing and promotions, then it must be the case that iPods and HD radio do not compete with SDARS; otherwise the "demand-enhancing" investments that would occur after the merger would still generate demand for iPods and HD radio.

In summary, the "externality" that XM and Sirius invoked is properly described as product differentiation, and it is precisely the force that is constraining the price of SDARS today. The merger can be counted on to "solve" this "competition problem" between XM and Sirius. But the result will be higher SDARS prices (in the absence of a price-freeze concession). For that reason, the externality problem should have been ignored.

3. *What Is the Proper Role for Novel Economic Theories of Antitrust Analysis?*

In its supplemental report, XM and Sirius aimed to resuscitate its dynamic demand arguments.[171] Yet XM and Sirius were not able to identify a *single*

---

welfare loss from monopsony power, all of these claimed efficiencies represent at best a transfer of surplus from equipment and content suppliers to XM and Sirius. Thus, they would not even increase the inappropriate total welfare standard. Moreover, because they would not reduce the merged firm's marginal costs, none of these claimed efficiencies would redound to the benefit of consumers in the form of lower SDARS prices or expanded output. In fact, one would expect that these so-called "savings" would result in the combined XM-Sirius becoming *less* aggressive in signing up incremental subscribers, because these savings would allow the combined firm to maintain its profitability with fewer subscriptions. In other words, the combined company will likely sell fewer subscriptions than XM and Sirius would sell absent the merger. For this reason, none of the claimed efficiencies can be counted on to offset a reduction in consumer welfare caused by an increase in SDARS prices or more commercials or both.

170 *Id.* at 61–62.

171 Further Economics Analysis of the Sirius-XM Merger, November 9, 2007, Appendix A, at 38–59 [hereinafter *CRA Further Analysis*].

instance in which dynamic demand considerations had been recognized by an antitrust court or agency during a merger review. The closest that the merging parties came to satisfying this burden were citations to the "economics literature and the marketing literature."[172] Although several abstract theories have been developed by economists over the years, none of them serves as a basis for deviating so radically from the *Merger Guidelines*.

Put simply, the relevant question for the Commission was whether it was ready to depart from recognized antitrust analysis in light of a novel theory that could have some bearing on merger analysis but had not yet been recognized by any antitrust authority. In an effort to build precedence for such a radical approach, XM and Sirius cited language from the *Merger Guidelines*, *Merger Commentary*, and the AMC report,[173] each of which admittedly tolerates some "flexibility" in merger analysis.[174] Indeed, the very quote provided by XM and Sirius admits exactly where the AMC is willing to entertain new economic theories:

> In industries in which innovation, intellectual property, and technological change are central features, just as in other industries, antitrust enforcers should carefully consider market dynamics in *assessing competitive effects* and should ensure proper attention to economic and other characteristics of particular industries that may, depending on the facts at issue, have an important bearing on a valid antitrust analysis.[175]

The term "competitive effects" has a precise meaning in merger analysis, and it would be naïve to assume that the AMC was not aware of that meaning when drafting its report. According to the *Merger Guidelines*, the "competitive effects" analysis *follows* market definition and precedes entry and efficiency analyses. In particular, the Guidelines describe the analytical process that the Agency will employ in determining whether to challenge a horizontal merger. First, the Agency assesses whether the merger would significantly increase concentration and result in a concentrated market, properly defined and measured. Second, the Agency assesses whether the merger, in light of market concentration and other factors that characterize the market, raises concern about potential adverse competitive effects.[176]

[172] *Id.* at 39 n. 136 (citing EVERETT M. ROGERS, DIFFUSION OF INNOVATIONS [1983]; Frank M. Bass, *A New Product Growth Model for Consumer Durables*, 15 MGMT. SCI. 1825 [1967]; JEAN TIROLE, THE THEORY OF INDUSTRIAL ORGANIZATION 71 [MIT Press 1990]).

[173] *Id.*

[174] *See, e.g.,* Antitrust Modernization Committee, Report and Recommendations (April 2007), available at http://www.amc.gov/report_recommendation/toc.htm (last visited November 5, 2007) at 32 ("Antitrust analysis, as refined to incorporate new economic learning, is sufficiently flexible to provide a sound competitive assessment in such industries.").

[175] *Id.*

[176] *Merger Guidelines*, *supra* note 3, § 0.2.

Thus, XM's and Sirius's attempt to revise the *market definition* analysis[177] by incorporating dynamic-demand considerations did not seek mere "flexibility" in merger analysis, as contemplated by the AMC. Instead, it attempted to redesign the fundamental concept of market definition radically. Stated differently, the concept of dynamic demand may have a place in a competitive effects analysis (assuming conservatively the concept is not so generic that it could be applied to every industry), but it should not inform market definition.

New economic ideas should play a vital role in regulatory proceedings. For example, the literature on two-sided markets is being applied to many communications industries to reveal insights that were not possible with the traditional tools of economic analysis. The question for antitrust agencies is where and how to apply a new economic tool in a particular proceeding. In contrast to the concept of two-sided markets, which by definition cannot be applied in any one-sided industry, the concept of dynamic demand appears to lend itself to any industry and therefore provides no valuable insights. At most, the concept could have some role in the competitive effects analysis of a merger. But the notion of bending the accepted framework of market definition is too radical a departure from antitrust precedent.

IV. COMPETITIVE EFFECTS

In this section, we analyze the likely price and quality effects of the proposed merger. We also examine potential effects in the market for content. The section concludes with an analysis of the antitrust significance of the National Association of Broadcasters' opposition to the merger.

A. The Likely Price Effects

As we 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 postmerger 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 postmerger 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

[177] *CRA Further Analysis*, *supra* note 171, at 40. ("This understanding of the implications of dynamic demand on pricing and investment is central to analyzing the competitive effects of the merger. *It is also central to constructing a hypothetical monopolist test for market definition* that fits the facts and circumstances of this merger and therefore will define the relevant market a way that informs rather than obscures an understanding of the competitive effects of the merger.") (emphasis added) [hereinafter *CRA Supplemental Report*].

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,[178] one can estimate the postmerger margins, which are likely to exceed the premerger margins significantly.

For example, under the NEIO model, the premerger margins can be written as:

$$R_{\text{premerger}} = HHI_{\text{premerger}}(1 + p)/E \tag{1}$$

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 (1) yields

$$E = HHI_{\text{premerger}}(1 + p)/R_{\text{premerger}} \tag{2}$$

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

$$R_{\text{postmerger}} = 1/E \tag{3}$$

Substituting (2) into (3) yields

$$R_{\text{postmerger}} = R_{\text{premerger}}/HHI_{\text{premerger}}(1 + p) \tag{4}$$

The premerger HHI is roughly 5131.[179] Under Cournot, p is 0, which implies that the merger would nearly double margins.

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."[180] But the

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

[179] Craig Moffett & Judah Rifkin, *XM Satellite Radio (XMSR): Clearer Skies Ahead*, BERNSTEIN RESEARCH, July 5, 2006 (showing nationwide market shares as of the end of the third quarter 2006 of 42 percent and 58 percent for Sirius and XM, respectively).

[180] *Merger Guidelines*, *supra* note 3, § 3.0.

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.[181] Both XM and Sirius had to overcome significant fixed costs of establishing a nationwide radio network, 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. The Likely Quality Effects

The likely unilateral effects of the proposed merger is not limited to the incremental out-of-pocket costs that subscribers would have to pay to get programming. It also should take account of the costs associated with enduring additional commercials, a planned strategy of XM and Sirius conditional on their obtaining merger approval. In a February 20, 2007 conference call to discuss the proposed merger, Mel Karmazin explained that advertising would be a central strategy of the combined firm:

> Looking at the next slide, which would be number 10, given the combined year-end 2006 subscription figures for both companies, the merged company will be significantly more attractive to large national advertisers. AM–FM radio advertising is a $20 billion industry. XM and Sirius compete for this advertising spend and in 2006 took a fraction of it. Advertisers look for reach, and as one company, we will have twice the reach of what either company has on its own, and as a consequence access to a greater number of advertising accounts than we have on our own. At the same time, we see an opportunity to capture savings on our respective advertising sales expense as we combine these operations. Sirius and XM currently have about 14 million subscribers, and that number is growing every day.[182]

Later, XM and Sirius explained that the "advertising line is going to contribute significantly in the future towards ARPU."[183]

Although it is difficult to quantify the exact welfare loss associated with increased advertising time, it is reasonable to conclude that any increase in advertising time would generate significant welfare losses.[184] Presumably, there exists some combination of increased advertising revenues per subscriber (from more commercials) and decreased SDARS subscribers such that

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

[182] Conference call to discuss the merger of Sirius Satellite Radio and XM Satellite Radio, February 20, 2007, available at http://online.wsj.com/documents/transcript-xmsr-20070220.pdf.

[183] *Id.*

[184] *See, e.g.*, PATRICK S. MC CARTHY, TRANSPORTATION ECONOMICS, THEORY & PRACTICES: A CASE STUDY APPROACH 121 (Blackwell 2001) (showing the value-of-time estimates by income by transportation mode).

the increase in commercial time would be profitable for the merged XM–Sirius. Let Q be the number of SDARS subscribers, P be the monthly subscription price, C be the costs of operating the SDARS network, and A be the monthly advertising revenues per subscriber, and $k(t)$ be the percentage of SDARS customers who retain their subscription in spite of an increase of t commercials per minute. One can regard $k(t)$ as the share of the "inframarginal customers." Profits with more commercials will exceed profits without commercials whenever

$$[A+P]Q\,k(t) - C > PQ - C \tag{5}$$

Simplifying (5) yields

$$k(t) > P/[A+P] \tag{6}$$

Equation (6) says that, so long as the ratio of subscription revenue per subscriber to total revenue per subscriber is less than the share of inframarginal subscribers, the injection of t commercials per hour will increase profits. Thus, a combined SDARS provider will increase commercials by t minutes whenever the share of inframarginal customers exceeds the ratio of subscription revenue per subscriber to total revenue per subscriber.

To generate a range of potential welfare effects, we varied (1) the fraction of a subscriber's willingness to pay for SDARS that can be attributable to commercial avoidance and (2) the increase in commercial time for every hour spent listening to SDARS. For example, we estimate that when (1) 30 percent of a subscriber's willingness to pay for SDARS can be attributable to avoidance of commercials and (2) commercial time is increased by 5 minutes per hour, then the share of marginal subscribers is 18.9 percent and the annual welfare loss exceeds \$633 million. Alternatively, we estimate that when (1) 10 percent of a subscriber's willingness to pay for SDARS can be attributable to avoidance of commercials and (2) commercial time is increased by 5 minutes per hour, then the share of marginal subscribers is 5.6 percent and the annual welfare loss exceeds \$211 million. These two inputs and corresponding outputs ("input–output pairs"), along with several other pairs, are depicted graphically in Figure 1.

Any particular input–output pair must be subjected to a profitability test—that is, one must determine whether a combined SDARS provider would have the incentive to increase commercials by t minutes. To depict the profitability of a given input–output pair in the space of commercial time and percentage of value attributed to commercial avoidance, we assume that the advertising revenue per subscriber, A, is equal to the product of a and t, where a is the monthly advertising revenue per customer expressed on a per-minute per-hour basis. For example, if advertising revenues were to account for one-third of total revenues per subscriber (A equals \$6.50, P equals \$12.99), and if t

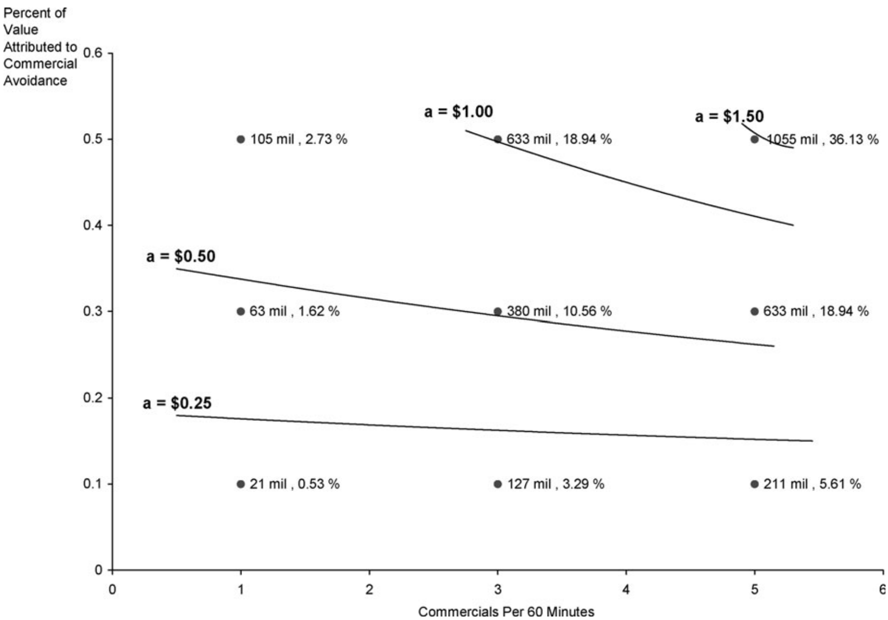

Figure 1. Profitable increases in commercial time for an SDARS provider.

were equal to 5 minutes of commercials per hour, then *a* would equal \$1.30 (equal to \$6.50 divided by 5 minutes per hour). It is now possible to portray an "isoprofit curve"—that is, input pairs such that a combined SDARS provider would be indifferent between increasing and not increasing commercials by *t* minutes per hour. Figure 1 shows these isoprofit curves for several different values of *a*, ranging from \$0.25 to \$1.50.

As Figure 1 shows, when *a* is \$0.50, the SDARS provider is roughly indifferent between adding and not adding 3 minutes of commercials when subscribers attribute 30 percent of the value of SDARS to commercial avoidance (that is, that input–output pair sits on the isoprofit line). Holding the percentage of value attributed to commercial avoidance constant at 30 percent (that is, moving horizontally from the same input–output pair), an increase of 2 minutes of commercials per hour is profitable (that is, that input–output pair is *below* the same isoprofit line), whereas an increase of 4 minutes of commercials per hour is not profitable (that is, that input–output pair is *above* the same isoprofit line). Indeed, when *a* is \$1.50, the SDARS provider would be indifferent between adding and not adding 5 minutes of commercials to its lineup when subscribers attribute 50 percent of the value of SDARS to commercial avoidance—despite the fact that 36 percent of its customers would terminate their subscription. The point of this exercise is not to estimate with precision the amount of the welfare loss and the share of marginal subscribers associated with any given increase in commercial time. Instead, it is to demonstrate that a combined XM–Sirius could calibrate its commercial time in such a way as to increase profits at the expense of consumer welfare.

The prospect that a merged XM and Sirius would increase commercial time on satellite channels is not a matter of conjecture. In a September 17, 2007 investor conference, Mel Karmazin, CEO of Sirius, stated that he "would like to see advertising revenue eventually make up about 10% of Sirius' total revenue, up from the current 4% to 5%."[185] Mr. Karmazin noted, however, that Sirius would *not* increase commercial time on its music channels.[186] Given that SDARS subscriptions are expected to grow rapidly, Mr. Karmazin's stated objective would require a significant increase in total revenue from advertising. Thus, the increase in commercial time posited above—from 1 minute per hour to 5 minutes per hour—is not unreasonable. Moreover, Sirius's commitment not to increase commercials on music channels does not change the consumer-welfare analysis. An increase in commercials on channels like Howard Stern, Playboy Radio, and Sirius Comedy would still constitute a quality-adjusted price increase being imposed on current SDARS consumers. By stating that Sirius will not impose commercials (impose a quality-adjusted price increase) on consumers of music channels, Mr. Karmazin revealed that a substantial, implicit quality-adjusted price increase *is* feasible—*so long as it is done in a coordinated fashion with XM*—for consumers of those nonmusic channels.

C. The Likely Effect in the Upstream Programming Market

The proposed merger would likely 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.

A monopsonist is a single buyer.[187] As a price setter, the monopsonist can reduce output, and thus can eliminate the surplus that consumers would have enjoyed at higher output levels.

[185] Louis Hau, *Sirius CEO Discusses The Biz*, FORBES.COM, September 17, 2007, available at http://www.forbes.com/business/2007/09/17/sirius-xmradio-advertising-biz-media-cx_lh_0917karmazin.html.

[186] *Id.*

[187] *See, e.g.*, Weyerhaeuser Co. v. Ross-Simmons Hardwood Lumber Co., Inc., 127 S. Ct. 1069, 1075 (2007) ("The reduction in input prices will lead to 'a significant cost saving

As Figure 2 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 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 2 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.

D. What Is the Competitive Significance of the Opposition of the National Association of Broadcasters?

Conventional wisdom in antitrust circles is that the positions of interested parties supply useful information about the competitive effects of a proposed merger. This viewed was articulated by Judge Richard Posner in a case before the Federal Trade Commission.[188] Relying on that framework, XM and Sirius argued that the opposition of the National Association of Broadcasters (NAB) to the merger was evidence that SDARS competes with broadcast radio:

> In public filings and statements, various members of the radio broadcasting industry have emphatically stated that they compete directly with satellite radio and other forms of audio entertainment—a view that is underscored by the fervent opposition they

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."); DENNIS CARLTON & JEFFREY PERLOFF, MODERN INDUSTRIAL ORGANIZATION 107 (Addison Wesley 3d ed. 2000).

188 Hospital Corp. of Am. v. FTC, 807 F.2d at 1391–92. ("Hospital Corporation's most telling point is that the impetus for the Commission's complaint came from a competitor. . .. The hospital that complained to the Commission must have thought that the acquisition would lead to lower rather than higher prices—which would benefit consumers, and hence, under contemporary principles of antitrust law, would support the view that the acquisitions were lawful.").

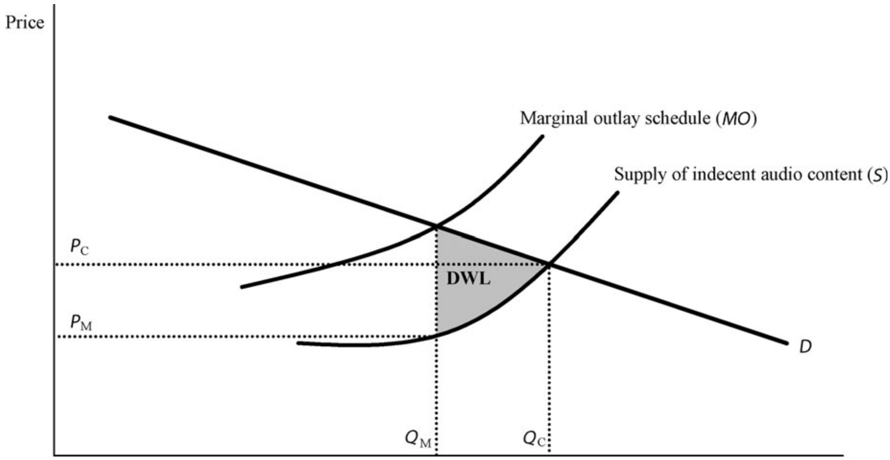

Figure 2. Deadweight loss from monopsony.

expressed toward the proposed transaction before the ink on the merger agreement was even dry.[189]

This argument was echoed on the progressive left by Gigi Sohn of the advocacy group Public Knowledge[190] and on the libertarian right by Holman Jenkins of the *Wall Street Journal*.[191]

The argument that NAB's opposition to the merger was proof that the merger is procompetitive is incorrect as a matter of logic, erroneous as a matter of economic analysis, and irrelevant as a matter of antitrust law. That the argument was so readily embraced by proponents of the merger underscores their failure to acknowledge, and to place their arguments within the context of, the complex nature of competition between SDARS (a subscription-funded service) and terrestrial broadcast radio (an advertiser-funded service) in what economists call a "two-sided market."[192]

[189] Consolidated Application for Authority to Transfer Control of XM Radio Inc. and Sirius Satellite Radio Inc., In the Matter of XM Satellite Radio Holdings Inc., Transferor and Sirius Satellite Radio Inc., Transferee, MB Dkt. No. 07–57, filed March 20, 2007, at 38 (citing Press Release, National Association of Broadcasters, NAB Statement in Response to Proposed Sirius/XM Merger, February 19, 2007) [hereinafter *Merger Application*].

[190] *See The XM-Sirius Merger: Monopoly or Competition from New Technologies: Hearing Before the S. Committee on the Judiciary, Subcommittee on Antitrust, Competition Policy and Consumer Rights,* 110th Cong. 8 (March 20, 2007) (statement of Gigi Sohn, President of Public Knowledge) (noting NAB's opposition to the merger).

[191] *See* Holman W. Jenkins, Jr., *Beyond Parity*, WALL ST. J. at A14, April 25, 2007 ("Naturally, leading the opposition is the National Association of Broadcasters. That competitors would lobby against a merger as 'anticompetitive' is now accepted without a guffaw.") [hereinafter *Beyond Parity*].

[192] For explanations of the relevance of two-sided markets to antitrust analysis, see J. Gregory Sidak, *A Consumer Welfare Approach to Network Neutrality Regulation of the Internet*, 2 J. COMPETITION L. & ECON. 349 (2006); David S. Evans, *The Antitrust Economics of*

By opposing the merger, broadcasters were understandably concerned that a combined XM–Sirius would divert advertising dollars away from radio stations. Broadcasters fear that some *advertisers* (as opposed to consumers) perceive SDARS audiences and terrestrial broadcast radio audiences to be close substitutes for purposes of disseminating advertising messages. One can infer from NAB's opposition that broadcasters believe that SDARS and terrestrial radio broadcasting compete (at least potentially) in the antitrust product market *for radio advertising*. Indeed, XM and Sirius explicitly stated what their advertising strategy would be were the government to approve their merger. Given SDARS' unique nationwide footprint—and its potential ability to subsidize advertisement rates from subscriber revenues—terrestrial radio broadcasters may be unable to compete effectively with SDARS in the sale of radio advertisements that achieve nationwide clearance. Thus, NAB's concern reflects the impact of the merger *only* on one side of this two-sided market—the radio advertising side of the market, as opposed to the content side. This economic concern over loss of radio advertising revenue is sufficient to explain why NAB opposed the merger of XM and Sirius.

So it is here that the logical fallacy of XM, Sirius, Public Knowledge, and the *Wall Street Journal* manifested itself. They attempted to use factors concerning the market for radio advertising as a means to draw inferences about consumer perceptions of product substitutability on the *other* side of this two-sided market. This error of logic has important implications for correct economic analysis in a merger review. The fact that two suppliers (potentially) compete in the market for radio advertising does not imply anything about whether *SDARS consumers* perceive terrestrial broadcast radio to be reasonably interchangeable for SDARS. *That* question is the dispositive one for defining the relevant product market in a merger case and thereafter evaluating the merger's enhancement of market power with respect to that relevant product.

There is intermodal competition among media outlets for advertising. The following example makes this point clear. AT&T would like to buy print, radio, and cable television advertising to promote its new iPhone. (AT&T has an exclusive deal with Apple.) The fact that the *Washington Post* (a print medium) and Comcast (a television medium) vie for the same advertising dollars from AT&T does not imply anything about whether *Washington Post* readers and Comcast subscribers perceive the *Washington Post* to be reasonably interchangeable with Comcast cable

Multi-Sided Platform Markets, 20 YALE J. ON REG. 325 (2003); Jean-Charles Rochet & Jean Tirole, *Platform Competition in Two-Sided Markets*, 4 J. EUR. ECON. ASS'N 990 (2003). The seminal article on two-sided markets is William F. Baxter, *Bank Interchange of Transactional Paper: Legal and Economic Perspectives*, 26 J.L. & ECON. 541 (1983).

television service. (Obviously, one cannot watch movies or baseball games in the pages of the *Washington Post*, even if Comcast and the *Washington Post* compete for the same advertising accounts on the other side of the market.) Similarly, the fact that Apple might advertise on both SDARS and broadcast radio does not imply that SDARS subscribers perceive broadcast radio to be a reasonable substitute for SDARS. Indeed, a merged XM–Sirius could capture a significant percentage of all broadcast advertising dollars without inducing any significant substitution *by SDARS subscribers* to terrestrial broadcast radio—which, it bears repeating, should have been the legal and economic question to ask for defining the relevant antitrust product market for consumers in the merger proceeding. In short, XM and Sirius made specious arguments about consumer substitution because they failed to analyze the two-sided nature of the market in which XM and Sirius operate.

V. PREEMPTIVE OFFERS TO DISSIPATE MONOPOLY RENT

By strategically designing its preemptive concessions, Sirius and XM sought to allocate a very small portion of the expected monopoly rents to the following key political constituencies: (1) proponents of mandatory à-la-carte offerings; (2) social conservatives; (3) public safety groups; and (4) minorities. Many conservative commentators—including those in the *Wall Street Journal*, the *Washington Times*, and the *New York Sun*—blessed the merger under the assumption that a combined satellite firm would be able to compete more efficiently with terrestrial radio providers. But they missed the point that "public interest" groups, aided by the FCC, were able to use the merger approval process to plan what a provider of satellite radio service would look like—down to the number of channels that would be dedicated to various formats, the types of packages offered, or the monthly subscription price.

The result would be a Frankenstein's monster of regulation by merger approval. For example, the left-leaning consumer advocacy group Public Knowledge blessed the merger after XM and Sirius promised to allocate a specified amount of channel capacity for "noncommercial educational and informational programming." Elsewhere on the political spectrum, the Family Research Council blessed the merger after XM and Sirius promised to give subscribers the option to forgo sexually explicit channels in exchange for a small rebate.

In this section, we analyze XM's and Sirius's preemptive offers to dissipate its expected monopoly rent. These offers generally took the form of conduct remedies. We begin with a review of the DOJ's position vis-à-vis conduct remedies. With this backdrop in mind, we analyze the conduct remedies offered preemptively by XM and Sirius.

A. Conduct Remedies Versus Structural Remedies

In 2004, the DOJ's Antitrust Division attempted to increase transparency and certainty in its merger review process by issuing the *Merger Remedies*.[193] These guidelines strongly encourage structural remedies over conduct-based remedies in merger cases. The term "structural remedies" is synonymous with divestitures. According to the DOJ, structural remedies are "relatively clean and certain, and generally avoid costly government entanglement in the market."[194]

The *Merger Remedies* are highly skeptical of conduct remedies. According to these guidelines, "[a] conduct remedy ... typically is more difficult to craft, more cumbersome and costly to administer, and easier than a structural remedy to circumvent."[195] Conduct remedies are said to impose four discrete costs: (1) direct costs associated with monitoring the merged firm's activities and ensuring adherence to the decree; (2) indirect costs associated with efforts by the merged firm to evade the remedy's "spirit" while not violating its letter; (3) conduct remedies may restrain potentially procompetitive behavior; and (4) even where "effective," efforts to regulate a firm's future conduct may prevent it from responding efficiently to changing market conditions.[196] To be fair, the DOJ does not expressly reject conduct remedies. Such remedies are only encouraged as a "complement" to structural remedies, which may be used to "perfect" the structural remedies in certain circumstances.[197]

The *Merger Remedies* explain that standalone conduct remedies are "only appropriate when a full-stop prohibition of the merger would sacrifice significant efficiencies and a structural remedy would similarly eliminate such efficiencies or is simply infeasible."[198] According to the DOJ, standalone conduct remedies "present substantial policy and practical concerns," and thus will be implemented only in industries where there is already close government oversight.[199] The DOJ's reluctance to impose conduct remedies is made evident in a review of its merger approvals. According to one analysis, between October 1, 1993 and September 30, 2003, the DOJ filed 113 merger cases.[200] Fewer than ten merger cases imposed conduct remedies without any structural remedy.[201] Essentially, where structural remedies are not feasible, for the aforementioned reasons, the DOJ will be far

[193] Antitrust Division Policy Guide to Merger Remedies, Oct. 2004, available at http://www.usdoj.gov/atr/public/guidelines/205108.pdf.

[194] *Id.* at 7.

[195] *Id.* at 8.

[196] *Id.* at 8–9.

[197] *Id.* at 18.

[198] *Id.*

[199] *Id.* at 22.

[200] *Id.* at 20.

[201] *Id.*

more likely to prohibit the merger entirely as opposed to imposing conduct remedies.

B. XM's and Sirius's Preemptive Concessions

Despite the DOJ's warning against the use of conduct remedies, the FCC allowed its merger approval process to serve as an exchange for rents created by the merger.[202] By strategically designing the merger concessions, Sirius and XM sought to allocate a very small portion of the expected monopoly rents to the following key political constituencies: (1) proponents of mandatory à-la-carte offerings;[203] (2) social conservatives;[204] (3) public safety groups;[205] and (4) minorities.[206] XM and Sirius approached the necessary evidentiary showing for their transfer application as though it were a cross between a business negotiation and a media blitz for a political campaign. If a merger review were either, then instead of defining the relevant markets and assessing market power within those markets, merging parties would only need to focus their attention on eliciting the support of influential political interest groups. Economic analysis of the proposed merger's effect on consumer welfare would become completely irrelevant to the merger review process. In short, the approach of XM and Sirius, including their exploitation of interest groups endorsing the merger, flouted at least three decades of refinements in antitrust jurisprudence that have sought to diminish political influence by elevating the principled analysis of consumer welfare through accepted economic methods.

1. The Price-Freeze Concession

The biggest preemptive concession of all was XM's and Sirius's offer to freeze the monthly subscription price at the current monthly rate of $12.95 and to offer a variety of new tiered program packages that XM and Sirius generously describe as "à-la-carte." These offers were intended to neutralize the traditional antitrust concerns that a merger among direct competitors leads to higher prices and to win the support of certain vital constituencies. In testimony before the House Judiciary Committee on February 28, 2007,

202 For an explanation of why the FCC was willing to play this role, see J. Gregory Sidak & Hal J. Singer, *Foxes in the Henhouse: FCC Regulations through Merger Review*, 10 MILKEN INSTITUTE REVIEW (2008).

203 *Merger Application, supra* note 189, at i–ii ("The efficiencies resulting from the merger will allow the combined company to provide consumers programming choices on a more à-la-carte basis at lower prices.").

204 *Id.* at ii ("Consumers will also be able to block adult-themed channels and receive a price credit for those channels.").

205 *Id.* at 14 ("This additional capacity also will allow the combined company to provide additional programming related to public safety and homeland security.").

206 *Id.* at 13 ("[Offering] expanded non-English language programming ... and additional programming aimed at minority and other underserved populations.").

Sirius CEO Mel Karmazin offered to keep prices for end users below the current monthly price of $12.95.[207]

a. *Would the Offer to Freeze Prices Increase or Decrease Consumer Welfare?*

The conditions that the merger proponents offered will 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 will 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 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 subscribers (and thus receivers) will drive down production costs and lower distribution costs."[208] 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 will exceed the but-for duopoly price. Consequently, this merger condition will do nothing to protect consumer welfare.

Mr. Karmazin's offer to freeze the monthly price at $12.95 also failed 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 wanted to preserve revenues per subscriber, then it could 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 made no such offer.

[207] Antitrust Task Force Subcommittee, House Committee on the Judiciary, Competition and the Future of Digital Music, February 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*].

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

Finally, price-cap regulation of the kind that the merger proponents envisioned 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."[209] 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 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.

b. Does FTC or DOJ Precedent Support a Price Freeze as Part of an Antitrust Consent Decree?

Even assuming that 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 that 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."[210] 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 meaning" of the Clayton and Sherman Acts.[211] This view has not differed between Republican and Democratic administrations.

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

[209] *Antitrust Task Force Hearings*, *supra* note 207, 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.").

[210] 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* October 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).

[211] Reply Brief for Plaintiff Appellant FTC at 5, FTC v. Butterworth Health Corp., No. 96-2440, 1997 App. LEXIS 17422 (July 8, 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.").

such an agreement.[212] Though the court denied the FTC's request for a preliminary injunction,[213] 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.[214] Specifically, the court stated it is "difficult to conceive of any commitment of this nature that would provide failsafe assurances."[215]

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 that they charged.[216] 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."[217] *Cardinal Health* effectively ratified the antitrust enforcement agencies' rejection of price-cap regulation as a component of antitrust consent decrees. The FTC and the DOJ have for decades held the view that prices are best disciplined by competition—not by price-caps or price regulation.[218] The rule to be drawn from *Butterworth* and *Cardinal Health* is that courts and enforcement agencies are not regulators.[219]

c. Does the FCC Have the Statutory Authority to Create a Rate-Regulated Monopoly for SDARS?

Congress has not delegated to the FCC the power to regulate SDARS rates, and no delegation can be inferred.[220] Yet, by regulating the prices of the merged XM and Sirius, the FCC is necessarily setting rates for the future—a legislative act that far exceeds the FCC's authority under current law. Attempts by agencies to regulate rates in this way have historically been struck down by the courts. The early attempts by the Interstate Commerce

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

213 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.

214 *See id.*

215 *Id.*

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

217 *Id.*

218 *See, e.g.*, Richard G. Parker, Senior Deputy Director, Bureau of Competition, FTC, *Trends in Merger Enforcement and Litigation*, Annual Briefing for Corporate Counsel (September 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).

219 *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.").

220 *See, e.g.*, Farrell Malone & J. Gregory Sidak, *Should Antitrust Consent Decrees Regulate Post-Merger Pricing?*, 3 J. Competition L. & Econ. 471 (2007).

Commission (ICC) to regulate the prices of the railways provide a specific example. After the passage of the Interstate Commerce Act in 1888, a statute that delegated authority to the ICC to ensure that railway rates were "just and reasonable," the ICC attempted to regulate the prices charged by railroads. That action was struck down as exceeding the authority of the agency under the statute.

Were Congress to delegate the authority to regulate price to an agency, such as the FCC, the delegation would have been "open to no misconstruction," and "clear and direct."[221] But Congress did not make any such legislative delegation to the FCC with respect to price regulation for SDARS.[222] Never before, to our knowledge, has the FCC permitted an industry to consolidate into a rate-regulated monopoly when the market structure has been unregulated and supported two competitors.

2. *Would the À-la-carte and Bundled-Offering Concessions Increase Consumer Welfare?*

XM and Sirius suggested that several "benefits" would flow naturally from the merger, including à-la-carte pricing. Far from being efficiency gains, these goodwill gestures were merely preemptive concessions designed to please key political constituents.[223] Nothing prevented XM and Sirius from offering à-la-carte prices unilaterally or sharing content. Thus, XM and Sirius cannot claim à-la-carte pricing to be a merger-specific benefit. If one instead characterizes à-la-carte pricing not as a merger efficiency but as a proposed remedy for the potential abuse of monopoly power, there is reason to doubt the efficacy of that remedy. The hypothetical à-la-carte offerings could be constructed to ensure that very few subscribers select the smaller package. XM claimed that these smaller packages "will include an attractive mix of music, news, informational, sports, children's, and religious programming."[224]

[221] ICC v. Cincinnati, New Orleans & Tex. Pac. Ry., 167 U.S. 479, 505 (1897).

[222] Nor has Congress given legislative delegation to the FCC with respect to price regulation for satellite video services. Indeed, Chairman Martin has publicly noted that the FCC is not a rate regulator in this kind of situation. In discussing the proposed Echostar-DirectTV merger, he stated that a "detail we would need to iron out is how this policy [of uniform national pricing] would be enforced—I, for one, am generally hesitant to enter the rate regulation business." Kevin Martin, Commissioner, Federal Communications Commission, Remarks at The Carmel Group's Satellite Entertainment 2002: TV and Radio From Space (April 25, 2002) http://www.fcc.gov/Speeches/Martin/2002/spkjm205.txt.

[223] *Id.* at 11 ("The proposed merger will generate significant synergies that will allow the combined company to offer consumers programming choices on a more à-la-carte basis at lower prices. Customers may, if they elect, continue to enjoy programming substantially similar to that which they currently receive after the merger at the existing monthly price of $12.95; the combined company will also offer consumers the options of receiving either fewer channels at a lower price or more channels, including the 'best of both' networks, at a modest premium to the existing $12.95 per month price.").

[224] *Merger Application, supra* note 189, at 11.

The merging parties' bundling of both the XM and Sirius packages for something less than twice the current price of one of them will also fail to protect consumers from monopoly pricing. There are likely few subscribers who will be interested in both packages—even at a significant discount from $25.90 per month. Depending on cost and demand conditions, even an unregulated profit-maximizing monopolist might choose to set the price for this bundle at less than twice the current duopoly price of $12.95. Again, XM and Sirius offered no serious economic evidence to substantiate the claims made in the Merger Application. XM and Sirius stated in a footnote that "[f]inal decisions to make currently exclusive programming available on both services will be subject to contractual negotiations with programming partners."[225] Clearly, a modest discount for the bundled offering that failed to generate any consumer interest would allow XM and Sirius to honor their pledge without upsetting their current offerings.

VI. CONCLUSION

Given the unorthodox approach to market definition and the preemptive concessions to assuage third parties, the proposed merger of XM–Sirius is a direct attack on the standard way in which mergers are analyzed. The *Merger Guidelines* define a standard under which the relevant product market is defined. That standard is grounded in sound economic reasoning, as it seeks to determine whether one product significantly constrains the pricing of another product. Because their merger cannot prevail under the standard established by the *Merger Guidelines*, XM and Sirius sought to apply a different standard. The extent to which XM and Sirius advocate deviating from the *Merger Guidelines* here—from admitting supply-side evidence in a different industry to altering the SSNIP test due to "dynamic demand" considerations—would be unprecedented in antitrust jurisprudence, would violate economic principles, would harm the public interest, and would bind merger reviews to an ad hoc standard from this point forward.

Based on our review of the demand-side evidence put forward in the merger proceeding, the relevant product market for assessing the competitive effects of the proposed merger of XM and Sirius 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. Our 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.

[225] *Id.* at 12 n. 26.

In concocting the phrase "audio entertainment," XM and Sirius invented a new product market definition that finds no support in precedent or in the accepted principles by which the FCC, DOJ, and FTC analyze the competitive effects of a proposed merger. XM and Sirius have failed to put forward any evidence showing that some alternative audio entertainment source constrains the pricing of SDARS. Stated differently, they have failed to provide direct or indirect evidence of the elasticity of demand for SDARS with respect to a relative change in the price of SDARS to the price of some audio alternative. Without significant sensitivity to a change in price, the SDARS monopoly provider would be free to raise SDARS prices to monopoly levels.

To mitigate that predictable harm, XM and Sirius have offered to subject themselves to myriad conduct remedies, including price regulation in the form of nonbinding promises regarding prices for an uncertain duration entirely within the merged entity's discretion. Because the two SDARS providers compete along multiple dimensions—including programming choices, amount of commercials, equipment, and equipment prices—temporarily promising to refrain from increasing subscription prices to monopoly levels will not protect SDARS customers from a change in any of the other dimensions over which the two SDARS providers currently compete. To protect completely against the SDARS monopoly provider's extracting all consumer surplus, the merger authorities would have to secure, in addition to a subscription price freeze, concessions relating to (1) the amount of commercial time, (2) the price charged for hardware, and (3) the quality of programming. Alternatively, the merger authorities could have relied on extant competitive pressures to determine these attributes of the SDARS market by denying the merger.

The DOJ's *Merger Remedies* counsel against the use of conduct remedies in merger reviews. In particular, the *Merger Remedies* explain that conduct remedies impose social costs in the form of monitoring costs and impairing efficient conduct by the regulated firm. Another significant social cost of conduct remedies, and one that was overlooked by the DOJ, is rent-seeking activity induced by the prospect of securing rents during merger reviews. Although the DOJ is willing to abide by its own guidelines, it appears that the FCC is willing to serve as a trading platform for merger-created rents by allowing third parties to extract concessions in exchange for their blessing the merger. By designing its preemptive conditions strategically, XM and Sirius fully exploited this opportunity. In this sense, the XM–Sirius merger proceeding represented a repudiation of both the *Merger Guidelines* and the *Merger Remedies*. As of the time of this writing, the merger review was still in process. But it should be painfully clear that approval of this merger could fundamentally alter the way in which merger investigations—especially those in the communications industry—are conducted in Washington.