Meanwhile, mobile phone providers also continue to introduce new products. Verizon offers multiple new models, including the Chocolate; Alltel has the Wafer. Sprint Nextel and Samsung have teamed up to create the UpStage, which went on sale in April 2007.[87] The trend to provide Internet access in mobile phones is rapidly expanding. AT&T demonstrated its commitment to this technology in early October 2007 when it purchased spectrum licenses covering 196 million people in the 700 MHz frequency band from Aloha Partners for $2.5 billion, strengthening its position as a competitor to satellite radio.[88]

Finally, local broadcast stations recently announced a proposal to broadcast local television shows to mobile phones, video iPods and MP3 players, in-car DVD players, and other devices equipped with TV tuners after the scheduled conclusion to the digital TV transition in 2009.[89] Broadcasters can transmit their main channels for free, while charging advertisers a premium to reach larger audiences, as well as selling mobile ads that would let consumers purchase products at the touch of a button. Chips with TV tuners are being developed by LG and Samsung, among others, which are expected to add approximately $10 to the price of a mobile device, while an add-on tuner would cost less than $50.[90]

Given the rapid evolution of media technology, it is nearly impossible to discuss every development and update. It is clear, however, that with every innovation, the field of competitors to satellite radio only strengthens and expands. These developments reinforce the

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87 *See* Mark Wilson, *Frankenreview: Sprint/Samsung UpStage*, GIZMODO.COM, Mar. 28, 2007, http://gizmodo.com/gadgets/feature/frankenreview-sprintsamsung-upstage-247653.php (last visited July 22, 2007).

88 Press Release, AT&T, *AT&T Acquires Wireless Spectrum from Aloha Partners*, Oct. 9, 2007, *at* http://www.att.com/gen/press-room?pid=4800&cdvn=news&newsarticleid=24516.

89 Paul Davidson, *Free TV Shows May Air on Cellphones*, USA TODAY, Oct. 18, 2007.

90 *Id.*

now-inescapable conclusion that the combined company would be but a small player in a highly competitive and constantly evolving market for audio entertainment services.

IV. THE OUTCOME OF THIS MERGER WILL NOT PRE-DETERMINE THE OUTCOME OF ANY OTHER COMMISSION PROCEEDING, INCLUDING THE FCC'S MEDIA OWNERSHIP PROCEEDINGS.

At the same time that they are vehemently opposed to the proposed merger of Sirius and XM, broadcast interests have asserted that approval of the transaction would "prejudge" various broadcast ownership proceedings in their favor.[91] These parties contend that if the Commission approves the merger, "it would be compelled to reconsider other rules that it currently has in place regarding ownership restrictions on local radio intramodal competition and eliminate them."[92]

The Commission's decision in the Sirius-XM merger does not need to affect the outcome in any other proceeding. There is no reason as a matter of law or policy why approval of the Sirius-XM merger would force the Commission into altering its multiple ownership rules.

This is true for a number of obvious reasons. First, by any metric, terrestrial radio overwhelmingly dominates the market for audio entertainment:

- According to Arbitron, Sirius and XM *combined* have *4.1 percent* of all radio listenership spread out over approximately 300 channels.[93]

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[91] *See, e.g.*, Letter from Lawrence R. Sidman to Marlene H. Dortch, Secretary, FCC, MB Docket No. 07-57 (filed Nov. 7, 2007).

[92] Comments of Clear Channel Communications, Inc., MB Docket No. 07-57, at 7 (Aug. 13, 2007).

[93] Orbitcast, "Arbitron reports Satellite Radio listening is up" (Sept. 30, 2007), http://www.orbitcast.com/archives/arbitron-reports-satellite-radio-listening-is-up.html (last visited Nov. 8, 2007).

- Terrestrial radio broadcasters accounted for more than $21 billion in revenues in 2006. Satellite radio accounted for just $1.6 billion – less than seven percent of all radio revenues[94] – while facing disproportionately higher capital and operating expenses.

- While Sirius and XM combined had approximately 14 million subscribers at the end of last year, 230 million Americans listen to terrestrial radio every week.[95]

Terrestrial radio dwarfs satellite radio and all other forms of audio entertainment, and it will continue to do so after the merger. In fact, permitting the combination of two comparatively small satellite radio companies by itself will have virtually no impact on the dominant position that terrestrial radio holds among audio entertainment providers.[96]

Second, based on long-standing Commission policy, broadcast ownership rules are governed by a number of considerations that are irrelevant to the Sirius-XM merger—most particularly localism and local viewpoint diversity. The ownership proceeding now before the agency—launched in July 2006 as the result of a judicial remand[97] and a Congressionally required quadrennial review of broadcast ownership restrictions[98]—is, according to the

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94 *Id.* at 50-51 n.167 & accompanying text.

95 *Id.* at 51 nn.169, 174 & accompanying text. Similar numbers have been featured prominently in the NAB's continual we-will-bury-them rhetoric: "In 2006, we have satellite and Internet radio. . . But we have news for our competitors: 'We will beat you – as we have beaten those change agents in the past.' . . . And when people ask us are you focused on satellite radio because you're afraid of the competition – we say, 'No.' Satellite radio says it has at most 10 million subscribers, notwithstanding those 500,000 subscribers in empty car lots. But 260 million people listened to broadcast radio last week alone." Speech by David K. Rehr, President & CEO, NAB, The 2006 NAB Radio Show (September 21, 2006), http://www.nab.org/AM/Template.cfm?Section=Press_Releases1&CONTENTID=6802&TEMPLATE=/CM/ContentDisplay.cfm (last visited Nov. 1, 2007).

96 In addition, with the advent of HD radio, competition from terrestrial radio has increased.

97 *2002 Biennial Regulatory Review—Review of the Commission's Broadcast Ownership Rules and Other Rules Adopted Pursuant to Section 202 of the Telecommunications Act of 1996*, Report and Order and Notice of Proposed Rulemaking, 18 FCC Rcd 13620 (2003), *rev'd and remanded*, *Prometheus Radio Project v. FCC*, 373 F.3d 372 (3d Cir. 2004).

98 *2006 Quadrennial Regulatory Review—Review of the Commission's Broadcast Ownership Rules and Other Rules Adopted Pursuant to Section 202 of the Telecommunications Act of 1996*, Further Notice of Proposed Rulemaking, 21 FCC Rcd 8834 (2006) ("2006

Commission,[99] to be guided by longstanding core objectives, including localism[100] and local viewpoint diversity.[101]

These uniquely local public interest objectives have little connection to the issues at stake in or analysis of the proposed Sirius-XM merger. Neither Sirius nor XM is licensed to individual communities. Moreover, at the insistence of broadcasters, neither Sirius nor XM may broadcast differentiated programming to local areas; all Sirius and XM programming is transmitted, and available, nationwide,[102] and the FCC previously determined that government regulation is not "needed to preserve access to multiple sources of national news and public affairs information" because "[c]onsumers have numerous sources of national news and information available to them."[103]

FNPRM"). The current local radio ownership rules originally were imposed by statute in the Telecommunications Act of 1996, Pub. L. No. 104-104, 110 Stat. 56 (1996), which legislation also required the Commission to periodically review the restrictions and to repeal or modify any of the regulations that it finds are "no longer in the public interest."

99 *See 2006 NPRM* at ¶ 4 ("In the *2002 Biennial Review Order*, the Commission determined that its long-standing goals of competition, diversity, and localism would continue to guide its actions in regulating media ownership. These policy objectives also will guide our actions on remand.").

100 As the FCC noted in its most recent media ownership decision, "localism continues to be an important policy objective" with respect to the regulation of broadcast ownership. *2002 Biennial Review Order* at ¶¶ 73-74. This is because federal regulation of local broadcasting "has historically placed significant emphasis on ensuring that local television and radio stations are responsive to the needs and interests of their local communities"—an objective "rooted in Congressional directives to this Commission and . . . affirmed as a valid regulatory objective many times by the courts." *Id.*

101 Preserving "the availability of media content reflecting a variety of perspectives" on a local basis has been another basic tenet of the Commission's regulation of broadcast ownership. Id. at ¶ 10.

102 *Sirius Satellite Radio*, DA 01-2171, ¶¶ 10-11 (Sept. 17, 2001); *XM Radio Inc.*, DA 01-2172, ¶¶ 10-11 (Sept. 17, 2001).

103 *2002 Biennial Review Order* at ¶ 106.

In sum, neither satellite radio in general nor the Sirius-XM merger in particular has any appreciable effect on localism or local viewpoint diversity. Certainly, no outcome in the merger review would need to affect decision in the Commission's pending ownership inquiry.

V. CONCLUSION

For these reasons, the Commission should reject the arguments raised in various recent ex parte filings and approve the merger of Sirius and XM.

Respectfully Submitted,

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November 13, 2007

EXHIBIT A

CRA International,
FURTHER ECONOMIC ANALYSIS
OF THE SIRIUS-XM MERGER

REDACTED

FOR PUBLIC INSPECTION

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
	)	
XM Satellite Radio Holdings Inc.	)	
Transferor	)	
	)	
and	)	MB Docket No. 07-57
	)	
Sirius Satellite Radio Inc.	)	
Transferee	)	
	)	
Consolidated Application for Authority to	)	
Transfer Control of XM Radio Inc. and Sirius	)	
Satellite Radio Inc.	)	

FURTHER ECONOMIC ANALYSIS OF THE SIRIUS-XM MERGER

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REDACTED
FOR PUBLIC INSPECTION

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I. INTRODUCTION AND CONCLUSIONS

1. Our examination of the proposed Sirius-XM merger filed at the FCC in July reached two fundamental conclusions.[1] First, we demonstrated that the overall effect of the merger of Sirius and XM would be procompetitive and lead to consumer benefits.[2] Second, we concluded that the relevant market is audio entertainment devices and services, not satellite radio only.[3] This submission presents additional evidence and analysis. We also respond to various criticisms levied by Gregory Sidak in his most recent declaration, none of which lead us to alter our conclusions.[4]

2. As discussed in detail below, our investigation relies on categories of evidence typically used in sound merger analysis, as set out in the Merger Guidelines and elsewhere. This evidence demonstrates that the relevant product market is audio entertainment, not simply satellite radio. In particular, the evidence demonstrates substantial demand substitution between satellite radio and other audio entertainment devices and services. The evidence also demonstrates that Sirius and XM are differentiated products and that substitution between them is further constrained by switching costs. Each service has exclusive distribution agreements with automobile OEMs, and each has exclusive audio content. This differentiation reduces the substitutability between the two products, relative to substitutability with other audio entertainment products. Thus, it tends to broaden the relevant market. This product differentiation also is expanding as the size of the OEM channel grows relative to the retail/aftermarket channel. In addition, switching from one satellite radio service to the other is more costly for most subscribers than switching to many other audio entertainment products (such as terrestrial radio). All of these factors support our conclusion that the relevant product market is audio entertainment, not simply satellite radio.

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[1] Steven C. Salop, Steven R. Brenner, Lorenzo Coppi, and Serge X. Moresi, *Economic Analysis of the Competitive Effects of the Sirius-XM Merger* (July 24, 2007), Exhibit A to *Sirius-XM Joint Opposition.*, MB Docket No. 07-57 (hereafter "CRA FCC Report"). Our Curricula Vitae were attached as Exhibit A to this earlier report.

[2] For example, *see* CRA FCC Report at ¶2 and ¶8.

[3] For example, *see* CRA FCC Report ¶16.

[4] J. Gregory Sidak, *Third Supplemental Declaration* (October 1, 2007), Submitted to the FCC October 1, 2007 by The Consumer Coalition for Competition in Satellite Radio (hereinafter "Sidak 3rd Supplemental").

3. The audio entertainment market is both highly competitive and technologically dynamic. The market has experienced, and will continue to experience, substantial innovation – continuously improving products and services with new features and functionality, and new competitors. Audio entertainment sellers respond to improvements provided by other sellers with improvements of their own, which in turn spur further improvements. Competition is characterized by both the introduction of new devices and new features and also by considerable feature convergence among types of devices and services as suppliers respond to each other. For example, satellite radio has added storage capacity and XM's partnership with Napster facilitates sales of downloads. Terrestrial radio has reduced the number of commercials and has improved sound quality and variety with the introduction of HD radio. iPods and MP3 players are introducing WiFi access, and subscription services are providing a wider array of audio selections. Indeed, Clear Channel's HD channels are beginning to allow songs to be flagged for downloading through the iTunes Music Store, similar to what XM does with Napster. Wireless phones have become audio-enabled and offer both audio streaming and downloading, including the type of services provided on radio. Sirius, XM and Clear Channel all sell their content on a wholesale basis to wireless phone companies in competition with others. At the same time, automobile companies are integrating iPods and wireless phones into their sound systems, increasing the scope of audio competition in vehicles.

4. Defining the relevant market is not the main goal of merger analysis, but a step that can throw light on the ultimate inquiry – determining the competitive impact of a proposed merger. As discussed in the recent Commentary on the Horizontal Merger Guidelines from the Federal Trade Commission and Department of Justice, "Agencies do not settle on a relevant market definition before proceeding to address other issues. Rather, market definition is part of the integrated process by which the Agencies apply Guidelines principles, iterated as new facts are learned, to reach an understanding of the merger's likely effect on competition."[5]

5. In this case, the evidence demonstrates that competition in the market for audio entertainment is already robust and is increasing over time. The merger of Sirius and XM will be procompetitive and will lead to consumer benefits, not consumer harm. As discussed in our earlier report, the merger will lead to an increase in the number of subscribers of the merged firm, not a decrease in output. The merger will likely reduce prices and increase quality, relative to what one would expect if the merger does not occur. The merger will lead to a variety of merger-specific efficiencies, including product improvements, lower costs, and incentives for deeper penetration pricing and

[5] Federal Trade Commission and U.S. Department of Justice, *Commentary on the Horizontal Merger Guidelines* (March 2006) (hereinafter, "Merger Commentary") at 5.

other demand-enhancing and cost-reducing investments. Rather than reducing competition, the merger will create an additional spur to competition in the audio entertainment market. In fact, even if the market were erroneously defined to be satellite radio, it is clear that the merged firm will face continued and increasing inter-modal competition. For all these reasons, we conclude that consumer welfare likely will increase.

6. Sidak has criticized these conclusions and the analysis we used to support them. However, as demonstrated throughout this paper, Sidak's own analysis is contrary to sound merger analysis in general and the Merger Guidelines in particular. Sidak misunderstands or misstates the basic market definition methodology in the Merger Guidelines and rejects categories of evidence typically used in merger analysis. Sidak also mistakenly thinks that our analysis of dynamic demand is inconsistent with the Merger Guidelines. In fact, our analysis of market definition and dynamic demand spillovers is perfectly consistent with the Merger Guidelines' dictate that analysts should apply "the standards of the Guidelines reasonably and flexibly to the particular facts and circumstances of each proposed merger."[6]

7. Sidak says that the "traditional SSNIP calculus" is focused on the short-term.[7] Sidak misreads the Merger Guidelines if he thinks that the *ssnip* analysis involves only a short-term price increase or requires consideration of only the short-run profits of the hypothetical monopolist. That is not what the Merger Guidelines say and for good reason. Taking this approach would lead to "misleading answers to the economic questions raised under the antitrust laws."[8]

8. In fact, the "hypothetical monopolist" test for market definition in the Merger Guidelines focuses on the profitability of a "non-transitory" price increase, which the Guidelines state is "lasting for the foreseeable future," not just for a single quarter or a single year.[9] Nor does the hypothetical monopolist test focus on short-term profitability. Instead, it asks whether the non-transitory price increase would be "in the economic interest" of the

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[6] U.S. Department of Justice and Federal Trade Commission, *Horizontal Merger Guidelines* (Issued April 2, 1992, Revised April 8, 1997) (hereinafter "Merger Guidelines") at §0.

[7] Sidak 3rd Supplemental at ¶77.

[8] Merger Guidelines at §0.

[9] The Merger Guidelines state, "[i]n attempting to determine objectively the effect of a "small but significant and nontransitory" increase in price, the Agency, in most contexts, will use a price increase of five percent lasting for the foreseeable future." Merger Guidelines at §1.11.

hypothetical monopolist, that is, whether it likely would be undertaken by a profit-maximizing firm.[10]

9. The "traditional calculus" that Sidak describes seems to rely on the now-outmoded methodology of the 1982 Merger Guidelines, which focused on buyer shifts within one year of the price increase.[11] However, this older methodology was replaced in 1992 by the more rigorous formulation of whether the "profit-maximizing" hypothetical monopolist (the "only present and future seller") likely would implement a *ssnip*, that is, a "small but significant and non-transitory increase in price," a price increase "lasting for the foreseeable future."[12]

10. Sidak compounds his error by saying that the hypothetical monopolist test must focus solely on the response of current customers and should ignore the responses of potential new customers.[13] This is not what the Merger Guidelines say and that approach would not constitute a sound antitrust analysis of a merger involving firms whose sales are rapidly growing. It obviously would make no economic sense for the hypothetical monopolist to ignore the responses of potential new customers to its non-transitory price increase. Those responses could have a large effect on the profitability of a price increase lasting into the foreseeable future. Sidak's preferred analysis could lead to nonsensical relevant markets.

11. Sidak also misapplies the proper standards for determining what evidence is relevant and informative for evaluating market definition. The Merger Guidelines make it clear that the analysis should "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."[14] The courts similarly examine a wide array of economic evidence.

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[10] Merger Guidelines at §0.1.

[11] U.S. Department of Justice, *1982 Merger Guidelines* (hereinafter "1982 Merger Guidelines") *available at* http://www.usdoj.gov/atr/hmerger/11248.htm (last visited October 31, 2007), at §II.A.

[12] Merger Guidelines §1.11.

[13] Sidak 3rd Supplemental at ¶55, 63-64.

[14] Merger Guidelines at §1.11.

12. For example, despite this clear directive, Sidak rejects as irrelevant the evidence of buyer substitution from terrestrial radio to satellite radio in response to changes in the competitive landscape, including improvements in the programming quality offered by satellite radio providers and buyer learning about satellite radio. Sidak also rejects evidence of seller responses on the spurious grounds that this is "supply-side" evidence, despite the Merger Guidelines' clear statement that evidence of seller business decisions made in the prospect of buyer substitution is probative. In addition, as explained in this paper, Sidak also misinterprets other evidence that we have presented.

13. Sidak suggests that the best evidence would be a reliable econometric estimate of the own-elasticity of demand for satellite radio.[15] In fact, in an earlier declaration, he attempted to "estimate" this elasticity by "eyeballing" XM's subscriber numbers before and after the 2005 price increase, a methodology that is fatally flawed for numerous reasons we pointed out in our report.[16] Unfortunately, it is impossible to obtain a statistically reliable econometric estimate of the own-elasticity, since neither XM nor Sirius price discriminate, there has been only a single price increase (by XM only), the price increase was accompanied by significant simultaneous changes in XM's product offering and pricing structure, and the price increase was more than two years ago in a market that is trending away from aftermarket equipment to OEM-installed equipment.

14. While willing to rely on his own eyeballing of the XM data, Sidak rejects our econometric study of substitution based on the relationship between satellite radio penetration and the number of terrestrial radio stations around the country. He mistakenly claims that our study does not provide useful information on consumer substitution between satellite and terrestrial radio, and that the results are undermined because the number of terrestrial radio stations is not a perfect quality measure. He also says that we left out other possible explanatory variables, some of which make no difference to the results and others that would make no econometric sense to include. None of these objections undermine the conclusions of our analysis.

15. Sidak rejects our analysis of dynamic demand spillovers based on numerous irrelevant or faulty grounds. Sidak complains that our dynamic demand analysis represents a "novel" concept, despite the fact that the analysis derives from the classic work of Frank Bass from 1967 and is included in the leading microeconomics textbook of Jean Tirole.[17]

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[15] Sidak 3rd Supplemental at ¶26 and notes to Table 2 at 36.

[16] J. Gregory Sidak, Expert *Declaration of J. Gregory Sidak Concerning the Competitive Consequences of the Proposed Merger of Sirius Satellite Radio Inc. and XM Satellite Radio Inc.*, Prepared for the Consumer Coalition for Competition in Satellite Radio (March 16, 2007), Submitted to the FCC March 28, 2007 (hereinafter "Sidak Declaration") at ¶22 and CRA FCC Report at n. 170.

[17] *See* CRA FCC Report, Appendix A.

Sidak complains that our analysis is "wholly theoretical," and that we have not articulated the conditions under which the concept applies and whether those conditions are present here, despite the fact that we have identified the conditions analytically and have pointed to numerous facts that support the analysis. The main conditions can be summarized as follows:

- Satellite radio is still early in its life cycle and demand is not close to saturation. Growth has been rapid, but penetration is still low and there is still significant growth opportunity.
- Satellite radio involves a relatively new technology and concept ("pay radio") whose value is not obvious to many potential customers. Satellite radio depends heavily on word-of-mouth information diffusion and recommendations from satisfied subscribers to help drive demand growth. Demand also is driven by the "market buzz" generated by consumer excitement and retailer investments, which in turn also are driven by the expectation of growth.
- Demand spillovers have significant effects on the pricing incentives of the individual firms, giving them an incentive for "penetration pricing." As stated plainly by Sirius CEO Mel Karmazin, the firms set lower prices in order to generate a larger subscriber base and faster subscriber growth.[18] This larger subscriber base in turn leads to additional growth as more current subscribers recommend and demonstrate the product to others, and more retailers invest and promote the product.
- The demand spillovers include both "internal" and "external" spillovers. While both internal and external demand spillovers affect the pricing incentives of the hypothetical monopolist and the individual firms in the pre-merger world, the external spillovers generate incentives for post-merger price decreases and enhanced investment. Conditions in satellite radio are consistent with significant external demand spillovers. Recommendations by subscribers of each service drive demand for both services because word-of-mouth information applies to both services, auto OEMs have exclusive distribution arrangements with one or the other service, and each service has important exclusive premium content.

16. Sidak complains that we try to "evade conventional merger analysis" by applying the concept of dynamic demand spillovers to this merger.[19] Quite the contrary. We are conducting a conventional merger analysis by applying the principles of the Merger

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[18] Sirius Satellite Radio, *Q1 2005 Earnings Call Transcript*, April 28, 2005.

[19] Sidak 3rd Supplemental at ¶8.

Guidelines to the "particular facts and circumstances" of this merger, precisely what the Merger Guidelines direct should be done. As stated there,

> Because the specific standards set forth in the Guidelines must be applied to a broad range of possible factual circumstances, mechanical application of those standards may provide misleading answers to the economic questions raised under the antitrust laws. Moreover, information is often incomplete and the picture of competitive conditions that develops from historical evidence may provide an incomplete answer to the forward-looking inquiry of the Guidelines. Therefore, the Agency will apply the standards of the Guidelines reasonably and flexibly to the particular facts and circumstances of each proposed merger.[20]

Sidak apparently would prefer that the Commission ignore the facts and apply an incorrect market definition methodology in a mechanical way. Of course, such a flawed approach likely would produce misleading answers to the economic questions and an incorrect market definition. Indeed, Sidak's preferred methodology likely would lead to finding that XM and Sirius each comprise separate "single firm" relevant markets.

17. In his most recent Declaration, Sidak again defends his advertising model and his consumer welfare analysis of that model. Sidak's analysis remains fundamentally flawed. The analysis relies on unsupported assumptions about the value to consumers of commercial-free satellite radio and post-merger increases in the number of commercial minutes. But, even taking these assumptions at face value, Sidak ignores our earlier criticism that the firm would have an incentive to reduce its subscription price if it were to increase the number of commercials as Sidak suggests.[21] When this pricing incentive is reckoned into the analysis, Sidak's results are reversed. Whenever his model predicts that the additional advertising is profitable, it also implies that the firm's profit-maximizing subscription price falls, the number of subscribers rises, and consumer welfare increases. Thus, his own model rejects Sidak's welfare concerns about advertising on satellite radio.

18. In short, Sidak's most recent Declaration does not weaken our conclusions.

19. This report is organized as follow. Section II discusses the Merger Guidelines' principles for product market definition on which we relied and demonstrates that it is Sidak, and not our analysis, that departs from those principles. It also demonstrates that, contrary to

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[20] Merger Guidelines at §0.

[21] CRA FCC Report at ¶150.

Sidak's claims, the evidence on which we relied to conclude that the market is broader than satellite radio service is evidence customarily used in merger analysis and acceptable under the Merger Guidelines. We also supplement this with additional evidence customarily used in merger analysis. Section III discusses our analysis of dynamic demand spillovers, showing that Sidak is wrong to claim that this analysis is inconsistent with standard merger analysis or the Merger Guidelines. We also present additional evidence of the importance of both internal and external dynamic demand spillovers. Section IV analyzes Sidak's model of the effect of increased satellite radio advertising on consumer welfare. We demonstrate that his model, when analyzed properly, contradicts his opinion because it predicts an increase in consumer welfare. Section V concludes.

II. MARKET DEFINITION UNDER THE MERGER GUIDELINES: PRINCIPLES AND EVIDENCE

20. Claiming to embrace "entirely uncontroversial" principles of market definition in the Merger Guidelines, Sidak alleges that our analysis starts "from the proposition that the market-definition principles of the Merger Guidelines are fundamentally flawed."[22] The truth is quite the opposite. It is Sidak who departs from the Merger Guidelines by narrowing the hypothetical monopolist test for product market definition only to the short-term impact of a price increase on current subscribers only.

21. Sidak also claims that our evidence that the relevant product market is broader than satellite radio is not acceptable under the standards of the Merger Guidelines. To the contrary, Sidak's analysis of our evidence (a) misapplies the Merger Guidelines standards for determining what evidence is relevant and informative for evaluating market definition; (b) improperly rejects our econometric evidence of substitution based on the inverse relationship between satellite radio penetration and the number of available terrestrial radio signals; and (c) unreasonably faults our analysis for failing to provide econometric estimates of price elasticity, without acknowledging that elasticities cannot be reliably estimated given the facts and history of this industry.

22. As we shall show, his assertions rest on, at best, a misreading of the Merger Guidelines, and a misunderstanding or distortion of our analysis and evidence. Indeed, Sidak's analysis fails to adequately consider the facts of this merger, an approach that the Merger Guidelines warns can produce "misleading answers to the economic questions raised under the antitrust laws."[23]

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[22] Sidak 3rd Supplemental at ¶11.

[23] Merger Guidelines at §0.

A. The Relevant Time Period for the Hypothetical Monopolist Test for Market Definition

23. The hypothetical monopolist test used by the Merger Guidelines to define product markets begins with the specification of a hypothetical price increase; in particular, the Guidelines call for evaluating the profitability of a "small but significant and nontransitory price increase" ("*ssnip*").[24] Sidak charges that we seek to "alter the traditional 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."[25]

24. Sidak misreads the Merger Guidelines by claiming the Merger Guidelines require consideration of only short-term profits. Embedded in the acronym "*ssnip*" is the characteristic that it is a *non-transitory* price increase. Reinforcing the point, the Merger Guidelines of 1992 (revised 1997) go on to say that the Agency's analysis implementing a hypothetical monopolist or *ssnip* test will use a price increase "lasting for the foreseeable future" and that the hypothetical monopolist is the "only present and future" seller.[26] The language of the Merger Guidelines is clear; the *ssnip* is *not* a short-term price increase that lasts only a single quarter or a single year.

25. Contrary to Sidak's insistence that only the short-term profit impact of a short-term increase matters, the Merger Guidelines expressly ask whether a "hypothetical profit-maximizing firm that was the only present and future seller of those products ('monopolist') *likely would* impose at least a 'small but significant and non-transitory' increase in price."[27] By "likely would," the Guidelines are evaluating whether the price increase ("lasting for the foreseeable future") would be in the "economic interest" of a profit-maximizing hypothetical monopolist.[28] Nowhere do the Merger Guidelines suggest that the hypothetical monopolist would consider only *short-term* profits when setting a price that would last for the foreseeable future. Nor would it be economically rational for

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[24] Merger Guidelines at §1.0.

[25] Sidak 3rd Supplemental at ¶77.

[26] The Merger Guidelines state, "[i]n attempting to determine objectively the effect of a "small but significant and nontransitory" increase in price, the Agency, in most contexts, will use a price increase of five percent lasting for the foreseeable future." Merger Guidelines at §1.11.

[27] Merger Guidelines at §1.11, emphasis added.

[28] Merger Guidelines at §0.1 ("the analysis is focused on whether consumers or producers 'likely would' take certain actions, that is, whether the action is in the actor's economic interests") and §1.0 (A market is defined such that "a hypothetical profit-maximizing firm…that was the only present and future producer…likely would impose" a *ssnip*). The Merger Guidelines expressly assume that the hypothetical monopolist will "pursue maximum profits in deciding whether to raise the prices of any or all of the products under its control." Merger Guidelines at §1.11.

the hypothetical monopolist, or any other firm, to consider only the near-term profit consequences of a non-transitory price increase if those differed from the total impact of its choice of price on profits over time.[29]

26. Sidak's so-called "traditional SSNIP calculus" actually appears to be an outmoded formulation explicitly replaced fifteen years ago by a newer formulation of the hypothetical monopolist test for market definition.[30] The 1982 Merger Guidelines were closer to Sidak's approach, stating that "as a first approximation, the Department will hypothesize a price increase of five percent and ask how many buyers would be likely to shift to the other products within one year."[31] However, this 1982 formulation was replaced entirely in the 1992 Merger Guidelines (and the 1997 revision) by language calling for an analysis of the profit-maximizing hypothetical monopolist's incentives to institute a price increase lasting "for the foreseeable future."[32]

27. Were the hypothetical monopolist erroneously assumed to consider myopically only short-run effects, then the market definition *ssnip* test would have no grounding in real world market conditions and would not reflect the real world pricing incentives of the merged firm or of the hypothetical monopolist. Such a divergence of analysis and fact would, as the Merger Guidelines warn, "provide misleading answers to the economic questions raised under the antitrust laws" in many instances, including this one.[33] In sum, the principles articulated in the Merger Guidelines are not consistent with Sidak's call for

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[29] The notion that it is not always optimal for firms to maximize profits in the short-term is not novel. For example, Greg Werden has written: "Short-run profit maximization is a reasonable assumption in most cases, but the pursuit of longer run objectives may take precedence over short-run profit maximization. For example, prices are sometimes set below the short-term profit maximizing level to build market share, and such possibilities must be considered." *Demand Elasticity in Antitrust Analysis,* 66 Antitrust L.J. 363 (1998) at 381. The specific example cited by Werden may or may not involve dynamic spillovers, but his general point applies in any case.

[30] Sidak 3rd Supplemental at ¶77.

[31] 1982 Merger Guidelines at §II.A.

[32] This formulation of the hypothetical monopolist test in the 1992 (and 1997) Merger Guidelines represents a clear evolution of the analytic framework from earlier versions of the Guidelines. The 1982 Merger Guidelines stated that, "as a first approximation, the Department will hypothesize a price increase of five percent and ask how many buyers would be likely to shift to the other products within one year." 1982 Merger Guidelines at §II.A. The 1984 Merger Guidelines involved some evolution, and introduced some ambiguity, by referring to the *ssnip* as a price increase lasting for one year "in most contexts." US Department of Justice, 1984 *Merger Guidelines* (hereinafter "1984 Merger Guidelines") *available at* http://www.usdoj.gov/atr/hmerger/11249.htm (last visited November 4, 2007) at §2.11. This ambiguity was eliminated in the 1992 Guidelines, which changed the language to refer to what the hypothetical monopolist "likely would" do and to make it clear that the *ssnip* typically is a price increase "lasting for the foreseeable future." This change was not an accident. See Gregory Werden, *The 1982 Merger Guidelines and the Ascent of the Hypothetical Monopolist Paradigm,* 71 Antitrust LJ 153, n. 19 (2003).

[33] Merger Guidelines at §0.

an analysis limited to short-term profitability. Restricting the analysis in this way would lead to erroneous answers and flawed public policies.

B. Evaluating the Impact on Potential and Current Subscribers

28. Sidak compounds his error by asserting that the hypothetical monopolist test must focus exclusively on the response of current subscribers; in his words, "the only class of customers whose elasticity matters for defining the relevant product market under the Merger Guidelines is existing SDARS customers."[34] Sidak insists that we violate the standards of the Merger Guidelines by claiming that evidence on substitution by prospective satellite radio subscribers is relevant to market definition.[35] He expresses surprise that we could "misunderstand a concept so fundamental" to product market definition as that "one must determine whether those existing customers – not potential customers – would be willing to substitute to alternatives in response to a small but significant an [sic] increase in the price of those services."[36]

29. Sidak, however, provides no citation for the asserted "fundamental" concept that the Merger Guidelines do not allow consideration of the effect of the *ssnip* on potential as well as existing customers. Nor could he. The Guidelines direct that the hypothetical monopolist test determine if a *ssnip* is profit-maximizing for the hypothetical monopolist, with no limitation placed on which customers should be considered.[37] And they warn that "the picture of competitive conditions that develops from historical evidence may provide an incomplete answer to the forward-looking inquiry of the Guidelines."[38] Therefore, in order to be consistent with the Merger Guidelines approach, one must consider all responses by *all* customers (both actual and potential customers) that would affect the

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[34] Sidak 3rd Supplemental at ¶6, emphasis in original. Also see Sidak 3rd Supplemental at ¶63.

[35] Sidak 3rd Supplemental criticizes our use of evidence on prospective subscribers at, for example, ¶63 (switching costs faced by prospective satellite radio customers); ¶55 (evidence of supplier responses is relevant only if it indicates how current satellite radio subscribers would react to a price change); and ¶64 (the preferences of prospective satellite radio subscribers for commercials or nationwide availability of satellite radio is irrelevant as a matter of merger law).

[36] Sidak 3rd Supplemental at ¶63. Sidak goes on to assert that existing satellite radio subscribers are "the only class of customers whose elasticity matters for defining the relevant product market under the *Merger Guidelines...*" *Id.*

[37] The Merger Guidelines say that the hypothetical monopolist test begins with each product sold by the merging parties and asks what will happen if the hypothetical monopolist imposes a *ssnip*. The Guidelines, however, say nothing about looking only at the impact of this price increase on existing customers. Instead, they say that the test is to ask if, "in response to the price increase, the reduction in sales of the product would be large enough that a hypothetical monopolist would not find it profitable to impose such an increase in price...." Merger Guidelines at §1.11.

[38] Merger Guidelines at ¶0.

profitability of the non-transitory price increase. This approach of the Guidelines also makes economic sense, as it is founded on how a profit-maximizing firm would behave.

30. A profit-maximizing firm in the satellite radio business certainly must consider the impact of a price increase on prospective as well as current subscribers. Both satellite radio companies are adding new subscribers by the hundreds of thousands each quarter. The price of satellite radio service affects how many potential new subscribers actually will sign up next month and in the months and quarters after that. The response of potential subscribers who would choose not to subscribe if price were increased will affect the profitability of that increase, both for the stand-alone Sirius and XM, and for the hypothetical monopolist used in the market definition test.[39]

31. Sidak also is wrong to claim that a focus on the switching costs faced by current subscribers to Sirius and XM would lead to a market comprised solely of satellite radio.[40] In fact, as discussed in our earlier report, any "lock-in" created by these switching costs applies to XM or Sirius *individually*, rather than to satellite radio generally.[41] These switching costs reduce substitution between XM and Sirius. If anything, focusing on the switching costs only of current subscribers might well lead to a conclusion that XM and Sirius should each be placed in separate, *single-firm* relevant markets. So small a fraction of *current subscribers* might substitute away in response to a significant and non-transitory price increase by one service to make the increase profit-maximizing, if only current subscribers were considered, since each firm currently sets prices by considering its effects on potential as well as current subscribers.[42]

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[39] In a mature industry that is not adding new customers and faces static competitive conditions, only the responses of existing customers might need to be considered to evaluate the profitability of a ssnip. But that is not the case for satellite radio. Indeed, given the growth rates and churn rates of XM and Sirius, a large fraction of the current subscriber base at the end of 2008 likely will have subscribed in 2007 and 2008 and were not part of the base at the end of 2006. This can be illustrated with a simplified example. Suppose that the churn rate is 20% and the gross addition rate is 40%. Suppose further that one firm started with 100 customers at the end of 2006 and gained 40 in 2007. At the end of 2007, it would have 120 subscribers – that is, the 40 new subscribers plus 80 left from the original 100 in 2006 (having lost 20). At the end of 2008, it would have 144 subscribers, that is, 48 new subscribers (i.e., 40% of 120) plus 96 from the 120 remaining from 2007 (having lost 24). Those 96 would be comprised of 64 from the 2006 base plus 32 left from the new subscribers joining in 2007. Thus, of those 144 subscribers at the end of 2008, only 64 were part of the base in 2006, or 44%.

[40] Sidak 3rd Supplemental at ¶63.

[41] CRA FCC Report at ¶74.

[42] This outcome is even more likely when the analysis takes into account penetration pricing incentives. Due to the presence of dynamic demand spillovers, XM and Sirius currently set relatively low "penetration prices" to encourage growth. Therefore, short-term profits earned solely from current subscribers might well rise following a unilateral price increase by a single firm's service. The use of penetration pricing is a relevant factor when testing for market definition, both because it affects the level of current, pre-merger prices that is the benchmark, and

32. Furthermore, if market definition tests based only on current subscribers did not place each firm in a single-firm relevant market, the analysis likely would expand each candidate market beyond satellite radio rather than to the other satellite radio firm. When subscribers to one satellite radio service deactivate their service, only a small fraction substitute to listening to the other satellite radio service. [redacted] of disconnecting subscribers switch to the other satellite radio service. [redacted]

33. Properly applying the principles of the Merger Guidelines to the "particular facts and circumstances" of the proposed merger – as the Guidelines say must be done – requires that the analysis consider the impact of a non-transitory price increase on prospective subscribers as well as current subscribers.[43] One can think of different industries with different facts – perhaps industries that are declining or adding no new customers – where a price increase would affect only current customers. But those are not the facts of satellite radio. Like his view that the analysis should be restricted to short-term profitability, Sidak's rejection of evidence on demand by prospective satellite radio subscribers is inconsistent with the Merger Guidelines and rigorous economic analysis.[44]

C. Market Definition Evidence

34. Sidak misapplies the proper Merger Guidelines standards for what evidence is relevant and informative for evaluating market definition. He demands evidence that history has not provided and rejects relevant information that exists and that we supplied. And having done so, he claims that we have failed to provide evidence that is acceptable (by his unique standards) to demonstrate that the relevant market is broader than satellite radio services. This section shows that Sidak's attempt to prevent the Commission from examining the customary evidence analyzed in merger review is inconsistent with mainstream economics, the Merger Guidelines, and relevant antitrust precedent.

because the hypothetical monopolist's profit-maximizing price will be affected by the magnitudes of subscriber growth and of dynamic spillovers (both internal and external).

[43] Merger Guidelines at §0.

[44] Sidak's discussion makes it clear this would affect the conclusions. As he explains, "[t]here can be no doubt that the cross-price elasticity of demand of potential SDARS customers (between SDARS and HD radio) is more sensitive than that of existing SDARS subscribers." Sidak 3rd Supplemental at ¶63.

1. Market Definition Must Rely on Available Evidence

35. Sidak claims that our report fails to present the direct demand-side evidence of buyer substitution that is needed to show the market is broader than satellite radio service.[45] He implies that the only acceptable evidence consists of estimates of the own-price elasticity of demand for satellite radio services, or of the relevant cross-price elasticity of demand, and he faults our Report for not providing such evidence.[46]

36. Sidak's own track record on such evidence provides an appropriate warning. In his first Declaration, Sidak attempted to "estimate" or quantify this elasticity by "eyeballing" XM's growth and churn rates before and after the 2005 price increase.[47] Our previous report pointed out numerous methodological flaws in Sidak's exercise and concluded that it failed to provide reliable evidence on the elasticity of demand for XM or for satellite radio.[48] Sidak subsequently claimed that he never intended to offer a "point estimate for the actual elasticity of demand facing a hypothetical monopoly provider of SDARS," and he apparently does not now claim to have an estimate of the own-price elasticity of demand for satellite radio.[49]

37. The facts make it impossible for either Sidak or us to develop reliable econometric estimates of these price elasticities. Unfortunately, it is impossible in this matter to obtain a reliable econometric estimate of the own-elasticity for satellite radio. The reasons for this include the following.

- Lack of cross-sectional variation or other price discrimination in the subscription prices offered to subscribers.
- No price changes by Sirius since its entry in 2001.

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[45] For example, *see* Sidak 3rd Supplemental at ¶2.

[46] Sidak 3rd Supplemental at ¶26. Also see note to Table 2, where these elasticities are the only examples given of acceptable evidence on buyer substitution in response to a change in prices or quality-adjusted prices. Sidak 3rd Supplemental at p. 36.

[47] Sidak Declaration at ¶22.

[48] CRA at note 170. *See also* Thomas W. Hazlett, *The Economics of the Satellite Radio Merger* (June 14, 2007) at 30-31 (commenting on Sidak's analysis of this information).

[49] J Gregory Sidak, *Second Supplemental Declaration of J Gregory Sidak*, Attachment A to *Response of the Consumer Coalition for Competition in Satellite Radio* (July 24, 2007), MB Docket No. 07-57 (hereinafter "Sidak 2nd Supplemental) at ¶25, stating that his earlier statement was not offered as a "point estimate for the actual elasticity of demand facing a hypothetical monopoly provider of SDARS" but was "intended to demonstrate the general insensitivity of demand for SDARS." The defects of his earlier analysis, however, mean that it cannot provide a reliable indication even of the "general insensitivity of demand for SDARS." Also see Sidak 3rd Supplemental at ¶26, which does not offer any estimate of elasticity.

- Only a single price change by XM, in 2005.
- Other XM changes at the time of the price increase: beginning to broadcast all Major League Baseball games; changing its price structure (offering Opie & Anthony and internet access as part of the basic service package, rather than for additional charges); changing the relationship between the charge for a first and additional (family plan) radios; permitting subscribers to "grandfather" previous subscription price by prepaying for a period of time.[50]
- Changes in Sirius programming to which consumers were reacting at the time of the XM price increase.[51]
- Introduction of new iPod models within a few months of the XM price increase.

Given these and other complications, it is impossible from this single episode reliably to estimate the demand elasticity for XM, let alone an own-price demand elasticity of satellite radio.[52]

38. Furthermore, even if it were possible to obtain reliable estimates of demand elasticities as of 2005, conditions since then have changed sufficiently that one could not presume those elasticity estimates would be meaningful or accurate for predicting pricing incentives and behavior in 2008 and beyond. Since 2005, the competitive landscape has changed. Many more consumers have iPods or other MP3 players, and new related services to deliver content have developed since 2005.[53] Mobile telephone providers have introduced mobile phones that access, play, and store music and other audio programming, as well as services to deliver such content.[54] HD radio has been introduced and the number of

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[50] Given the additional programming that was made available at this time and the change in the price structure, it is possible that the $3 increase in the base subscription fee actually involved a reduction in the quality-adjusted price, not an increase.

[51] Sirius had announced a few months earlier that Howard Stern would broadcast on Sirius. Stern began to broadcast on Sirius in January 2006.

[52] There are still other estimation difficulties. Terrestrial radio service is free, so there have been no variations in that price. (There is, however, geographic variation in the quality of terrestrial radio service, and we provided evidence exploiting this information, as discussed below.) Prices of wireless phones and iPods/MP3 players have changed, but there have been large improvements in the quality of these products, as there have been for Sirius and XM. The demand for equipment and subscriptions also are linked. In addition, econometric estimation is made much more complicated because of the dynamic demand spillovers, as well as the continuous product introductions and product improvements in many of the products that compete with the satellite radio services.

[53] *See* CRA FCC Report at, for example, ¶19 and ¶41-42.

[54] *See* CRA FCC Report at ¶37-39. Sidak criticizes this evidence, arguing that it is difficult to play content on a mobile phone in a car, and audio services are too costly after adding the cost of data packages to be substitutes. Sidak 3rd Supplemental at ¶43-47. But mobile phones often can be connected to vehicle audio systems using the auxiliary jacks available in many new vehicles and appropriate cables and plug adapters or using a wireless

channels is growing rapidly, while HD radio equipment is becoming less expensive and now is increasingly becoming available in vehicles.[55] Finally, the demand for satellite radio itself has evolved, with substantial shifts in the relative importance of the aftermarket and OEM channels.[56]

39. This situation differs from those in cases where demand elasticities have been estimated for mature industries using information on variation in prices and sales over time or locations or both.[57] In this matter, there are no good natural experiments for estimating the own-price elasticity for satellite radio. (Nevertheless, as discussed below, we were able to use another natural experiment – geographic variation in the number of terrestrial radio signals and satellite radio penetration – to generate reliable econometric evidence that consumers view satellite and terrestrial radio as substitutes.)

40. Moreover, Sidak is mistaken to suggest that the Commission should not consider other evidence. The Merger Guidelines do not exclude the use of other information where reliable econometric evidence of demand elasticities is unavailable. Indeed, other evidence typically is used even in investigations and cases where econometric estimates have been available.[58] The Merger Guidelines say that, "the Agency will take into

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Bluetooth connection when that is available. They also can be connected to new systems that are being developed, such as the Sync system developed by Ford and Microsoft. (For discussion of the capabilities of the Sync system, see Kevin Massy, *Ford and Microsoft in Sync for in-car infotainment*, CNET Reviews (January 7, 2007), *available at* http://reviews.cnet.com/8301-12760_7-9672096-5.html (last visited October 31, 2007) and Thom Cannell, *2008 Ford Focus Sync Review*, TheAutoChannel.com, *available at* http://www.theautochannel.com/news/2007/10/08/066147.html (last visited October 31, 2007).) As for the cost of mobile phone data packages, Sidak fails to acknowledge that these costs will not represent incremental costs of audio content for many consumers. Such packages provide access to data-based services besides audio content and an increasing number of mobile phone subscribers are using such data services. Similarly, the Sprint Power Vision services provide subscribers access to a variety of services other than audio content. *See* CRA FCC Report at ¶39.

[55] *See* CRA FCC Report at ¶32-33. Since then, the number of HD stations have grown from about 1350 near the end of July to 1520 as of October 31, 2007. *See* http://www.ibiquity.com/hd_radio/hdradio_find_a_station (last visited October 31, 2007). In addition, Ford recently announced that it is making HD Radio equipment available on nearly all 2008 models – and for many 2005, 2006, and 2007 models as well. Ford Motor Company Press Release, *Ford to Make HD Radio Available Across Nearly All Product Lines* (September 26, 2007) *available at* http://media.ford.com/newsroom/feature_display.cfm?release=26070 (last visited October 31, 2007).

[56] For evidence, *see* CRA FCC Report at ¶105 and the further discussion and evidence below.

[57] For example, *see New York v. Kraft General Foods, Inc.*, 926 F.Supp.321 (S.D.N.Y. 1995). *See also* the matters listed by the Merger Commentary at 9, 14, 29-31.

[58] For example, *see Federal Trade Commission v. Staples, Inc.*, 970 F. Supp. 1066 (D.D.C. 1997); *New York v. Kraft General Foods, Inc.*. The Department of Justice and the Federal Trade Commission make it clear in their Merger Commentary that they rely on non-econometric, as well as econometric, evidence. The Merger Commentary states that, "In the vast majority of cases, the Agencies largely rely on non-econometric evidence, obtained primarily from customers and from business documents." Merger Commentary at 9.