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Satellite Radio: An Innovative Technology's Path through the FCC and into the Future

By Adam Cain*

I. INTRODUCTION

Increasingly, American consumers have grown dissatisfied with traditional broadcast radio. Tired of the limited content provided by local broadcasters, weary of listening to commercials and static, and frustrated with the lack of timely traffic and weather reports, consumers desire a radio service that meets their individual needs and tastes. Today, satellite radio hopes to present a solution to many Americans' frustrations with traditional radio. For this fledgling industry to survive, however, it must successfully navigate a myriad of regulatory and market obstacles.

Seventy-five percent of Americans listen to the radio everyday, and ninety-four percent of all Americans listen to the radio at least once a week.¹ On average, Americans spend 19.5 hours per week just listening to the radio.² Despite the vast number of Americans listening to the radio everyday, the number and variety of programming stations remains limited. Twenty-two million people in the United States receive five or fewer FM stations, and more than 700,000 people live entirely outside current FM broadcast coverage.³

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1. XM SATELLITE RADIO INC., ANNUAL REPORT 3 (2003), *available at* <http://ccbn.10kwizard.com/xml/download.php?repo=tenk&ipage=2668925&format=PDF>.

2. *Id.*

3. *In re* Establishment of Rules and Policies for the Digital Audio Radio Satellite Service in the 2310-2360 MHz Frequency Band ¶ 11 (FCC) (No. 90-357) (March 3, 1997), *available at*

For example, New York, the largest radio market in the United States, has fewer than fifty AM and FM radio stations, many of which broadcast the same programming.⁴ Moreover, AM stations make up forty percent of all radio stations, however, the susceptibility to interference of AM broadcast technology results in poor sound quality.⁵ In contrast, satellite radio offers listeners variety and quality, providing over 120 channels of commercial free music, news, sports, entertainment, traffic, and weather – all in digital clarity.⁶

Although satellite radio may be the solution to many radio listeners' frustrations, satellite radio must face serious obstacles before any future success can be assured. Convincing consumers to adopt this new technology poses the first obstacle. Although satellite radio offers more to listeners, it also requires listeners to pay more each month. A subscription to satellite radio generally costs \$12.95 a month.⁷ Not only must listeners pay for a monthly subscription, but subscribers may also have to pay a start-up fee and the cost of purchasing new equipment capable of receiving the satellite signal. With all these expenses facing potential customers, satellite radio providers must persuade consumers that the new technology is worth the cost and hassle.

In reality, new technological advances consistently result in new products that provide consumers with better quality and convenience. However, many of these products do not survive because not enough consumers are willing to purchase them.

For example, long before DVDs, laser disk technology offered

<http://www.fcc.gov/Bureaus/International/Orders/1997/fcc97070.txt> [hereinafter *In re Establishment of Rules and Policies*].

4. XM SATELLITE RADIO INC., ANNUAL REPORT, *supra* note 1.

5. *In re Establishment of Rules and Policies*, *supra* note 3.

6. XM Satellite Radio, *Learn about XM*, at <http://www.xmradio.com/learn/index.jsp> (last visited Apr. 20, 2005).

7. *Sirius Satellite, Radio Rival XM Gain Subscribers*, WALL ST. J., Dec. 28, 2004, at B3. XM offers a \$6.99 a month family plan for more than one subscription and up to 10% off for buying a multi year service package. XM Satellite Radio, *Service and Subscription*, at http://www.xmradio.com/service_subscription/service_subscription.jsp (last visited Apr. 20, 2005). Sirius also offers a multi subscription plan for \$6.99 a month and a lifetime subscription for \$499.99. Sirius Satellite Radio, *Choose a Plan*, at <http://www.sirius.com/servlet/ContentServer?pagename=Sirius/CachedPage&c=Page&cid=1065475754240>.

digital sound and picture that clearly outperformed VHS technology. Nevertheless, because laser disks were the size of a record and required a special player to use, consumers never embraced the format. Only a short time later, consumers quickly adopted DVD technology soon after it appeared on the market. Today, video rental stores carry as many, if not more, DVDs than VHS cassettes. Grocery shopping through the Internet provides another example. Internet grocery shopping initially generated great fanfare because it promised to ease the process of buying groceries. However, not enough people chose to utilize the service, resulting in grocery stores discontinuing the service. One last example is the invention of satellite phones. Satellite phones promised to be the phone of the traveling professional. These phones enabled people to call from anywhere in the world, freeing individuals from the constraints of the limited cellular coverage offered by individual providers. Although satellite phones are still in use today, consumers decided not to invest in them like sellers had anticipated.

Drawing parallels with cable television, XM and Sirius believe that satellite radio constitutes a service for which consumers will widely adopt.⁸ Broadcast television, like traditional radio, is limited in the number of available channels and quality of signal. In contrast, cable television, like satellite radio, offers hundreds of digitally transmitted channels that consumers have been willing to pay for. In December 2003, 67.7 percent of households with televisions subscribed to a cable television service, despite the costs of additional equipment and monthly subscription fees.⁹

Though neither satellite radio company has reached profitability yet, the market for satellite radio has grown substantially. On January 22, 2005, the satellite radio industry claimed more than 4.3 million subscribers, a strong indication that satellite radio will overcome this first obstacle of consumer adoption.¹⁰ Of the 4.3

8. XM SATELLITE RADIO INC., ANNUAL REPORT, *supra* note 1, at 4.

9. *Id.*

10. Press Release, XM Satellite Radio, XM Satellite Radio Surpasses 3.2 Million Subscribers, (Jan. 5, 2005), *available at* http://www.xmradio.com/newsroom/screen/pr_2005_ces.html; Press Release, Sirius Satellite Radio, Sirius Satellite Radio Ends the Year With More Than 1.1 Million Subscribers (Jan. 3, 2005), *available at* <http://www.sirius.com/servlet/ContentServer?pagename=Sirius/CachedPage&c=PressReleAsset&cid=1102975192985>.

million satellite radio subscribers, more than 3.2 million subscribed to XM, and 1.1 million subscribed to Sirius.¹¹

Even if satellite radio overcomes its market obstacles, it must also face regulatory challenges arising under the authority of the Federal Communication Commission (FCC). As with many new technologies, satellite radio comes into conflict with other existing technologies, especially those broadcasting over the finite electromagnetic spectrum. The FCC's challenge is to "ensure that spectrum is made available for new technologies and services, and flexibility is preserved to adapt to new market needs."¹² And yet, while the FCC must preserve flexibility, it is simultaneously charged with maximizing efficient use of the spectrum.¹³ These two core principles of the FCC, flexibility and efficiency, outline the regulatory framework that will confront the future growth of satellite radio.

"[W]hile administrative agencies may be equipped with expertise, experience and institutional memory, the administrative agency faces enormous challenges in designing, formulating and implementing government policy. In addition, numerous competing groups (many well-organized and some politically influential) will want to press their claims in this public policy process."¹⁴ In particular, groups such as the National Association of Broadcasters (NAB) and the Society of Broadcast Engineers (SBE) have submitted many comments and proposed rules to the FCC that would greatly hinder the development of satellite radio.¹⁵ The NAB endeavors to restrict satellite radio providers' use of terrestrial repeaters and thwart the broadcast of local programming by satellite radio providers.¹⁶ The SBE wishes to prevent satellite providers from using satellite earth stations within 150 kilometers of the top 100 television markets.¹⁷

11. *Id.*

12. FCC, *Connecting the Globe, Spectrum Allocation, Assignment and Enforcement*, at <http://www.fcc.gov/connectglobe/sec7.html> (last visited Apr. 20, 2005) [hereinafter *Spectrum Allocation, Assignment and Enforcement*].

13. *Id.*

14. John D. Woodward, *Biometric Scanning, Law & Policy: Identifying the Concerns-Drafting the Biometric Blueprint*, 59 U. PITT. L. REV. 97, 139 nn.329-30 (1997).

15. See *infra* notes 113-23, 213-17 and accompanying text.

16. See *infra* notes 113-23 and accompanying text.

17. See *infra* notes 213-17 and accompanying text.

Additionally, BellSouth and other groups would like to place limits on the strength of the signal broadcasted by satellite radio terrestrial repeaters.¹⁸ The FCC's resolution of these issues will have dramatic ramifications for the growth and viability of satellite radio.

This article will outline and analyze the regulatory issues facing the FCC, posed by the emerging technology of satellite radio. First, this article will briefly trace the background and history of the FCC as an administrative agency, as well as the FCC's challenges in regulating the electromagnetic spectrum.¹⁹ Second, this article will explore the history of satellite radio and the specific systems of XM and Sirius used to provide satellite radio.²⁰ Third, this article will set forth the rules proposed by BellSouth and other groups that seek to place restrictions on the operation of satellite radio terrestrial repeaters.²¹ Fourth, this article will discuss proposed rules by the NAB that seek to restrict terrestrial repeaters and local programming.²² Fifth, this article will consider the rules proposed by the SBE, seeking to prohibit the use of satellite earth stations within 150 kilometers of the top 100 television markets.²³ Sixth, this article will provide a detailed analysis of the actual ramifications of the proposed rules for satellite radio, and investigate the validity of each party's arguments.²⁴ Finally, this article will conclude by summarizing the difficult challenge that satellite radio presents to the FCC, and the anticipated future of satellite radio.²⁵

II. HISTORICAL BACKGROUND

A. *The Development of the Federal Communications Commission and Regulation of the Electromagnetic Spectrum*

The FCC, an independent government agency, regulates radio, television, wire, satellite, and cable communications.²⁶ No stranger

18. See *infra* notes 93-102 and accompanying text.

19. See *infra* notes 26-54 and accompanying text.

20. See *infra* notes 55-89 and accompanying text.

21. See *infra* notes 90-102 and accompanying text.

22. See *infra* notes 103-93 and accompanying text.

23. See *infra* notes 194-226 and accompanying text.

24. See *infra* notes 227-46 and accompanying text.

25. See *infra* notes 247-49 and accompanying text.

26. FCC, *About the FCC*, available at <http://www.fcc.gov/aboutus.html> (last

to innovation, this agency was established to control rapid changes in technology. The FCC traces its roots to the early twentieth century, when Congress passed the Radio Act of 1912, in response to the advances of the “emerging” technology of radio.²⁷

Unfortunately, the 1912 Radio Act proved insufficiently capable of dealing with interference.²⁸ Massive interference soon wreaked havoc on the reception of radio broadcasts because broadcasters often used the same frequencies.²⁹ Broadcasters were neither assigned a set frequency on which to broadcast, nor required to follow any particular rules in broadcasting their signal.³⁰ As a result, the limited authority to issue broadcasting licenses, granted by the 1912 Radio Act to the Secretary of Commerce and Labor, failed to prevent the substantial broadcasting interference that occurred in the 1920’s.³¹

Witnessing the shortcomings of the 1912 Radio Act, Congress responded by passing the 1927 Radio Act, which gave the Secretary of Commerce and Labor the authority to create rules and regulations preventing signal interference.³² Eventually, the Communications

modified Mar. 28, 2005).

27. Daniel Erskine, *Satellite Digital Radio Searching for Novel Theories of Action*, 1 J. HIGH TECH. L. 135, 139 (2002).

28. *Id.*

29. *Id.*

30. *See id.*

31. *Id.* Licensing is still an important tool for the FCC as it has the “sole authority to grant, revoke, and reissue licenses.” *Id.* Since the 1930’s the length of the license has increased from one year in 1934 to eight years in 1996 through the Telecommunications Act. *Id.* at 140. The FCC distributes these licenses on a bidding basis and by taking into account factors of public interest, convenience, and necessity. *Id.* “Bidding represents an effective way to ensure that licenses are assigned quickly and to the entity who values them most highly, while recovering the value of the spectrum resource for the public.” *Spectrum Allocation, Assignment and Enforcement*, *supra* note 12. In the past five years, the FCC has utilized twenty-one bidding auctions for licensing. *Id.* Bidding auctions for satellite licenses have only been used twice for Digital Audio Radio Satellite Service (SDARS) and Direct Broadcast (Video) Satellite service. *Id.* Although the FCC views bidding as very favorable in licensing, it also recognizes that bidding auctions are not useful in all situations. *Id.* Non-bidding situations include licenses that are not mutually exclusive but are required to share their spectrum allocation. *Id.*

32. Erskine, *supra* note 27. The FCC’s authority included the ability to determine frequencies for specific uses, assign particular frequencies, and determine the power level of transmissions. *Id.*

Act of 1934 established the FCC, providing the agency with a broad range of authority to regulate the entire spectrum in the public interest.³³

Notably, the FCC does not regulate the broadcasting spectrum unilaterally. The FCC also works closely with National Telecommunications and Information Administration (NTIA).³⁴ While the FCC manages commercial, local government, and state government spectrum use, the NTIA manages use of the spectrum by the federal government.³⁵ Because limited frequencies within the electromagnetic spectrum create clear potential for interference in the face of so many different broadcasters, the FCC and NTIA must work together to maximize spectrum use and minimize interference.³⁶

B. Interference: An Ongoing Problem in the Electromagnetic Spectrum

Interference occurs when one transmission degrades another transmission because they are operating on similar frequencies.³⁷ Cell phones³⁸ (824mhz – 849mhz), FM radio stations (88mhz –

33. *Spectrum Allocation, Assignment and Enforcement*, *supra* note 12.

34. *Id.*

35. *Id.*

36. *Id.*

37. Paul Margie, *Can You Hear Me Now? Getting Better Reception from the FCC's Spectrum Policy*, 2004 STAN. TECH. L. REV. 5, ¶ 1 (2004). The FCC defines interference as “[t]he effect of unwanted energy due to one or a combination of emissions, radiations, or inductions upon reception in a radiocommunication system, manifested by any performance degradation, misinterpretation, or loss of information which could be extracted in the absence of such unwanted energy.” 47 C.F.R. § 2.1 (2002). Today, the FCC determines interference based on the transmitter and not the receiver. Margie, *supra* ¶ 12. Once a complaint of interference is received, the FCC searches its database of licenses and uses an electronic direction finder to locate the exact source of interference. *Spectrum Allocation, Assignment and Enforcement*, *supra* note 12. However, new interference temperature metrics are now available to detect the amount of interference on a particular frequency. Margie, *supra* ¶ 11-12. If repeated interference continues or illegal interference is discovered the FCC has a variety of options to choose from which include warnings, fines, license revocation, equipment seizure, and imprisonment. *Spectrum Allocation, Assignment and Enforcement*, *supra* note 12.

38. The FCC in the 1980's originally delegated 195mhz of spectrum use for

108mhz), AM radio stations (535kHz - 1.7mhz), TV stations (54mhz-88mhz), national defense systems, GPS (1,227mhz and 1,575mhz), wireless networks, air traffic control radar (960mhz-1215mhz), garage door openers (40mhz), and many other devices operate in the same spectrum but different frequencies.³⁹ These transmissions of sound, data, and video are electromagnetic waves set at precise frequencies in the electromagnetic spectrum.⁴⁰ Because the spectrum has a limited range of frequencies that may be allocated, ranging from 3kHz to 400Ghz, interference will always be a matter of great concern for the FCC.⁴¹

To ensure efficient use of the spectrum, the FCC divided the whole spectrum into bands, designating each band for specific categories of service.⁴² The FCC then subdivided these bands again into groups of specific frequencies for particular services in which licenses can be obtained for one or multiple frequencies, known as “channels.”⁴³

Going further, there are two types of allocations made for specific services: primary allocations and secondary allocations.⁴⁴ Services with primary allocations have priority in use of the spectrum, but must equally share the spectrum with other primary allocations in the same band.⁴⁵ In contrast, secondary allocations must ensure that they do not cause “harmful interference” with primary allocations in the same band.⁴⁶ However, all secondary allocations have equal rights in

cell phones. Gregory Staple & Kevin Werbach, *The Coming Spectrum Explosion—A Regulatory and Business Primer*, 21 COMM. LAW. 23 (2003). Because of the explosion of cell phone usage, the FCC in 2000 delegated an additional 300mhz to such use. *Id.* The greater delegation of spectrum allowed the national cell phone providers to better serve their 140 million subscribers. *Id.*

39. Margie, *supra* note 37, ¶ 7. See also Marshall Brain, *How the Radio Spectrum Works* (Oct. 28, 2004), at <http://electronics.howstuffworks.com/radio-spectrum1.htm>.

40. Brain, *supra* note 39. See also FCC, *FCC Strategic Goals: Spectrum*, at <http://www.fcc.gov/spectrum> (last modified Jan. 3, 2005).

41. Margie, *supra* note 37, ¶ 7.

42. *Spectrum Allocation, Assignment and Enforcement*, *supra* note 12.

43. *Id.* The FCC relies on private sector petitions to determine the needs of each subgroup which has helped shaped the spectrum use. *Id.*

44. *Id.*

45. *Id.*

46. *Id.*

the same band.⁴⁷

Despite the best efforts of the FCC, it is difficult to keep one frequency from spilling over into another.⁴⁸ For this reason, *most* frequency bands are not required to have zero interference in other frequencies.⁴⁹ Rather, a standard of unacceptable degradation applies.⁵⁰ In other words, interference can occur but not to the extent that it substantially affects another broadcaster's service. Generally, interference that disrupts the functioning of a "radionavigation" service or other safety service is classified by the FCC as harmful interference, and thus prohibited.⁵¹ However, frequency transmissions are not the only factor that can cause interference. Low power transmitters, distance between the transmitter and receiver, buildings, as well as radiation, can also interfere with a transmission.⁵²

With the development of new wireless communications, the FCC constantly confronts the challenge of accommodating new innovations while protecting prior technologies from unacceptable interference.⁵³ "The FCC's strategic goal for spectrum [use] is to encourage the highest and best use of spectrum domestically and internationally in order to encourage the growth and rapid development of innovative and efficient communications, technologies, and services."⁵⁴

C. *The Emergence of Satellite Radio*

In 1995, Satellite Digital Audio Radio Service (SDARS) became a reality when the FCC allocated space in the "S-band" (2.3 GHz) for

47. *Id.*

48. Margie, *supra* note 37, ¶ 19.

49. *Id.* ¶ 20.

50. *Id.*

51. *Id.* ¶ 25. The FCC defines harmful interference as "[i]nterference which endangers the functioning of a radionavigation service or of other safety services or seriously degrades, obstructs, or repeatedly interrupts a radiocommunication service operating in accordance with these [international] Radio Regulations." 47 C.F.R. § 2.1 (2002).

52. Margie, *supra* note 37, ¶¶ 8-9.

53. *Id.* ¶ 2.

54. *FCC Strategic Goals: Spectrum*, *supra* note 40.

satellite radio on a primary basis.⁵⁵ The FCC believed that SDARS was in the public's best interest because it would allow CD quality sound from coast to coast without interruption, offer niche channels for listeners with special interests, and provide service to listeners in remote areas.⁵⁶ In 1997, six companies submitted bids for SDARS licenses, but only XM Satellite Radio's bid of \$89 million and Sirius Satellite Radio's bid of \$83 million yielded licenses.⁵⁷ These licenses were granted for eight years and commenced when XM's and Sirius's satellites were in orbit and operational.⁵⁸ Currently, XM's licenses for its two satellites remain valid until March and May of 2009, and Sirius's licenses remain valid until February 14, 2010, by which time both SDARS operators will seek renewal of their licenses or decommission their satellites.⁵⁹

55. *In re* Establishment of Rules and Policies, *supra* note 3, ¶ 5.

56. *Id.* ¶ 2.

57. Erskine, *supra* note 27, at 135. XM, formerly known as American Mobile Radio Corporation, was licensed 2332.5mhz-2345mhz and Sirius, formerly known as Satellite CD Radio, was licensed 2320mhz-2332.5mhz. E-mail from TSR43, FCC Representative, Federal Communications Commission, to Adam Cain, Pepperdine University School of Law (Nov. 3, 2004) (on file with author) [hereinafter E-mail from TSR43]. To qualify for a SDARS license each bidder had to meet certain requirements. First, each bidder had to prove their system would serve at least the forty-eight contiguous states of the United States. 47 C.F.R. § 25.144(a)(3)(i) (1997). Second, each bidder had to certify that their system would have receivers capable of accessing all licensed SDARS systems. § 25.144(a)(3)(ii). In this area, SDARS operators have made efforts to satisfy their certification. On February 16, 2000, XM and Sirius signed an agreement to jointly develop a unified standard for satellite radios in which a listener could switch between services on the same piece of equipment. SIRIUS SATELLITE RADIO INC., ANNUAL REPORT 11 (2003), available at <http://www.shareholder.com/Common/Edgar/908937/950117-04-968/04-00.pdf>. Failure to create this interoperability of systems "could result in fines, additional license conditions, license revocation or other detrimental FCC actions" for SDARS operators. *Id.* at 16. The third requirement to qualify for a SDARS license was to identify the compression rate used to transmit their signal. 47 C.F.R. § 25.144(a)(3)(iii). The last requirement was to set milestone goals to insure SDARS was operational in six years. § 25.144(b)(1)-(4).

58. *In re* XM Radio Inc. Application for Minor Modification to Relocate Satellite Digital Audio Radio Service (SDARS) Satellite from 85° W to 115° W, Order and Authorization, DA 05-180, ¶ 25 (Jan. 26, 2005) (citing 47 C.F.R. § 25.144(d)), available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/DA-05-180A1.doc [hereinafter *In re* XM Radio Inc.].

59. SIRIUS SATELLITE RADIO INC., ANNUAL REPORT, *supra* note 57; *In re* XM

1. The Technology: How Does Satellite Radio Work?

A Satellite Digital Audio Radio Service consists essentially of five parts. First, SDARS operators must create the programming to broadcast. Programming for satellite radio is not only made up of enormous music libraries, but also the rebroadcast of outside programming such as Fox News and ESPN.⁶⁰ Second, a satellite earth station is required to transmit the chosen programming to a system of satellites over a designated frequency.⁶¹ Third, a system of satellites transmits the signal back to earth over another designated frequency.⁶² There are two distinct types of satellite systems, Geostationary Satellite Orbit (GSO) and Non-Geostationary Satellite Orbit (NGSO).⁶³ GSO, utilized by XM, uses two satellites that remain at a fixed point in orbit around the earth.⁶⁴ In other words, GSO satellites travel at the same speed at which the earth rotates, allowing them to stay over fixed locations relative to the surface of the earth. The NGSO system, utilized by Sirius, uses three satellites

Radio Inc., *supra* note 58. Recently, the FCC authorized XM to replace its current satellites Rock and Roll. *See Infra* note 46. When XM's new satellites are in orbit and operational, a new eight-year license will commence. *In re XM Radio Inc.*, *supra* note 58.

60. XM Satellite Radio, *Channel Guide*, at http://www.xmradio.com/pdf/channel_guide.pdf (last visited Feb. 3, 2005); Sirius Satellite Radio, *Channel Guide*, at <http://www.sirius.com/pdf/channelguide.pdf> (last updated Oct. 24, 2004).

61. Kevin Bonsor, *How Satellite Radio Works*, at <http://electronics.howstuffworks.com/satellite-radio.htm> (last visited on Oct. 28, 2004). Satellite earth stations transmit their signal between 7.025GHz-7.025GHz. E-mail from TSR43, *supra* note 57.

62. The satellites' telemetry is controlled through frequencies in the S-Band (3.7GHz-4.2GHz and 5.9GHz-6.425Ghz). E-mail from TSR43, *supra* note 57.

63. Bonsor, *supra* note 61.

64. Erskine, *supra* note 27, at 137. XM has two satellites in orbit, satellite "Rock" (call sign S2119) at 115° W.L. orbital location, and satellite "Roll" (call sign S2118) at 85° W.L. orbital location. *In re XM Radio Inc.*, *supra* note 58, ¶ 1. However, solar arrays have "progressively degraded" satellites Rock and Roll, causing a shorter life expectancy and technical difficulties. *Id.* ¶¶ 1, 4. As a result, the FCC authorized XM to send two additional satellites, XM-3 and XM-4, to replace Rock's and Roll's orbital locations at 85° W.L. and 115° W.L. *Id.* ¶ 1. During this relocation process, XM cannot cause harmful interference to other in-orbit satellites and must accept interference from other satellites. *Id.* ¶ 23. Once XM-3 and XM-4 are in place, Rock and Roll will cease all transmissions except for telemetry control. *Id.* ¶ 24.

that travel in an elliptical path around the earth so at least two of the three satellites spend about sixteen hours each day over the United States.⁶⁵ In both GSO and NGSO, the satellite requires a direct line of sight to relay the signal.⁶⁶ Because a direct line of sight is not always possible, the terrestrial repeaters constitute the fourth part of the system. Terrestrial repeaters operate at a designated frequency and rebroadcast the signal that is transmitted by the satellite.⁶⁷ These terrestrial repeaters enable the reception of satellite radio in places where tall buildings and other large objects block a direct line of sight.⁶⁸ Lastly, specialized radio receivers are required to unscramble the encoded signal transmitted by the satellite and terrestrial repeaters.⁶⁹

2. The Growth of Satellite Radio

Since the inception of SDARS, subscriber interest has continued to increase along with the growing availability to the public through various means. XM is available in eighty new vehicle models including GM, Honda, Toyota/Lexus/Scion, Nissan/Infiniti, Isuzu, and Volkswagen/Audi,⁷⁰ as well as in 20,000 Avis rental cars.⁷¹ Likewise, Sirius is an option available in Chrysler, Dodge, Jeep, Mercedes, Ford, Lincoln, Mercury, Volvo, Mazda, Jaguar, Land Rover, and BMW.⁷² Hertz Rent-A-Car also provides Sirius as an option for its customers. Car manufacturers have invested heavily in satellite radio by making satellite radio available in their vehicles and purchasing minority ownership interests in the SDARS operators. Currently, General Motors owns an eight percent interest in XM, and

65. Bonsor, *supra* note 61; SIRIUS SATELLITE RADIO INC., ANNUAL REPORT, *supra* note 57, at 9. Sirius deploys Loral FS-1300 model series satellites, and all three orbiting satellites have a life expectancy of fifteen years. SIRIUS SATELLITE RADIO INC., ANNUAL REPORT, *supra* note 57, at 8.

66. Erskine, *supra* note 27, at 138.

67. *Id.*

68. *Id.*

69. Bonsor, *supra* note 61. At the moment XM and Sirius receivers are incompatible with each other. *Id.*

70. XM SATELLITE RADIO INC., ANNUAL REPORT, *supra* note 1, at 6.

71. *Id.* at 1.

72. SIRIUS SATELLITE RADIO INC., ANNUAL REPORT, *supra* note 57, at 3.

Honda owns a nine percent interest in XM.⁷³

Soon, satellite radio will also be available in other means of transportation. XM has reached agreements with Jet Blue and AirTran to allow passengers access to satellite radio on airplanes.⁷⁴ Additionally, specific receivers are now available for marine and aviation markets, which can also deliver important navigational information.⁷⁵ As a whole, SDARS companies continue to gain appeal among an assorted audience by spending hundreds of millions of dollars to add new programming. XM has invested \$650 million in an eleven-year contract to broadcast Major League Baseball.⁷⁶ Sirius has added the National Football League for \$220 million and Howard Stern⁷⁷ for a five-year \$500 million contract, beginning in 2006.⁷⁸ In particular, Sirius claims that signing Howard Stern is “the most important deal in radio history,” and expects many new subscribers from his loyal fan base.⁷⁹ In addition, the mass media attention from Howard Stern’s switch to satellite radio alone is “worth tens of millions of dollars.”⁸⁰

73. *Liftoff for Satellite Radio*, WALL ST. J., Nov. 15, 2004, (The Journal Report Online) at R2.

74. XM SATELLITE RADIO INC., ANNUAL REPORT, *supra* note 1, at 1.

75. *Id.* at 2.

76. Michael Hiestand, *New Technologies Will Give Fans Even More Ways to Enjoy Sports*, USA TODAY, Nov. 11, 2004, at C11.

77. Howard Stern switched to Sirius because satellite radio is not subject to the same indecency regulations of traditional radio broadcasters. The FCC decided not to impose the same indecency regulations because satellite radio is a subscription service, and the FCC “does not impose regulations regarding indecency on services lacking the indiscriminate access to children that characterizes broadcasting.” Tony Sanders, *FCC: Satcasters Not Subject to Indecency Rules*, *Billboard Radio Monitor*, Dec. 15, 2004, at http://billboardradiomonitor.com/radiomonitor/news/business/leg_reg/article_display.jsp?vnu_content_id=1000737602.

78. Ellen Sheng, *XM Satellite Radio Unveils Portable Unit*, WALL ST. J., Oct. 26, 2004, available at http://online.wsj.com/article_print/0,,BT_CO_20041026_012921,00.html; Nadja Brandt & Chitra Somayaji, *Satellite Radio Firms Tally Subscribers*, SAN DIEGO UNION TRIBUNE, Dec. 28, 2004, available at http://www.signonsandiego.com/uniontrib/20041228/news_1b28radio.html.

79. Edward C. Baig, *Satellite Radio In the Palm of Your Hand; XM Offers Handheld Device Like Transistor Radio But Way Better*, USA TODAY, Nov. 11, 2004, B5.

80. Sarah McBride, *Radio Shock Jock is Forced to Assume a Low Profile Before 2006 Satellite Debut*, WALL ST. J., Dec. 22, 2004, at B2.

D. Traditional Radio Broadcasters Create Obstacles, Slowing the Growth of Satellite Radio

Although SDARS operators have managed to gain consumer interest along with licenses to broadcast, broadcasters of traditional radio continue to create opposition for the continuing expansion of satellite radio. Major broadcasters such as Clear Channel Communications, Viacom Infinity Broadcasting, and Entercom have put out a new advertising campaign to promote traditional radio.⁸¹ An estimated twenty-eight million dollars is being spent on advertising spots featuring artists Avril Lavigne and Ludacris to remind people of the importance of traditional radio.⁸² The major broadcasters also use the National Association of Broadcasters (NAB) as their representative against satellite radio.

The NAB is a full-service trade association that protects the interests of major broadcasters in situations before Congress, federal agencies, and the courts.⁸³ When satellite radio first entered the market “the NAB went on an all-out smear campaign to discredit the new technology . . . ,” and now persists in trying to restrict SDARS operators from using terrestrial repeaters and providing local programming.⁸⁴

1. Use of Terrestrial Repeaters by SDARS Operators

Currently, XM and Sirius operate terrestrial repeaters with special temporary authority from the FCC.⁸⁵ The Communications Act of 1934 allows the FCC to grant special temporary authority if a delay

81. Sarah McBride, *Operators, Long Dismissive of Satellite Services, Start Their Own Promotional Blitz*, WALL ST. J., Jan. 11, 2005, at B4.

82. *Id.*

83. Edward O. Fritts, *About NAB*, at <http://www.nab.org/about/message.asp> (last visited Jan. 5, 2005).

84. Chris Mallon, *Sirius, XM Facing Down the Giants*, *The Motley Fool*, Oct. 27, 2004, at <http://www.fool.com/server/Foolprint.asp?File=/news/mft/2004/mft04102743.htm>.

85. *In re* Request for Special Temporary Authority to Operate Additional Satellite Digital Audio Radio Service Terrestrial Repeaters ¶ 2, (No. 04-2987) (Sept. 15, 2004), available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/DA-04-2987A1.doc. The FCC allowed for the use of up to 200 repeaters for each SDARS operator. SIRIUS SATELLITE RADIO INC., ANNUAL REPORT, *supra* note 57.

would hurt the public interest.⁸⁶ The FCC determined that because satellite radio offers continuous coverage for motorists and diverse program formats it is a public interest and would be hindered without the use of terrestrial repeaters.⁸⁷ The FCC also placed restrictions on the repeaters and required “simultaneous retransmission of the complete programming . . . transmitted by the satellite directly to SDARS subscriber’s receivers”⁸⁸ Additionally, the repeaters had to operate on a non-interference basis with all other permanently authorized radio communications.⁸⁹

III. PROPOSED RULES IN THE FCC

A. *BellSouth Proposed Rules to Restrict the Operation of Terrestrial Repeaters*

The FCC initiated rulemaking regarding terrestrial repeaters on March 3, 1997.⁹⁰ The FCC requested comments on permitting SDARS operators to set up terrestrial repeaters on an as needed basis, thereby removing the special temporary authority on which the repeaters had been operating.⁹¹

Bellsouth Corporation, the Wireless Communications Association International, and MCI WorldCom all submitted comments in opposition to the FCC’s proposal to permit SDARS operators use of terrestrial repeaters. As for the SDARS operators, they propose that they be allowed to operate terrestrial repeaters at power levels as high as 40 kW EIRP.⁹² However, the opposing organizations advocate the need for “more stringent restrictions on terrestrial [S]DARS operations than are being proposed by XM Radio and Sirius.”⁹³

86. *In re* Request for Special Temporary Authority to Operate Additional Satellite Digital Audio Radio Service Terrestrial Repeaters, *supra* note 85, ¶ 5.

87. *Id.* ¶ 6.

88. *Id.* ¶ 10(c).

89. *Id.* ¶ 18.

90. *In re* Establishment of Rules and Policies, *supra* note 3, at p. 1.

91. *Id.* ¶ 142.

92. Supplemental Comments of Sirius Satellite Radio at 3, *In re* Establishment of Rules and Policies (No. 90-357) (Jan. 18, 2000), available at http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6010952272.

93. Comments of BellSouth Corporation at i, *In re* Establishment of Rules and

More stringent restrictions will ensure the protection of Multipoint Distribution Services (MDS), Instructional Television Fixed Services (ITFS), and Wireless Communications Services (WCS), all of which operate in adjacent frequencies.⁹⁴ Sirius maintained that its terrestrial repeaters will not cause harmful interference to WCS or MDS, and its “sophisticated spectral shaping and extensive filtering [will] achieve very low out of band emissions.”⁹⁵ Furthermore, Sirius’s repeaters will operate in a sub band (2324.25-2328.25 MHz) of its allocated frequencies to increase the separation from adjacent bands.⁹⁶ Regardless of any amount of possible interference from repeaters, repeater interference will go unnoticed because WCS systems already receive substantial interference from each other.⁹⁷

BellSouth maintained that the proposed rules by XM and Sirius allow “unlimited flexibility to deploy high-power” repeaters which can not only cause interference but may also harm electrical equipment.⁹⁸ Sirius asserts that only equipment within 15.3 meters of

Policies (No. 90-357) (Feb. 22, 2000), *available at* http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6010955373; Comments of the Wireless Communications Association International, Inc. at 1, *In re* Establishment of Rules and Policies (No. 90-357) (Feb. 22, 2000), *available at* http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6010955383; Reply Comments of MCI WorldCom, Inc. at 1, *In re* Establishment of Rules and Policies (No. 90-357) (Mar. 8, 2000), *available at* http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6010957024.

94. Comments of BellSouth Corporation, *supra* note 93, at 1. Wireless Communications Services (WCS) operate in two blocks of frequencies 2305-2320 MHz and 2345-2360 MHz and there is a concern of interference because SDARS repeaters operate in between the WCS block at 2320-2345 MHz. *Id.*

95. Supplemental Comments of Sirius Satellite Radio, *supra* note 92, at 4.

96. *Id.* at 4-5.

97. *Id.* at 9.

98. Comments of BellSouth Corporation, *supra* note 93, at 1-2. The FCC previously dealt with a similar situation with a proposed rule for unrestrained operation of terrestrial WCS facilities. *Id.* at 2; Amendment of the Commission’s Rules to Establish Part 27, the Wireless Communications Service, 12 FCC Rcd 3977 (1997), *available at* <http://www.fcc.gov/Bureaus/Miscellaneous/Orders/1997/fcc97050.txt>. The FCC determined that the unrestrained operation would interfere with uses in adjacent frequencies and established power limits, notice requirements, and equipment replacement rules. Comments of BellSouth Corporation, *supra* note 93, at 2. BellSouth requests the same type of restrictions that were placed on the WCS

terrestrial repeaters could be affected. However, BellSouth's analysis reveals that blanketing interference could potentially affect equipment 2.5 miles away, and there is not a filtering device that can be economically installed to lessen the interference.⁹⁹ BellSouth, the Wireless Communications Association International, and MCI WorldCom all suggest a 2,000 watts peak equivalent isotopically radiated power limit on SDARS repeaters.¹⁰⁰ These groups also suggest that SDARS operators notify potentially affected licensees before operating a repeater.¹⁰¹ Lastly, these groups suggest SDARS operators replace MDS/ITFS downconverters because the terrestrial repeaters are likely to cause block downconverter overload, which can harm equipment.¹⁰²

B. Satellite Radio's Use of Terrestrial Repeaters to Deliver Local Programming

Additionally, on March 3, 1997, the FCC requested comments on its "tentative conclusion" to prohibit terrestrial repeaters from being used for local programming.¹⁰³ SDARS operators have assured the FCC that the terrestrial repeaters will only be used to retransmit the satellite signal;¹⁰⁴ however, the NAB still worries that the terrestrial repeaters will be used for delivering local programming.¹⁰⁵

1. Technological Advancement Creates Many Ways for Satellite Radio to Deliver Local Programming

As the technology developed for satellite radio, the NAB

facilities for satellite radio. *Id.* at 3.

99. *Id.* at 6-7.

100. Comments of BellSouth Corporation, *supra* note 93, at 3, 9; Comments of the Wireless Communications Association International, Inc., *supra* note 93 at 1; Reply Comments of MCI Worldcom, Inc., *supra* note 93, at 1.

101. Comments of BellSouth Corporation, *supra* note 93, at 3, 9; Comments of the Wireless Communications Association International, Inc., *supra* note 93 at 1; Reply Comments of MCI Worldcom, Inc., *supra* note 93, at 1.

102. Comments of BellSouth Corporation, *supra* note 93, at 3, 9; Comments of the Wireless Communications Association International, Inc., *supra* note 93 at 1; Reply Comments of MCI Worldcom, Inc., *supra* note 93, at 1.

103. *In re* Establishment of Rules and Policies, *supra* note 3, ¶ 142.

104. *Id.* ¶ 140.

105. *Id.* ¶ 139.

realized numerous possibilities for delivering local programming. On February 12, 2002, XM obtained a patent entitled "Method and System for Providing Geographic Specific Services in a Satellite Communications Network."¹⁰⁶ The sole purpose of this patent was to allow XM's terrestrial repeaters to deliver localized programming. The NAB maintained that SDARS operators are also developing a new receiver utilizing Global Positioning Satellite (GPS) and store-and-forward technologies that could deliver localized programs and advertising.¹⁰⁷ This new receiver would be able to determine the appropriate local programming to play based on the location of the receiver, and filter out non-applicable local programming.¹⁰⁸ What also concerns the NAB is XM's new NavTraffic, which is a technology designed to deliver content based on a driver's location.¹⁰⁹ NavTraffic combines GPS navigation with current traffic information and allows drivers to see traffic, construction zones, and alternate routes.¹¹⁰ The service requires an additional four dollars a month subscription fee to XM and is available in twenty different markets.¹¹¹ This new technology worries the NAB because it makes delivering local programming to subscribers much easier.¹¹²

106. National Association of Broadcasters Petition for Declaratory Ruling at 15, *In re* Establishment of Rules and Policies (No. 90-357) (Apr. 14, 2004), available at http://gulfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6516087974.

107. *Id.* at ii.

108. *Id.*

109. Reply Comments of the National Association of Broadcasters MB Docket at ii, *In re* Request for Comment on Petition Filed by the National Association of Broadcasters Regarding Programming Carried by Satellite Digital Audio Radio Services (No. 04-160) (June 21, 2004), available at http://gulfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6516214434.

110. *Id.* at 6.

111. Sarah McBride & Sholnn Freeman, *Array of In-Dash Services Offer Real-Time Alerts on Traffic Jams*, WALL ST. J., Jan. 6, 2005, at D4.

112. Mobile video and navigation services are gaining significant interest from consumers. In 2004, mobile video and navigation services reached sales of \$782 million. *Id.* Responding to XM's NavTraffic service, Clear Channel Communications has come out with its own navigational system capable of delivering instant traffic. The navigational system is transmitted using FM frequencies but the system only works with equipment developed by Audiovox Electronics Corporation. *Id.* A subscription fee of \$59.99 a year is also required to

C. The NAB's Petition for Declaratory Ruling on Terrestrial Repeaters and Local Programming

The advancements in satellite radio technology have fueled the fire between the NAB and SDARS operators, and eventually led to the NAB filing a petition for declaratory ruling on April 14, 2004.¹¹³ The NAB argued that allowing local programming through the use of terrestrial repeaters or any other method “is directly contrary to the SDARS licensees.”¹¹⁴ The NAB also maintained that XM’s and Sirius’s licenses were awarded under the impression they would provide niche programming rather than simply duplicating existing programming.¹¹⁵ Furthermore, XM and Sirius have openly admitted

operate the system. *Id.* One significant advantage of Clear Channel’s service is its availability in forty-eight different markets while XM’s service is only currently available in twenty markets. *Id.*

113. National Association of Broadcasters Petition for Declaratory Ruling, *supra* note 106, at i.

114. *Id.*

115. *In re* Establishment of Rules and Policies, *supra* note 3. The NAB asserted that the niche programming that satellite radio was suppose to provide included ethnic programs, senior programs, and child programs. *Id.* The NAB insisted that in 1994 Sirius proposed to have programs dedicated to Chinese, Greek, Japanese, Jewish, Filipino, Portuguese, Korean, Polish, and Italian programming. *Id.* at 11. Instead, the SDARS operators have only provided several channels for Spanish and Latin programming and several children’s programs. *Id.* at 12. However, Sirius has recently come out with a new channel for gay programming and is “America’s first and only full-time gay radio service” Gay Satellite Radio Channel Adds New Programming, at <http://sirius.com/servlet/ContentServer?pagename=Sirius/CachedPage&c=EditorialAsset&cid=1104779646662> (Dec. 7, 2004). In a comment filed by James Anderson, a private individual, an argument was made in support of satellite radio currently providing niche programming. James Anderson maintained that niche programming is more than just a channel devoted to a particular ethnic group but any type of music programming that is not accessible through traditional radio. Comment of James W. Anderson, MB No. 04-160 at 1 (Sept. 15, 2004), available at http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6516483985. James Anderson made a comparison between what is available on XM and AM/FM radio stations. *Id.* For example, there are only ten AM/FM radio stations in the United States devoted to broadcasting traditional jazz music. *Id.* Although there are many more radio stations that broadcast jazz, they do not do so on a continuous format. *Id.* As a result, music enthusiasts cannot listen to jazz at anytime of the day but instead have to wait for the designated block of time devoted to jazz. *Id.* XM radio on the other hand offers traditional jazz and four other channels of varying types of jazz twenty-four hours a day, seven days a week.

to this requirement by the FCC.¹¹⁶

The NAB conducted a study to show the harm that would occur to small local broadcasters if satellite radio was permitted to have local broadcasts.¹¹⁷ The study found that the smaller markets played a vital role in the life of communities and created a forum for social activities and information, but the local broadcaster service was fragile and could be severely impacted by satellite radio.¹¹⁸ The most significant way local broadcasters would be impacted is in advertising revenue. The majority of their revenues come from local advertising; therefore, the loss of this revenue would not allow local broadcasters to stay in business.¹¹⁹ The NAB maintained that the government has a major interest in assuring the survival of local broadcasters. Radio is not only easily available, powered, and operated, but is also the last means of communication in the event of

Id. See also Jazz & Blues, at http://www.xmradio.com/programming/neighborhood.jsp?hood=jazz_and_blues (last visited Jan. 20, 2005). Classical music was also used as an example because there are less than 200 radio stations broadcasting classical music. Anderson, *supra*. Of those 200, most radio stations only offer classical music during specific times of the day. *Id.* In contrast, XM offers three different channels of varying classical music, from historic composers, opera, and modern classical music. *Id.* One final example is the availability of dance music. *Id.* In the United States there are very few dance formatted radio stations because these stations rarely achieve high ratings. *Id.* XM on the other hand, has four different dance formats of continuous music. *Id.* See also Dance Programming, at <http://www.xmradio.com/programming/neighborhood.jsp?hood=dance> (last visited Jan. 20, 2005).

116. *In re* Establishment of Rules and Policies, *supra* note 3, at 6. To support the NAB's argument, the NAB quoted XM stating, "[b]y its nature, SDARS is a nationwide service that will not carry local news and information. It therefore is at a significant competitive disadvantage against local stations which have the ability to carry local news, sports, weather, and other local information . . ." *Id.* at 6. The NAB also quoted Sirius stating, "[s]atellite radio is an inherently national service and therefore offers no competitive threat whatsoever to traditional radio stations' local programming strengths, such as local news, weather, traffic, [and] school closings . . ." *Id.* at 7.

117. *Id.* at 8.

118. *Id.* at 9. Out of 13,454 AM and FM stations, 9,606 are small privately owned stations lacking the protection and financial security that major broadcasters possess. Reply Comments of the National Association of Broadcasters, *supra* note 87, at 17. The NAB asserted that these small stations are most likely to face economic harm. *Id.*

119. *Id.*

a disaster.¹²⁰ The NAB also stressed the important role played by local broadcasters in providing public safety information, publicizing AMBER Alerts, and announcing school closures.¹²¹

The NAB had two requests for relief in its declaratory ruling. The first request was for the FCC to prohibit SDARS operators “from using any technology to permit the delivery of content that would be aired on a receiver in one location that differs from the content that would be aired on a receiver in a different location.”¹²² The second request was for the FCC to prohibit SDARS operators from “providing locally oriented services on nationally distributed channels.”¹²³

1. XM’s and Sirius’s Opposition to the NAB’s Petition for Declaratory Ruling

XM and Sirius made a number of arguments in opposition to the NAB’s petition for declaratory ruling. First, XM and Sirius maintained that they are already in compliance with the NAB’s demands and at that time had not inserted any local content through terrestrial repeaters, which was a focus of the FCC’s proposed rulemaking in 1997.¹²⁴ Second, traditional radio stations are not entitled to any special protection from advances in technology. As

120. *Id.* at 19. XM also has an Emergency Alert station which “is dedicated to providing critical, updated information before, during, and after natural disasters . . . to listeners across the country.” XM Satellite Radio, *Instant Traffic and Weather*, at <http://www.xmradio.com/programming/neighborhood.jsp?hood=traffic> (last visited Jan. 7, 2005). Also, satellite radio is now easily accessible through portable satellite radio units which are made by XM, Pioneer, and Tao. Chance Patterson, *XM Satellite Radio to Expand Line-Up of XM2GO Portable, Hand-Held Satellite Radios* in _____ 2005, at http://www.xmradio.com/newsroom/screen/pr_2005_ces_xm2go.html (Jan. 5, 2005).

121. *In re* Establishment of Rules and Policies, *supra* note 3, at 19.

122. *Id.* at ii.

123. *Id.*

124. Opposition of Sirius Satellite Radio Inc. and XM Radio Inc. at 1, *In re* Request for Comment on Petition Filed by the National Association of Broadcasters Regarding Programming Carried by Satellite Digital Audio Radio Services (No. 04-160) (June 4, 2004), available at http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6516211454.

such, satellite radio is simply a response to consumer demand.¹²⁵ Third, the NAB's study suggesting local broadcasters would suffer because of satellite radio had already been rejected in 1997 when the FCC concluded satellite radio would not be a threat to traditional radio.¹²⁶ XM asserts that in the 2004 Radio Business Report the NAB's President and CEO, Edward Fritts, even admitted that satellite radio was not a threat to local radio stations. Fritts stated, "[h]ometown radio stations have little to fear in the form of competition from satellite. The 175 million listeners who choose free, local radio compared to the 2 million subscribers who elect the niche programming of satellite demonstrates which product has wider appeal."¹²⁷ Fourth, the First Amendment guarantees SDARS operators the right to protected speech.¹²⁸ Therefore, SDARS operators have editorial discretion in compiling and broadcasting the traffic and weather information. It would be considered unlawful censorship for the FCC to prohibit SDARS operators from broadcasting weather and traffic.¹²⁹ The final argument made by XM and Sirius maintained that traditional radio would not be

125. *Id.* at 9.

126. *Id.* at 10.

127. XM Radio Inc., Written Ex Parte Presentation at 3, *In re* Request for Comment on Petition Filed by the National Association of Broadcasters Regarding Programming Carried by Satellite Digital Audio Radio Services (No. 04-160) (Oct. 28, 2004) (quoting Radio Business Report, Vol. 21, Issue 170 (Aug. 31, 2004)), at http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6516789239.

128. Opposition of Sirius Satellite Radio Inc. and XM Radio Inc., *supra* note 124, at 13 ("When a licensee exercises editorial discretion in the selection and presentation of its programming, even where that programming involves the speech of third parties, the licensee engages in protected speech.") (quoting *Ark. Educ. TV Comm'n v. Forbes*, 523 U.S. 666, 674 (1998)). The SDARS operators further asserted that they have a first amendment claim as well as satellite subscribers.

The people as a whole retain their interest in free speech by radio and their collective right to have the medium function consistently with the ends and purposes of the First Amendment. It is the right of the viewers and listeners, not the right of the broadcasters, which is paramount.

Opposition of Sirius Satellite Radio Inc. and XM Radio Inc., *supra* note 124, at 14 (quoting *Red Lion Broadcasting Co. v. FCC*, 395 U.S. 367, 390 (1969)).

129. Opposition of Sirius Satellite Radio Inc. and XM Radio Inc., *supra* note 124, at 13.

economically impacted by satellite radio.

Satellite radio currently has two million subscribers which is less than one percent of the 800 million radios receiving traditional radio.¹³⁰ Jeff Smulyan, Chairman and CEO of broadcast giant Emmis Communications, acknowledged the same point but with different figures stating, "even if the Satellite Radio Providers achieve 'their wildest dreams' of 40 million total subscribers, '295 million people will still be listening exclusively' to AM and FM radio."¹³¹ Ultimately, businesses will be unwilling to pay for advertisements on satellite radio with so few listeners.

In further support of the viability of local radio stations, there has been a growing trend in advertising revenue for traditional radio and "[a]nalysts predict 2004 advertising revenue will grow between [four] percent and [eight] percent, a clear sign local radio is healthy."¹³² This type of revenue growth will ensure the dominance of traditional radio in the market. Another guarantee of traditional radio's dominance is the substantial amount of money necessary to keep satellite radio operating. SDARS operators must spend billions of dollars in purchasing spectrum, launching satellites, licensing music, and setting up repeaters.¹³³ In contrast, traditional radio stations do not have to pay for spectrum use or expensive state-of-the-art technology, and therefore, enjoy a much higher profit margin from its advertising revenue.¹³⁴

2. Adding Fuel to the Fire, XM Provides Local Traffic and Weather Programming

a) XM Maintained It Did Nothing Wrong

130. *Id.* at 10.

131. XM Radio Inc., Written Ex Parte Presentation, *supra* note 127 (quoting Frank Ahrens, *Stern's Move to Satellite Radio Is a Signal Event*, WASHINGTON POST, Oct. 8, 2004).

132. Opposition of Sirius Satellite Radio Inc. and XM Radio Inc., *supra* note 124, at 11.

133. *Id.* at 12. Because one of the major incentives for subscribers is commercial free radio, SDARS operators are limited in the amount of revenue they can earn from advertising. Instead, XM and Sirius must rely on their subscription fees and revenue from sales of equipment to receive satellite radio broadcasts.

134. *Id.* at 13.

The introduction of SDARS operators' new programming for local traffic and weather has created a great deal of controversy. XM now provides local traffic and weather for twenty-one cities on twenty-one different channels.¹³⁵ Notably, Sirius also provides local traffic and weather for twenty cities on ten channels.¹³⁶ XM asserted that this type of programming is an ancillary service to satellite radio and a service the public expects.¹³⁷ The FCC approved of ancillary uses of the SDARS licenses knowing that technology advances were inevitable.¹³⁸ The SDARS operators also asserted that the relief requested by the NAB has already been satisfied because the traffic and weather service is the same for all subscribers.¹³⁹ A subscriber can turn the channel to any one of the twenty-one stations to hear traffic and weather updates for all twenty-one different cities.¹⁴⁰ However, XM still asked the FCC to eliminate any rule requiring programming to be the same for all subscribers. XM stated that this type of rule "could potentially eliminate innovative and beneficial

135. Reply Comments of the National Association of Broadcasters, *supra* note 87, at 8. XM provides traffic and weather information for Boston, New York, Philadelphia, Baltimore, Washington, Pittsburgh, Detroit, Chicago, St. Louis, Minneapolis, Seattle, San Francisco, Los Angeles, San Diego, Phoenix, Dallas, Houston, Atlanta, Tampa, Orlando, and Miami. XM Satellite Radio, *Instant Traffic and Weather*, *supra* note 120.

136. Sirius Satellite Radio, *Sirius Channel Guide*, at <http://www.sirius.com/pdf/channelguide.pdf> (last modified Oct. 24, 2004). Sirius provides traffic and weather information for New York City, Philadelphia, Atlanta, Boston, Baltimore, Washington D.C., Los Angeles, San Diego, Chicago, St. Louis, Detroit, Pittsburgh, Dallas-Ft. Worth, Houston, San Francisco, Seattle, Orlando, Tampa-St. Petersburg, Miami-Ft. Lauderdale, and Phoenix. *Id.* While XM only provides weather for specific local cities, Sirius has taken an additional approach for delivering weather programming to its customers. Sirius has obtained the services of the weather channel for broader areas such as a program for the eastern, central, and western parts of the United States. *Id.* This allows Sirius listeners to get weather updates even if they do not have a specific channel designated for their city.

137. Reply Comments of the National Association of Broadcasters, *supra* note 87, at 9.

138. *Id.* "The applicants have proposed a mix of ancillary services. We agree with the commenters who argue that allowing flexibility consistent with the allocation will allow providers to tailor service offerings to meet consumer needs." Opposition of Sirius Satellite Radio Inc. and XM Radio Inc., *supra* note 124, at 6 (quoting FCC Satellite SDARS Report and Order, 12 FCC Rcd at 5793).

139. *Id.* at 4-5.

140. *Id.*

services that XM is already offering today.”¹⁴¹

For instance, XM offers real-time technical weather data to pilots, mariners, and mobile emergency crews.¹⁴² This service provides radar, wind-speed, and other navigational information based upon the individual’s location.¹⁴³ This critical information is especially useful for private planes that lack the sophisticated equipment of commercial airliners.¹⁴⁴ Because of the many technological benefits satellite radio offers, it is in the public’s interest to increase the availability of traffic and weather information so more than one source is available.¹⁴⁵

b) The NAB Maintained That Local Traffic and Weather Programming Are Components of Traditional Radio, and Therefore Not Ancillary to Satellite Radio

The NAB maintained that ancillary services were defined as “high speed broadcast data or location based geographic information, electronic graphic/visual information, voice mail, and alphanumeric messages”¹⁴⁶ Furthermore, local traffic and weather services fall outside the scope of satellite radio because XM’s and Sirius’s licenses were granted on the basis of providing services local radio could not provide.¹⁴⁷ Local traffic and weather have always been a component of radio and a service relied upon by the public, therefore, local traffic and weather programming cannot be considered ancillary

141. XM Radio Inc., Written Ex Parte Presentation, at 1, *In re* Request for Comment on Petition Filed by the National Association of Broadcasters Regarding Programming Carried by Satellite Digital Audio Radio Services (No. 04-160) (Nov. 1, 2004), available at http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6516792232.

142. *Id.* The XM new service for pilots and mariners works on the GDL 69, a device manufactured by Garmin. Press Release, Garmin Unveils Next-Generation Weather Data for Popular Avionics (Oct. 21, 2004), available at <http://www.garmin.com/pressroom/aviation/102104.html>.

143. *Id.*

144. *See id.*

145. Opposition of Sirius Satellite Radio Inc. and XM Radio Inc., *supra* note 124, at 7-8.

146. Reply Comments of the National Association of Broadcasters, *supra* note 109, at 10.

147. *Id.* at 9.

to satellite radio.¹⁴⁸

3. Third Party Comments Regarding the NAB's Motion for Declaratory Ruling

a) Supporters of Satellite Radio

The FCC received an overwhelming response regarding the NAB's motion for a declaratory ruling. A substantial majority of these comments were made in support of SDARS operators. Those in favor of the SDARS operators included over 25,000 satellite radio subscribers,¹⁴⁹ the Satellite Broadcasting and Communications Association (SBCA), Satellite Industry Association (SIA),¹⁵⁰ Consumer Electronics Association,¹⁵¹ United States Department of Transportation,¹⁵² and American Honda Motor Co., Inc. (Honda).¹⁵³

148. *Id.*

149. The subscribers that submitted comments were comprised of truck drivers, commuters, travelers, and public safety and health workers. *Id.* Each of these subscribers attested to the great benefits the instant traffic and weather programming provided. Joint Reply of XM Radio Inc. and Sirius Satellite Radio Inc. at 2, *In re* Request for Comment on Petition Filed by the National Association of Broadcasters Regarding Programming Carried by Satellite Digital Audio Radio Services (No. 04-160) (June 21, 2004), available at http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6516214469.

150. The SIA stated that NAB's efforts were "an unabashed attempt to convince the FCC to adopt policies that favor one industry over another without regard to the interests of consumers." Joint Reply of XM Radio Inc. and Sirius Satellite Radio Inc., *supra* note 149, at 4-5 (quoting Comments of the Satellite Industry Association, MM Docket No. 04-160 at 2 (June 4, 2004)).

151. The CEA believed that "technological innovation fuels the engine of the American economy and is the lifeblood of the consumer electronics industry." *Id.* (quoting Comments of the Consumer Electronics Association at 2, *In re* Request for Comment on Petition Filed by the National Association of Broadcasters Regarding Programming Carried by Satellite Digital Audio Radio Services Providers (No. 04-160) (June 4, 2004), available at http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6516211568). Therefore, the FCC should maintain "its longstanding commitment to facilitate innovative use of spectrum and technology." *Id.*

152. Reply Comment of the United States Department of Transportation, *In re* Request for Comment on Petition Filed by the National Association of Broadcasters Regarding Programming Carried by Satellite Digital Audio Radio Services

XM and Sirius believe that the numerous comments submitted in support of their service show the greater public interest in dismissing the NAB's petition.¹⁵⁴

The United States Department of Transportation strongly believed that providing local traffic and weather on satellite radio is in the public interest for enhancing safe and efficient transportation.¹⁵⁵ The United States Department of Transportation based its opinion on several factors. First, satellite radio provides drivers with information that is more frequently updated and therefore more accurate than traditional radio.¹⁵⁶ Second, drivers need information about their current location and their potential destination.¹⁵⁷ Local broadcasters are very limited in the distance their signal can travel, therefore, a person driving to a distant location would only be aware of the traffic and weather situation when he or she reaches their destination.¹⁵⁸ This lack of information limits the ability for drivers to avoid traffic congestion, accidents, dangerous road conditions, and hazardous weather.¹⁵⁹ In contrast, satellite radio

(No. 04-160) (June 21, 2004) ("The United States Department of Transportation ("DOT" or "Department") strongly supports widespread dissemination of such information in the interests of enhancing safe and efficient transportation."), *available* at http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6516214430.

153. Joint Reply of XM Radio Inc. and Sirius Satellite Radio Inc., *supra* note 149, at 2-5.

154. *Id.* at 1.

155. Reply Comment of the United States Department of Transportation, *supra* note 152, at 1. Although the Michigan Department of Transportation (MDOT) did not file any comments, MDOT has demonstrated support for satellite radio. MDOT has placed traffic signs listing XM's and Sirius's traffic and weather channels, as well as two AM stations, in the Detroit area. XM Radio Inc. and Sirius Satellite Radio Inc., Written Ex Parte Presentation, at 1, *In re* Request for Comment on Petition Filed by the National Association of Broadcasters Regarding Programming Carried by Satellite Digital Audio Radio Services (No. 04-160) (Oct. 27, 2004), *available* at http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6516787495. MDOT would not have spent the resources unless satellite radio provided a substantial benefit to the public.

156. Reply Comment of the United States Department of Transportation, *supra* note 152, at 2.

157. *Id.*

158. *Id.*

159. *Id.*

allows for “enhanced safety, efficiency, and predictability, as well as improved traffic management.”¹⁶⁰ Furthermore, the ability of drivers to predict traffic and find alternate routes reduces fuel consumption and overall pollution.¹⁶¹ The United States Department of Transportation’s comments further its core objective “to ease access in order to reap the benefits of informed decisions by travelers.”¹⁶²

Another strong supporter for SDARS operators is the Consumer Electronics Association. The Consumer Electronics Association emphasized in comments to the FCC that a ruling in favor of the NAB would be a “detriment of the consumers electronics industry and American consumers.”¹⁶³ Furthermore, that “[t]he innovative services offered by XM and Sirius are prime examples of the technological innovation that fuels the consumer electronics industry and the U.S. economy.”¹⁶⁴

b) Supporters of the NAB

The NAB also had supporters who filed comments with the FCC but were far fewer than those supporting SDARS operators. Major NAB supporters included the State Broadcast Association, Clear Channel, Walt Disney Company, Mt. Wilson FM Broadcasters, Greater Media, Cumulus Media Inc., Entercom Communications Corp., Saga Communications, Northern California Broadcast Association, Journal Broadcast group, and dozens of radio stations

160. *Id.* The United States Department of Transportation has a history of increasing access to traffic and weather information to the public. In 1999, the United States Department of Transportation requested the FCC provide a national single abbreviated telephone number (511) for drivers to access travel information. *Id.* at 2-3. The service would allow drivers to access traffic information before they reached their destination, which is especially helpful for long distance drivers who are outside the local broadcaster’s transmission range. *Id.* at 3.

161. *Id.* at 2.

162. *Id.* at 3.

163. Comment of Consumer Electronics Association at 1, *In re* Request for Comment on Petition Filed by the National Association of Broadcasters Regarding Programming Carried by Satellite Digital Audio Radio Services (No. 04-160) (Nov. 2, 2004), available at http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6516792688.

164. *Id.*

and their employees.¹⁶⁵ These NAB supporters all asserted one common argument; SDARS operators promised to remain a national service and now have reneged by providing local traffic and weather programming.¹⁶⁶

The Walt Disney Company, owning over seventy radio stations in the United States, reminded the FCC that the SDARS licenses were granted with national programming in mind, and the FCC has never authorized SDARS operators to provide local programming.¹⁶⁷

165. FCC, Records Found for Proceeding 04-160, at http://gullfoss2.fcc.gov/cgi-bin/websql/prod/ecfs/comsrch_v2.hts?ws_mode=retrieve_list&id_proceeding=04-160&start=1&end=100&first_time=N (last visited January 22, 2005). Other supporters of the NAB included Northern Star Broadcasting, Waitt Radio, Media Access Project, Sierra Broadcasting Corporation, New Radio Group L.L.C., Bonneville International Corporation, Radio One, and Legend Communications. *Id.*

166. Reply Comments of the Walt Disney Company and ABC, Inc. at 6, *In re* Request for Comment on Petition Filed by the National Association of Broadcasters Regarding Programming Carried by Satellite Digital Audio Radio Services (No. 04-160) (June 21, 2004), available at http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6516214472; Comments of MBCO-AM/WQEL-FM at 1, *In re* Request for Comment on Petition Filed by the National Association of Broadcasters Regarding Programming Carried by Satellite Digital Audio Radio Services (No. 04-160) (July 14, 2004), available at http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6516285437; Comments of Clear Channel Augusta, GA at 1, *In re* Request for Comment on Petition Filed by the National Association of Broadcasters Regarding Programming Carried by Satellite Digital Audio Radio Services (No. 04-160) (July 7, 2004), available at http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6516285451; Comments of Clear Channel Anchorage, AK at 1, *In re* Request for Comment on Petition Filed by the National Association of Broadcasters Regarding Programming Carried by Satellite Digital Audio Radio Services (No. 04-160) (July 12, 2004), available at http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6516285433; Comments of Skycountry Broadcasting Inc., Radio Station WPTL at 1, *In re* Request for Comment on Petition Filed by the National Association of Broadcasters Regarding Programming Carried by Satellite Digital Audio Radio Services (No. 04-160) (July 12, 2004), available at http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6516285436.

167. Reply Comments of the Walt Disney Company and ABC, Inc., *supra* note 166, at 1, 3.

Evidence of the FCC's intent is demonstrated by its decision to continually refer to satellite radio as a national service.¹⁶⁸ For example, Walt Disney Company quoted the FCC stating, "[g]iven the distinguishing features of satellite [S]DARS—it is a national service . . . —we find that the effect of satellite [S]DARS on terrestrial radio is likely to be significantly smaller than the effect of additional terrestrial radio stations."¹⁶⁹ Because of statements like this, supporters of SDARS argue that the FCC never assessed the affect of satellite radio providing local programming and the consequence of competing for local advertising revenue.¹⁷⁰ Small radio stations maintained that the only service they have to offer listeners is local programming and without it they would cease to exist.¹⁷¹

Small radio stations believe that they contribute a great deal to their communities. Investing heavily in broadcasting local high school games, society functions, and fund raising events, the community can stay in touch with local matters that are important.¹⁷² To be effective, these services require many employees, all of whom must be paid. However, neither the services nor the employees can be sustained without advertising revenue.¹⁷³ Small stations also maintained that these jobs provide the necessary entry-level positions for people interested in the industry.¹⁷⁴

Finally, broadcasting companies asserted that the public interest is best served by protecting these vital local radio stations. During broadcasts local radio stations donate a great deal to local communities and make considerable donations to the general public. In 2003 alone, broadcasters donated \$9.6 billion to their local communities, demonstrating the close relationship broadcasters have with their communities.¹⁷⁵

4. The NAB Moves to Dismiss Its Petition for Declaratory Ruling

168. *Id.*

169. *Id.* at 5.

170. *Id.* at 4.

171. Comments of Skycountry Broadcasting Inc., Radio Station WPTL, *supra* note 166, at 2.

172. *Id.* at 1; Comments of MBCO-AM/WQEL-FM, *supra* note 166.

173. Comments of MBCO-AM/WQEL-FM, *supra* note 166.

174. *Id.*

175. Comments of Clear Channel Augusta, GA, *supra* note 166.

On November 8, 2004, the NAB unexpectedly moved to dismiss its petition for declaratory ruling.¹⁷⁶ This move resulted in the dismissal of the NAB's declaratory ruling without prejudice on November, 12, 2004.¹⁷⁷ The NAB believed that because the new advancements in satellite radio were so recent there was not enough information for the FCC to make an informed decision on the potential harm it would cause traditional radio.¹⁷⁸ However, the NAB's motion to dismiss does not mean it will not bring this declaratory ruling again. Rather, the "NAB will continue to monitor the evolution of satellite radio and . . . bring the matter before this agency when a fuller picture has developed."¹⁷⁹

5. The FCC Faced a Similar Challenge with the Emergence of Cable Television

This same scenario of powerful broadcasters versus new technology has played out before in the FCC with the emergence of cable television. Even though the technology was available since the 1950's, cable television took off in the late 1970's.¹⁸⁰ The delay was due to major broadcasters putting pressure on the FCC to restrict cable television.¹⁸¹ The major broadcasters transmitted over the electromagnetic spectrum by means of VHF stations, which had many limitations.¹⁸² VHF problems included distortion that was easily created by tall buildings, fewer channels because of spectrum

176. Motion to Dismiss Without Prejudice at 1, *In re* Request for Comment on Petition Filed by the National Association of Broadcasters Regarding Programming Carried by Satellite Digital Audio Radio Services (No. 04-160) (Nov. 8, 2004), at http://gulfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6516793471.

177. Order of Dismissal at 1, *In re* Request for Comment on Petition Filed by the National Association of Broadcasters Regarding Programming Carried by Satellite Digital Audio Radio Services (No. 04-160) (Nov. 12, 2004), available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/DA-04-3577A1.doc.

178. Motion to Dismiss Without Prejudice, *supra* note 176, at 3.

179. *Id.*

180. *Regulatory Reform in the Cable Industry: The Effect of the 1992 Cable Act's Must Carry and Retransmission Consent Rules on the Industry and the Consumer*, 47 ADMIN. L. REV. 587, 588-90 (1995).

181. *Id.* at 589.

182. *Id.* at 588-89.

use, and limited ability to have national programming.¹⁸³ Broadcasters feared cable television because it could offer a higher quality picture, signals to remote areas of the country, unlimited number of channels, and original programming not seen on VHF broadcasts.¹⁸⁴ However, the VHF broadcasters were able to put enough pressure on the FCC so that it adopted regulations designed to hinder the ability of cable television to compete.¹⁸⁵ These hindrances included denying requests to install microwave relays to carry cable television's signal, requiring cable television to carry all local broadcast signals, and restricting the number of outside broadcasts that cable television could bring to an area.¹⁸⁶ In response to these rules and regulations, the cable companies went to the courts for relief.

In *Home Box Office, Inc. v. FCC*, the United States Court of Appeals for the District of Columbia helped the FCC reevaluate the way it dealt with cable television.¹⁸⁷ The court specifically looked at those regulations which prohibited cable television from offering programs that VHF broadcasts did not have, unless those programs were later re-broadcast over VHF.¹⁸⁸ The purpose of these regulations was to keep cable television and VHF broadcasts at the same level.¹⁸⁹ However, the court invalidated the regulations and reasoned that although they may make sense for VHF broadcasters, who had limited amounts of spectrum use, cable television technology was not burdened by spectrum limitations and could offer an abundance of channels.¹⁹⁰ Essentially, the court required the FCC to develop regulations independent of VHF broadcasts because of the difference in the two technologies.¹⁹¹

Eventually in the late 1970's, the FCC eliminated many of these

183. *Id.* at 588.

184. *Id.* at 588-89.

185. *Id.* at 589.

186. *Id.*

187. *Home Box Office, Inc. v. FCC*, 567 F.2d 9 (D.C. Cir. 1977).

188. John F. Gibbs & Todd G. Hartman, *The Regulation of Convergence Technologies: An Argument For Technologically Sensitive Regulation*, 27 WM. MITCHELL L. REV. 2193, 2202 (2001). This type of regulation was known as an "anti-siphoning" rule. *Id.*

189. *Id.*

190. *Home Box Office*, 567 F.2d at 34.

191. Gibbs & Hartman, *supra* note 188, at 2204.

restrictive rules and cable television was able to grow into a billion dollar industry.¹⁹² The FCC learned an important lesson with cable television; “any attempt to impose ‘regulatory parity’ in a service area carries an inherent risk of stifling the evolution of technology with respect to that service.”¹⁹³

D. Satellite Radio Faces Additional Obstacles Due to Possible Restrictions for Satellite Earth Stations

1. The Problem with Satellite Earth Stations

On December 23, 2004, the FCC gave notice of a proposed rulemaking that would affect satellite earth stations. Here, the goal of the FCC was to “modify . . . frequency coordination rules to promote sharing between non-geostationary satellite orbit (NGSO) and geostationary satellite orbit (GSO) fixed satellite service (FSS) operations and various terrestrial services operating in several frequency bands.”¹⁹⁴ The problem revolves around the 7 GHz band in which FSS operators are licensed all frequencies within the band and fixed service (FS) operators are only licensed a specific frequency.¹⁹⁵ The licensing of multiple frequencies to FSS creates options in frequency selection when transmitting from different locations or satellite positions.¹⁹⁶ Broadcast Auxiliary Service (BAS) and Cable Television Relay Service (CARS) both use the 7 GHz band for various transmitting purposes such as fixed point-to-point stations, studio transmitter links, TV relays, TV microwave boosters, and

192. *Regulatory Reform in the Cable Industry: The Effect of the 1992 Cable Act's Must Carry and Retransmission Consent Rules on the Industry and the Consumer*, *supra* note 180, at 590; Kevin W. Grillo, *Electronic Privacy: Can the Cable Television Industry Prevent Unauthorized Interception?*, 13 ST. MARY'S L.J. 587 (1982).

193. Gibbs & Hartman, *supra* note 188, at 2205.

194. Notice of Proposed Rule Making at 1, *In re* Amendment of Parts 25, 74, 78 and 101 of the Rules regarding Coordination between the Non-Geostationary and Geostationary Satellite Orbit Fixed-Satellite Service and Fixed, Broadcast Auxiliary and Cable Television Relay Services in the 7 GHz, 10 GHz and 13 GHz Frequency Bands [Hereinafter *In re* Amendment of Parts 25, 74, 78 and 101] (No. 03-254) (Dec. 23, 2003), at http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-03-318A1.doc.

195. *Id.* at 4.

196. *Id.* at 8 n.23.

delivering cable television programming from one system to another.¹⁹⁷ Further complicating matters are Mobile BAS and CARS transmitters, which are typically identified by the large dishes on vans transmitting live television broadcasts. Complications arise due to the random manner in which they transmit coverage of news requiring great flexibility in their use of the 7 GHz band.¹⁹⁸

2. XM's and Sirius's System for Satellite Earth Stations

XM has a geostationary satellite orbit (GSO) FSS in which the satellite receiving the transmission from the satellite earth station remains in the same place in orbit.¹⁹⁹ In other words, the satellite rotates at the same speed as the earth to remain in the same position in the sky. Sirius on the other hand has a non-geostationary satellite orbit (NGSO) FSS in which several satellites orbit the earth but do not remain in one fixed position; instead, NGSO satellites take turns over the area to be covered. Sirius chose a NGSO FSS because it allows for a more over-head direct line of sight, rather than the more southerly line of sight required by XM's GSO FSS.²⁰⁰

197. Reply Comments of XM Radio Inc. at 4 n.12, *In re* Amendment of Parts 25, 74, 78 and 101 (No. 03-254) (March 18, 2004), available at http://gulfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6516083353.

198. Notice of Proposed Rule Making, *supra* note 172, at 3. Unlike the satellite earth stations for satellite radio, Mobile BAS and CARS operators have an advantage in mitigating interference because their transmitters are mobile. Comments of Boeing Company at 4, *In re* Amendment of Parts 25, 74, 78 and 101 (No. 03-254) (March 3, 2004), available at http://gulfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6515784495. If a mobile BAS or CARS encounters interference it can easily move to another location to transmit. *Id.* The best example is a news helicopter that can change altitude while broadcasting to obtain a better signal. *Id.* There are two thoughts on the use of Mobile BAS and CARS. Boeing asserted that these mobile systems are not a problem because of their highly predictable use at stadiums, fair grounds, airports, and government facilities. Reply Comments of the Society of Broadcast Engineers, Inc. ¶ 7, *In re* Amendment of Parts 25, 74, 78 and 101 (No. 03-254) (March 18, 2004). In contrast, the SBE maintained that the mobile systems are highly unpredictable because of "the highly unpredictable nature of the location of breaking news events . . ." *Id.*

199. Notice of Proposed Rule Making, *supra* note 172, at 2 n.3.

200. Telephone Interview with Stephen Duall, Policy Branch of the FCC Satellite Division (Jan. 24, 2005).

The FCC licensed both XM and Sirius operators 7025-7075 MHz FSS (7 GHz band) frequencies for their satellite earth stations.²⁰¹ The frequencies are licensed “on a co-primary basis with the [Broadcast Auxiliary Service] BAS and [Cable Television Relay Service] CARS operators that share the band.”²⁰² Without the licensing of multiple frequencies, SDARS operators would not be able to uplink with their satellites.²⁰³ SDARS operators use the many frequencies not only for transmitting programming to their satellites but also for tracking, telemetry, and control of the satellites.²⁰⁴

XM obtained permission to operate satellite earth stations in Washington, D.C. and another proposed station in Atlanta, Georgia.²⁰⁵ Although XM broadcasts its programming from D.C., XM transmits tracking and telemetry control from a station in Canada.²⁰⁶ However, there are still satellite earth stations in the United States capable of temporarily overriding the Canadian station.²⁰⁷ Sirius obtained licensing to transmit programming from a satellite earth station in Vernon, New Jersey, and also utilizes three stations in New Jersey, Pennsylvania, and California to communicate with tracking and telemetry control stations in Panama and Ecuador.²⁰⁸

201. Reply Comments of XM Radio Inc., *supra* note 197, at 2.

202. *Id.*

203. Notice of Proposed Rule Making, *supra* note 172, at 2 n.4 (quoting *In re* Establishment of Rules and Policies, *supra* note 3, ¶ 129.).

204. *Id.* at 3.

205. *Id.*

206. Telephone Interview with Stephen Duall, *supra* note 200; *In re* XM Radio Inc., *supra* note 58, ¶ 5.

207. *In re* XM Radio Inc., *supra* note 58, ¶ 5.

208. E-mail from Stephen Duall, Policy Branch of the FCC Satellite Division, to Adam Cain, Pepperdine University School of Law (Jan. 26, 2005) (on file with author); E-mail from Hessler Theodore, Sirius Satellite Radio, to Adam Cain, Pepperdine University School of Law (Feb. 3, 2005) (on file with author); E-mail from Hessler Theodore, Sirius Satellite Radio, to Adam Cain, Pepperdine University School of Law (Feb. 10, 2005) (on file with author); E-mail from Hessler Theodore, Sirius Satellite Radio, to Adam Cain, Pepperdine University School of Law (Feb. 11, 2005) (on file with author). Sirius leases fiber or satellite circuits to communicate between its satellite earth stations in North America and the tracking and telemetry control stations in Panama and Ecuador. E-mail from Theodore Hessler (Feb. 11, 2005), *supra*. Because the Panama and Ecuador stations are on the equator, these stations can see the satellites entire orbit. *Id.*

3. The FCC's Proposed Rules to Maintain Its Existing Coordination Procedures

To guarantee all licensees in the 7 GHz band have access, the FCC proposed to continue with its existing coordination procedures.²⁰⁹ Anytime a new NGSO or GSO FSS is awarded a license, the other operators in the 7GHz band coordinate efforts by following the procedures set by the FCC.²¹⁰ The FCC believed this to be a viable method because of the limited number of satellite earth stations.²¹¹ The proposed rule was “designed to enable flexible spectrum sharing, while fully accommodating the needs of each service and not imposing excessive burden on any service.”²¹²

4. The Society of Broadcast Engineers Proposed Rules to Prevent Operation of Satellite Earth Stations Within 150 Kilometers of the Top 100 Television Markets

The Society of Broadcast Engineers (SBE) proposed a different solution in which satellite earth stations would be prohibited from transmitting to GSO or NGSO satellites within 150 kilometers of the top 100 television markets.²¹³ These top 100 televisions markets would include Washington, D.C. where XM currently has an uplink station. The theory behind this proposed rule is to protect the existing FS systems, which do not require multiple frequencies, to allow FS systems to expand.²¹⁴ The proposed rule also protects

209. Reply Comments of XM Radio Inc., *supra* note 197, at 4.

210. *Id.* To coordinate the use of the 7 Ghz Band users would look to sections 25.203, 25.251, and 101.103(d) of the coordination rules. *Id.*

211. *Id.*

212. Reply Comments of the Boeing Company at 1, *In re* Amendment of Parts 25, 74, 78 and 101 (No. 03-254) (March 18, 2004), *available at* http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6516083350.

213. Comments of the Society of Broadcast Engineers, Inc. ¶ 8, *In re* Amendment of Parts 25, 74, 78 and 101 (No. 03-254) (March 3, 2004), *at* http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6515784398.

214. *See* SkyBridge L.L.C. Written Ex Parte Communication at 2 (No. 98-206) (Dec. 8, 1999), *available at* http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6010251768.

against “warehousing” of spectrum frequencies.²¹⁵ Warehousing could occur when a NGSO FSS claims to use frequencies that in fact are not actually being used, in order to guarantee access to multiple frequencies when needed.²¹⁶ The SBE insisted this is likely to happen because of the first in time principal set out by the FCC where “a later-authorized station has to protect the operation of an earlier-authorized station.”²¹⁷

a. XM’s Opposition to the SBE’s Proposal

XM argued several points. First, the SBE’s proposal is not needed to avoid interference between satellite earth stations and BAS and CARS operators. XM has been coordinating its uplink transmissions in a top television market since 2001 and has not received any interference complaints.²¹⁸ Second, adoption of the SBE’s proposal would cause substantial harm to XM radio because it would have to build a new uplink station, and in the meantime be unable to broadcast to its satellite radio subscribers.²¹⁹ The Satellite Industry Association affirmed the substantial burden to DARS operators because satellite earth stations are:

extremely expensive to construct and, once completed, highly impractical to relocate. Therefore, before beginning construction, satellite network

215. Reply Comments of SkyBridge L.L.C. at 2, *In re* Amendment of Parts 25, 74, 78 and 101 (No. 03-254) (March 18, 2004), available at http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6516083302.

216. *Id.* SkyBridge counters the argument of a NGSO FSS spectrum warehousing problem, by pointing out that a NGSO FSS has to use all frequencies in the assigned spectrum in order to operate; therefore, frequencies would not be held without use. *Id.* at 3.

217. Reply Comments of the Society of Broadcast Engineers, Inc. ¶ 8, *In re* Amendment of Parts 25, 74, 78 and 101 (No. 03-254) (Mar. 18, 2004).

218. Reply Comments of XM Radio Inc., *supra* note 197, at 6. The Boeing Company also asserted that the FCC has “repeatedly” witnessed the effectiveness of the coordination procedures because no harm has occurred to other licensees in the band. Reply Comments of The Boeing Company, *supra* note 212, at 4.

219. Reply Comments of XM Radio Inc., *supra* note 197, at 6. Substantial harm to XM would be in conflict with the purpose of the proposed rule set out by the FCC. See Reply Comments of the Boeing Company, *supra* note 212.

operators take pains to identify geographic locations that can be coordinated for all of the spectrum (and orbital look angles) that the gateway facility may need to use during the life of the network.²²⁰

Third, XM's GEO satellites are easy to coordinate with other operators in the 7 GHz because the direction transmitted is always the same.²²¹ The real problem is actually with NGSO satellites because NGSO satellites are not in a fixed orbit and must be tracked. Therefore, multiple look angles are required to transmit to the satellite creating more occurrences of interference with other users on the band.²²² The SBE affirmed this in their own comments to the FCC stating, "a GSO uplink sharing the 7 GHz TV BAS band is not nearly the interference threat that 7 GHz MSS feeder uplinks needing to communicate with NGSO satellites would be."²²³ The Boeing Company has also verified the ease of coordinating GSO satellites because BAS and CARS operators will be able to predict locations for uplinks without interference.²²⁴ Globalstar, a manager of mobile satellite services and licensed FSS operator, maintained that the first in time principle used by the FCC would not lead to "spectrum warehousing."²²⁵ Globalstar based its opinion on the past seventy years of frequency use without any such incidents of spectrum warehousing.²²⁶

IV. ANALYSIS

A. The NAB Will Not Give Up Its Attempts to Prohibit Local Programming

1. Localized Programming Will Not Substantially Impact Traditional

220. Reply Comments of The Boeing Company, *supra* note 212, at 3.
221. Reply Comments of XM Radio Inc., *supra* note 197, at 5.
222. Reply Comments of SkyBridge L.L.C., *supra* note 215.
223. Comments of the Society of Broadcast Engineers, Inc., *supra* note 213, at 4.
224. Reply Comments of XM Radio Inc., *supra* note 197, at 6.
225. Reply Comments of Globalstar at 5 (No. 03-254) (March 18, 2004), at http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6516083333.
226. *Id.* at 5-6.

Radio Today

The NAB's petition for declaratory ruling is something that will continue to wait on the sideline. The NAB's motion to dismiss is based primarily on the fact that the number of satellite radio subscribers today is relatively insignificant; therefore, an accurate determination of the effect on traditional radio broadcasters is impractical. Out of 800 million radio listeners 4.3 million now subscribe to satellite radio.²²⁷ This means that one percent of all radio listeners now listen to satellite radio. So why would any business spend money advertising on satellite radio when it could advertise to ninety-nine percent of all radio listeners on traditional radio? Although this is a valid argument today, traditional radio broadcasters are not worried about how many satellite subscribers there are currently but how many there will be in the future. Without yet knowing the limits of satellite radio technology it is very difficult to predict how many listeners there will be in the future. Many groups have predicted substantial growth for satellite radio in the coming years. XM anticipates 20 million subscribers by 2010 and SkyWaves Research, an independent research firm, predicts 40 million total satellite radio listeners by 2010.²²⁸

Sirius has recently announced that in 2006 a video service for children's programming will be available through its satellite service.²²⁹ XM has also developed a prototype service for providing video as well as radio programming but has not yet made any announcement of when the service will be available.²³⁰ This technological advancement, and others like it, may provide the catalyst to accelerate satellite radio subscriber growth such that almost every car on the road will subscribe to XM or Sirius. Clear Channel may likely have anticipated that satellite radio technology is still developing and that there is a good chance that it will be very successful. In fact, Clear Channel has even purchased shares of XM stock.²³¹

227. See *supra* notes 10, 130 and accompanying text.

228. *Sirius Satellite, Radio Rival XM Gain Subscribers*, *supra* note 7; The Journal Report Online, *supra* note 73.

229. McBride & Freeman, *supra* note 111.

230. *Id.*

231. See McBride, *supra* note 80.

Regardless of the number of satellite radio subscribers, the NAB has argued that allowing satellite radio to provide local programming will result in the loss of advertising revenue by traditional radio. Advertising revenue, especially from local advertisers, is essential to radio broadcasters because it is their main source of income. One problem with the NAB's position is that it does not take into account the consumers of satellite radio. One of the major selling points of satellite radio is commercial *free* radio, or at least a significantly reduced number of commercials on non-music channels. Even if businesses wanted to place local advertisements on satellite radio, XM and Sirius have a limited supply of commercial spots available because their subscribers are paying for a service that offers little or no commercials. If SDARS operators changed their service to allow for more commercials they would risk losing subscribers because the same style of programming is offered for free on traditional radio. Therefore, the argument that the satellite radio model steals traditional radio's advertising revenue and financially harms radio broadcasters is largely exaggerated.

2. Traditional Radio Does Not Offer Enough Unique Characteristics to Justify Preferential Treatment

The NAB argues that the government has a special interest in protecting traditional radio because it serves a special function in providing emergency information. However, XM offers an Emergency Alert channel which "is dedicated to providing critical, updated information before, during and after natural disasters . . . to listeners across the country."²³² The NAB then contended that traditional radio must be protected because of the ease in which listeners can access emergency information. Although an FM/AM radio has the advantage of being purchased anywhere and does not have to be activated by a SDARS operator, the development of satellite radio technology now allows for portable receivers.²³³ These units allow individuals the freedom to go anywhere and still have satellite radio access in a convenient size not much larger than a deck of playing cards. Because these portable receivers obtain their

232. *Instant Traffic and Weather*, *supra* at 120.

233. Patterson, *supra* note 120. Satellite radio is now easily accessible through portable satellite radio units, which are made by XM, Pioneer, and Tao. *Id.*

programming via satellite, even people located in remote areas beyond FM/AM coverage would have access to vital emergency information. In time, technological advances could make satellite radio access even easier. In sum, the benefits of traditional radio in emergency situations do not substantially outweigh those of satellite radio.

3. The NAB's Strategy with the FCC Will Be Ineffective to Guarantee Control of the Radio Market

Because the FCC was poised to rule against the NAB, the NAB has strategically decided to wait until satellite radio has enough subscribers to show a harmful impact.²³⁴ However, the problem with waiting for satellite radio subscribers to increase is the momentum that will grow in support of satellite radio. If and when satellite radio gains a substantial listener base, as compared to the number of total radio listeners, the public support of satellite radio will make it very hard for the FCC to hinder the advancements of satellite programming or technology. As a result, the NAB faces a difficult situation in which either strategy it chooses will most likely be a losing one. The advantage in waiting for a larger satellite radio listener base is the lack of a final determination; which allows the NAB to use the uncertainty against its smaller rivals, which already face market challenges.

B. Portable Satellite Radio Receivers Create More Incentive for SDARS Operators to Fight for Terrestrial Repeaters

XM has recently come out with the MyFi, which is a portable device capable of receiving satellite radio. The MyFi is equipped with special features such as stock and sports tickers, listener alerts for when a subscriber's favorite song or artist is played, recording capability of up to five hours of music, and an internal FM transmitter capable of broadcasting to any FM receiver.²³⁵ Sirius also

234. See Yahoo Finance, *Statement of XM Satellite Radio on the National Association of Broadcasters Withdrawal of Its Petition Requesting the FCC to Prevent XM From Providing Local Traffic and Weather Service* (Nov. 9, 2004), at http://biz.yahoo.com/prnews/041109/dctu049_1.html?printer=1.

235. Baig, *supra* note 79.

has a portable receiver that will soon be on the market.

Portable satellite receivers create an alternative to the already popular iPod, which has sold about 10 million units in the past three years.²³⁶ The iPod's success was aided by file sharing websites and programs, such as Napster, which enabled people to download music for free. Now that record companies are cracking down on these free sites and prosecuting those engaged in free MP3 file sharing, consumers are forced to buy their music. As a result, sites such as iTunes have become popular, offering music for ninety-nine cents per song.²³⁷

The portable satellite radio receiver provides a credible alternative to the iPod because the consumer does not have to spend time on the Internet searching for the latest music. Instead, the latest music is automatically available and organized into many different genres without the hassle of downloading. A drawback to the portable satellite receivers is that the portable receivers still require a direct line of sight from the satellite, meaning that if a person takes their receiver into a gym or any other covered place the signal will be lost. However, terrestrial repeaters provide a mechanism to avoid this frustration. Terrestrial repeaters are therefore very important to SDARS operators if they want to continue to attract consumers in the billion dollar portable player market.²³⁸ Realizing this, SDARS operators will fight very hard for the ability to install and operate terrestrial repeaters on an ongoing basis.

C. Why Has Sirius Not Submitted Any Comments Concerning Satellite Earth Stations?

Although XM has responded to the FCC's proposed rulemaking and the SBE's proposed rule affecting satellite earth stations, Sirius has failed to submit any comments. This is very surprising considering if the SBE's proposal is adopted Sirius will no longer be

236. Jeff Malester, *Apple Revenue Soars, Earnings Quadruple*, TWICE (Jan. 13, 2005), [at http://www.twice.com/index.asp?layout=articlePrint&articleID=CA496040](http://www.twice.com/index.asp?layout=articlePrint&articleID=CA496040).

237. Apple iTunes Music Store, *at* <http://www.apple.com/itunes/store/> (last visited Jan. 18, 2005).

238. Malester, *supra* note 236. Apple's revenues for iPod sales in the last quarter reached 1.2 billion dollars. *Id.*

able to send programming to listeners. Furthermore, Sirius uses a NGSO FSS which all the parties agree is most likely to cause interference; therefore, it is also the most likely satellite system to be prohibited in the top 100 television markets. Financially, Sirius may not recover if the SBE's proposal is accepted. As of December 31, 2003, Sirius had accumulated \$1.2 billion dollars of debt in creating its service, and if Sirius temporarily lost its source of revenue, it would most likely be unable to find the necessary finances to remain in operation.²³⁹

There are several possible reasons for Sirius's lack of comments for such an obviously important decision. First, Sirius may know or believe that the FCC has already made the decision to continue with the FCC's own coordination procedures. Sirius's confidence could be based on the fact that the SBE's proposal has been previously raised and rejected. In 2002, the FCC rejected the Fixed Wireless Communications Coalition's proposal in dealing with the different licensing of FSS and FS.²⁴⁰ The FCC reached its conclusion based on a lack of evidence showing injury to non-satellite services.²⁴¹ Therefore, Sirius may believe it is still not possible to demonstrate an injury to other services and that the same situation exists today.

A second possible reason is that even though Sirius is only licensed to operate a satellite earth station in New Jersey, it may have already constructed a satellite earth station in a remote area outside the top 100 television markets. If this theory is true, the building of this satellite earth station is in direct violation of the FCC. Practically speaking, with the number of legal problems Sirius already faces and the controversy inherent in this new technology it is very doubtful that Sirius would intentionally violate FCC rules.²⁴²

Another possible reason for Sirius's lack of involvement is that Sirius may believe it can rely on XM to sufficiently represent the interests of both satellite radio broadcasters. Sirius faces many of the same conflicts that XM does in the FCC, and XM has a history of anticipating potential legal or administrative agency decisions. Unfortunately, this strategy would fail with respect to certain issues, such as the SBE's proposed rules that would affect Sirius's NGSO

239. SIRIUS SATELLITE RADIO INC., ANNUAL REPORT, *supra* note 57, at 13-14.

240. Reply Comments of Globalstar, *supra* note 225, at 3.

241. *Id.*

242. E-mail from Stephen Duall, *supra* note 208.

FSS satellite system but not XM's GSO FSS satellite system.

XM could potentially use this opportunity to harm Sirius by pushing for only NGSO FSS restrictions, which would virtually shut Sirius down. Such an outcome would leave XM with total control of the satellite radio market. XM and Sirius "compete vigorously" for subscribers and have both spent hundreds of millions of dollars to obtain popular sports and talk programming.²⁴³ Barry Frank, who negotiated the Major League Baseball contract for XM stated, "[t]hese are two competitors bound and determined to kick the hell out of each other – with only one likely to survive."²⁴⁴ The two SDARS operators battle for subscribers because both are limited in their sources of revenue. The revenue of XM and Sirius is generally derived from subscription fees paid by subscribers. Satellite radio is limited in revenue from advertisers because it provides commercial-free music programming. If XM eliminated Sirius, XM could control the satellite radio market and likely assure financial security. Although possible, it is unlikely that a new competitor would emerge because of the significant amount of capital required to launch satellites and obtain FCC SDARS licenses.²⁴⁵

D. The FCC Will Maintain its Coordination Procedures for Licensees in the 7GHz band

Regardless of Sirius's involvement, the FCC will most likely rule in favor of keeping its coordination procedures. First, there is no real evidence of any interference problems thus far. Second, the FCC has already rejected a proposal of this type in the past. Third, if SBE's proposal was accepted, a significant amount of harm would be inflicted on satellite radio and other FSS systems. Since satellite radio entered the market, hundreds of millions of dollars have been spent to obtain licenses and exclusive programming. XM and Sirius may not be able to recover from such a proposed rule. Finally, the FCC would be harming the public interest by threatening a service that many people have found very valuable in their daily lives. For all these reasons, the FCC will probably reject the SBE's proposal

243. SIRIUS SATELLITE RADIO INC., ANNUAL REPORT, *supra* note 57, at 13; see *infra* text accompanying notes 57-59.

244. Hiestand, *supra* note 76.

245. *Sirius Satellite, Radio Rival XM Gain Subscribers*, *supra* note 7.

and continue with its own coordination procedures, allowing SDARS operators to operate their satellite earth stations within the top 100 television markets.

V. CONCLUSION

As it has in the past, the FCC today faces a complex task of accommodating both new and old technologies. Because of the vast economic and environmental impact of technological advances, administrative agencies have become increasingly important, particularly in the wake of the New Deal era.²⁴⁶ The far-reaching issues raised by the development of these technological advances require that regulators learn from the past while looking to the future, “ascertaining and promoting an ‘objective public interest.’”²⁴⁷ Today, satellite radio technology has advanced farther than originally anticipated by the FCC. Consequently, the FCC must now reevaluate its policies and the action necessary to serve the best interests of the public.

Confronted with the issues raised by the emergence of satellite radio, the FCC must choose between several competing policy choices. At their core, these issues strike at the FCC’s fundamental task of maximizing efficient use of the broadcast spectrum while “ensur[ing] that spectrum is made available for new technologies and services”²⁴⁸ In the end, the FCC must give precedence to the use of terrestrial repeaters by SDARS operators or the services that are already widely in use by the public, decide to protect local radio stations or allow SDARS operators to provide local programming, and finally choose to restrict satellite earth station transmissions or promote the growth of FS operators.

The array of regulatory issues that could cause great harm to the satellite radio industry begs an obvious question: Will satellite radio survive? While the fledgling industry will likely survive in one form or another, it will not thrive without the enormous efforts of XM and Sirius to advance their position to the FCC. To fully realize the

246. Cynthia R.S. Schiesswohl, *Judicial Autonomy in the Immigration Adjudicatory System*, 21 DAYTON L. REV. 743, 748 (1996).

247. Angela M. Johnson, *The Social Security Administration’s Policy of Nonacquiescence*, 62 IND. L.J. 1101, 1112-13 (1987).

248. *Spectrum Allocation, Assignment and Enforcement*, *supra* note 12.

potential for growth, each SDARS operator must vigorously confront the interests espoused by the vast resources of more established rivals. Nevertheless, just as the development of cable television has shown, even when the self-interested rivals succeed in influencing administrative agencies to adopt rules that hinder new technology, relief from the courts remains a viable option. While satellite radio already provides many benefits that serve the public interest, the drive of XM and Sirius to provide more value to consumers will result in new battles as new applications of the technology are commercialized. If, however, XM and Sirius succeed in overcoming the regulatory issues that threaten to constrict the continuing development and efficient utilization of satellite radio technology, the number of potential subscribers may even dwarf that of cable television.