

A HISTORY OF SATELLITE RADIO IN THE UNITED STATES

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KENNETH MORGAN LAMBERT

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Mark Pedelty

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Kenneth Morgan Lambert
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TABLE OF CONTENTS

CHAPTER 1: Introduction.....	1
CHAPTER 2: Theoretical Framework.....	9
CHAPTER 3: Literature Review.....	19
CHAPTER 4: Method.....	39
CHAPTER 5: Results Overview.....	44
CHAPTER 6: Results–Regulatory Issues Prior to Launch.....	46
CHAPTER 7: Results–The Mainstream Press and Satellite Radio.....	54
CHAPTER 8: Results–Subscriber Growth and Merger Concerns.....	62
CHAPTER 9: Discussion.....	70
CHAPTER 10: Conclusion.....	77
WORKS CITED.....	79

Chapter 1: Introduction

"The dream actually started by going to satellite conferences, where there were a bunch of engineers and saying, 'I have a better idea. I have a different idea. Why don't you try to do this?' And they would all say, 'that's impossible satellite dishes are as big as garages, you can't put them on a car.' And I said, 'Yes you can, here's how you can do it.' And they said, 'you can't!' I heard that like a thousand times.¹

-Martine Rothblatt, inventor of Sirius Satellite Radio.

In the last decade, consumers have seen the first major transition in radio since the adoption of FM technology. The introduction of satellite radio is an attempt to provide an alternative to traditional radio broadcasting and to change how people receive radio content. The satellite radio industry, which currently consists of one company, Sirius XM Satellite Radio, is also attempting to expand the limits of content and programming that consumers are able to receive.

It is important to look at satellite radio now, in its early stages, to analyze and understand its initial social impact. For years, AM and FM radio were the only live, real-time audio source for music and news, but in recent years consumers have been faced with more choices as technology has advanced. Satellite radio is a single-platform service unlike many other new technologies that incorporate audio programming into their technology.

Satellite radio is an audio content delivery service offered by Sirius XM that provides radio programming across North America. For over ten years, satellite radio has been in operation and its technology has remained steadfast. It is similar to cable television in that it provides content that typical broadcast stations often cannot provide.

¹ Martine Rothblatt interviewed on the *Howard Stern Show* (New York: Sirius Satellite Radio) March 1, 2007

For a monthly fee, one can subscribe and receive more than a hundred stations of commercial-free music, uncensored talk, and out-of-market collegiate and professional sports. This differs from terrestrial radio, which is supported by advertising, is subject to regulation on indecent language promulgated by the Federal Communications Commission (FCC), and often provides only local sports coverage of major professional and collegiate teams.

The purpose of this thesis is to present a history of satellite radio. In doing this, I am showing how satellite radio shares a similar history with other successful single-platform radio and television technologies. I am seeking to find what satellite radio's history tells us about larger trends in technology, media and society. An analysis of news coverage and regulatory debate of satellite radio will provide insight into this history of satellite radio. The potential is there for satellite radio to succeed and if it does, it could become the radio version of cable television. The questions driving my research are as follows:

RQ1: How has the development of satellite radio reflected technological change in broadcasting?

RQ2: How does the innovation of this technology compare to that of its predecessors and competitors?

RQ3: What issues did the satellite radio industry face during its formative years and during its merger?

RQ4: How did the press discuss this new technology as it was emerging?

RQ5: What possible future does satellite radio play in regard to terrestrial radio, Internet, cellular and other audio technologies.

It is important to study satellite radio because it is the first, major alternative to terrestrial broadcasting. Although adoption has been slow, subscriptions to this relatively new product have grown steadily since 2004. In examining the history of satellite radio, I will further the dialogue of how new advances in radio technology fit in with previous advances in radio and television technology. I will also be contributing to the lacking scholarly discussion on satellite radio technology.

By examining the histories of cable television and FM radio, I will show how satellite radio is similar to the growth of cable television and different from other radio services. I explain how, as a nationwide, premium radio service, satellite radio could have the same prominence that cable television has.

I will also be looking at how press coverage of satellite radio's formative years and launch told the public about this new technology. This early press coverage may have helped persuade or dissuade people who were in the market for this new alternative to terrestrial radio. In examining FCC documents, corporate press releases and other regulatory discussion, I intend to show how opponents and proponents of satellite radio felt about this new technology.

Although satellite radio's future is unpredictable, one possibility is that it could serve as a de facto national programming service, akin to cable television. Satellite radio fills a gap left by local radio stations, much like cable television filled the gap terrestrial

television broadcasters had. Due to the constraints of terrestrial radio technology, AM and FM stations cannot nationally broadcast from coast to coast, they cannot provide uncensored music because of FCC regulation and niche programming choices and expanded sports coverage would be impossible because the technology of terrestrial radio cannot allow for as much programming that the compression of digital satellite technology allows.

Satellite Radio Overview:

Satellite radio technology developed in the late 1990s, and eventually launched in the early 2000s, with the promise of niche programming and crystal-clear, digital reception from coast to coast. These promises appealed to people who were willing to pay for better radio reception and whose needs were not being met by traditional radio stations. Because large radio ownership groups have formed station clusters around the country, terrestrial radio formats are similar from one market to the next and programming is often received from national syndicators. In small markets, some stations are programmed remotely to sound like they are broadcasting locally; others use voice-tracking software to automate the station. Author Eric Klinenberg describes that, by doing this, “radio stations could store music or talk shows on exportable and manipulable digital files, rather than on CDs or records, and DJs could craft their programs by adding commentary, news, traffic, and commercials into the electronic mix.”² Digital technology has allowed station owners to cut expenses by eliminating staff, reducing airshifts, and remotely programming their stations.

² Eric Klinenberg, *Fighting for Air: The Battle to Control America's Media*, (New York: Metropolitan Books, 2007), 44.

As the consolidation of media groups since the mid-1990s has led to stagnation in terrestrial radio. Ben Bagdikian states that prior to the mid-1990s:

FCC regulations and former broadcast law awarded licenses on the basis of what kinds of programs each applicant for a broadcast license committed itself to provide for the needs of the cities covered by its stations. In contrast, licenses are now granted to whichever corporation has the most money, with no obligations except to operate “in the public interest,” a phrase still in communications law, which in recent years has meant less than nothing.³

XM and Sirius founded their companies as a way to provide unique programming options that large media companies could not, or chose not to provide. Audiences who were dissatisfied with the lack of quality in terrestrial radio stations were now allowed a new choice with satellite radio. Professionals who were limited by the confines of Federal Communications Commission (FCC) regulation and tightly controlled playlists by radio management have also been allowed more liberty with their profession. And today, satellite radio is a viable option for radio listeners who have chosen to switch off their FM dials.

The potential of satellite radio is best summarized by Lee Abrams, former chief programmer of XM satellite radio:

Local radio [...] has been dead for 25 years. Other than the *true* [emphasis Klinenberg’s] local stations, mostly big AMs like WGN or KMOX, local radio is primarily satellite fed, voice-tracked from remote locations or syndicated. The definition of ‘local’ is changing. In XM satellite radio’s case, local means 48 states. Music downloading is only the tip of the iceberg. The bigger problem is that contemporary music has run out of creative steam. Media concentration threatens the future of terrestrial radio.⁴

³ Ben H. Bagdikian, *The New Media Monopoly*. (Boston: Beacon Press, 2004), 138.

⁴ Robert L. Hillard and Michael C. Keith, *The Quieted Voice: The Rise and Demise of Localism in American Radio*. (Carbondale, IL: South Illinois University Press, 2005), 21.

Meanwhile, people who feel traditional radio is overly censored can now listen to uncensored music and talk on satellite radio because satellite radio is not bound by the same content restrictions the FCC requires terrestrial broadcasters to follow.

Two separate companies, XM Satellite Radio and Sirius Satellite Radio who have since merged, initially provided satellite radio service. The technology requires a signal from Sirius XM's headquarters to be beamed to satellites in orbit and sent back down to earth where subscribers are able to receive the content from the satellite radio signal on radio receivers that they purchase.⁵ Besides purchasing a new radio, one must also buy accessories such as speakers and a docking unit for home or car. Subscribers must also choose among several subscription options. Sirius XM uses terrestrial-based repeater stations in major cities that allow content to be received via radio frequency to assist receivers that may have interference problems with ground-to-sky reception due to large buildings or other obstructions.⁶ Newer receivers make use of Wi-Fi connections to aid in delivery of the service.

Satellite radio content is predominately programmed for a national audience, the exceptions being minimal local content produced by terrestrial stations for professional and collegiate sports programs that are then broadcast on Sirius XM, and traffic and weather information in several major metropolitan regions. Radio programs produced for specific cities or regions of the country remain exclusive to terrestrial radio.

After the initial launch of satellite radio by XM and Sirius, adoption of this new technology was slow. However, this changed when Howard Stern, who had been fined multiple times by the FCC due to content aired on his terrestrial radio show, was signed

⁵ Adam Rogers, "A Little Space Music" *Newsweek*, Vol 138, Issue 20, November 12, 2001.

⁶ "Help/FAQS," Sirius Satellite Radio, accessed May 10, 2009, <http://www.sirius.com/faqs>.

by Sirius in late 2004. Although still a year away from broadcasting on Sirius, within months many of his fans subscribed and awareness of satellite radio grew. Subscription numbers for both Sirius and XM services increased. In 2008, the two companies merged into one entity known as Sirius XM Satellite Radio, providing content to subscribers initially as two brands that share content and now as a single brand.⁷

Thus far, little scholarly research has been conducted on satellite radio. It is important to provide a rich history of satellite radio in order to understand its background and understand the technological change that is coming with it. Some technological changes in media occur because of mandates from government, such as the FCC-required switch to High-Definition Television (HDTV). Other changes in technology sweep users up quickly because they are new, fun, entertaining, and make people's lives easier, such as the iPhone. Still other technological changes may take a longer period for adoption and satellite radio seems to have fallen into this category. There are plenty of entertaining aspects of satellite radio, but the technology has yet to be fully adopted by the American public; as of January 2011, subscriptions stood at just under 20 million.⁸ Although impressive for a service that has existed for just over ten years, it is more than 40 million fewer subscribers than basic cable television, which as of January 2011 stands at 61.1 million subscribers.⁹ Like cable television, satellite radio offers improvements over traditional broadcasting. Satellite radio's adoption will depend on the programming content as well as on how terrestrial radio continues to perform. If listeners to AM and

⁷"SIRIUS and XM Complete Merger," Sirius XM Satellite Radio, July 29, 2008, accessed August 4, 2010, <http://investor.sirius.com/releasedetail.cfm?releaseid=324858>.

⁸"SIRIUS XM Radio Reports Full Year and Fourth Quarter 2009 Results," Sirius XM Satellite Radio, accessed September 28, 2010, <http://investor.sirius.com/releasedetail.cfm?ReleaseID=447093>.

⁹"Basic Video Customers – NCTA.com," SNL Kagan cited from National Cable and Television Association. accessed January 17, 2011, <http://www.ncta.com/statistics.aspx>.

FM radio continue to be turned off by commercials, repetitious playlists, and censored content, they may find satellite radio to be a better option.

Chapter 2: Theoretical Framework

This thesis deals with a relatively new form of radio technology, thus the historical research methods employed necessarily include an examination of mainstream and trade publications, press releases, and newspaper articles. In addition to news sources, documents from the FCC were consulted to help explain the inception of satellite radio and its history. Scholarly works on satellite radio are sparse; however, several scholars have researched radio history, technological change in media, and media consolidation and the effects of deregulation in terrestrial radio.

Much of what is written about satellite radio comes from the popular press. The popular press is examined because scholarly literature concerning satellite radio is lacking, but also because consumers who read the mainstream and trade press are the ones deciding whether to purchase satellite radio. The public, which serves as an audience for the press, depends on the news media to explain events, people, and products with which it is unfamiliar.

According to Todd Gitlin, “mass media define the public significance of movement events or, by blanking them out, actively deprive them of larger significance.”¹⁰ Thus, the news writers and editors writing about satellite radio constructed what is important for the public through routine editorial and news decisions. Gitlin writes, “...people are pressed to rely on mass media for bearings in an obscure and shifting world.”¹¹ This could be especially true as technology changes at a pace that sometimes seems impossible to catch up to.

¹⁰ Todd Gitlin, *The Whole World Is Watching: Mass Media in the Making & Unmaking of the New Left*. (Berkeley: University of California Press, 1980), 3.

¹¹ *Ibid.*, 1.

According to Maxwell E. McCombs and Donald L. Shaw, those within the media shape our reality because they determine what the important issues are. The press tells readers “not only about a given issue, but also how much importance to attach to that issue from the amount of information in a news story and its position.”¹² Bernard Cohen explained that the press “may not be successful much of the time in telling people what to think, but is stunningly successful in telling its readers what to think about. [...] The world will look different to different people, depending [...] on the map that is drawn for them by writers, editors, and publishers of the papers they read.”¹³

As satellite radio was discussed more in the press, consumers were provided with many details about the service and debate about whether it could be successful. A specific article or publication would probably not persuade one to purchase new radio equipment, however in context with other articles, one’s decision to subscribe could be influenced. Media coverage of a new technology, especially prior to and after its launch, has a way of drawing awareness to what consumers are currently living without. This product may become a part of their lives or, as in the case of satellite radio, may be on the periphery of their interests, wants, or needs. How the press discussed satellite radio, associated programming, and the investment required to join Sirius XM affects the interest a consumer may have in subscribing to a pay-radio service. The new alternative to terrestrial radio was not enough to drive consumer interest. Early reporting on Sirius and XM tended to have heavy focus on the new technology, which often led to high speculation about the success of satellite radio.

¹² Maxwell E. McCombs and Donald L. Shaw, “The Agenda-Setting Function of Mass Media,” *Public Opinion Quarterly*, Summer 1972, Vol. 36 Issue 2, 176.

¹³ Bernard C. Cohen, *The Press, the Public, and Foreign Policy*. (Princeton, NJ: Princeton University Press, 1963), 13.

Satellite radio has often been marketed as an alternative to terrestrial radio. In the years since the passage of the Telecommunication Act of 1996, criticism of the American media structure has grown. Scholars argue that the law has allowed media conglomerates to grow larger and larger, to the detriment of local, terrestrial broadcasters. Aware of this, both Sirius and XM began to launch their services as an alternative to terrestrial radio. Still bound by FCC regulation, terrestrial radio stations often cannot air the same programming that satellite radio provides. Expanded sports, uncensored talk and vast music genres has been a selling point for Sirius and XM. As terrestrial radio changed and became more homogenous in content, media scholars such as Ben Bagdikian and Eric Klinenberg began to take issue with how large media conglomerates have changed American media.

Bagdikian is one of the most important critics of big media. He argues that today only “a handful of powerful, monopolistic corporations inundate the population day and night with news, images, publications, and sounds.”¹⁴ As deregulation led to large radio groups purchasing stations, the number of voices allowed to broadcast has decreased. Bagdikian reminds us that “[t]he airwaves, the broadcast frequencies on which most Americans depend, happen to be public property. For all practical purposes these public airwaves have been expropriated by giant media corporations.”¹⁵ These giant media corporations, he contends, control much of the political and social thought expressed over the air due to the fact that they produce much of the content that is aired and they own the stations that broadcast the programs.

¹⁴ Ben H. Bagdikian. *The New Media Monopoly*. (Boston, MA: Beacon Press, 2004), XIII-XIV.

¹⁵ *Ibid.*, 259

Klinenberg also takes issue with large media corporations seizing the airwaves and reducing local programming. He states that “concerned citizens [...] share one widespread conviction: that the distinctively local voices, personalities, and sources of news and entertainment that used to animate radio, television, newspapers, and alternative weeklies have been crushed by an onslaught of cookie-cutter content.”¹⁶ Radio business operations have been consolidated and local production has been dramatically reduced, which has allowed media companies to save money by programming nationally and sprinkling in local cut-ins.

Similarly, Robert L. Hilliard and Michael C. Keith show that “short-term financial gains from consolidation in radio have resulted in the demise of local radio services to individual communities, concomitantly resulting in the not-so-long-term possible demise of radio itself.” As other technologies such as satellite and Internet radio have emerged, they contend, “[the] one thing that might save radio as we have known it is a return to localism.”¹⁷

The concerns these authors have with big media companies have been major concerns for listeners of terrestrial radio. As new technologies have been developed, satellite radio, along with Internet streaming, podcasts and mp3s have created more competition for terrestrial broadcasters. Repetitious content and these new technologies have led to a decrease in ratings on terrestrial radio stations over recent years.

The technology of satellite radio is unique in that it still serves as a single-platform media, like radio and television. It allows for a national standard of service and

¹⁶ Eric Klinenberg. *Fighting for Air: The Battle to Control America's Media*. (New York: Metropolitan Books, 2007), 15.

¹⁷ Robert L. Hillard and Michael C. Keith. *The Quieted Voice: The Rise and Demise of Localism in American Radio*. (Carbondale, IL: South Illinois University Press, 2005), xiii

because the technology does not allow it to focus on individual communities, it must remain a nationally programmed service.

In looking at technological change in radio and television history, Jennifer Daryl Slack and J. Macgregor Wise make several points about technology and culture needing to be understood as working in synchronicity of each other. They posit that it is not the technology that determines societal effects, but rather it is the “people [who] create and use technologies.”¹⁸ The authors believe that we tend to think inconsistently about technology and “that other cultural forces and connections (beyond the purely hypothetical) come into play, that is, articulate, in the decision-making process.”¹⁹ This is the case with satellite radio. The technology was born out of an idea to change radio and to provide national content unavailable through terrestrial broadcasting.

Instead of a technological determinist approach to the history of technology, where technology drives social or cultural changes, Slack and Wise see technology as a result of what society may be asking for. They state, “to focus on bounded artifacts—on thingness—is to deflect understanding from the ongoing energies, activities, relations, interpretations and investments within which these things [new technologies] appear, take flight, and have effects.”²⁰ In looking at the history of satellite radio, particularly news coverage of satellite radio, reporters discussed the new technology as having advantages (and disadvantages) over the existing technology. Reporters, as explained later, wrote about partnerships with industries and investments Sirius and XM had that presented this

¹⁸ Jennifer Daryl Slack and J. Macgregor Wise, *Culture and Technology: A Primer*, (New York: Peter Lang Publishing, Inc., 2005), 45.

¹⁹ *Ibid.*, 114.

²⁰ *Ibid.*, 96-7.

new technology not just as a “thing” but rather as an “application, capability, manner of doing, and specialized aspect, but not as a thing.”²¹

Marshall McLuhan is known for the oft-cited phrase, “the medium is the message.” He explains that it is the medium “that shapes and controls the scale and form of human association and action.”²² I disagree with the technological determinist belief that society is driven and altered by the technology we use, because not all technologies that are available are widely accepted. Satellite radio is one of those. Satellite radio was created in response to the already socially accepted technology of terrestrial radio. The inventors of satellite radio saw this new technology as an alternative for those who were unhappy with the limitations of terrestrial radio. In the formative years of satellite radio, the technology was unsuccessful due to the lack of popular content on the medium. The technology existed, but without a popular radio host or exclusive content, people were not subscribing in high numbers. It took those who wanted to perform in an uncensored environment to work for the satellite radio companies. In turn, those who wanted to hear this content subscribed and made the choice to adopt the technology into their lives.

Harold Innis seems to lie somewhere in the middle of technological determinism and cultural determinism. By examining time-bias media and space-bias media, Innis sought to show how technology and society influence each other equally. He explains that, “the medium of communication tends to create a bias in civilization favourable [sic] to an over-emphasis on the time concept or on the space concept and only at rare intervals are the biases offset by the influence of another medium and stability achieved.”²³ The

²¹ Ibid., 95.

²² Marshall McLuhan, *Understanding Media: The Extensions of Man* (Cambridge: The MIT Press, 1994), 9.

²³ Harold Innis, *The Bias of Communication* (Toronto: University of Toronto Press, 1982), 64.

technology was developed out of a response to what terrestrial radio lacked. Similarly, it was also developed in the fashion of cable television because satellite radio could offer more, to a wider audience than terrestrial broadcasting.

Marshall T. Poe writes that in regard to audiovisual media, “[i]ndustrial capitalism gave men like Edison, Berliner, and Marconi a reason to create marketable new technologies and a means to build companies to produce and sell them.”²⁴ He explains, as Harold Innis proposed, “new media were ‘pulled’ into broad use by rising demand, not driven by rising supply.”²⁵

Poe believes that it is in our human nature to want to watch and listen to things, “not to everything, but to a certain class of things.”²⁶ In this regard, satellite radio is an extension of what we have been able to listen to. Companies have improved technology over time and when satellite radio was launched, it was the newest technology that we could choose to listen to. Initially, we did not listen, but as content piqued our interest, people began to make the switch to this technology. The growth of satellite radio, over the years, has come predominantly from programming content exclusively broadcast on Sirius XM.

Throughout this thesis, I discuss satellite radio and the adoption of this new technology. The theory behind this is derived from Everett Rogers’ *Diffusion of Innovations* theory that states, “Diffusion is the process by which an innovation is

²⁴ Marshall T. Poe, Marshall, *A History of Communications: Media and Society from the Evolution of Speech to the Internet* (Cambridge: Cambridge University Press, 2011), 160.

²⁵ *Ibid.*, 7.

²⁶ *Ibid.*, 164.

communicated through certain channels over time among the members of a social system.”²⁷

Rogers explains that there are five “characteristics of innovations, as perceived by individuals, [that] help to explain their different rate of adoption.”²⁸ The first is, “relative advantage.” Relative advantage explains how improved an innovation “is perceived as better than the idea it supersedes.” The second characteristic is “compatibility.” This is “the degree to which an innovation is perceived as being consistent with the existing values, past experiences and needs of potential adopters.” The third characteristic, “complexity,” is the degree to how difficult or confusing a new innovation may be. Fourth, “trialability.” This is how easily a new innovation can be experimented with. And last, “observability.” This is “the degree to which the results of an innovation are visible to others.”²⁹

If applying this test to satellite radio, the relative advantage is that it has a more consistent signal, expanded content, however it is lacking local content and requires a subscription. Second, satellite radio is somewhat compatible to terrestrial radio or a cable converter box, and works with headphones or a car stereo. Third, satellite radio is not very complex. It is rather easy to use if one is familiar with similar technology. Fourth, it is frequently available for trial in rental cars or at electronic stores. And fifth, it is reasonably observable because the innovation has over twenty million subscribers, so it is very possible to know someone who has access to the innovation.

²⁷ Everett Rogers, *Diffusion of Innovations*, Third Ed., (New York: The Free Press, 1983), 5.

²⁸ *Ibid*, 15.

²⁹ *Ibid.*, 15-6.

Within the social system there are three ways, Rogers explains, that innovations can be adopted or rejected. The first option is called “optional innovation-decisions.” This is a choice to “adopt or reject an innovation that are made by an individual independent of the decisions of other members of the system.”³⁰ An example of this could be whether or not to adopt satellite radio technology. This technology exists, but one must make the choice whether or not it is beneficial for adoption. The second option is called “collective innovation-decisions.” These are “choices to adopt or reject an innovation that are made by consensus among the members of a system.”³¹ An example of this might be a homeowner’s association and the collective decision to allow television antennas or satellite dishes. An individual may be very unlikely to display an outdoor antenna if the homeowner’s association bans antennas. The third option is “authority innovation-decisions” which are “choices to adopt an innovation that are made by a relatively few individuals in a system who possess power, status, or technical expertise.”³² An example of authority innovation-decisions would be the adoption of HDTV technology. Those wishing to receive terrestrial broadcast televisions signals must do so with an HDTV equipped television or converter box as set by the authority of the FCC.

As people decide to add new technology to their lives, Rogers also explains that there five categories for those who adopt a new innovation. These categories are as follows. First, “innovators,” who are “very eager to try new ideas.”³³ These are the people who are the first to adopt a new technology even if it has not yet been proven as

³⁰ Ibid., 29.

³¹ Ibid.

³² Ibid., 30.

³³ Ibid., 248.

successful. Second, “early adopters,” who are a “more integrated part of the local social system than are innovators.”³⁴ Those within this category have “the greatest degree of opinion leadership in most social systems.” These are the people Rogers describes as “the individual to check with’ before using a new idea.”³⁵ Third, the “early majority” are those who “adopt new ideas just before the average member of a social system.” Fourth, the “late majority” which are those who are skeptical of a new idea. And the last category for those who adopt a new innovation are “laggards.” These people are the ones who are “the last in a social system to adopt an innovation.”³⁶ Laggards tend to adopt an innovation once it is socially acceptable or when it “may already have been superseded by another more recent idea that is already being used by the innovators.”

Consumers who adopted satellite radio technology did so for different reasons. Those with first generation equipment are the “innovators” who were willing to risk buying the equipment when it was uncertain Sirius or XM would become successful. Many satellite subscribers probably fall under the “late majority” category. In 2004 when Howard Stern was signed to Sirius many were still skeptical of the technology but were willing to purchase the necessary equipment to receive his radio show. Those who subscribed to Sirius in 2004 and 2005 were still taking a risk at adopting this technology, as it was still unproven, however, as I explain later, subscription numbers greatly increased with his arrival and the technology has improved over time.

³⁴ Ibid.

³⁵ Ibid., 249.

³⁶ Ibid., 250.

Chapter 3 – Literature Review

Radio Historians:

Many radio historians such as Douglas Craig, Susan Smulyan, Michelle Hilmes and Susan Douglas selected specific periods to examine how the role of radio, as the technology was emerging, impacted in people's lives. Craig discusses radio's influence in political culture between the two World Wars. Using records from the radio networks, the Federal Radio Commission (FRC), FCC, and political parties, he explains that from 1920 through 1940 radio left its mark on American life because it "blurred the distinction between public and private culture and entertainment."³⁷ Craig states that "radio exceptionalism" was to hold "the promise of a new beginning for American citizenship, governance, and community"³⁸ but that in the end "the story of interwar radio and political culture is a story of the skillful co-option of radio exceptionalism by broadcasters, politicians, and regulators to serve their own ends."³⁹

Similarly, Smulyan focuses on the almost the same time period as Craig. However, Smulyan focuses her research on "how radio in the United States became commercialized, or financed by selling time."⁴⁰ She explains that advertising-supported broadcasting, although seemingly inevitable, was actually not well received until the mid-1930s and ultimately inspired a backlash. Because national radio was provided over wired networks, wire rental was expensive and thus advertising was believed to be able to generate the largest income to pay for wire rentals. As advertising became more socially

³⁷ Douglas B. Craig, *Fireside Politics: Radio and Political Culture in the United States, 1920-1940*. (Baltimore: The John Hopkins University Press, 2000). 279.

³⁸ *Ibid.*, 281.

³⁹ *Ibid.*

⁴⁰ Susan Smulyan, *Selling Radio: The Commercialization of American Broadcasting, 1920-1934*. (Washington: Smithsonian Institution Press, 1994). 1.

accepted, radio programs were altered and tailored to their audiences depending on the day-part of a radio broadcast day.

Hilmes, like Craig and Smulyan, focuses on approximately the same time period and examines how radio was a “social practice grounded in culture.”⁴¹ She writes that the history of broadcasting “lies not in a succession of technological developments but in a series of small crises of cultural control.”⁴² Hilmes focuses on how radio played a pivotal role in shaping gender and racial roles by those at the networks and by advertisers. Those within the radio industry programmed evening radio shows differently than daytime shows. Evening radio programs were considered “highbrow” and geared toward men, while daytime program was considered “lowbrow” entertainment and linked with women. Although many believed early radio would present an idealistic version of America, it instead, promulgated a homogenized, commercialized version that depended on stereotypes to sell advertising and entertain listeners.

Although focusing less on networks or regulatory issues and more on the social aspect of actually listening to the radio. Douglas says, “whether curled up in our beds, sitting in the living room with our families, or blasting around in our cars—when Americans listened to the radio, [it] was often with a passion.”⁴³ Douglas examines the relationship Americans have had with radio over the past seventy years and the sense of community that radio has for many. She confesses that “radio was hardly an unfettered vehicle for the democratic expression of diverse American voices” but that “there is something about the medium itself that makes listeners willing to forgive-even forget-

⁴¹ Michelle Hilmes, *Radio Voices: American Broadcasting, 1922-1952*, (Minneapolis: University of Minnesota Press, 1997), xiii.

⁴² *Ibid.*

⁴³ Susan J. Douglas, *Listening In: Radio and the American Imagination*, (Minneapolis: University of Minnesota Press, 1999), 6.

much of this.”⁴⁴ Delving into the culture of radio hobbyists, the lives of disc jockeys and the FM revolution, she that explains that new groups of listeners would grow as formats changed and how Americans were listening in on this history. In essence, this approach to radio history is actually more of a history of the audience.

Technological Change Over Time:

Instead of focusing on one medium as the above authors have, some scholars have explored the history of technological change over time through various media. Carolyn Marvin uses mainly the popular and trade press to show how the use of two technologies, electric light and the telephone, interacted with society. Her goal is to show how the early history of electric media is “a series of arenas for negotiating issues crucial to the conduct of social life.”⁴⁵ In doing this, the history of the media are not as important to Marvin as much as how society and culture were affected by these technologies. In looking at press coverage, she shows how advancement in technology affected the public in varying ways.

Asa Briggs and Peter Burke analyze media over approximately six centuries in what they describe as “a social and cultural history with the politics, the economics and – not least – the technology put in, yet it rejects technological determinism, which rests on misleading simplifications.”⁴⁶ Their goal is “to show the relevance of the past to the present by bringing history into media studies and media into history.”⁴⁷ They stress that new media do not replace older ones, but that older media continue to exist alongside

⁴⁴ Ibid., 6-7.

⁴⁵ Carolyn Marvin, *When Old Technologies Were New: Thinking About Electric Communication in the Late Nineteenth Century*, (New York: Oxford University Press, 1988), 4.

⁴⁶ Asa Briggs and Peter Burke. *A Social History of the Media: From Gutenberg to the Internet*, 3rd edition, (Cambridge: Polity Press, 2009), 5.

⁴⁷ Ibid., p. viii.

newer media. In doing so they show how new media is considered as it emerges within a society.

Radio:

Examining the history of past transitions in audio and video technology may also provide insight into understanding the technological transition toward satellite radio. The adoption of satellite radio technology is most similar to the impact cable television had on broadcast television and that FM radio had on AM radio and much of the literature here will focus on that. Exploration from the start of radio, through the development of FM radio, to the implementation of television, and later cable television can help explain similar aspects that broadcast technology shares with satellite radio.

When new technology is introduced to the public, a natural curiosity ensues. The press who bring further awareness of this technology to the public's attention often increases this curiosity. As I explain later, the press presented satellite radio in different ways to the public, some positive and some negative. The same can be said about previous radio and television technologies that were introduced over the last century.

As wireless radio was emerging in the early 1900s, the press expressed reservations of the new technology. In Susan Douglas' *Inventing American Broadcasting, 1899-1922* she quotes a *New York Times* article which feared the possibility of "thousands of voices traveling in all directions."⁴⁸ Of course, because radio was such a new experience for so many, the belief was that people would be able to talk to each other with no restrictions, much like a wireless telephone. As radio became

⁴⁸ Susan J. Douglas, *Inventing American Broadcasting 1899-1922*, (Baltimore: Johns Hopkins University Press, 1987), 173.

successful in the 1920's popular magazines began to have radio sections and address questions like "How would radio change America?" and "What did the spread of broadcasting mean for Americans?"⁴⁹

Douglas contends that newspapers and magazines between 1915 and 1922 mostly rejected the original radio boom. She explains that the "press, through the content and tone of its articles, constantly emphasized the newness of the phenomenon."⁵⁰ The success radio had with the public was reflected by Leonard Smith of the *New York Times* who wrote, "the delicate mechanism of the radio has caught and brought to the ears of us earth dwellers the noises that roar in the space between the worlds."⁵¹ As the boom continued, she explains that the "aspect of radio most universally praised in the press was its ability to promote cultural unity in the United States."⁵² The use of radio fostered a connection between rural towns and large cities that may have once felt disconnected from each other.

From the wireless telegraph to what we now call radio, this technology, AM radio, was developed not out of the blue, but from previous thoughts and inventions. While many were happy with the content and quality of AM, there were others who aspired for more. According to George H. Douglas, "even without FM there was a clamor throughout the thirties for 'high fidelity' and 'hi fi' became the byword of the day."⁵³ As inventors and investors of broadcast technology sought to improve, AM radio

⁴⁹ Ibid., 304.

⁵⁰ Ibid., 304.

⁵¹ A. Leonard Smith, Jr. "Broadcasting to Millions." *New York Times*, February 19, 1922, sec 7, 6., cited in Susan J. Douglas, *Inventing American Broadcasting 1899-1922*, (Balitmore: Johns Hopkins University Press, 1987), 304.

⁵² Susan J. Douglas, *Inventing American Broadcasting 1899-1922*, (Balitmore: Johns Hopkins University Press, 1987), 305.

⁵³ George H. Douglas. *The Early Days of Radio Broadcasting*, (Jefferson, NC: McFarland, 1987), 163.

started the public through new technological innovations over the last century including, FM radio, television, cable television and now satellite radio.

Improvements in radio technology have affected the quality of sound. While the addition of stereo to AM radio had little, if any, impact on the medium the invention of FM, by Edwin Howard Armstrong in the late 1920s, is the most important transition until recently. It is important to provide some historical context concerning FM radio. The higher quality sound produced through FM radio technology, as well as the programming available led to the popularity of FM radio. Satellite radio has also grown in popularity since the mid-2000s due to the same reasons; higher fidelity, alternative musical content and also because of improved programming that is found exclusively on Sirius XM. Thus, the two technological transitions are strikingly similar.

The introduction of FM radio is credited to Edwin Armstrong, a professor of physics at Columbia University who later worked for RCA.⁵⁴ According to George H. Douglas, “RCA introduced FM in 1934 over station W2XF, using an experimental transmitter atop the Empire State Building in New York. By 1942 there were 25 licensed commercial FM stations in the United States, and when that development had to bow to the war effort that year, there were some 250,000 FM receivers in operation.”⁵⁵ Initially, due to the growth of television after World War II, FM failed to gain listenership and many stations went dark. As better receivers and the addition of stereo capabilities, it was not until the late-1950s and early-1960s that FM radio saw a major increase in listenership.

⁵⁴ Christopher J. Sterling, “WTMJ-FM: A Case Study in the Development of FM Broadcasting” in Lawrence W. Lichty and Malachi C. Topping, *American Broadcasting: A Source Book on the History of Radio and Television*, (New York: Hastings House, 1975), 132-135.

⁵⁵ George H. Douglas, *The Early Days of Radio Broadcasting*, (Jefferson, NC: McFarland, 1987), 163.

Armstrong worked “nearly full time in 1928 to perfect frequency modulation [and] in 1930 he filed his first basic FM patents.”⁵⁶ Four years later, while working with David Sarnoff at RCA, he installed an experimental FM transmitter at the Empire State Building. However, RCA was more interested in television development, so in 1938, Armstrong went on the air with his own station. As FM became successful, listeners embraced FM’s higher fidelity and expanded programming choices.⁵⁷

In 1940, FM radio was predicted to have strong growth. The June 8, 1940 issue of *The Science News-Letter* reported that within five years, “almost every large broadcasting station now operating will be paralleled by an FM station, probably carrying the same program [and that FM provided] extraordinary fidelity of tone, and lack interference from distant stations.”⁵⁸ Radio manufacturers were reported to have been interested as there would be a demand in new sets, yet “dominant radio broadcasting interests did not take kindly to a new kind of radio.” As the years passed, the development of FM radio predicted in the *Science News-Letter* article did not come to be due to World War II. Radio typewriters, similar to teletypes, and facsimile services were seen as possible services FM radio could provide. The article explained that these services would only be available if the public was willing to pay for the “rather costly and complicated receivers.”⁵⁹ The public was not willing to do so and these unsuccessful ventures were soon dropped.

⁵⁶ Lawrence W. Lichty and Malachi C. Topping. *American Broadcasting: A Source Book on the History of Radio and Television*. (New York: Hastings House, 1975), 1.

⁵⁷ Richard Campbell, Christopher R. Martin, Bettina Fabos. *Media & Culture: An Introduction to Mass Communication*, 6th ed. (Boston: Bedford/St. Martin’s, 2008), 135-36

⁵⁸ “Frequency Modulation May Cause Fast Changes in Radio.” *The Science News-Letter*, Vol. 37, No. 23. June 8, 1940. p. 365.

⁵⁹ *Ibid.*

The original FM spectrum band was at the 42-50 megahertz (megacycle) band. This switched in 1946 to 84-102 megahertz (the latter half 102-108 megahertz were used for supplemental FM services such as the aforementioned radio typewriters). Presently the FM spectrum is at 87.5-108 megahertz. In 1945, FM converters were built by the Engineering Department of the FCC and radio enthusiasts could easily build them as well.⁶⁰ These converters were able tune your radio into a frequency on the old band and use the converter to tune in a frequency on the new band. This seems to be a type of retransmitter similar to ones used today in cars to rebroadcast satellite radio to an unused FM radio frequency.

An article in *The Science News-Letter* on December 5, 1959 by Allen Long gave a short explanation on the history of FM radio and described the growth of FM radio in its second attempt at gaining listenership. Long described reception of FM radio as allowing “a broadcast of a five-man combo or symphony orchestra sound as though the players were spread out before him in his living room.”⁶¹ This type of radio was explained as “‘stereo’ or 3-D music,” and was ideal for listeners seeking true “hi-fi quality.”⁶² Long noted that FM radio began being used as background music in grocery stores, similar to the use of satellite radio today by stores and restaurants. This brought in additional revenue to station owners who could not sell advertising on their FM stations. Since these stations had limited commercials, music fans began to tune into the stations and growth began again. Long described programming as consisting of classical music, opera,

⁶⁰ “New FM Converter.” *The Science News-Letter*, Vol. 47, No. 12. March 24, 1945, 188.

⁶¹ Allen Long, “FM is Born Again.” *The Science News-Letter*, Vol. 76, No. 23, December 5, 1959, 386-387.

⁶² *Ibid.*

romantic music, jazz, and network programming, noting that “in New York Chinese programs can be heard at certain hours.”⁶³

The reason that FM radio had fluctuation in stations and listeners early on was because of the war effort, as previously mentioned, which made the construction of stations difficult. Additionally, more attention began to be focused on television production and people seemed content with AM radios and television. According to Sterling, in 1957-58 authorizations for FM licenses increased for the first time since 1949. He listed “a number of factors that led to this renewed interest in the medium: income from supplemental services [such as supermarket music services], possibilities of using multiplexed signals, better FM receivers (many with an automatic frequency control feature) and more of them, and a consequently larger potential audience for FM stations.”⁶⁴ He also wrote that the AM band had become very crowded and that many stations began applying for an FM license to serve their audience in nighttime hours.⁶⁵ Many AM stations had to (and continue to) sign off at nightfall per FCC regulation in order to allow stations with a higher class license to operate at a full 50,000 watts, which allows for longer distance reception across much of the country.

As technology improved in the recording industry, it paved the way for changes in how music and radio content were delivered. FM provided stereo reception that audiences were beginning to seek because as Sterling noted, “interest in high-fidelity music developed rapidly, fed in part by the introduction of stereo recordings.” FM radio stations were able to serve this newfound audience with their high fidelity, stereo broadcasts.

⁶³ Ibid.

⁶⁴ Sterling, 138.

⁶⁵ Ibid.

FCC regulation also contributed to the growth of FM radio. Originally, many stations simulcast their AM radio broadcasts onto their FM stations. In 1965, FM audiences began to grow as a “result of a 1965 rule prohibiting more than 50% duplication of AM programming by FM stations in markets of more than 100,000.”⁶⁶ Also, the automotive industry helped as “FM car radios were more available and were capable of better reception.”⁶⁷ Lawrence W. Lichty and Malachi C. Topping, citing Pulse, Inc, wrote that by 1974, “in more than half of the 150 largest markets FM saturation was above 90%; about 95% in 14 of those. More than 85% of all autos had radios and about one-fourth of all new auto radios included FM. For every person in the U.S. there were 1.8 radios-about 40% included FM-and half of all people had access to four or more radios.”⁶⁸ Although growth of FM radio was considered to have “taken off” after World War II, it seemed to have taken until the mid-1960s to begin to realize its potential. Regulation helped mainstream FM programming move away from simulcasts of its AM counterpart and into programming specific for the FM band, and automobile manufacturers helped introduce FM radio into many new cars.

The emergence of new and different radio programming on FM also helped draw listeners to the new technology. Susan Douglas believes that the explosion of FM radio was due to “primarily the emergence of a profoundly anticommerical, anticorporate ethos in the 1960s” and that “it was marked by a new passion for listening, in particular for fidelity listening.”⁶⁹ FM radio seemed to be an alternative to mainstream broadcasting.

⁶⁶ Lawrence W. Lichty and Malachi C. Topping, *American Broadcasting: A Source Book on the History of Radio and Television*, (New York: Hastings House, 1975), 310

⁶⁷ Ibid.

⁶⁸ Ibid, 455.

⁶⁹ Susan J. Douglas, *Listening In: Radio and the American Imagination*, (Minneapolis: University of Minnesota Press, 1999), 259.

Douglas said that there was a “disdain for the ‘vast wasteland’ of television and for the formulaic, overly commercialized offerings of radio, and a scorn, first on the part of older intellectuals and later on the part of the counterculture, for the predictability and mindlessness of mainstream popular music.”⁷⁰ She cites a *Time* article from January 1957 describing the early FM radio audience as “middle-aged, male and intelligent, drawn largely from professions requiring highly conscientious performance.”⁷¹ Douglas explains that early FM listeners were “more educated than average Americans and tended to have ‘high culture’ tastes, preferring FM’s music, intellectual fare, and lack of commercialism to the usual AM programming.” They were from major metropolitan cities, listened to music ranging from “Frank Sinatra and Mantovani to Dave Brubeck” and many shared “a deep aversion to television” preferring to listen to FM during prime-time hours.⁷² The resurgence of FM in the 1960s and 1970s was due to youth culture. Douglas explains that rock, blues, and “especially folk” music allowed a critique of mainstream culture that was rarely broadcast; “when some of these young people, primarily men, worked their way into FM radio stations they deliberately used their positions to challenge every aspect of what people heard and how they heard it on the dominant medium, AM radio.”⁷³ Free-form radio, where the disc jockey has control over which songs were played, allowed for a new and interesting development in FM radio. A revolt against the traditional AM sound began.

Today a counterculture surrounds satellite radio similar to what surrounded FM radio in the 1970s. This counterculture tends to be found online, as there are websites

⁷⁰ Ibid.

⁷¹ Ibid., 264.

⁷² Ibid., 266-67.

⁷³ Ibid., 269.

and online forums devoted to Sirius XM satellite radio, as well as sites devoted to specific hosts and channels. Even though satellite radio is far from anti-corporate, when compared to AM and FM radio stations owned by media conglomerations such as CBS Radio and Clear Channel it feels less corporate. Language and content is unrestricted at XM and Sirius, which allows for a feeling of freedom that traditional broadcasters cannot convey to their listeners. “Shock jocks” such as Howard Stern and Opie and Anthony, who were not allowed to express certain language and thoughts on FM radio, can broadcast in an unrestricted environment on satellite radio. Fans of uncensored music now can listen to songs that may have questionable language in the lyrics, but as the artists originally intended the songs to sound. Those interested in uniquely formatted programming or who want to hear radio in another language, such as French or Korean, can now have access to it. Notably, like FM radio, satellite radio has also had the backing of the automotive industry, which helps launch the product to many new subscribers. With programming choices that range from classical to punk, conservative to liberal, and in a variety of languages, satellite radio is attempting to change how people listen to radio.

Television:

In 1939, David Sarnoff of RCA presented television to the American public declaring, “now we add radio sight to sound.”⁷⁴ Although the idea of television had been in the minds of many for years, it was not until after World War II that television began to take off. According to Gary Edgerton, “no technology before TV ever integrated faster

⁷⁴ Gary R. Edgerton, Gary R. *The Columbia History of Television*, (New York: Columbia University Press, 2007), 12.

into American life. Television took only ten years to reach a penetration of thirty-five million households, while telephone required eighty years, the automobile took fifty, and even radio needed twenty-five”⁷⁵

Due to an FCC freeze on new television licenses in 1948, many who wanted television were unable to receive a proper signal due to distance or terrain. The adoption of cable television by consumers has its roots in community antenna television (CATV). The origins of the first CATV system are disputed, but it is believed to have been created simultaneously between 1948 and 1952 in rural areas of Pennsylvania and Oregon as a means to link a community to an antenna capable of receiving the signal unavailable to many with rooftop antennas because of its distance from the broadcast station.⁷⁶ CATV began when an antenna was installed at a high point of a building and then cable line from the antenna was split to various houses. The owner of the antenna would charge a nominal fee for the service. Thus, cable television was born.

In 1952, the FCC finished four years of work allocating “the available spectrum space among the nation’s communities.”⁷⁷ The FCC chose to create a system of hundreds of local broadcast television stations instead of creating “a system of regional television markets where a number of broadcast stations would serve the same broad geographic area.”⁷⁸ The FCC sought to ensure diversity in programming not by requiring stations to broadcast certain content, but by dividing the nation into regional markets. “The commission’s desire for a system of small town television broadcasters [...] soon ran into

⁷⁵ Ibid, xi.

⁷⁶ Herbert H. Howard, Michael S. Kievman, and Barbara A. Moore, *Radio, TV, and Cable Programming*, 2nd ed. (Ames, IA: Iowa State University Press, 1994), 366.

⁷⁷ Martin H. Seiden, *Cable Television U.S.A.: An Analysis of Government Policy*. (New York: Paeger Publishers, 1972), 11.

⁷⁸ Ibid.

conflict with the public's desire to receive the programs of all three major networks. Each small town, though, may not have been able to support three local stations."⁷⁹ Translator stations (retransmitters or boosters) were built, some illegally, to relay a station's signal to a smaller town. When CATV entered small towns these translator stations allowed for the reception of all three broadcast networks. However, this threatened a local station's advertising revenue in a market where there may have been a sole broadcaster. By 1960, Seiden explains, these cable systems were outlawed and in 1962, the FCC ordered a freeze that stopped cable systems from entering the top-100 markets in the United States.⁸⁰ Interestingly, this process allowed for smaller markets to be served by cable systems, providing coverage of out-of-market stations to a local community not originally intended to be served by such stations. The freeze order by the FCC forced smaller market stations to compete with a larger market stations.

By 1965, "approximately 1,450 CATV systems existed throughout the country serving more than 1,600,000 homes."⁸¹ CATV began to offer more than the initial broadcast signals. The addition of microwave relays offered viewers more programming of distant signals and "several systems [...] branched out to offer background music, educational television, and continuous weather information to their subscribers."⁸² In 1969, pay-cable television was started "prompting a proliferation of pay-cable services that offered movies and sports."⁸³

⁷⁹ Ibid.

⁸⁰ Ibid, 15-16.

⁸¹ Anthony M. Lamport. "The Community Antenna Television Industry." *Financial Analysts Journal*. January/February 1965, Vol. 21, No. 1: 53-55.

⁸² Ibid.

⁸³ Megan Mullen, *The Rise of Cable Programming in the United States*, (Austin: University of Texas Press, 2003), 187

In 1970, Rolla Edward Park wrote about cable television's possible impact on broadcast television. Park stated, "when cable carries distant signals, it fragments the local audience, tending to reduce local station revenue. Reduced revenues may force broadcasters to reduce the quality of their programming, particularly local and public service programming. Some stations might even be forced off the air..."⁸⁴ For example, in the Eau Claire, Wisconsin market, a CATV system could have carried its own WKBT CBS 8 and also WCCO CBS 4 from Minneapolis because of strong signal penetration. This would have affected advertising revenues for the smaller-market WKBT, as viewers may have been tuned to larger-market WCCO. It also would have created another concern for WKBT because WCCO likely had a larger budget for the station, meaning better programming and facilities for in-house productions. These issues are not of major concern today because of agreements cable operators have with local broadcasters and because in-house production outside of news is fairly minimal. However, it shows one of the major challenges that local broadcasters faced when competing with programming provided by cable television.

As pay cable took off, it resulted in what Thomas Baldwin and D. Stevens McVoy called a "churn" in subscribers. Customers would sign up and then drop the service after a few months after realizing that programming was not really what had been advertised. Baldwin and McVoy stated that cable was "oversold," meaning that a service would advertise blockbuster movies and end up showing mostly older, less popular movies with a few hit movies scattered in. The problem cable companies had to address were how to convince people to pay for television. "It took several years to establish the idea that

⁸⁴ Rolla Edward Park, "The Growth of Cable TV and Its Probable Impact on Over-The-Air Broadcasting." *American Economic Review*, Vol. 61, No. 2, *Papers and Proceedings of the Eighty-Third Annual Meeting of the American Economic Association*, May 1971, 69-73

television was something of value and that unedited, uninterrupted movies, even just a couple of month, were worth \$7 or more.”⁸⁵ Much like satellite radio today, the cable television industry faced the problem of being known as a pay service. Baldwin and McVoy explain further, “promoting the unfortunate name ‘pay cable’ played into the hands of TV network competitors who labeled their own service ‘free TV.’ Moreover, the system of paying for a whole channel, when only a few programs are viewed, violated a consumer code for some people; there was too much waste.”⁸⁶

In recent years, terrestrial broadcasters have used the same type of marketing strategy to compete with satellite radio. As Howard Stern left Infinity Radio (now known as CBS Radio) for Sirius Satellite Radio, Infinity began running commercials asking listeners why they would pay for something they can get for free. To counter Stern’s departure, his flagship station WXRK in New York switched call letters to WFNY and began identifying themselves as “Free FM.” Several other Infinity properties that previously carried Stern’s show followed suit.⁸⁷ The tactics used for years by broadcast television were updated and implemented for radio once terrestrial radio owners were threatened as broadcast television had once been threatened.

Over the years, broadcast television struggled as “competition from cable, VCRs, and other home technologies” created problems for networks.⁸⁸ Broadcast television began to lose prime-time audiences to cable and, as Hilliard and Keith explain, networks such as CBS “tried to become more business efficient by cutting back on staff and paying

⁸⁵ Thomas F. Baldwin and D. Stevens McVoy, *Cable Communication*, (Englewood Cliffs, NJ: Prentice Hall, Inc. 1988), 131.

⁸⁶ *Ibid.*

⁸⁷ “Infinity Announces Howard Stern Replacement Strategy,” *FMQB*, October 25, 2005, Accessed January 20, 2011, <http://www.fmqb.com/article.asp?id=137561>.

⁸⁸ Robert L. Hilliard and Michael C. Keith. *The Broadcast Century and Beyond: A Biography of American Broadcasting*, 4th ed., (Oxford: Focal Press), 247

more attention to the profit and loss columns.”⁸⁹ However, FCC regulation worked in local broadcasters’ favor in 1990 when “syndex-syndicated exclusivity, which required a cable system to black out any distant station or cable network program it carried that was already being aired by a local TV station was reenacted.”⁹⁰ This pleased local broadcasters because it gave them exclusive broadcast rights, superseding those of a cable channel or out-of-market broadcast station. A broadcast station that chooses to enforce syndex-syndicated exclusivity reaps the benefits of purchasing a program to air and not having to compete with the same program on a different channel. Cable operators may be unhappy with this because it requires them to block out certain programs and essentially “black out” a variety of programming on cable channels if that programming is also aired on a broadcast station. Likewise, radio broadcasters today struggle with similar issues as they lose listeners because of competition with satellite radio, podcasts, iPods, and other forms of downloadable audio content.

In the sixty years cable television has existed it has gone from not being regulated to being a tightly controlled medium. FCC requirements forcing cable operators to black out certain broadcasters, requiring channel carriage of others, and also requiring public, educational and governmental programming have all had an effect on what can be shown on cable TV.

Satellite radio is still in its infancy, with it being just over a decade since it first launched. Regulation has been tight since satellite radio’s inception; however, programming constraints by the FCC have been limited, unlike with cable television. Public access is not a factor for satellite radio as it is with cable television. However,

⁸⁹ Ibid.

⁹⁰ Ibid, 266.

since XM and Sirius merged some regulations have been put in place, as will be explained later. Satellite radio faces the same problems as once faced the cable industry in initially attracting subscribers. Competition with cable television and other technologies such as the VCR led to decreased revenue and viewership for broadcast television stations. Despite these challenges broadcast television is alive and well and its technological innovations are supported by the FCC. During the recent HDTV conversion, the FCC issued 40-dollar coupon vouchers to consumers to help offset the cost of buying the converter boxes that allow viewers to tune in the digital signal. As with the competition from satellite radio, terrestrial radio has succeeded and most likely will continue to broadcast into people's lives for years to come.

Satellite Radio:

Satellite radio shares much of the same problems FM radio and cable faced when each service debuted, however little has been written about satellite radio or those who chose to adopt the technology. What has been discussed is provided below.

In March 2006, Carolyn A. Lin surveyed a national sample it was found that “the motive of seeking diversion from radio listening appears to be a relatively strong factor for the radio audience when they are making a satellite radio adoption decisions”⁹¹ Also, habit, was a strong factor and “the combined significance of these two psychological factors suggests that the radio listener who relies on radio for diversion on a routine basis is also the most likely adopter of satellite radio.”⁹²

⁹¹ Carolyn A. Lin. “Predicting Satellite Radio Adoption via Listening Motives, Activity, and Format Preference,” *Journal of Broadcasting & Electric Media*, (March 2006), 153-4.

⁹² *Ibid.*, 154.

A December 2006 study of XM's programming by Garth Alper explains through interviews with music programmers at XM that their goal is to fill the void left by terrestrial broadcasters as the quality of FM radio has declined over the years. By "paying knowledgeable programmers to create different worlds of imagination" they are able to educate listeners, play music which has not been played on terrestrial radio in years, promote new artists, improve fidelity, give talented DJs a national audience, and "expos[e] people to music that is outside their normal sphere of listening."⁹³

By examining radio and new technology uses among young adults by Alan B. Albarran, et al., showed that "younger audiences are leaving terrestrial radio for new technologies like MP3 players, Internet radio, and satellite radio. Interestingly, most of the 18-24 year olds in this study "perceive satellite radio as a distinctive media separate from terrestrial radio delivering dissimilar types of content."⁹⁴ It also showed that of those surveyed only 11.2 percent subscribed to satellite radio and rated it lowest in terms of gratification items.⁹⁵ The authors explain that "this is not surprising given the low number of satellite radio subscribers in the sample, as well as the fact that the satellite services are not really marketed heavily to young audiences who can afford the monthly subscription fee."⁹⁶

Although, these articles are informative to satellite radio, I am hoping to add a larger, historical context to satellite radio and its place with similar technologies. I am striving to find out the issues that surrounded the development of satellite radio. I am

⁹³ Garth Alper, "XM Reinvents Radio." *Popular Music and Society*, Vol. 29, No. 5 (December 2006), 517.

⁹⁴ Alan B. Albarran et al., "What Happened to our Audience? Radio and New Technology Uses and Gratifications Among Young Adult Users," *Journal of Radio Studies* (November 2007), 95.

⁹⁵ *Ibid.*, 97.

⁹⁶ *Ibid.*, 98.

seeking to show who, when and why people chose to subscribe to satellite radio and their motivations for adopting this technology. While some have looked at programming content and uses of satellite radio, this will be the first examination of satellite radio and the concerns from those in favor and those who opposed the technology. It is also the first to examine news coverage during its formative years, and the regulatory issues surrounding Sirius and XM's merger.

Chapter 4 - Methodology:

In doing research on satellite radio I decided to do a close read of the mainstream press, FCC documents, corporate press releases and NAB discussion on Sirius and XM's merger. In doing this I felt I could best find what satellite radio's history tells us about larger trends in technology, media and society. I wanted to know which companies or organizations opposed or supported satellite radio, if other technologies were competing for listenership, how the press discussed the launch of satellite radio technology to the public and once available, which organizations were opposed to their merger.

I was primarily concerned with the following two questions: What issues did the satellite radio industry face during its formative years and during its merger? And, how did the press discuss this new technology as it is emerging?

Regulatory Issues Prior to Launch:

In order to find context on satellite radio prior to the launch of Sirius and XM a search was conducted of the University of North Texas' "Federal Communications Commission Record" digital collection from 1990 through 1998. 1990 was selected as a starting date when an FCC inquiry into satellite radio was released. 1998 was selected as the ending year because 1998 is when the first document other than the original *New York Times*' article announcing satellite radio was published in the four sources above. The term "satellite radio" yielded fifty-six results in the search. Many of the results for "satellite radio" returned results pertaining to other satellite technologies such as maritime satellite transmission, cellular to satellite technology and amateur-satellite radio operations. Also discarded were results that were found in footnotes of other FCC issues

being discussed. Of the fifty-six results, seven were relevant to satellite radio technology as discussed here.

Of the seven results, three main FCC documents provided the most information related to birth of satellite radio technology. It showed who opposed and was in favor of the implementation of satellite radio, how the new technology would fare against competition from terrestrial broadcasting and how other technologies saw the implementation of satellite radio as a threat. The final 1997 Report and Order also included stipulations that would later lead to whether a possible merger would be possible. The information gleaned from these FCC documents provide an understanding of how satellite radio came into existence and to learn what proponents and opponents of satellite radio discussed prior to publication of news concerning it.

The Mainstream Press and Satellite Radio:

Articles on satellite radio service steadily increased as the technology became available. With this, the press began reporting on satellite radio knowing consumers might have an interest. The best understanding of how the technology came into existence and was presented to the public is by examining early reports on satellite radio from the mainstream press. I believe these reports helped mold consumers' understanding of what the product was and what to expect from it. These early articles explain satellite radio's emergence as a new technological choice and provides insight into its initial adoption by consumers.

To learn what the press wrote about satellite radio four sources were studied. Originally, only *Time*, *Newsweek*, and *U.S. News & World Report* were selected for

study. The *New York Times* was added after little coverage of satellite radio was found in the three news magazines. In the four sources studied, the first article found concerning satellite radio service was an article in the *New York Times* in 1991. Articles were scarce until XM and Sirius were set to launch in the late 1990s. As the satellite radio services gained prominence and subscribers, more articles appeared. Articles with an open-ended date through January 2004 were read and provide a glimpse into satellite radio's emergence as a new technology and its initial adoption by consumers.

I chose to stop looking at articles after January 2004 because not long after discussion of satellite radio began to focus on the announcement of Howard Stern's signing with Sirius Satellite Radio.

To help understand what the media was writing about satellite radio, I applied Gitlin's use of media frames that he says, "help organize the world both for journalists who report it and, in some important degree, for us who rely on their reports."⁹⁷ He explains that, "[m]edia frames are persistent patterns of cognition, interpretation, and presentation, of selection emphasis, and exclusion, by which symbol-handlers routinely organize discourse, whether verbal or visual."⁹⁸

Although, I am not conducting a framing analysis, I am looking at themes through which the media chose to explain satellite radio and how these articles were contextualized for the public. In the years leading up to and just after satellite radio's launch, there were several definite themes found in the articles written in these four publications.

⁹⁷ Gitlin, *The Whole World...*, 7.

⁹⁸ *Ibid.*, 7.

The *New York Times* and the three news magazines studied are available nationwide and have strong reputations and circulation numbers. As of December 2010, the circulation of *Time* was 3.31 million, *Newsweek*'s circulation was 1.5 million and *U.S. News & World Report* was just over 1 million.⁹⁹ As of December 2010, the *New York Times* daily circulation was over 1 million and the Sunday circulation was over 1.5 million.¹⁰⁰ As Sirius and XM were beginning to establish themselves, articles on satellite radio appeared in the *New York Times* more frequently than *Time*, *Newsweek* and *U.S. News & World Report*, likely due to the *New York Times*' daily publication.

Articles from *Time*, *Newsweek*, and *U.S. News & World Report* were searched using Ebscohost Academic Search Premier with the following keywords: "Satellite Radio," "XM," "Sirius," "American Mobile Radio," "CD Radio," "CD Satellite Radio," and "Satellite CD Radio" The last four terms refer to XM and Sirius's former names and variations. After excluding duplicate articles and irrelevant content (e.g. Sirius is also the name of the brightest star in the night sky¹⁰¹ and the name of a New York port-authority police dog¹⁰²), the search yielded the following: three articles from *Time*, five articles from *Newsweek*, and six articles from *U.S. News and World Report*.

Articles from *The New York Times* were searched using ProQuest Newsstand Complete with the same keywords listed above. Sixty articles remained after duplicate articles and irrelevant content were excluded. This number was reduced to 36 randomly selected articles. From these four sources, the total number of articles studied was fifty.

⁹⁹ Audit Bureau of Circulations "Access ABC: eCirc for Consumer Magazines"
<http://abcas3.accessabc.com/ecirc/magtitlesearch.asp> <accessed 15 April 2011>

¹⁰⁰ Ibid.

¹⁰¹ Pedro Braganca, "The 10 Brightest Stars", SPACE.com, July 13, 2003, Accessed March 31, 2008,
http://www.space.com/scienceastronomy/brightest_stars_030715-1.html.

¹⁰² Francine Parnes. "Dogs Have Their Day." *New York Times*, June 30 2002, 14 WC.5.

Subscriber Growth and Merger Concerns:

Press releases from Sirius and XM were examined to show subscription growth and numbers. Prior to Howard Stern's arrival much of the press discussion was focused on this new technology, however discourse shifted to Stern and the content of his program and what his arrival meant for satellite radio. Searching the corporate websites for both Sirius and XM let to relevant information to construct a timeline of events mixed with subscription growth. Press releases showed how once Stern announced he was leaving terrestrial radio and moving to Sirius, subscriptions increased.

Stern's arrival and the resulting subscription growth eventually led to a merger between Sirius and XM. Regulatory discussions in the Department of Justice and the FCC were examined as well as opposition from the NAB. The concluding FCC decision is included in chapter eight.

Chapter 5: Results Overview

Although there are similarities between the rise of satellite radio and the rise of other media technologies such as cable television and FM radio, there are also important differences. Most important, perhaps, is the fact that people need to subscribe to a satellite radio service in order to receive it. For the first time, people are paying for radio in order to seek an alternative to AM and FM radio.

The following three chapters show the results of research into FCC documents, mainstream press coverage of satellite radio, corporate press releases and discussion from other organizations that dealt with the Sirius XM merger.

In chapter six, FCC documents were studied because they provide a first hand account of what Sirius and XM were trying to accomplish prior to launch. These documents show concerns from organizations that saw the launch of satellite radio technology as a threat to their operations and from those who welcomed the technology as a way to provide an alternate service.

In chapter seven, mainstream press reports of satellite radio from before the two services launched until a year after it was available for purchase. A close read of these articles show various themes that reporters used to explain this new service to the public. These themes may have persuaded or dissuaded consumers from trying satellite radio in its formative years.

Lastly, chapter eight shows the subscriber growth of satellite radio and regulatory issues prior to Sirius and XM merging. This chapter contains corporate press releases, FCC discussion and other debate from the Department of Justice and the NAB. It also

shows how satellite radio subscriptions increased once Howard Stern signed to Sirius and reaction from those opposed to the merger.

These chapters answer the questions of how satellite radio was discussed in mainstream press. It also addresses the issues the satellite radio industry faced during its initial years and during its merger.

Chapter 6: Results – Regulatory Issues Prior to Launch

FCC Documents:

In August 1990, an FCC inquiry into the “development and implementation of new digital audio radio services” was released and it was found that “digital audio radio services” (DARS) would be able to implement new technologies allowing for better sound quality than that of AM and FM radio. At that time there had been three filings to provide digital audio broadcasting services across the United States: Satellite CD Radio, Radio Satellite Corporation licensed to the American Mobile Satellite Corporation, and Strother Communications. In later years, Satellite CD Radio would go on to become Sirius Satellite Radio and American Mobile Satellite Corporation would become XM Satellite Radio. While the former companies were trying to implement a system that the FCC later granted as satellite radio, the latter, Strother Communications, was requesting permission to create a system similar to today’s HD Radio, where a current AM or FM station is multiplexed with additional digital audio content.¹⁰³

At this early stage, the FCC was still unsure as to whether to implement a satellite service or a digital terrestrial service. Seeking comment from the public, the FCC tried to determine the impact on the industry and the need of the public. The Commission was concerned with the impact on “existing audio services” and whether they could “ensure that the public benefits of digital radio are most efficiently realized.” Importantly, the FCC noted that the “United States has a strong, competitive radio broadcast service” and they were concerned the “new radio service might have a significant impact on these

¹⁰³ United States. Federal Communications Commission.. *FCC Record, Volume 05, No. 17, Pages 5138 to 5328, August 13-August 24, 1990*. Washington, D. C.. UNT Digital Library. Accessed November 4, 2010 <http://digital.library.unt.edu/ark:/67531/metadc1655/>.

existing services.” The concern was that as technology improved, people would grow dissatisfied with AM and FM radio quality. The FCC asked for comments, specifically seeking information about “the ramifications of these potential (audio quality) improvements on both broadcasters and the listening public.” The FCC also wanted to know if it was in the public’s interest to pay for additional equipment to receive audio quality akin to compact discs. It was noted that a satellite-based system could improve reception for a “wide-coverage area” and that a terrestrial-based system would offer “the advantage of local stations providing programming responsive to local needs.” The Commission wanted to know if there would be a negative impact on existing broadcasters and also if improved sound quality would eventually serve the best interests of existing broadcasters. The FCC also sought comment on whether it should provide “existing terrestrial audio broadcasters with a migration or transition priority in a new digital audio service” or “whether there should be a priority or ‘set-aside’ for noncommercial operations.”¹⁰⁴

Less than five years later, on January 18, 1995, the FCC allocated frequencies that allowed for the implementation of the “satellite digital audio radio services” in the United States. In their “Report and Order” regarding satellite radio and its impact on existing broadcasters, they noted that by 1992 there had been two additional license applicants besides Satellite CD Radio and American Mobile Radio Corporation, bringing the total to four DARS license applications by 1995.¹⁰⁵ In the years between the initial inquiry and the order, comments regarding whether the technology should be allowed were received

¹⁰⁴ Ibid.

¹⁰⁵ United States. Federal Communications Commission.. *FCC Record, Volume 10, No. 05, Pages 2081 to 2695, February 21-March 3, 1995*. Washington, D. C.. UNT Digital Library, Accessed November 4, 2010, <http://digital.library.unt.edu/ark:/67531/metadc2085/>.

by the FCC from proponents for and opponents of satellite radio. A major concern was if satellite radio were to succeed, would local radio broadcasters fail? As we now know, this has not been the case. Satellite radio is still in its infancy with approximately 20 million subscribers.¹⁰⁶

Proponents stated that major benefits from the implementation of satellite radio, besides improved audio quality, would be that it would “meet the needs of unserved and underserved markets as well as provide enhanced quality of reception and increased audio program diversity” and that “allocation will create new business opportunities in the audio broadcast industry, especially for companies engaged in the design and manufacture of DARS-related systems.” Other arguments in favor of the new satellite service came from sports programmers who foresaw the expansion of sports programming nationwide and also believed there would be an increase in jobs within their industry. Currently, terrestrial radio sports broadcasts typically concentrate on a local team or a weekly national game such as Monday Night Football. Local radio markets tend to have one station that focuses on local sports programming throughout the day, and then switches to syndicated network programming such as ESPN Radio in the late evenings until morning drive. Many markets also have a second or third sports-oriented station that is exclusively syndicated programming. All Pro Sports and Entertainment, Inc. commented that satellite sports programming could become niche-oriented and that this type of “audio programming is analogous to the proliferation of cable television programming, which has grown because of increases in channel availability and increased market size.” All Pro believed that not granting spectrum

¹⁰⁶ "SIRIUS XM Radio Reports Full Year and Fourth Quarter 2009 Results." Sirius XM Satellite Radio. February 25, 2010, Accessed September 28, 2010, <http://investor.sirius.com/releasedetail.cfm?ReleaseID=447093>

access to satellite radio “would fail to promote diverse and equitable audio programming coverage for the entire U.S. population.”¹⁰⁷

Educational, minority and non-profit organizations saw prospects for satellite radio similar to the possibilities of cable television: the ability to provide a wider range of programming. These groups responded to the Commission’s request by saying satellite radio could promote an increase in educational and minority programming. The non-profit educational improvement organization The Education Development Center commented that satellite radio could “provide the capability to deliver educational audio programming to remote and rural areas of the country and extend educational opportunities outside of the classroom.” The United Church of Christ and National Asian American Telecommunications Association said that satellite radio was an opportunity to narrowcast “high quality, diverse programming” that reaches audiences that may not already receive such content.

Whether it was because particular communities were underserved, radio interference was prevalent, rural locations were too remote, or because various organizations did not have a voice, the common thread in many of these comments was the lack of coverage in areas currently served by terrestrial broadcasters. The FCC report states, “several other groups point out that specific niche markets hitherto unserved or underserved for social and economic reasons may now be served by satellite DARS.” The Maine Farm Bureau Association and Wyoming Farm Bureau Federation both agreed that satellite radio would help “significantly increase access to sources of information” and “alleviate many of the reception problems caused by Wyoming’s mountainous

¹⁰⁷ United States. Federal Communications Commission.. *FCC Record, Volume 10, No. 05, Pages 2081 to 2695, February 21-March 3, 1995*. Washington, D. C.. UNT Digital Library. Accessed November 4, 2010, <http://digital.library.unt.edu/ark:/67531/metadc2085/>.

terrain.” The Recreation Vehicle Industry Association commented that “the new service will increase the utility of RVs and thus promote the RV industry” because satellite radio would not face the same fading and interference issues as terrestrial radio. Proponents of satellite radio saw the new technology as an opportunity to reach out to larger or underserved audiences.

Technological advancement was also an argument for many proponents of satellite radio. Several companies suggested that developments in audio compression, satellite communications, and satellite-to-moving-vehicle technology would grow because satellite radio would “extend digital media into many aspects of everyday life.” This would also allow, they explained, for people to receive weather, traffic and emergency notifications in remote areas unreachable through other means. Nationalistic arguments were made by technology companies such as Loral Aerospace Holdings, Inc., which stated, “satellite DARS is necessary in order to maintain the U.S. lead in technology over other countries”¹⁰⁸ and Primosphere commented that, “rapid implementation of satellite DARS will increase the ability of American industry to compete in international markets.”¹⁰⁹

Opponents to the advancement of satellite radio development were, according to the FCC, “primarily existing broadcast entities.” The main objection to satellite radio was the fear “satellite systems [would] adversely impact present AM/FM radio services by driving local stations out of business [causing] a loss of local service, which a satellite service by its nature cannot replace.” These opponents also suggested that “programming [would] become less, not more, diverse as a result of satellite DARS and cited the

¹⁰⁸ Ibid.

¹⁰⁹ Ibid.

Communications Act of 1934 to support an argument that these broadcasters would not be serving local needs by providing a national service, a provision in the Act that all broadcasters must follow. Several broadcasters took issue with the FCC's rules on localism, arguing that satellite radio would become a de facto "national monopoly of superstations not tied to any community" and that it would immediately "reach 261 markets throughout the entire country, unduly [concentrating] control of radio service, in contravention of the Commission's recent efforts to limit the number of stations that can be controlled by one entity." It should be noted that National Public Radio and the Corporation for Public Broadcasting were not opposed to satellite programming, but rather suggested allocation on a different frequency for sharing opportunities.¹¹⁰

Terrestrial broadcasters saw a national satellite radio service as a threat to their operations; many said they believed the radio marketplace was already highly competitive. Shamrock Broadcasting stated that, "a variety of specialized audio channels [are] available to cable television subscribers at a cost approximating that projected by potential satellite DARS providers."¹¹¹ Shamrock's assertion was correct—cable television does provide audio channels—however, this ignores the fact that those cable channels are not available on car stereos. Mount Wilson FM Broadcasters commented that many new FM stations have been added and given the competitive market FM radio would have trouble competing with satellite radio. The juxtaposition between large satellite radio companies and local radio stations was also expressed by KSBJ, which stated, "the large budgets of satellite companies would permit them to provide

¹¹⁰ Ibid.

¹¹¹ Ibid.

programming that would draw away local listeners, thus fragmenting local audiences to the point where small stations could no longer survive.”¹¹²

A push for terrestrial digital radio was also suggested. The National Association of Broadcasters (NAB) argued that the FCC should explore what they considered “the best option” for digital radio technology. This version of digital radio is what exists today as HD Radio and would allow digital channels to be broadcast alongside their analog counterparts terrestrially. The NAB saw satellite implementation as a threat to this digital radio technology and said that satellite radio would “present a potential danger to free local radio service.” Noble Broadcasting, Inc. suggested that satellite digital audio be implemented long after terrestrial digital audio had advanced, allowing for “long-term commercial viability for AM and FM services.” In response, those in favor of satellite broadcasting said that the consumer should have the choice to utilize a digital audio service.¹¹³ The opportunity for a digital terrestrial service would eventually happen, satellite radio proponents said, and consumers could then choose between what eventually became XM and Sirius Satellite Radio services and HD Radio.

In the establishment of the rules and policies of satellite service, discussion focused on the effect of the Communications Act of 1934’s requirement that broadcasters serve the public interest. The Commission felt that implementation of satellite radio did not contradict the Communications Act because the framers of the Act could not have foreseen the development of satellite technology. They cited *NAB vs. FCC* (1984) where the court held that “not every communications service approved by the Commission need

¹¹² Ibid.

¹¹³ Ibid.

to be tied to a local community.”¹¹⁴ The FCC found that a nationwide audio service such as satellite radio would actually “supplement, rather than supplant, local broadcast stations.” It conceded that while some local radio stations might struggle to finance local content due to this new competition, it saw that the benefits of compact disc quality sound, programming that could reach underserved communities, and an improved position for the United States in the international marketplace outweighed these problems. The FCC said that that neither Satellite CD Radio nor the NAB was able to fully justify their predictions. The Commission stated that, “It may be that SCDR [Satellite CD Radio] understates the possible impact on terrestrial radio and that the NAB overstates it.” However, the FCC believed there were too many unknown factors to demonstrate that satellite radio would have a negative impact on terrestrial radio. In its conclusion, the FCC noted that by the time satellite DARS was implemented, terrestrial DARS could also be in existence and that the FCC was fully supportive of these new digital audio technologies.¹¹⁵

¹¹⁴ United States. Federal Communications Commission.. *FCC Record, Volume 10, No. 05, Pages 2081 to 2695, February 21-March 3, 1995*. Washington, D. C.. UNT Digital Library. Accessed November 4, 2010, <http://digital.library.unt.edu/ark:/67531/metadc2085/>.

¹¹⁵ *Ibid.*

Chapter 7: Results – The Mainstream Press and Satellite Radio

In examining mainstream press coverage of satellite radio, several themes were found in how reporters discussed satellite radio prior to launch until approximately a year after Sirius and XM had launched their services. Five themes were found in these reports: *New Technology*, *Skepticism*, *Diverse Programming*, *Automotive Partnerships*, and *Terrestrial Broadcasting Concerns*. These articles, as mentioned earlier, were selected with an open-ended date until 2004 in the *New York Times*, *U.S. News and World Report*, *Time* and *Newsweek*.

New Technology:

Reports of the advancement in radio technology were seen as early as 1991. Edmund L. Andrews, economic reporter for the *New York Times*, reported that another company, Worldspace, Inc., hoped to begin satellite operations as early as 1993. This company would have provided service similar to shortwave radio, with programs from international broadcasters such as the British Broadcasting Company (BBC) and Voice of America. In 1991, the governments of Egypt, Niger and Senegal expressed interest in programming channels for Worldspace.¹¹⁶ (Worldspace later invested twenty percent in XM Satellite Radio, helping them secure funding for the FCC auction of the two satellite licenses.¹¹⁷) Just over a year later, Andrews reported on the FCC's plan to assign frequencies for satellite radio. Andrews quoted Jeff Baumann, general counsel of the NAB, as saying he feared the new technology "undermined the ability of local

¹¹⁶ Edmund L. Andrews, "Satellite Radio System for Homes Is Cleared." *New York Times*, 33, 37. June 22, 1991, accessed November 5, 2010.

¹¹⁷ Terry Golway "High-Tech Radio Isn't Static Free." *New York Observer*. March, 28 1999, accessed November 5, 2010.

broadcasters to compete [and that] it would undermine their ability to attract listeners, sell advertising and maintain their viability.”¹¹⁸ However, Martin Rothblatt, founder and chairman of Satellite CD Radio (Sirius), said that satellite radio would be “the beginning of a new consumer electronics market segment.”¹¹⁹ Rothblatt’s belief was that because revenues would be obtained through subscriptions and not advertising, terrestrial radio had no reason to fear the new technology.

Even though some early reporting focused on whether satellite radio would be a viable service, other reports focused on how satellite radio technology was the first major change in radio since the addition of FM to terrestrial radio. These explanations helped consumers understand how different satellite radio was compared to terrestrial radio and how one could tune into “hundreds of better-than-FM-quality stations” by using their receiver in their car and their home systems.¹²⁰ Rather than picking up stations from a broadcast tower located regionally, XM’s satellites (named Rock and Roll) “now float in geostationary orbit at fixed spots 22,000 miles above the earth.”¹²¹ And while people were used to interference on AM radio from other stations and atmospheric events, satellite radio suffers interference only from tall buildings. Terrestrial repeaters, which are, “refrigerator-size boxes of electronics that strengthen and retransmit the signal” eliminated much of the interference problem.¹²² Eric Taub of the *New York Times* described both Sirius and XM’s studios in detail, providing information on the size of their complexes, computer storage systems for digital audio, and how in the future they

¹¹⁸ Edmund L. Andrews, “F.C.C. Plan For Radio By Satellite.” *New York Times*, October 8, 1992, accessed: November 5, 2010

¹¹⁹ *Ibid.*

¹²⁰ Chris Taylor, “Back to the Future,” *Time*, 20, January 2003, Vol 161, Issue 3.

¹²¹ Adam Rogers, “A Little Space Music” *Newsweek*, November 12, 2001, Vol 138, Issue 20.

¹²² *Ibid.*

could provide global positioning service (GPS) systems, video, interactive advertisements, and a plethora of other services because both services were essentially transmitting only data.¹²³

As the early 2000s progressed and satellite radio was taking off, the companies were finding alternate ways of delivering their content beyond satellite technology. Kenneth Terrell of *U.S. News & World Report* mentioned an “XM Personal Computer Receiver [that] makes satellite radio available when you’re working on your PC.” He added, “the receiver doesn’t eat up bandwidth and processing power the way that streaming Internet audio programs do.”¹²⁴ Later, both XM and Sirius would go on to provide online streaming of their channels, and new units were introduced that switch between Wi-Fi and satellite signals. Satellite radio was often portrayed in a way that made it seem that the technology was ever expanding and by purchasing it, the consumer would have access to cutting-edge technology many did not yet have.

Skepticism:

The emergence of any budding technology often creates skepticism, and some articles focused on the initial issues Sirius and XM faced leading up to and soon after their launch. After years of radio that was transmitted to receivers at no cost, a new, subscription-based radio system was a big change and the critics pointed out the flaws. In September 2001, within a week of XM’s soft-launch of satellite radio service in San Diego and Dallas, *New York Times* reporter Ian Austen pointed to the lack of subscribers

¹²³ Eric Taub, “Digital Transmissions Could Transform Radio In The Car And At Home,” *The New York Times*, October 19, 2000, G1.

¹²⁴ Kenneth Terrell, “Satellite sound by the sofa,” *U.S. News & World Report*, December 15, 2003, Vol 135, Issue 21.

when he wrote, “Digital radio made its debut this week in parts of the United States. But that doesn’t mean many people were listening.” Austen’s article elaborated that XM acknowledged “there were only about four listeners for each channel.”¹²⁵

Not long after the national launch of XM in November 2001, Laurie J. Flynn of the *New York Times* wrote that, “no one knows whether consumers, or even traveling sales people, will pay for radio programming.” The cost of satellite radio technology seemed to be a main focus for her article which noted the price of expensive new equipment and subscription fees, asking if listeners were willing to “pay monthly for a bigger selection, much as they now pay for cable television?”¹²⁶

Pamela Sherrid of *U.S. News & World Report* noted, “the rivals [XM & Sirius] face a daunting job in educating consumers about the new medium and establishing brand identity. XM plans a \$100 million advertising campaign.”¹²⁷

Diverse Programming:

Sirius and XM’s diverse programming was often a selling point for the two companies. Much like the way FM’s early years saw experimental music formats broadcast over-the-air, many people saw new programming options as a way for satellite radio to cut into the terrestrial radio market because they could provide specialized content that local stations could not replicate. Because satellite radio technology allows for many channels of programming, stations can program niche formats for a wide audience on multiple stations. Terrestrial radio often sticks to one format, such as Top 40

¹²⁵ Ian Austin, “If No One Hears Digital Radio, Does It Make A Sound?” *New York Times*, September 17, 2001, G3

¹²⁶ Laurie J Flynn, “Persuading Audiences to Pay to Listen,” *New York Times*, 6, December 31, 2001.

¹²⁷ Pamela Sherrid “Songs by satellite to suit every taste,” *U.S. News & World Report*, Vol 130, Issue 19, May 14, 2001.

music, with exceptions being morning shows or newsbreaks. The uniqueness of satellite radio was discussed in a brief article in *Newsweek* in 1998, which mentioned diverse programming that could split classical music into narrower formats by creating “separate channels for opera, symphonic and chamber music.”¹²⁸ For people who were unhappy about the stagnation of content on terrestrial radio, satellite seemed like an obvious improvement.

The promise of commercial-free music and a wide range of programming on the two services were highlighted as well. Reporter Eric A. Taub wrote that, “both [satellite radio] companies offer a wide range of specialty music genres. Jazz and blues fans have a choice of seven channels on XM, and eight on Sirius.”¹²⁹ Talk radio, a staple of AM broadcasting, would be continued on satellite radio, however, the range of programming options would exceed the options on terrestrial radio. Barnaby J. Feder of the *New York Times* wrote about Sirius’s Out-Q channel aimed at the gay, lesbian, bisexual, and transgender audience. Feder said, “prominent gay and lesbian people described the new 24-hour-a-day news, music and talk service as a landmark development for minority groups that they say have been badly served by traditional radio and television broadcasters.”¹³⁰ Radio plays that were popular in the early years of terrestrial radio have largely disappeared from AM and FM radios, however, Sirius and XM were willing to broadcast them. In 2003, David Cole discussed XM’s “Sonic Theater” channel and said it that it would broadcast plays from the BBC and the Canadian Broadcasting

¹²⁸ “Far Out,” *Newsweek*, Vol. 132, Issue 3, July 20, 1998.

¹²⁹ Eric A. Taub, “Forsaking AM and FM for Satellite-Dial Diversity” *The New York Times*, January 2, 2003, G8.

¹³⁰ Barnaby J. Feder, “Satellite Radio Channel Will Focus on Interests of Gays and Lesbians” *The New York Times*, April 14, 2003, C4.

Corporation (CBC).¹³¹ Satellite radio became a new way to experience a wider range of content than traditional radio could offer. If you had an interest that was outside the mainstream agenda, satellite radio could help you find your niche.

Automotive Partnerships:

As Sirius and XM began rolling out their products, many partnership agreements between automobile companies and satellite services were announced, which helped financially back the companies early in their development. A February 2000 article in the *New York Times* discussed DaimlerChrysler's investment of \$100 million in Sirius Satellite Radio, Inc.¹³² Months later, *New York Times* reporter Simon Romero followed this up with information on XM's financing, noting that "\$50 million from the Honda Motor Company's sales and marketing subsidiary in the United States" was poured into XM and also that "XM's backers include General Motors [...] Sirius, which is based in New York, has installation deals with DaimlerChrysler, Ford Motor and BMW."¹³³ In an effort to promote new features besides AM and FM, compact discs, or cassette decks in factory-issued car stereos, automobile manufacturers began to offer satellite radio in their stereos. These partnerships were beneficial to the satellite companies, car manufacturers, and owners of new vehicles who, upon purchase of their car, were offered trial subscriptions to XM or Sirius. In January 2004, Brad Stone of *Newsweek* wrote that, "half of new sat-radio subscribers sign up for the service when they buy a new car."¹³⁴

The consumer could test out a new radio service, the automobile manufacturer had a new

¹³¹ "Drama for the Ear and the Imagination." *New York Times*, Aug 17, 2003, 2.5

¹³² Bloomberg News, "Daimlerchrysler to Equip Vehicles with Satellite Radio," *New York Times*, February 2, 2000, C4.

¹³³ Simon Romero, "XM Satellite Radio Completes Its Financing," *New York Times*, July 10, 2000, C15.

¹³⁴ Brad Stone "Greetings, Earthlings." *Newsweek*, January 26, 2004, Vol 143, Issue 4.

option to promote, and the satellite companies began to be noticed by consumers. Years later, automotive partnerships would increase as Sirius and XM were often features in rental cars that allowed a traveler to test the new radio service.

Terrestrial Broadcasting Concerns:

Andrea Adelson of *The New York Times* wrote that corporate consolidation of terrestrial radio and the pressure of risk-taking had led to a stale radio environment.

Andrea Adelson wrote in the *New York Times* that since the early 1990s terrestrial radio had lost 11 percent of its audience, while corporate consolidation mixed with the pressure of risk-taking led to a stale radio environment.¹³⁵ Adelson detailed how the services would provide commercial-free music channels and other programming the satellite companies planned to offer prior to launch. She said commercials on terrestrial radio interrupted nearly a third of the hour and that niche-programming formats were nonexistent on terrestrial radio. Robert Unmacht, an independent media analyst, was quoted in her article that, “The biggest loser may be traditional radio.”¹³⁶

Local broadcasters feared the competition with the satellite radio services. While XM and Sirius grew, so did the technology to deliver their content. Land-based repeater stations used to help boost their digital audio streams were constructed. In February 2002 Corey Kilgannon explained that local radio managers were fearful of the construction of a terrestrial repeater because they were suspicious of XM’s tactics. XM’s Lon Levin stated “the F.C.C. forbids satellite radio companies from using their repeaters to provide any programming that is not broadcast directly from the satellite.” However, local

¹³⁵ Andrea Adelson, “Satellite Radio’s Bet on Dissatisfied Listeners.” *New York Times*, July 30, 2001, C9.

¹³⁶ Ibid.

broadcasters in Westchester County, New York, believed that XM would somehow skirt the regulations and insert local content, such as regional advertising.¹³⁷

¹³⁷ Cory Kilgannon, "IN BUSINESS; Satellite Radio Comes to Westchester" *New York Times*, February 10, 2002.

Chapter 8: Results – Subscriber Growth and Merger Concerns

The years leading up to the 2007 merger saw significant subscriber growth and interest in satellite radio. When Sirius signed Howard Stern, many fans of his show made the switch to Sirius Satellite Radio. On September 30, 2004, Sirius ended their third quarter with 662,289 subscribers.¹³⁸ The next day, October 1, XM announced their third quarter results with more than 2.5 million subscribers.¹³⁹ Five days later, on October 6, Stern was signed to Sirius.¹⁴⁰ The result of his departure from terrestrial radio and subsequent jump to Sirius was that satellite radio was showing itself to be a major competitor in the audio entertainment industry. Stern still had one year left on his contract with Infinity Broadcasting, but it also meant he had a year to promote satellite radio over the air on his own show, much to the dismay of the radio companies that paid for his syndicated show.

The more hype and promotion on Stern's show, the more Infinity reacted and fans began to buy Sirius equipment. Sirius's subscription numbers began to blossom. On November 23, 2004, Sirius subscriptions were about 800,000 and by the end of 2004, they were over 1.1 million.¹⁴¹ The gap was beginning to close between Sirius and XM. By the end of 2004, XM ended the year with over 3.2 million subscribers. One year later, by the end of 2005, with Howard Stern just two weeks away from starting his new Sirius

¹³⁸ "SIRIUS Satellite Radio Announces Third Quarter 2004 Financial and Operating Results" Sirius XM Satellite Radio, October 27, 2004, accessed November 11, 2010, <http://investor.sirius.com/releasedetail.cfm?ReleaseID=150206>.

¹³⁹ "XM Satellite Radio exceeds 2,500,000 Subscribers in Third Quarter" Sirius XM Satellite Radio, October 1, 2004, accessed November 11, 2010, <http://investor.sirius.com/releasedetail-XM.cfm?ReleaseID=333991>.

¹⁴⁰ "Howard Stern And SIRIUS Announce The Most Important Deal In Radio History," Sirius XM Satellite Radio, October 6, 2004, accessed November 11, 2010, <http://investor.sirius.com/releasedetail.cfm?ReleaseID=151947>.

¹⁴¹ "SIRIUS Satellite Radio Ends Year With More Than 1.1 Million Subscribers" Sirius XM Satellite Radio January 3, 2005, accessed November 11, 2010, <http://investor.sirius.com/releasedetail.cfm?ReleaseID=152809>.

Satellite Radio show, Sirius announced that they had passed 3 million subscribers.¹⁴² In one year, Sirius had gained 2.9 million subscribers. By the end of 2006, Sirius had just over 6 million subscribers¹⁴³ while XM had 7.6 million, a difference of only 1.4 million.¹⁴⁴ In just two years, Sirius had grown by nearly 5 million subscribers. Although rival XM still saw growth, the gap between the two companies was shrinking at a rapid pace.

On February 19, 2007, just two months after the 2006 subscription numbers were released, Sirius Satellite Radio and XM Satellite Radio announced a \$13 billion merger of equals. The goal of the merger, according to a Sirius XM press release, was to provide “consumers with enhanced content, greater choices and accelerated technological innovation.”¹⁴⁵ The companies’ belief was that greater technological integration could allow them to “develop and introduce a wider range of lower cost, easy-to-use, and multi-functional devices,” with better management of costs “through sales and marketing and subscriber acquisition efficiencies.” As a combined company Sirius and XM could become a “more competitive audio entertainment provider.” The announcement claimed that the merger would “better position consumers’ attention and entertainment dollars against a host of products and services in the highly competitive and rapidly evolving audio entertainment marketplace.”¹⁴⁶ This marketplace consisted of traditional, terrestrial radio, iPods, and mobile phone streaming, as well as “new challenges from the rapid

¹⁴² “SIRIUS Satellite Radio Passes 3 Million Subscribers” Sirius XM Satellite Radio, accessed November 11, 2010, <http://investor.sirius.com/releasedetail.cfm?ReleaseID=182568>.

¹⁴³ “Sirius Reports Fourth Quarter and Full Year 2006 Results” Sirius XM Satellite Radio, February 27, 2007, accessed November 11, 2010, <http://investor.sirius.com/releasedetail.cfm?ReleaseID=231374>.

¹⁴⁴ “XM Satellite Radio Holdings Inc. Announces Fourth Quarter and Full Year 2006 Results” Sirius XM Satellite Radio, February 26, 2007, accessed November 11, 2010, <http://investor.sirius.com/releasedetail-XM.cfm?ReleaseID=330135>.

¹⁴⁵ “SIRIUS and XM to Combine in \$13 Billion Merger of Equals” Sirius XM Satellite Radio, accessed November 11, 2010. <http://investor.sirius.com/releasedetail.cfm?releaseid=230306>.

¹⁴⁶ *Ibid.*

growth of HD radio, Internet radio and next generation technologies.”¹⁴⁷ The announcement proclaimed that as a cohesive unit, the two companies could best serve subscribers’ interests, while allowing a new, merged company to better place itself in the audio entertainment industry.

Over the course of the next year and a half, the merger went through several regulatory steps. The companies, still operating as separate entities, officially filed with the FCC on March 20, 2007 for approval of the merger. In this filing, they stated that the new company would be “owned equally by the former shareholders of XM and Sirius, and [...] be controlled by a new Board of Directors selected by both XM and Sirius.”¹⁴⁸ On November 13, 2007, stockholders for both XM and Sirius overwhelmingly approved the merger. According to a Sirius press release, “preliminary tabulation indicate[d] that more than 96 percent of the shares voted were cast in favor of the transaction.”¹⁴⁹ At XM, the approval was even higher, “99.8 percent of the shares voted were cast in favor of the transaction.”¹⁵⁰ Under the terms of the merger agreement “XM stockholders will receive a fixed exchange ratio of 4.6 shares of SIRIUS common stock for each share of XM they own. XM and SIRIUS stockholders will each own approximately 50 percent of the combined company.”¹⁵¹

On March 24, 2008, the Department of Justice closed its investigation into the proposed merger and found no evidence that the merger would substantially reduce competition, while concluding that merging would not harm consumers. They found that

¹⁴⁷ Ibid.

¹⁴⁸ “Public Notice,” FCC.gov, http://hraunfoss.fcc.gov/edocs_public/attachmatch/DA-07-2417A1.pdf

¹⁴⁹ “Sirius Stockholders Approve Merger with XM” Sirius XM Satellite Radio, November 13, 2007, accessed November 11, 2010, <http://investor.sirius.com/releasedetail.cfm?releaseid=275560>.

¹⁵⁰ “XM Shareholders Vote to Approve Agreement with Sirius,” Sirius XM Satellite Radio, November 13, 2007, accessed November 11, 2010, <http://investor.sirius.com/releasedetail-XM.cfm?ReleaseID=330021>.

¹⁵¹ “Sirius Stockholders Approve Merger with XM,” Sirius XM Satellite Radio, November 13, 2007, accessed November 11, 2010, <http://investor.sirius.com/releasedetail.cfm?releaseid=275560>

the merger would not mean an increase in subscribers' prices for several reasons. First, it would not be profitable for the company to do so as consumers have alternative audio options to satellite radio. Second, over time, there will be more competitive audio services available to consumers, and third, the merger would create a more efficient business model, which could benefit consumers.¹⁵²

Importantly, the Department of Justice also found that Sirius and XM compete with "AM/FM radio, HD Radio, MP3 players (e.g., iPods), and audio offerings delivered through wireless telephones" and that these technologies offer many of the same qualities of satellite radio. In the release, the Department of Justice said it did not see satellite radio as a major threat to competition such as terrestrial broadcasting. It stated that evidence gathered during the investigation did not establish that "the combined firm could profitably sustain an increased price to satellite radio consumers." The Department of Justice also said it believed that wireless streaming of Internet content to mobile devices would probably be satellite radio's biggest competitor in the future.

On June 16, 2008, FCC chairman Kevin Martin announced that he would recommend approval of the merger "in exchange for concessions that include devoting channels to noncommercial and minority programming."¹⁵³ He added that there should also be a three-year price freeze. The other commissioners did not note their opinions publicly. After a year of deliberations within the Commission, this was the first public announcement of any approval for the merger.

¹⁵² United States Department of Justice, "Statement of the Department of Justice Antitrust Division on its Decision to Close its Investigation of XM Satellite Radio Holdings Inc.'s Merger with Sirius Satellite Radio Inc." March 24, 2008, accessed December 2, 2010, http://www.justice.gov/opa/pr/2008/March/08_at_226.html.

¹⁵³ "F.C.C. Chief Backs XM-Sirius Deal" *New York Times*, June 16, 2008, accessed December 2, 2010, <http://query.nytimes.com/gst/fullpage.html?res=990CEFDA1538F935A25755C0A96E9C8B63&scp=11&q=xm&st=nyt>.

On July 25, 2008, the FCC approved the merger in a 3 to 2 vote along party lines, with the three Republicans voting to favor of the merger. The approved merger called for some stipulations, as listed below, but not as many as chairman Martin said he wanted. The FCC required that the new company offer “a la carte packages” starting at 50 channels for \$6.99 per month with additional channels available for 25 cents each. Even with a la carte programming, the FCC required that the service cost no more than \$12.95 per month, with an option of 100 channels for \$14.99 per month. Other concessions included varied programming packages, such as a “best of both,” meaning if a subscriber had Sirius, he or she could get an additional grouping of the best of XM channels at an additional charge, and vice-versa. The FCC also required the merged companies to provide a discounted “Family Friendly” package.

Most importantly, in approving the merger the FCC mandated channels be set aside for a specific purpose for the first time. Known as “Public Interest and Qualified Entity Channels,”¹⁵⁴ four percent of channels from the Sirius platform and four percent of channels from the XM platform (six channels on each or twelve channels total) must be set aside for non-commercial, educational, and informational programming. The set-up is similar to cable television’s requirement to offer public access, educational, and governmental (PEG) channels. The FCC also required service be provided to Puerto Rico and that interoperable receivers (receivers that receive both XM and Sirius) be manufactured and that a three-year price freeze be enacted.

In contrast with the Department of Justice, the FCC had concerns with the merger. Prior to the two companies forming in the late 1990s, the FCC made the effort to prevent

¹⁵⁴ United States. Federal Communications Commission. *FCC Report and Order*, FCC 08-178

a monopoly from occurring by granting licenses to two satellite radio companies.¹⁵⁵ The 1997 (SDARS) Report and Order contained the following paragraph:

We note that DARS licensees, like other satellite licensees, will be subject to rule 25.118, which prohibits transfers or assignments of licenses except upon application to the Commission and upon a finding by the Commission that the public interest would be served thereby. Even after DARS licenses are granted, one licensee will not be permitted to acquire control of the other remaining satellite DARS license. This prohibition on transfer of control will help assure sufficient continuing competition in the provision of satellite DARS service.¹⁵⁶

Opponents of satellite radio made use this statement in trying to persuade the Commission from granting the merger. However, debate on whether this prohibition was required prompted the FCC to repeal the rule, finding that:

[...] approval of the merger, subject to Applicants' voluntary commitments and the other conditions, will benefit consumers by making available to them a wider array of programming choices at various price points and affording them greater choice and control over the programming to which they subscribe, and that those benefits exceed the harms identified above. For the same reasons, we conclude that repeal of the rule prohibiting the merger will, on balance, serve the public interest.¹⁵⁷

The FCC continues to adhere to the Communications Act of 1934 as its highest standard. In removing the provision from the original 1997 (SDARS) FCC Report and Order, the FCC stated that this merger served the public's interest, convenience, and necessity. With the approval of the merger, it was the belief of the FCC that Sirius XM could compete with other audio entertainment products while providing a better product to existing and new consumers of satellite radio.

¹⁵⁵ United States. Federal Communications Commission. *FCC Report and Order*, FCC 95-17

¹⁵⁶ United States. Federal Communications Commission. *FCC Record, Volume 12, No. 10, Pages 5267 to 5852, Supplement*. Washington, D. C.. UNT Digital Library. Accessed April 18, 2011
<http://digital.library.unt.edu/ark:/67531/metadc2330/>.

¹⁵⁷ United States. Federal Communications Commission. *FCC Record, Volume 23, No. 14, Pages 12422-12423, August 4-August 15, 2008*. Washington, D. C.. UNT Digital Library. Accessed April 18, 2011.
<http://digital.library.unt.edu/ark:/67531/metadc6505/>.

The biggest opponent to the merger was the National Association of Broadcasters (NAB). As previously noted, the NAB opposed the development of satellite radio and preferred terrestrial digital radio because the same terrestrial broadcasters would be invested in that digital technology. The NAB deemed the merger of Sirius and XM a monopoly and argued that it would be devastating for consumers. It even lobbied 72 members of the House of Representatives to openly write a letter opposing the merger.

Upon approval of the merger the NAB's response was:

Just six years ago, the FCC denied a monopoly to the nation's only two satellite TV companies in a 5-0 vote. Yet today, the Commission is apparently preparing to grant a monopoly to the nation's only two satellite radio companies that in their 11 years of existence have had more luck flaunting the FCC's own rules than creating a successful business model.¹⁵⁸

Drawing a comparison to satellite television providers the NAB fails to mention that although satellite television and satellite radio are similar in technology, satellite television companies operate differently than Sirius and XM. Satellite television companies such as DirecTV and Dish Network operate in a manner similar to cable television companies. They mainly rebroadcast programming from local television stations and cable channel providers, such as CNN or Discovery Channel. Satellite television operators do have some exclusive, original content, but their main service is to deliver television produced by other companies. In their statement the NAB is missing the point that satellite radio is more focused on in-house production with programming from other broadcasters used as a supplement. Therefore, the argument that the FCC

¹⁵⁸ National Association of Broadcasters, "NAB News Release: NAB Statement on FCC's Reported 3-2 Vote Favoring a Satellite Radio Monopoly." July 23, 2008, accessed November 21, 2010, <http://www.nab.org/documents/newsroom/pressRelease.asp?id=1643>.

should follow the precedent set when satellite television companies tried to merge is ineffective.

Despite the threats perceived by the NAB and others, the merger was approved and Sirius XM exists today as a merged company. While terrestrial stations have seen some financial loss from the departure of hosts like Howard Stern, the threat that satellite radio would possibly steal listeners away from terrestrial radio probably has not been as detrimental as the NAB might have once thought.

Chapter 9: Discussion

The Future of Radio

In the coming years, both satellite radio and terrestrial radio industries face stronger competition as newer innovations are introduced. Mobile smartphone technology such as iPhones and Android phones have allowed for easy access to one's own music library via MP3 technology. However, beyond MP3s, streaming content is now readily available on these smartphones. Internet-only broadcasters such as Pandora and Slacker Radio allow listeners to like or dislike songs and artists thus helping listeners streamline a personalized radio station based on the one's taste.

With competition predominantly from products like the iPhone and other streaming audio devices, it remains to be seen if the initial success satellite radio had with uncensored talk and music (the signing of Howard Stern and other celebrities such as Oprah Winfrey, Rosie O'Donnell, and Martha Stewart, as well as copious amount of sports coverage) will continue. For satellite radio, the content that is exclusive to Sirius XM will probably determine the success of the technology. Meanwhile, terrestrial radio may continue to see a decline in listeners due to homogenized programming content and new alternative technologies.

Deregulation of radio in the 1980s and 1990s, leading up to the passing of the Telecommunications Act of 1996, created relaxed ownership regulations and allowed media conglomerates such as Clear Channel and CBS Radio to buy large clusters of stations, reduce staff and programming costs, and retool their properties to try to appeal to larger audiences.¹⁵⁹ According to Alan B. Albarrab et al., "Arbitron has produced a

¹⁵⁹ Eric Klinenberg. *Fighting for Air: The Battle to Control America's Media*. (New York: Metropolitan Books, 2007), 27.

series of annual studies that, in general, show that younger audiences are spending less time listening to traditional radio as other audio technologies are adopted.” Their study showed that nearly 50% of young adults never listen to the radio and that “the [terrestrial] radio industry faces a key challenge in trying to compete for younger audiences in this heavy technological era where variety and choice are key motivations for listening to music.”¹⁶⁰ Many feel that terrestrial radio has become stagnant. For example, one can currently hear the same type of “Jack FM” formatted station, a CBS Radio concept, in multiple markets.¹⁶¹ While new technologies are vying for the attention of the consumer, radio corporations are still struggling to gain listeners.

Bagdikian stressed, “[b]y steadily relaxing limits on ownership and introducing other new provisions, the F.C.C. has done two things. It has fostered broadcasting that is a nationally homogenized mix of programs, indistinguishable from one market to another, and it has made licensing a game largely reserved for big corporations. More and more, local political, ethnic and social groups, women, minorities and unions are out of the picture.”¹⁶² Because of deregulation, radio broadcasters no longer have a true connection to the communities they serve. They rely on industry analysis to receive feedback to determine what a community wants. Charles Fairchild contends, “radio conglomerates are now able to provide standardized programming to any station regardless of its location and pursue economies of scale that allow them to effectively dominate local markets and rationalize the medium down to its core.”¹⁶³

¹⁶⁰ Alan B. Albarran et al., “‘What happened to our audience?’ Radio and New Technology Uses and Gratifications Among Young Adult Users.” *Journal of Radio Studies*, Nov. 2007

¹⁶¹ CBS Radio. “CBS Radio – Radio Stations.” Accessed April 17, 2009.
http://www.cbsradio.com/stations/index.html?sort=stat_format.

¹⁶² Ben H. Bagdikian, “Pap Radio.” *The Nation*. April 13, 1992, 473.

¹⁶³ Charles Fairchild, “Deterritorializing radio: deregulation and the continuing triumph of the corporatist perspective in the USA” *Media, Culture & Society*, 1999 London: Sage Publications, Vol. 21, 549.

In an effort to retain listeners, many terrestrial broadcasters have developed their own applications (apps) that provide their content on mobile phones at low or no cost. For example, Clear Channel has a free app called “iHeartRadio” that provides “750 of America’s favorite radio stations right to your iPhone or iPod touch”¹⁶⁴ and ESPN Radio provides an app for more than 35 of their networked stations for \$2.99. Many terrestrial stations have an individual app for their station and one app, WunderRadio, provides access to over 50,000 Internet radio streams ranging from the BBC to low power FM stations for \$6.99. These apps are greatly changing the audiences for terrestrial and other audio services. One can listen to a radio station from Tampa in Minneapolis as easy as tuning in to a local station in one’s own town. As long as one has a stable Internet connection, it could be possible to drive from Los Angeles to New York listening to a local FM station from Chicago using streaming radio technology on one’s phone.

Satellite radio is also beginning to provide content in this manner. Sirius XM now a mobile app for its service. However, you must first have a subscription and satellite radio receiver. Then, you must pay an additional \$2.99 per month for Internet access to this feature. As mobile Internet technology grows, the use of satellite technology may actually become unnecessary and Sirius XM could transition to an Internet-only subscription service, if they so desired.

As satellite radio technology improves and subscriptions increase, terrestrial radio may continue to see a decline in listeners. Repetitious playlists and decreased local content are some factors for this decline as is the adoption of satellite, Internet and other newer technologies. However, terrestrial broadcasters have looked at the implementation

¹⁶⁴ Clear Channel Entertainment, “iHeartRadio – 750+ Stations from 150 Cities” 2011, accessed January 27, 2011, <http://www.iheartradio.com/main.html>.

of HD radio as an option to combat some of the competition. Although still held to the standards of the FCC, terrestrial broadcasters could use this technology to improve local content and expand playlists. HD radio makes use of new digital technology that splits a signal so more than one audio stream is provided to the listener. The technology is similar to HDTV that allows more than one video service on a given channel. This would mean a listener of a typical AM and FM radio would receive one type of content on a main channel, but could receive additional programming and music on the HD radio subchannels if that listener was willing to purchase an HD radio. This creates competition for Sirius XM and should appease the NAB who view satellite radio as a monopoly. In doing this, terrestrial broadcasters' could make use of HD radio to reduce homogenized programming and increase local content thus better serving the public's interest.

Terrestrial radio is a unique medium because the technology requires a station to be based in one location and the broadcast signal is limited by the license and the station's power. While satellite radio and other technologies may come along, I believe terrestrial radio will always exist. As cable television was introduced in the 1970s and 1980s, there was initial fear that this technology could negatively impact broadcast television. Instead, I would argue that the impact was beneficial to broadcast television because these stations were able to provide a unique service, often in the form of news, to a local community. Cable television could not provide that and the same is true of satellite radio.

Terrestrial radio offers a service that other forms of media cannot: immediate, localized content that can be broadcast to thousands of people within limited vicinity. In

response, these people can voice their opinions on local shows. This unique service allows for an exchange of dialogue in real time. McChesney states, “In the case of radio broadcasting, the most logical public service for the medium [is] to provide local content. Radio is arguably the least expensive of all our media in which to produce high-quality content. Therefore, while it is unrealistic to expect every mid-sized city to have its own major film studio or TV network, it is economically feasible to expect every community to have several commercially viable, locally based radio stations. Radio is in fact the ideal local medium.”¹⁶⁵ Sadly, often these broadcast stations are more interested in their profits as opposed to the needs of their listeners.

The shift to large-scale ownership meant local communities lost their voice. As stations began focusing on national content, voices from one political spectrum could dominate the airwaves, important local content was reduced, and radio as a medium has suffered. The only way people can respond if they are unsatisfied by national, syndicated programming is often by turning off the dial. Fairchild explains that “[l]ocal influence can only be asserted through mechanisms created, controlled and implemented by the industry, such as audience analysis and ratings systems, in short, mechanisms whose primary purpose is to tell stations how successfully they are persuing [sic] and producing their product [audiences].”¹⁶⁶ If we stop listening to one station and switch to another, stations will switch formats. However, if we stop listening to terrestrial radio as a whole, maybe the industry will examine its practices over the last quarter of a century.

¹⁶⁵ Robert McChesney, Forward from Robert L. Hillard and Michael C. Keith. *The Quieted Voice: The Rise and Demise of Localism in American Radio*. (Carbondale, IL: South Illinois University Press, 2005), x.

¹⁶⁶ Charles Fairchild. “Deterritorializing radio: deregulation and the continuing triumph of the corporatist perspective in the USA” *Media, Culture & Society*, 1999 London: Sage Publications, Vol. 21.,555-556

The future of radio will be interesting. As the Internet becomes more accessible through wireless hotspots, 3G and 4G mobile connections, or through community efforts to blanket entire cities, Internet technology could lead to a decrease in terrestrial listeners and satellite subscriptions. If terrestrial broadcasters continue with homogenized content and continue to not make use of their proximity in relation to their audience AM and FM stations could continue to see a decline in listenership. And if satellite radio continues to offer premium content that is unavailable on other audio services such as terrestrial radio or through mobile applications, Sirius XM could become a service akin to cable television. However, as new technological innovations develop, Internet, terrestrial and satellite radio, will have to continue to change their programming to maintain listeners.

Limitations:

The results found in this thesis are limited to the qualitative work implemented. Examining articles from three common news magazines and one newspaper limits the results to a national survey. It also does not take into account what other, local newspapers or trade specific publications may have discussed that Americans may have also been reading. It also does not take into account any broadcast television or radio stories the public may have seen or heard. The themes found in this thesis are a result of the sources studied and thus, other periodicals may have had other interpretations of the launch of satellite radio.

Future Studies:

Additional qualitative study could be done on news discussion on satellite radio in the years immediately preceding Howard Stern's arrival to Sirius Satellite Radio to see if discussion changed from an emphasis on technology to an emphasis on radio personalities or programming content. Also, HD Radio technology was implemented not long after Sirius and XM had initial success and a study on the impact of HD Radio would be worthy for future research.

Chapter 10: Conclusion

The goal of this thesis was to provide a history of satellite radio and present how this history closely shares a history with other single platform radio and television technologies. Satellite radio has reflected technological change by improving upon previous incarnations of radio and television technologies. Expanded programming, uncensored content, improved fidelity and nationwide reception have allowed Sirius XM to fill the gap left by terrestrial broadcast technology. By closely examining press coverage of the launch and initial years of satellite radio, I was able to find that the press presented five themes to the public that may have impacted their knowledge of the new technology. FCC and other regulatory discussion also explained a history of how terrestrial broadcasters and others feared the result of the implementation of satellite radio from the onset and during the merger between Sirius and XM.

The histories of cable television and FM radio also shows how similar technologies can be influential in the development of other technology. FM was born out of the desire for higher fidelity and more programming options. Cable television, similarly, was born out of a desire to first improve television reception and then later to provide more programming options and services to the public. Satellite radio, is the latest in single-platform media that is able to provide expanded and uncensored radio programming. Not only does Sirius XM offer this to their customers, but it also allows their talent to have freedom of expression without the constraints of FCC regulation.

Satellite radio's role in the future of other audio technologies is driven by their exclusive content. As other radio technologies emerge, such as mobile streaming applications and HD radio, those with the content desired will be successful. Sirius XM

already has a large subscription base and could prove to be the dominant broadcaster in future radio technology depending upon the content they provide.

As more satellite radio subscriptions increase, more will be written on this technology, however this is the first history of satellite radio to be offered and by doing so I am filling a gap in literature on new radio technologies. Satellite radio already serves as the cable television of radio, and as more subscribers join Sirius XM, it has the potential to become as popular as cable television.

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