

TELEVISION BROADCASTERS' ADOPTION OF DIGITAL MULTICAST AND
ANCILLARY SERVICES: AN ANALYSIS OF THE PRIMARY CORE, SUPPORTING, AND
ENVIRONMENTAL DRIVERS

By

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To all who have inspired my intellectual curiosity and academic pursuits, and to all who have supported me in reaching this milestone

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The digital technologies of multicasting and datacasting are bringing with them a plethora of new challenges and opportunities for broadcasters. The researcher offers an exploratory look into the dynamics of these new technologies by conducting intensive interviews with nine television executives in four markets of varying size.

The researcher looks specifically at the core, supporting, and environmental factors which are driving the adoption decisions made by broadcasters. Key considerations and themes involved in selling the multicast channels and in remaining competitive in the digital age of broadcasting are discussed. The limited adoption of ancillary services at this time and the reasoning behind this finding are also analyzed.

The researcher found a number of themes pertaining to the market-based solutions broadcasters are employing to deal with the issue of multicast cable carriage. These themes illustrate the increasingly complex relationship between broadcasters and cable operators.

CHAPTER 1 INTRODUCTION

Digital television (DTV) (see Appendix A) is evolving into one of the most exciting and dynamic technologies our nation has ever seen. The rollout of the technology did begin rather slowly, but is now rapidly gaining momentum. The new broadcast standard will have a powerful impact on broadcasters, cable and satellite providers, film and television producers, electronic equipment manufacturers, and consumers. The potential is great as all of these parties try to determine how to maximize the advantages while minimizing the challenges that this new and dynamic technology provides.

Digital Television Rollout is Far Reaching

Digital television is the wave of the future. As stated by former Vice President Al Gore, in his address at the inaugural meeting of the Advisory Committee on Public Interest Obligations, the transition to digital represents “the greatest transformation in television history...one that is truly bigger than the shift from black and white to color...It’s like the difference between a one-man band and a symphony” (Advisory Committee on Public Interest Obligations of Digital Television Broadcasters, 1998). Popular culture is only now starting to become aware of the superior image of high-definition (HD) television and the excellent sound-quality that this technology produces. The public is discovering these benefits by seeing the technology on display at various electronics retailers, restaurants, public venues, and at the homes of friends and family. However, the public has yet to discover the impressive interactive capabilities of digital television. People will soon realize that with a simple click of a button, they will be able to immediately receive various product information concerning items on their television screens.

Commercial broadcasters are now well aware that in less than a year the analog spectrum will be taken away by the federal government and DTV and its supporting services will be all that they will have to offer. The time has come for broadcasters to start thinking about how to craft their DTV infrastructure in order to garner a return on their massive digital investment. With compression technology offering the promise of “HDTV and” rather than the threat of “HDTV or,” broadcasters are beginning to see ways to do more than HDTV (see Appendix A) over their digital channels.

The transition to digital is leading station executives to becoming more or less bandwidth managers instead of stewards of a one-channel broadcast. The spectrum of 6 MHz will deliver about 19.39 Mbps of material, which translates into 1 HD and two standard definition (SD) (see Appendix A) channels or as many as four or five SD channels. It will become a balancing act for executives as either more channels can be aired with poorer signal quality or fewer channels with higher signal quality. This represents the major challenge behind what is known as multicasting (see Appendix A), the simultaneous broadcast of two or more channels (programs) on one major channel. The technology, many believe, will allow broadcasters to be able to compete more effectively with cable and satellite operators as well as providers of newer technologies.

Broadcasters Face Competition from Various Sources

The revenue pie continues to shrink as the competition for eyeballs increases. Many are now realizing that there might be far fewer stations in 10 years than the nearly 1,600 stations in the United States currently. Even in the large markets, station managers are wondering if more than three competing newscasts can remain viable. Local and national advertisers are finding new and creative ways of getting exposure via alternate program and cable operators. According to a recent study by Marian Azzaro, Professor of Marketing at Roosevelt University in Chicago,

advertisers would need to buy 42 percent more commercial inventory on the three major networks than they did 10 years ago just to reach the same size audience today (Boston & Brown, 2004).

The cable industry is not the only competitor. TV stations face increasingly intense competition for the consumer's time from a plethora of other sources. "The biggest ones to watch will be digital video recorders, video-on-demand, and handheld devices which are delivering more content," said Chris Rohrs, president of the Television Bureau of Advertising. Other interactive technologies, including the Internet and the video game industry, are also siphoning off viewers from broadcast TV. In fact, the video gaming industry is a \$28 billion force that now rakes in more revenue than all commercial television in this country (Boston & Brown, 2004).

Origins of Digital Television

For the past 65 years, television broadcasters have transmitted signals in an analog format. This format, which was developed by the National Television Systems Committee in 1941, is also known as the "NTSC standard." The format remained intact through the transition to color television, provisions to enhance picture quality (and reduce "ghosting"), and the development of closed captioning and stereophonic sound (Advisory Committee on Public Interest Obligations of Digital Television Broadcasters, 1998).

The invention of HDTV was a nearly thirty-year-long journey that began in the late 1960's as an industrial goal to improve television technology. The Japanese started work on HDTV in 1970 under the leadership of Takashi Fujio of Nippon Hoso Kyokai (NHK), Japan's state broadcasting system. The research aimed to create a higher-quality picture, one with more vivid

color and greater detail. In addition, a major goal was to increase the psychological effects of the medium to improve its use as a venue for advertising (Van Tassel, 2001).

It was not until July 1987 that the Federal Communications Commission (FCC) opened an inquiry into the possible introduction of an advanced television service in the United States. The FCC then created an organization called the Advisory Committee on Advanced Television Service (ACATS) to explore the economic, technical, and social implications of such a service. The group, which was comprised of 28 volunteer members, set out to build a testing facility for high-definition television known as the Advanced Television Testing Center in Alexandria, VA. In early 1993, ACATS along with the Advanced Television Systems Committee (ATSC), an industry group for which analog TV was named, reviewed four digital HDTV proposals and one analog proposal. It was at this time that ACATS affirmed the superiority of digital over analog although a specific digital proposal could not be agreed upon (Advisory Committee on Public Interest Obligations of Digital Television Broadcasters, 1998). As a result of this debate, digital television competitors decided to form a coalition called the Grand Alliance to pool their expertise.

In May 1996, the FCC formally proposed adoption of the Grand Alliance standards and, in December of that year, it adopted them with some changes. The standards included 18 distinct formats, which was the best way for the FCC to appease the various parties involved, broadcasters, computer companies, and consumer electronics manufacturers to name a few. The plethora of formats were also used to provide for great flexibility in the use of digital television as several versions of scanning formats, aspect ratios, and lines of resolution became available (Advisory Committee on Public Interest Obligations of Digital Television Broadcasters, 1998).

In the end, the FCC recognized, but did not formally adopt, any one of the 18 recommended formats. Instead, it allowed broadcasters to use the scanning format that best suited their needs. The FCC said in its April 3, 1997 *Fifth Report and Order on ATV* (Advanced Television), “Since broadcasters have incentives to discover the preferences of consumers and adapt their service offerings accordingly, we believe it is prudent to leave the choice up to broadcasters so that they may respond to the demands of the marketplace” (Advisory Committee on Public Interest Obligations of Digital Television Broadcasters, 1998).

Included with this FCC order, a schedule for the rollout of DTV was set. The affiliates of the four major networks, ABC, CBS, FOX, and NBC in the top ten markets were required to be broadcasting a digital signal by May 1, 1999. Those network affiliates in markets 11 to 30 had to be on the air by November 1, 1999, while all other commercial stations had to be digital by May 2002. PBS was required to be broadcasting in digital by May 2003 (Van Tassel, 2001).

The Telecommunications Act of 1996 established the framework for licensing DTV spectrum to existing broadcasters. Broadcasters were assigned a new DTV license and were given an additional 6 MHz channel to facilitate the transition from analog to DTV. The original 6 MHz channel for analog broadcasts will be retained until the expected completion of the transition. Once the transition is complete, each licensee must return the channel to the FCC (Advisory Committee on Public Interest Obligations of Digital Television Broadcasters, 1998).

Early High-Definition Broadcasts

October 29, 1998, the launch of the space shuttle Discovery, marks the date of the first live news event to be broadcast in HD. The broadcast could be picked up in more than twenty markets. In November 1998, the ABC station in Detroit aired an HD version of the film *101 Dalmatians* which was seen by hundreds of curious people watching from electronics stores in

the area. In December 1998 and January 1999, CBS aired the first football games in HD in New York City (Van Tassel, 2001).

The earliest HD programming was centered around special events, movies, and sports. These types of programming capture an audience's attention especially well because they tend to have a relatively large following and numerous visual details and audio can be showcased as well. As far as early commercial adopters are concerned, Proctor and Gamble aired six high-definition commercials in an experimental HDTV broadcast in 1999 (Van Tassel, 2001).

Consumer Adoption of Digital Television Technology

As of September 4, 2007, there were 1625 television stations in 211 markets broadcasting a digital signal. Nearly 99 percent of TV households in the United States have access to at least one local digital station (TVB, 2007).

According to the Consumer Electronics Association, around 30 percent of US households have at least one HDTV, with a third of these households owning more than one (Robbins, 2007). This represents a solid increase over the roughly 7 percent of households that owned HDTV sets in 2004 (Lieberman, 2006). Nearly 16 million HD sets are expected to have been sold by the end of 2007, which brings the cumulative total to 52.5 million HD households in the U.S. (Robbins, 2007). The average price of either a plasma or liquid crystal display (LCD) TV is \$1,881 while an average projection TV costs \$1877 (PriceGrabber.com, 2006). In looking at the price issue, Kagan Research Associate Analyst Patrick Johnson, had this to say, "We project the average price of an HD set will decline some 38 percent by 2010, reducing the price to \$1,139." The rapid price declines, in conjunction with increasing levels of HD programming, are sure to significantly drive up the total number of HD households over the next few years (Business Wire Inc., 2006).

Another research firm, Leichtman Research Group, had made some other estimates as to the rapid growth of digital TV in its report *HDTV 2006: Consumer Awareness, Interest and Ownership*. Some 92 percent of adults had heard of HDTV, up from 86 percent in 2004. In addition, HDTV set sales were the highest among wealthy consumers. The average household income of an HDTV owner was \$89,500, which was 42 percent above the national average. This figure had not changed even as prices had fallen some 30 percent for plasma HDTV's and 15 percent for LCD models (Lieberman, 2006).

Comparison of Adoption of High-Definition TV to That of Color TV

Schubin (2003) compared the adoption of HDTV to that of NTSC color back in 1953. The first HDTVs and the first NTSC color receivers both appeared a year after their approval by the FCC. Also, HDTVs, at first, were very expensive as were the first NTSC color televisions, which cost \$1,295 at a time when a brand new Ford cost \$1,695.

Although there are similarities, the transition to digital television has moved quicker than the transition from black and white to color. First of all, the initial HDTV sets, while expensive, were relatively less expensive than the first NTSC color sets. The higher prices of NTSC sets led to a slower adoption of the new technology by consumers when compared to the adoption of digital sets. Second, it took even longer for color programming to be broadcast than HDTV. A full decade passed before NTSC color was broadcast, quite a bit longer than the first digital broadcast. Third, the reception of HDTV is improving at a faster pace as reception problems were abundant in the rollout of NTSC color. In 1967, IEEE Spectrum noted that NTSC should have stood for "Never Twice the Same Color" as severe reception problems kept many other countries from adopting the US system. Overall, the transition to NTSC color took more than a

quarter century and while the digital transition is taking some time, it will be complete much sooner than that of NTSC color (Schubin, 2003).

Although faster than the rollout of NTSC color, the conversion to digital television technology began at a very slow pace. It was not until early 2003 that it seemed likely that the technology rollout would, in fact, take place. Proulx (2004) discussed the rapid adoption of digital television and the chain of events that have taken place since early 2003. First of all, new HDTV sports channels were introduced which led to the creation of digital production studios, broadcast centers, and HDTV production trucks. Sports programming has been an exceptionally powerful driver for the creation of new facilities because so much of this type of content is live. Second, because of the increased development of digital facilities and infrastructure, a larger variety of more cost-effective broadcast equipment and HDTV sets have become available. Third, non-sports channels have begun working on and are developing their own HDTV plans because of the more cost-effective equipment available and because many more people are buying HDTV sets due to their lower cost. Fourth, cable and satellite providers are encouraged to carry HDTV programming and have been using the technology to help add to their subscriber base. This has, in turn, led to an increase in the amount of HD programming carried by both the networks and local affiliates. The key to the chain reaction is that it has been driven by consumers' appetite for HDTV content and their desire to purchase the equipment necessary to view it.

Consumer Adoption of Interactive Services

According to Stump (2005), only 34.1 million households subscribed to some form of interactive service, whether it was in the form of direct-response advertising, games, or home shopping. The number of households subscribing to interactive services is expected to reach 69

million by 2009. However, even with this doubling of households, the total revenue from interactive services will only amount to \$2.4 billion, as estimated by Kagan Research. For comparison's sake, Google recorded nearly \$6 billion in advertising revenue in 2004. The search engines have gotten consumers into the habit of interacting online. Cable companies hope that this behavior by consumers will lead to the use of remote controls to click on interactive TV ads.

High-Definition Gains Momentum

Several elements have aligned to make high-definition technology finally materialize for content providers and distributors. On the content side, cameras were introduced that were native in both 720p and 1080i (see Appendix A for a discussion of scanning and lines of resolution). This has allowed remote trucks, programming, and production vendors to the networks, to invest in HD equipment, as they no longer have to invest in two types of cameras or expensive conversion equipment to serve the separate ABC/FOX (720p format) and CBS/NBC (1080i format) camps. Secondly, HD equipment has dropped enough in price that there is a chance of making the investment pay off sooner rather than later. On the distribution side, ABC, CBS, and NBC are offering all prime time programming in HD (Boston & Brown, 2004).

Consumer Education

Despite the momentum that the digital transition now has, consumers still remain quite confused as to the transition and what it means to them.

Current Figures on Consumer Understanding of Digital TV

A 2006 survey, conducted by research firm ICR, found that although more stations were offering digital signals than ever before, 61 percent of survey participants had no idea the digital television transition was taking place. Only 25 percent of respondents said they were somewhat aware or very aware of the digital transition (Cripps, 2007).

When looking at high definition television specifically, there is a general lack of understanding both for shoppers and owners of HD television sets, according to the results of a survey conducted in August 2007 by GfK Roper Public Affairs and Media Omnibus Services. Nearly 32 percent of those surveyed claimed they had no understanding of HD television while 56 percent said they had a moderate understanding. In contrast, only 11 percent of general consumers claimed to have had a complete understanding of HD television. The phone interviews also illustrated confusion on the part of consumers as to how to receive HD on their sets. Nearly 39 percent of respondents did not identify an HD-ready set as a requirement to receive the superior image and sound quality of HD. In addition, some 44 percent did not know they needed access to HD programming or an antenna in order to receive an HD signal (“Poll Finds,” 2007).

Consumers Not Very Familiar with Interactive TV

An older study, conducted by Ipsos-Insight, looked into interactive television (ITV), one of the so-called “ancillary services” (see Appendix A). The study concluded that even after 10 years of hype, only 50 percent of Americans had even heard of ITV. Furthermore, only 11 percent said they were “somewhat familiar” or “very familiar” with it. When asked about how interested people were in ITV activities, the most popular feature mentioned was the ability to control camera angles. This was indicated by just 26 percent of adults. One of the favorite features of ITV developers has been that of playing games against other viewers. However, this feature only excited 15 percent of the respondents to the survey. As stated by Lynne Bartos, who works in the Cable, Media, and Entertainment research division of Ipsos, “ITV content providers and programmers have their work cut out for them to raise awareness levels, improve consumer

understanding, and get consumers excited about the features and benefits of interactive TV” (Swann, 2004).

Voluntary Actions to Increase Awareness

A key element in facilitating the transition from analog to digital is ensuring that consumers are aware of the transition. In April 2002, FCC Chairman Michael Powell drafted a proposal calling for voluntary actions to speed the transition to digital by increasing consumer awareness. The Chairman asked broadcast stations to use their analog channels to help promote their digital channels. Also, cable systems were asked to market their DTV programming and products to consumers on the air and in customers’ monthly bills. Furthermore, Powell asked for point-of-sale marketing of broadcast, cable, and satellite digital options by DTV equipment manufacturers and retail outlets (United States General Accounting Office, 2002).

As a result of the proposal, the 10 largest cable operators said they would do more to advertise and market their value-added DTV programming. Consumer electronics makers said they would embark on a national public awareness campaign to promote digital set-top boxes and that they would use point-of-sale promotions. In addition, the FCC itself provides information on its website and through the call center of its Consumer & Governmental Affairs Bureau (United States General Accounting Office, 2002).

To serve as an example of a specific initiative by cable companies and electronics manufacturers, the Marketer’s Council of the Cable & Telecommunications Association for Marketing (CTAM) and Samsung Electronics partnered in an effort to educate consumers about HDTV and its many benefits. CTAM, which is comprised of eight cable companies including Adelphia, Bright House Networks, Charter, Comcast, Cox, Insight Communications, Mediacom Communications, and Time Warner Cable, launched a three-tiered approach to educating

consumers on HDTV. First, the organization targeted consumers with a series of sports-oriented television commercials that showed the enhanced experience a viewer can have by watching a sporting event in HD. Second, it launched an interactive online guide to digital television which can be found at samsungusa.com/dtvguide/. Third, CTAM placed banner ads promoting HDTV on many popular websites, including BusinessWeek.com and NYTimes.com (“Samsung, CTAM Hope,” 2004).

Public Safety Concerns

A large part of the transition to digital is centered around public safety concerns. Moving television broadcasters to a digital spectrum will open up the analog spectrum to be used by the government and public safety officials.

First Responders Need Analog Spectrum

When terrorists attacked the World Trade Center on September 11, 2001, the fire chiefs responding to the scene had no way of communicating with the police. New York City police officers heard the warnings from police helicopters circling overhead while firefighters and fire chiefs, including special operations chief Ray Downey, heard nothing. These communications breakdowns prompted the 9/11 commission to recommend that broadcasters quickly vacate four television channels for public safety; however, it has yet to occur (Clark, 2005).

The slow transition has been frustrating for some, such as Thomas Kean, who headed the 9/11 Commission. He declared at a Washington news conference on Sept. 14, 2005, “It is a scandal...that four years after 9/11 we have not yet set aside spectrum to ensure reliable communications during attacks or disasters. We cannot go through this again. If Congress does

not act, people will die” (Shields, 2005). Senator John McCain agreed and asked, “What level of crisis must we endure before we act” (Shields, 2005)?

Over-the-air Television Critical During Emergencies

Broadcasters try not to publicly oppose the notion of turning spectrum over to first responders. However, they worry about losing a large chunk of their audience, the 21 million households who rely on over-the-air signals and would need additional equipment in order to receive digital signals. Many of these people are lower-income households. According to the United States General Accounting Office (2005), 48 percent of the households that relied on over-the-air signals had incomes under \$30,000. In addition, non-white and Hispanic households were more likely to rely on over-the-air television than were white and non-Hispanic households. This profile described many of the people stuck in New Orleans during Hurricane Katrina. These residents, in a post-analog world, would not have been able to receive a television signal without additional equipment; and, therefore, would not have been informed as to the latest details on the hurricane. “We make the point that broadcasters play a critical role in times of peril,” said Dennis Wharton, a spokesman for the National Association of Broadcasters. “Broadcasters are undoubtedly a lifeline service” (Shields, 2005).

In *Free Over-The-Air Saves the Day*, Michael Silbergleid (2004) gives a personal account of the importance of having over-the-air television. As he was riding out Hurricane Frances in Palm Beach County Florida, he switched to over-the-air television as both his cable and DirecTV service went out. He found out relevant information about the storm and knew that his house would have to endure another seven hours of hurricane-force winds. When the power went out, he switched to a battery-operated analog TV/radio for more over-the-air reception. Silbergleid

makes the point that during weather emergencies, there is only one place where people can tune in to see Doppler radar and get the latest information on a storm, free, over-the-air television. He continues by saying that free, over-the-air saves lives (Silbergleid, 2004).

New Digital Technologies Enhance Consumer Safety

Despite the debate over the transition from analog to digital and its impact on consumer safety, several initiatives are in place to utilize digital signals to enhance consumer safety. New Jersey Network (NJN) and the New Jersey Office of Emergency Management (OEM) have instituted a communications system that sends emergency messages at high speed to desktop personal computers. These messages are sent via NJN Public Television's digital broadcast signal ("DTV and Homeland," 2003).

Furthermore, new digital technologies have led to the development of innovative devices that assist law enforcement and public safety officials in maintaining the security of their districts. New technology includes such devices as handheld police video gear that can capture, send, and receive images from a crime scene. Another new technology device is a car-mounted navigation unit that picks up traffic reports, receives street-by-street information, and calculates alternate routes for drivers (Clark 2005).

Purpose and Value of This Research

The purpose of this research study is to see which factors are most significant in both driving broadcast outlets to adopt the digital technologies of multicasting and ancillary services as well as the form that these services will take. As television executives are confronted with many challenges and difficult decisions, these new technologies will allow for a flexibility and complexity previously unseen in the industry. Various market variables and stations in four

markets will be analyzed and compared to see what differences exist and why. The rationale that station management is using to make certain adoption decisions will be assessed. Focus will be placed on the network-affiliate relationship as well as the broadcast ownership group-local station relationship. Will affiliates simply carry out the digital hopes of their networks and ownership groups or will they be more locally focused? What will the factors be that will direct their decisions? A comparison of market size will be looked at as well to see if market size has any bearing over whether a station will adopt local programming or a digital network arrangement instead with respect to their multicast channels. In addition to video streams, various other services, known as ancillary services, will be looked at as well such as datacasting (see Appendix A), subscription television, teletext, and interactive services. The various forms of these services that managers choose will be examined in addition to the rationale that they will use to decide upon which services to pursue. Also, the impact of current FCC regulations regarding the carriage of multicast channels and ancillary services will be explored. How are stations combating these regulations and managing to receive voluntary cable carriage of their digital streams?

Because of the tremendous potential of digital television and its critical impact on the broadcast industry, an overview and comparison of various stations' adoption of digital services and will prove to be very valuable. This type of information will provide television executives with a roadmap as to what factors they need to assess before making their own adoption decisions. It is critical for station managers to utilize their digital bandwidth appropriately if they are to remain competitive. If, for instance, one station in a market successfully develops a local

digital news channel and the other stations in the market simply allow this to happen without developing any digital services of their own, it is likely that these other stations would lose some of their audience to this new digital offering. In another scenario, say that a local station begins to offer data over the television. At several points throughout the day, people could view stock quotes or possibly retrieve a different camera angle during a sporting event. These advantages would eventually begin to penetrate the market providing this local station with increased market share and increased revenues.

Conclusion

Digital television technology has reached all segments of our society. Although it began as an industrial goal, it now has finally achieved the momentum that industry pioneers dreamed of years ago. This research study will uncover the various factors stations are considering as part of their strategies to build audience share and gain profit from these new capabilities. Before looking into the investigator's research, a detailed literature review was conducted to understand all facets of this technological phenomenon.

CHAPTER 2 LITERATURE REVIEW

The literature review begins with a look at the proposed framework of new media adoption by media firms. This framework consists of eight sets of variables that have an impact on the adoption of new media technologies by media companies. The sets of variables are divided into three areas: core, supporting, and environmental. These drivers are introduced and applied to multicasting and ancillary services, the technologies which are the focus of this research study.

Following this framework, the social movement theory is discussed, a theory that helps to explain the adoption of digital television industry-wide. The review of the social movement theory is followed by the results of a research study that looked into the differences which existed between television stations and their readiness to explore digital television. The study took into account a number of variables, including market size, network affiliation, broadcast ownership group, and the role of the respondent within his/her broadcast operation.

Upon conclusion of the discussion of the study, a comprehensive overview of a series of FCC regulations related to digital television and the limitations to which broadcasters, cable providers, satellite companies, and other video suppliers have and will have to adhere. This section closes with a brief discussion of retransmission consent.

In the following section, the digital initiatives put forth by the major networks, NBC, ABC, and CBS are reviewed. This includes such existing digital channels as NBC Weather Plus as well as those yet to be developed, such as CBS 2. Also, the specialty digital-only networks, Qubo, LATV, Motor Trend TV, and World Championship Sports Network.

After discussing the digital networks, multicasting, otherwise known as the SD business model, is focused on in addition to ancillary services. This overview begins with the model of program choice, which predicts that the diversity of programs offered to viewers should increase as the number of channels increases. Following discussion of the model of program choice, the effects of the multicast model on the business of television advertising, the advantages that such a technology bring to table for broadcasters, and various uses of multicasting, including several revolutionary ones, are detailed. Also, several benefits to advertisers through the use of the SD business model are discussed. In addition to the advantages of multicasting, the challenges that this new technology presents are also reviewed, including the complexities involved in automating multiple broadcast channels. Following a thorough review of the multicast business model, ancillary services are highlighted. Some focus is placed on the utility of the technology in the future.

The next section of this chapter investigates the actions of two pioneers of the digital age, WRAL TV and KUSA TV. First, the successful strategies of WRAL both in utilizing multicasting and ancillary services to build station revenue are assessed. Second, the production and broadcast of local HD programming at KUSA and the advantages and challenges resulting from this technology are discussed.

After the focus on WRAL and KUSA has been completed, the researcher investigates the battle that cable is in with direct broadcast satellite (DBS) for subscribers. Focus is placed on the advantage that cable has in its better capability of carrying HD in addition to the SD signals of broadcasters.

In the final section of Chapter 2, the researcher looks at USDTV, the low-cost wireless alternative to cable that is now out of business. The details of the service are highlighted as well the challenges it faced in trying to gain market share.

Proposed Framework of New Media Adoption by Media Firms

In looking at the adoption of multicasting and ancillary services by television stations, it is critical to begin by detailing a framework designed to understand the various factors that interact to determine the likelihood of adoption as well as the form the adoption will take. As seen in Figure 2-1, there are eight sets of factors that affect this adoption. They are as follows: firm and media technology characteristics, strategic networks, perceived strategic value, available alternatives, market conditions, competition, and regulation/policy. These eight sets are split into three larger groupings: core (firm and media technology characteristics), supporting (perceived overall strategic value, alternatives available, and strategic networks/partnerships), and environmental (market conditions, competition, and regulation/policy) (Chan-Olmsted, 2006). These three groupings and their associated sets will serve as the theoretical backbone of this study.

Core Factors

Firm and media technology characteristics make up the two sets of core media firm adoption variables.

Firm characteristics

The characteristics of a firm have a strong impact on the adoption strategies of new media technologies. There are seven firm characteristics that come into play. They are as follows:

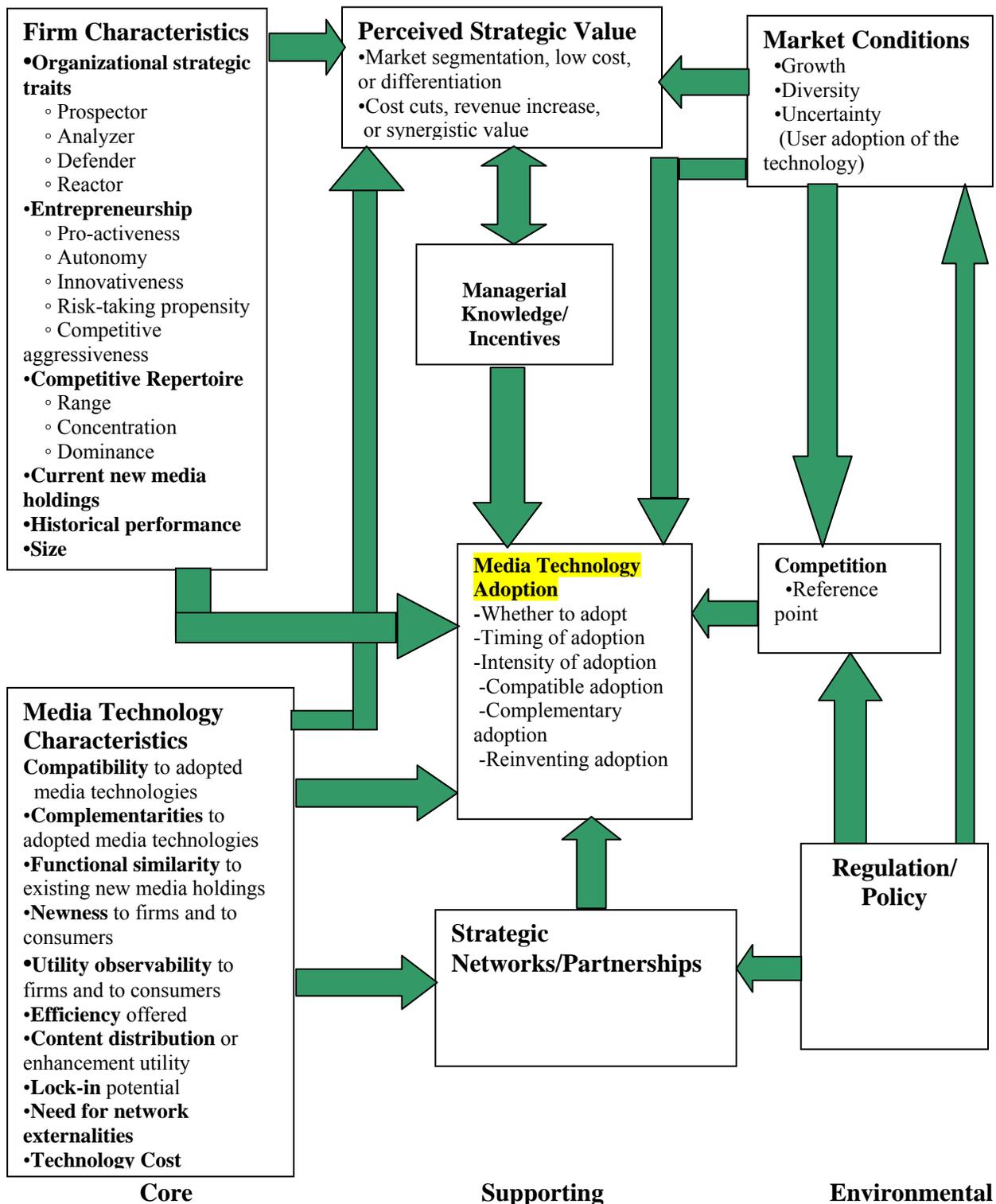


Figure 2-1. Toward a theory of media firm innovation development and adoption. Source: Chan-Olmsted, 2006, pg. 261, Fig. 12.2.

organizational strategic traits, degree of entrepreneurship, competitive repertoires, current new media holdings, historical performance, firm size, and firm age.

The organizational strategic traits can be divided into four groups: prospector, analyzer, defender, and reactor (Miles & Snow, 1978). Prospectors constantly look for new market opportunities and are typically the first to offer a particular product to a market. Defenders focus their attention on dominating a particular market segment and tend to have a stable customer base. Analyzers occupy a position that falls in between prospectors and defenders as they carefully monitor the prospectors while safeguarding a stable customer base. Reactors have a short-term focus and act in response to actions taken by their competitors (Zahra & Pearce, 1990).

The likelihood of a firm acting in an entrepreneurial way is the next factor to be considered. This likelihood is based on a variety of characteristics which may include, proactiveness, risk-taking propensity, innovativeness, autonomy, and competitive aggressiveness. When considering these characteristics, it is paramount that a media firm determine whether it has a core content or a distribution product. For a firm focused on core content, creativity and innovativeness might be the best measures of entrepreneurship. To the contrary, a firm focused on a distribution product might look at the likelihood of the company taking a risk as the best measure of its entrepreneurial spirit (Chan-Olmsted, 2006).

Competitive repertoires are a combination of market decisions within a given year to grow and maintain a customer base. They can be evaluated across three dimensions, range, concentration, and dominance. Range refers to the selection of market actions undertaken by a firm whereas concentration refers to the degree to which repertoires tend to be focused on a few

main types of actions. Dominance indicates the level to which a firm depends on its most common type of market action (Miller & Chen, 1996).

A media firm's current new media holdings might also serve as an indicator of the likelihood of a firm adopting additional new media technology. The firm might acquire experience that will help in its future adoption decision-making process.

Historical performance could come into play as it serves as an indication of the resources a firm has for releasing a new media technology. This factor also emphasizes potential areas which need attention.

Firm size, according to Christensen and Bower (1996), is sometimes a liability when it comes to innovation adoption. Larger firms tend to focus on providing products to their existing customer base rather than looking to reach new customers with new products. The newer the product the more likely it will be brought to market by new entrants.

Firm age might be a limiting factor in the flexibility of a firm to adjust its strategy and in its likelihood to take risks. It also can be a positive factor in that it equates to more established resources and experience (Chan-Olmsted, 2006).

These various firm characteristics describe the affiliations and ownership groups to which broadcast stations belong. The organizational strategic traits, degree of entrepreneurship, competitive repertoire, current media holdings, historical performance, size, and age are all relevant factors that collectively describe a particular affiliation or ownership group.

Media technology characteristics

In addition to the characteristics of media firms, the nature of a new media technology is also important. The characteristics of a new media technology influence the propensity of a media firm adopting one of the new technologies. The first three factors are compatibility, complementarities, and functional similarity to the current media products that the firm offers.

The value that a new media technology may have to a firm can be first demonstrated by the level of disruption that the new technology causes as it is integrated into the existing organization.

The level of compatibility of the new media technology to the existing product line offered by a firm is one consideration. The second factor, complementarities, refers to cases in which a bundle of goods provides more value than consuming goods separately (Brandenburger & Nalebuff, 1996). The degree of complementarity provides a look into how the technology might add value to an organization. In the case of multicasting, the additional digital streams translate into added value to a broadcast outlet in that the additional channels mean a larger variety of content available for viewers. The additional content should translate into an increase in advertising revenue. The third factor, functional similarity, illustrates the new product's level of substitutability from the standpoint of consumers. Specifically, how a new technology is perceived by consumers as being able to satisfy needs similar to those currently being fulfilled by an existing technology (Chan-Olmsted, 2006).

A technology innovation can also be analyzed by examining its degree of newness to the market, firm, or a combination of the two. The newer the technology the greater the uncertainty and the more apprehensive a firm will be to invest in the technology. Booz, Allen, & Hamilton (1982) suggested six levels of product innovativeness: cost reduction, repositionings, improvements in existing products, additions to existing product lines, new product lines, and new-to-the-world products. Cost reduction refers to new products that provide similar performance at a lower cost. Repositionings are new products targeted at new markets or new market segments. Improvements in existing products refers to new products that provide better performance or enhanced perceived value such as digital cable. Additions to existing product lines are new products that supplement a firm's established product lines such as a broadcaster's

streaming news online. New product lines refer to new products that allow a firm to penetrate an established market for the first time such as the adoption of satellite radio by Sirius. New-to-the-world products are new products that create a completely new market such as the introduction of dial-up Internet services (Chan-Olmsted, 2006).

In addition, an innovation can be characterized by its effect on established consumer consumption behavior (Robertson, 1967). There are three classification types of innovations: a continuous innovation, a dynamically continuous innovation, and a discontinuous innovation. A continuous innovation is one with characteristics that generate little disruption in consumers' consumption behaviors. A dynamically continuous innovation is one that creates some disruption although it does not alter the consumption pattern. A discontinuous innovation, on the other hand, is a new product that obligates a consumer to establish new consumption behaviors (Robertson, 1967).

A media firm's adoption decision is likely to be affected by the supposed utility and efficiency shown by the technology. The utility of moving to digital television might not be as apparent when contrasted with the utility of taking on a new technology that results in new sales revenues (Chan-Olmsted, 2006).

It has been stated by many that content plays an important role in a media market (Owen & Wildman, 1992). It is probable that a new media technology, which in some way advances the delivery of a content product or improves the allure of a content product, will increase its likelihood of being adopted (Chan-Olmsted, 2006).

Lock-in pertains to the capacity of a service to develop powerful incentives for repeat transactions, thus preventing the migration of customers to competitors (Amit & Zott, 2001). For instance, a new media technology that requires more upfront equipment investment by a

consumer is likely to achieve higher probability of lock-in. In addition, network externalities are defined as a change in the benefit or consumer surplus that consumers derive from a product when more consumers purchase the product (Chan-Olmsted, 2006).

The technology cost factor definitely affects a media firm's decision whether to adopt or not adopt a new technology. As a result of the uncertainty of a new technology, even media firms with plentiful resources might choose not to adopt a particular innovation if it is too costly (Chan-Olmsted, 2006).

Supporting Factors

Perceived overall strategic value, managerial knowledge of and incentives to seek alternatives, and strategic networks/partnerships comprise the three sets of supporting media firm adoption variables. As far as strategic networks/partnerships are concerned, it is proposed that the broadcaster-cable provider relationship will serve as one of the most influential variables of all those listed in the media adoption framework. The fact that cable is the multichannel video program distributor (MVPD) through which the majority of U.S. households receive their programming make this relationship especially significant.

Strategic networks

Strategic networks are essential because they can supply a firm with access to information, resources, markets, technologies, credibility, and legitimacy (Cooper, 2001; Gulati, et al., 2000). This is especially critical for new media firms that possess new technologies and attempt to commercialize them. Established media corporations might benefit through access to technologies and learning/sharing of information. Alliances or strategic networks are particularly important for smaller innovative firms because such partnerships offer access to financial/marketing resources and scale/scope economies (Chan-Olmsted, 2006).

Perceived strategic value

The value of a new media technology can be evaluated by analyzing its perceived contribution to a firm's overall strategic posture. Porter (1980) suggested that there are three major strategic approaches: market segmentation, low cost, and differentiation. Certain technologies might provide more utility in accomplishing that objective than others depending upon the firm's current strategic goals (Chan-Olmsted, 2006).

Managerial knowledge of and incentives to seek alternatives

Innovation adoption might be affected by a manager's knowledge of alternatives from his or her previous experience or through an investigation of his or her competitors. Internally, past performance, breadth of managerial experience, and firm age/size are expected to effect managerial incentives and knowledge. Externally, market diversity, growth, and uncertainty can feasibly influence the incentives and knowledge affiliated with various innovation options (Miller & Chen, 1996).

Environmental Factors

Chan-Olmsted (2006) in her proposed framework of new media adoption, discusses market conditions, competition, and regulation/policy as the three sets of environmental media firm adoption variables. Environmental variables such as market growth, diversity, and uncertainty make up the condition of the market and affect a firm's needs to adopt a new media technology. The degree to which a new technology is adopted has a profound impact on the overall condition of that market. In the case of digital television, it is proposed that market size is a powerful factor included as part of the market conditions set. In examining the variable of competition, Goel and Rich (1997) analyzed the incentives for private firms to adopt new technologies. They found that companies facing increased product market competition have a greater likelihood of adopting technological innovations. In general, the research literature suggests that a positive

relationship exists between innovativeness and both market turbulence/uncertainty and competition. In the case of the adoption of multicasting and ancillary services, it is proposed that there are three major types of competition: broadcaster to broadcaster, broadcaster to cable operator, and cable operator to cable operator.

New Media Technology Adoption

The first level of an adoption decision is whether to adopt a new media technology. Researchers have argued that the innovation adoption rate cannot be fully described by examining the relationship between the decision to adopt and a series of internal factors, the timing and intensity of adoption must also be considered (Dong & Saha, 1998).

The timing of an adoption is many times a strategy of holding back until more information is available. The value of waiting might be relative to the probable expenses associated with reversing the decision, fixed costs of adoption, and the likelihood that the new technology will be unprofitable (Dong & Saha, 1998).

Another factor that needs consideration is the intensity of the adoption. The adoption of new media technology at the firm level ranges from compatible, complementary, phasing, and reinventing adoption. A firm may adopt a new technology using one or more of these approaches or it could experience all four of these phases progressively. A compatible adoption would probably require the slightest amount of firm competency and entrepreneurial quality and take less time to adopt because the focus would be on making the new media technology conform to the existing product and operating systems. A complementary adoption requires more competency, entrepreneurial quality, and time than a compatible adoption. This type of adoption focuses on the existing product, but it equates to a more proactive use of the new technology's benefits. A phasing adoption takes place when a firm elects to invest and commercialize a new media technology over time, but carefully phases out an existing platform.

This decision takes even more competency, entrepreneurial quality, and time. Lastly, reinvention adoption pertains to revising or using a technology for new intentions for which it was not initially designed. This type of adoption decision requires the greatest level of competency, entrepreneurial quality, and time (Chan-Olmsted, 2006).

Social Movement Theory

Now that the framework for new media adoption has been discussed, this section focuses on a theory of the social influence of outside entities on the development of digital television. In social movement theory, change in institutions, such as technological standards, are brought about by individuals and organizations. It is not the innovation alone that determines the evolution of an industry, but the individuals and their actions behind the innovation that make the difference. Social movement theory hinges on collective action, the banding together of individuals or organizations to bring about change in an institution (Dowell, Swaminathan, & Wade, 2002).

Dowell, Swaminathan, and Wade (2002) used social movement theory as a template from which to view the actions firms take to activate resources and generate support from important players, such as suppliers, customers, and regulatory agencies. It is the creation of a new organizational form comprised of all of these constituents that signifies the social movement process. Collective action is often necessary to take advantage of the opportunities made possible by new technologies.

Collective action frames are combinations of unified beliefs that substantiate the presence of social movements. Frames are the result of strategic efforts by various groups to design common perceptions of the world that “legitimate and motivate collective action” (Dowell, Swaminathan, & Wade, 2002). In the case of digital television, broadcasters used their fight with land mobile companies as the basis of their first framing attempt. Broadcasters claimed that

television as a medium would be compromised if spectrum were given to the land mobile companies, a frame that was not considered legitimate and, therefore, failed. However, in the second framing attempt, broadcasters were much more successful. They focused their attention on Japan and its NHK system as a major threat to the United States and its economy. By focusing on the foreign threat and creating a sense of urgency, broadcasters were able to generate collective action and bring together the FCC, Congress, and electronics manufacturers in an effort to protect the spectrum used by broadcasters (Dowell, Swaminathan & Wade, 2002).

After the Grand Alliance was formed and the organization began making progress on an HDTV standard, two obstacles emerged. The first challenge came from the computer industry as digital broadcasts clouded the disparity between computers and televisions. The second obstacle resulted from various broadcasters and their different views as to the best use of digital television technology. Broadcasters began to fight over whether HDTV or digital television, in the form of multicasting and/or ancillary services, was the better standard to pursue. These two challenges illustrate how difficult it is to maintain collective action as open system technologies, like HDTV, evolve (Dowell, Swaminathan & Wade, 2002).

According to Tushman and Rosenkopf (1992), sociopolitical processes have more impact during times of change when many potential technological options exist, especially in the development of open system technologies (as cited in Dowell, Swaminathan & Wade, 2002). The focus on an external threat and the identification of new market opportunities encourage industry players to react in a collective manner. Various standards designed by industry partners and regulatory entities are then used to select one technological option. This initial alternative may evolve to become a hybrid of technologies from two different industries, resulting in the immersion of companies from other industries proposing new technical criteria into the selection

process. Subsequently, new alternative uses for the technology may be discovered, resulting in a dissolution of the initial collective action frame (Dowell, Swaminathan & Wade, 2002).

Broadcasters and Their Entry into the Digital Age

Broadcasters are facing a challenging time that is fraught with opportunity. One of the biggest challenges for broadcasters is learning how to exploit the new capabilities of digital television without investing an excessive amount of time or money.

To look into the readiness of broadcasters to enter the digital age, Jeffrey Oberg (2000), a researcher at the University of Tennessee, conducted surveys with television station managers and engineers. The mail survey, which was conducted between April 2, 1999 and June 1, 1999, targeted general managers at affiliates of the four major networks. The findings of the study indicated a shift between how broadcasters defined themselves then and how they would in the future. At the time of the survey, only 6.9 percent of station executives defined themselves currently as information providers whereas, in the future, 33.5 percent of the respondents would classify themselves as information providers. Furthermore, the respondents who classified themselves as information providers were more interested in providing digital services, particularly data enhancement, pager service, and interactive television.

In looking into planning for digital broadcasting, television stations in the top-30 markets were found to be further along. This was the case both in their planning to purchase digital equipment as well as their plan to be more enmeshed in digital technology within two years of commencing digital broadcasting. In addition, the stations that produced 20.5 hours or more of local programming were more likely to be further along in the planning process. However, the majority of respondents to the survey were only considering the purchase of a digital transmitter when asked about overall planning for digital broadcasting (Oberg, 2000).

The planning for digital broadcasting is mainly conducted at the local level. For both digital equipment purchasing and digital programming, most television executives stated that decision making was split evenly between corporate and local. However, for both programming and equipment purchasing, more respondents indicated decisions were either “totally local” or “mostly local/some corporate” than respondents who indicated they were “totally corporate” or “mostly corporate/some local” (Obergh, 2000).

There were also differences apparent between general managers and engineers in their perceptions of planning for digital broadcasting. Engineers felt that their respective stations were further along in planning than did general managers. While no differences were apparent between general managers and engineers in the area of digital purchasing, engineers felt that they were further ahead in planning for digital programming than general managers (Obergh, 2000).

In addition, stations with certain network affiliations felt that they were further along in planning for digital programming than stations of other affiliations. CBS affiliates believed to be further along in planning for digital programming than were affiliates of ABC, NBC, and Fox (Obergh, 2000).

In summary, the study shows that differences are apparent in the lengths to which television stations will go to capitalize on the digital revolution. Differences are seen when both market size and a manager’s classification (broadcaster or information provider) of his/her station are considered. The study concludes by stating that the amount of future information providers will grow as digital technology becomes increasingly widespread (Obergh, 2000).

Regulation/Federal Communications Commission Rulings

As the regulation of the industry has a critical impact upon the digital business model that stations will incorporate into their existing business operations, some attention needs to be given to regulation of the industry. This section discusses a variety of FCC rulings that have a direct

effect on broadcasters' adoption of new digital technologies, such as multicasting and ancillary services.

Three Key Recommendations of the U.S. General Accounting Office

In a November 2002 report, released by the United States General Accounting Office (GAO), three key recommendations were discussed that the FCC or Congress could put into action that would help facilitate the success of the DTV transition. The first action, which was briefly discussed in Chapter 1, was to explore options to raise awareness about the DTV transition and the implications this increased awareness will have. These steps will lead to a more rapid adoption of DTV equipment and will help to inform the public about the impact it will feel when the switch over from analog to digital is made. The second action was to instruct the relevant FCC bureaus and offices to examine the costs and benefits of the existing mandate for a digital over-the-air tuner in addition to the costs and benefits of mandating that all new televisions be digital cable-ready. The third recommended action called for the FCC's Media Bureau to examine the advantages and disadvantages of a policy that would set an exact date for cable carriage to switch from full carriage of analog signals to full carriage of digital signals (United States General Accounting Office, 2002).

The war over the airwaves has continued to rage on because, generations ago, the government handed out valuable frequencies to broadcasters for free and other industries have been unable to purchase these frequencies. In 2001, the airwaves used by television broadcasters were appraised by Wall Street at \$367 billion. However, as an economic asset, they are practically worthless to broadcasters as more than 85 percent of Americans with televisions now pay to watch cable or satellite transmissions and do not rely on over-the-air broadcasts (Clark, 2005).

Mandate for all TV sets to be digital over-the-air compatible and digital cable-ready

The second action-item mentioned, the mandate for all televisions to be digital over-the-air compatible and digital cable-ready, had been under intense discussion earlier in the decade. On August 8, 2002, the FCC adopted a plan that required over-the-air digital television (DTV) tuners on nearly all new TV sets by 2007. The FCC's plan, known as the Second Report and Order and Second Memorandum Opinion and Order, was to minimize the costs for equipment manufacturers and consumers by starting a five-year rollout schedule starting with larger, more expensive sets. By July 1, 2007, all television receivers with screen sizes greater than 13 inches and all television receiving equipment, such as DVD players/recorders and VCRs, were required to include DTV reception capability. The FCC said that its jurisdiction was established by the 1962 All Channel Receiver Act (ACRA). ACRA states that the FCC has the "authority to require that television sets be capable of adequately receiving all frequencies allocated by the FCC for television broadcasting" (Federal Communications Commission, 2002).

On September 10, 2003, the FCC adopted rules for digital "plug and play" cable compatibility. In a "plug and play" world, consumers can plug their cable directly into their digital TV set without the need of a set-top box. The FCC stated that the rules would ease the transition to digital TV by promoting convenience, competition, and simplicity for consumers. The rules will permit TV sets to be built with "plug and play" functionality for one-way digital cable services, which include standard cable programming services and premium channels like HBO and Showtime. Consumers will need to obtain a security card, called a POD or cable card, from their local cable operator, to be inserted into the TV set. However, consumers will still need a set-top box in order to receive two-way services such as pay-per-view, electronic programming guides, and video-on-demand (Federal Communications Commission, 2003).

Certain date for cable carriage to switch from analog to digital

The third recommendation called for a certain date as to when the cable companies will be required to switch over from full carriage of analog signals to full carriage of digital signals in their respective markets. In September 2005, National Association of Broadcasters (NAB) President and CEO Eddie Fritts announced during Senate hearings that the association endorsed a “hard date” in 2009 for the switch from analog to digital. In addition, the NAB agreed to drop the 85 percent penetration rule leading to a turn off of analog TV in 2009 (Ostroff, 2005).

The turning off of the analog signals would leave many American households with nothing but a blank TV screen. In fact, the Government Accountability Office (GAO), as mentioned previously, estimated that 21 million US households, or 19 percent, rely on free broadcast TV. This equates to some 73 million analog-only sets that will not be able to get DTV signals over-the-air after the transition without digital-to-analog converters (Halonen, 2005a). Consumer groups released a study in September 2005 that said that 39 percent of households have at least one TV that would go dark after the transition (Schatz, 2005).

Date set for analog switch off. On February 8, 2006, President Bush signed the Deficit Reduction Act of 2005, which includes legislation stating that all TV broadcasters must switch off their analog broadcasts on February 17, 2009. The Act calls for \$1.5 billion to be used for a subsidy for new DTV converter boxes. The converter box would allow televisions without a DTV tuner to receive the new digital broadcasts. Fortunately, the 2009 deadline will not affect the vast majority of Americans who rely on cable or satellite delivery (Katzmaier, 2006). In addition, the final bill set aside \$1 billion for upgrading emergency communications equipment. This was further encouraged by the communications problems experienced during Hurricane Katrina (Broache, 2006).

The Senate's passage of the spending bill, ends a longtime debate and represents a compromise with the U.S. House of Representatives. Earlier versions by both the House and Senate each varied in both implementation date and subsidy amounts. The conversion date for analog to digital was to be April 7, 2009, for the Senate, and January 1, 2009, for the House (Broache, 2006). The more significant difference between the two bills was the amount of subsidy for the digital-to-analog converter box. The bipartisan Senate bill set aside \$3 billion for a \$40 subsidy to cover two-thirds of the predicted \$60 price of the box. The House bill offered only \$990 million for that same \$40 coupon ("DTV Difference," 2005).

There were differences along party lines in coming up with a workable transition bill. Republicans were pushing for a more limited subsidy, while Democrats were calling for a subsidy that would cover everyone. In looking at the Senate bill, Democrats wanted a subsidy boosted from \$990 million to \$3.5-\$4 billion so that it would cover the entire \$60 of the cost of the box. The bill covers \$40 and also caps the subsidy at the first 10.3 million households that apply, with a limit of two coupons per household. Also, Democrats wanted to send coupons to everyone whereas Republicans wanted a several-step process for those who take the necessary action of asking the government for the boxes ("DTV Difference," 2005).

In return for accepting a hard date, broadcasters pushed for a stipulation forcing cable TV operators to carry their multicast digital signals. Sections of the bill set aside 24 megahertz of spectrum for first responders and other public safety uses and instructed to the FCC to auction off another 60 megahertz of spectrum. The Congressional Budget Office (CBO) has estimated the spectrum auction to raise \$10 billion, whereas technology companies estimate up to \$28 billion from the auction. A fund would be created from the auction revenues that would allow the Commerce secretary to make payments for the converter box subsidy (Clark, 2005).

Debate Over Dual Carriage by Cable Systems

Another ongoing fight has been over the issue of dual carriage by cable systems. Broadcasters insist that cable operators must carry both digital and analog signals until the DTV switch is completed. Broadcasters feel that by cable systems carrying both signals, a larger number of viewers would buy digital sets now and viewers who cannot afford or do not yet want to buy a digital set will not feel deprived. On the other hand, cable operators say carrying both an analog and a digital signal would be a waste of their channel capacity. Rather than carry two signals for every station in town, cable companies would prefer to only carry the top-rated stations in a market. According to Kyle McSllarrow, president of the National Cable & Telecommunications Association (NCTA), dual carriage would impose an “untenable burden” on cable operators and programmers (McConnell, 2005).

On February 10, 2005, the FCC, in its Second Report and Order and First Order on Reconsideration (CS Docket No. 98-120), resolved two important issues related to digital cable carriage to the benefit of the NCTA. The Order confirmed the Commission’s prior decision that cable operators are not required to carry more than a single digital programming stream, referred to as “primary video,” from any particular broadcaster. It also assured the tentative conclusion not to impose a “dual carriage” obligation on cable operators (Federal Communications Commission, 2005).

Broadcasters and Cable Industry Square Off on Issue of Multicasting

There is an equal amount of turmoil involved in the ongoing debate between broadcasters and the cable industry when it comes to multicasting.

Broadcasters’ viewpoint

Broadcasters claim that a regulatory change is needed so that cable companies would have to carry all the multicast channels from each broadcaster in a market. According to broadcasters,

requiring that cable companies carry all these multicast channels is necessary to energize the industry to make the high-priced switch to DTV. They also say that the expanded carriage would serve the interest of consumers by stimulating the influx of new sources of free TV programming. Dennis Wharton, a spokesman for the National Association of Broadcasters said, “It would benefit consumers because there would be more competition to cable from free over-the-air channels”(Halonen, 2003).

In filings to the Commission in January 2004, the networks and their affiliates hammered home their case. They stated that these opportunities for additional services cannot succeed unless cable passes them along to their subscribers. Without that, broadcasters will “withhold or withdraw” the necessary investment because cable operators “occupy a bottleneck position” and can “snuff out the bright promise of multicasting” (Hickey, 2004). The NAB also referred to a survey of 450 stations conducted in July 2005 which found that nearly 80 percent of local TV stations are unlikely to multicast without assurances of cable carriage. “This is also about more competition to cable,” said NAB president Eddie Fritts. “That’s why the cable gatekeepers will fight it so fiercely. They don’t like competition” (Grebb, 2005).

In late August 2005, the NAB, in an effort to validate their stance, detailed a study praising the alleged benefits of distributing digital multiple broadcast streams to consumers and local markets. The study found that multicasting would bring about more niche content for specific demographic groups, more regional news, and more in-depth news and information programs. Other benefits cited include added channel options for local advertisers allowing them to more efficiently reach a wider arrangement of demographic groups (Grebb, 2005).

The NAB claims that major efforts have been made to produce new and valuable content to be aired on multicast channels. According to Dennis Wharton, an NAB vice president, “We

think, as an industry, that there will be an absolute explosion in all types of programming, including public-interest programming, if digital must-carry is adopted by the FCC.” He went on to remark that many broadcasters would be in favor of using their multicast spectrum for city council meetings, political debates, and mayoral elections. He also maintained, “If the FCC is truly interested in the public interest, broadcasters will win this one on the merits” (Hickey, 2004).

In early September 2005, about 100 TV station executives met in Washington D.C. to persuade lawmakers to support a multicast must-carry provision. In addition, the NAB sent a video e-mail to congressional offices arguing that cable’s opposition to a multicast-carriage requirement is anticompetitive. “The giant cable companies want you to see only what they own or produce themselves. Congress needs to protect consumers and give them the freedom of choice they demand and deserve,” the video said (Halonen, 2005b).

The NAB has found specific cases in which the cable industry has declined the carriage of quality multicast channels developed by the major networks. ABC’s efforts to launch ABC News Now, a 24/7 multicast news channel, with its affiliates was stonewalled by a lack of cable carriage assurances early in 2005. It has since been refocused as a pay service for cable, telephone, and broadband platforms. In addition, industry sources said that smaller NBC affiliates are finding it difficult to persuade cable operators to carry NBC Weather Plus, a multicast channel that NBC and its affiliates launched in November 2004 (Halonen, 2005a).

Cable operators’ stance

Needless to say, the National Cable & Telecommunications Association (NCTA) sees things differently. The organization feels that the government should not go around telling a

major media industry what it can and cannot put on its wires into the 70 percent of U.S. homes that pay for cable service. They assert that this infringes on their First Amendment rights. Dan Brenner, counsel for the NCTA, stated, “Air great channels and systems will voluntarily carry them” (Davidson, 2004). Brian Dietz (2003), a spokesman for the NCTA had this to say, “We believe all programmers, whether cable or broadcast, should compete on the merits of their content, and cable networks should not be hamstrung by an unfair government mandate that would give broadcast networks guaranteed carriage” (as cited in Davidson, 2004).

To prove that the cable industry is willing to carry multicast channels in the absence of a multicast mandate, the NCTA stated in a letter to the FCC that cable was carrying 504 local digital TV stations on a voluntary basis. These stations were said to be providing “HDTV and other compelling digital content” to consumers living in big and small markets (Hearn, 2005). In addition, the cable industry has come to an agreement on a national level with PBS affiliates to carry all of their multicast channels (Davidson, 2004). Senior VP of Law and Regulatory Policy at the NCTA, Daniel Brenner, stated that voluntary carriage by cable operators reflects real market demand, not government-mandated forced carriage. He also said that it demonstrates the ability of broadcasters with alluring content to be carried on cable systems (Hearn, 2005).

In addition to the NCTA’s stance on the right of the cable industry to carry the programming it chooses, the organization feels that mandated multicasting will harm diversity in programming and will do nothing to speed the transition from analog to digital (Grebb, 2005). In fact, a multicast-carriage rule could lead to cable TV industry lawsuits that would cost the federal government billions of dollars according to Kyle McSlarrow, president and CEO of the NCTA. He said that such a rule could open the federal government to financial liability because it could be interpreted as a “taking” of cable TV property rights under the Fifth Amendment, which

prohibits the seizure of property without just compensation. In addition, the NCTA released a study that put a value of \$4.2 billion to \$115.6 billion on the bandwidth cable operators would lose if multicast carriage were to be mandated by the government (Halonen, 2005b).

A multicast carriage mandate would have a powerful effect on the cable industry. The cable industry has been fighting such a regulation since nearly the birth of digital broadcasting in the United States. In one of his first exchanges with the FCC on digital must-carry, back in October 1998, Braverman, a senior litigator and partner in the Washington, D.C.-based law firm Cole, Raywid & Braverman, argued that the E.W. Scripps networks, Home & Garden Television and Television Food Network, faced certain doom should a digital must-carry requirement be adopted by the Commission. “Such a regime would [see] new cable networks...displaced by redundant digital signals of broadcast networks,” Braverman wrote, adding that such an eventuality ran counter to the FCC’s mandate that “cable communications provide...the widest possible diversity of information sources and services to the public” (Crupi, 2005).

Braverman has stated that the cable networks have proven their value by providing quality, original programming. As an example, Braverman points out that in 2002, The Food Network had committed to running a programming lineup comprised of 95 percent original fare, or 2,000 hours, and in the process, introduced the country to the likes of Emeril Lagasse and Britain’s Two Fat Ladies. In his terms, this is in stark contrast to the “homogeneity of the broadcast networks” (Crupi, 2005).

Outdoor Life Network (OLN) senior VP of affiliate sales Becky Ruthven agrees with Braverman and mentions that the cable industry and broadcasters alike are competing for limited spectrum. “Broadcasters have unfavorable positioning, and that’s unfair to our industry,” she says (Crupi, 2005). Many established cable networks are concerned that if the FCC mandates

cable carriage of all of a broadcaster's multicast channels, then these established networks will be pushed to digital tiers and will, therefore, reach a much smaller audience base. As a defensive measure, according to Ruthven, OLN is desperately trying to lock up contract provisions that ensure the widest carriage possible (Crupi, 2005).

Broadcasters Denied Carriage of Multicast Channels

The February 10, 2005 decision by the FCC to, for the second time, deny broadcasters the ability to have all of their multicast offerings carried by the cable industry was a difficult decision for the commissioners. Former chairman Michael Powell mentioned in a press statement that while the multicast channels do afford broadcasters expanded business opportunities, the must-carry statute limits carriage to one channel. He stated that broadcasters will continue to have the ability to commercially negotiate carriage of other channels as public broadcasters have recently done and as other cable programmers must do (Powell, 2005). Commissioner Kathleen Abernathy also voted to deny broadcasters a multicast must-carry mandate. She stated in a press statement that for her to support a mandate the Commission would have to present "substantial evidence" in support of a finding that multicasting is necessary to prevent a substantial number of broadcast stations from experiencing serious financial hardship. She continued by saying that the record does not support such a conclusion (Abernathy, 2005).

Commissioner Kevin Martin, who has since become the FCC Chairman, voted in favor of a multicast mandate and felt that the advantage of free programming to the public outweighed the burden on cable companies. The decision, according to Martin, will have the most adverse impact on small, religious, family-friendly, independent, and minority broadcasters (Martin, 2005).

Commissioners Michael J. Copps and Jonathan Adelstein would support multicast must-carry if it is affiliated with strong public-interest obligations for DTV stations. The public interest, which is central to our democracy, means providing local civic and electoral discourse over the public airwaves. Copps and Adelstein felt that broadcasters were reluctant to discuss these obligations and; therefore, they refused to vote in favor of a multicast mandate. Adelstein stated that an exclusive federal license to use the public airwaves ought to carry a higher level of civic responsibility and accountability (Copps & Adelstein, 2005).

Lack of Public Interest Programming

There has been a substantial lack of public interest programming being broadcast in the United States. Data from the Lear Center's Oct. 21, 2004 interim report show that coverage at the local levels of elections as well as coverage of civic issues is down. Coverage of local television newscasts was at an average of 2.4 minutes of election footage per half-hour of evening news in the weeks leading up to the November 2004 election. Fewer than 1/3 of the coverage actually focused on campaign issues. Also, nearly 8 out of 10 of the campaign stories focused on the presidential and vice presidential races as opposed to other races, including local races (Tristani, 2004). Another study, conducted by the Alliance for Better Campaigns in 2003, found that community public affairs programming accounts for less than ½ of 1 percent of local TV programming nationwide. This compares to 14.4 percent for paid programming (Adelstein, 2005).

Coalition of Consumer Activists Enter Debate

In the debate over whether a multicast must-carry mandate is constitutional, a third party has entered the ring, a coalition of consumer activists. Their plea is to not give broadcasters automatic access to cable without a payback to the public, a quid pro quo that they will deliver “verifiable and quantifiable” amounts of public-interest programming in return. The concern of

this and other activist groups is that broadcasters will conveniently forget about their public interest promises once they gain access to these cable homes. According to Jeffrey Chester, executive director of the Center for Democratic Media, “They promise a lot but they have a terrible record of keeping promises” (Hickey, 2004). J.H. Snider, a senior research fellow at the New America Foundation Spectrum Policy Program, had favored either new and verifiable public-interest obligations or a 5 percent spectrum fee on broadcasters’ gross revenue, with the money going to the funding of public-interest programs to help low-income people buy digital converter boxes (Hickey, 2004).

In response to these ideas, an anonymous senior broadcast official said, “There are serious First Amendment implications if the FCC specifically writes into the rules types and percentages of programming that we have to create.” In addition, he noted that ironically, local cable companies also will immerse themselves in the First Amendment if the Commission tries to force them to carry the new channels on their wires (Hickey, 2004).

Retransmission Consent and the 1992 Cable Act

The 1992 Cable Act, which amended the Communications Act of 1934, laid out the initial rules concerning the obligations that cable companies have to broadcasters in carrying their signals. The ‘92 Cable Act precludes cable operators and other MVPDs from retransmitting television and radio broadcast signals without first obtaining the broadcaster’s consent, what is known as “retransmission consent” (Brown & Chan-Olmsted, 2004). Retransmission consent allows commercial broadcasters and cable companies to work together to negotiate a carriage agreement based on market and business factors. Broadcasters with a lot of leverage, such as network-affiliated stations, are in a good position to negotiate retransmission agreements and, as part of the agreement, receive compensation. On the other hand, if a commercial television

station does not believe it has enough clout to receive compensation, it would elect the must-carry option (Brown & Chan-Olmsted, 2004).

Retransmission consent is a key bargaining tool a television station has in securing carriage for its digital signal. A commercial station is permitted to tie a retransmission consent agreement for its analog signal to that of its digital signal. As this may potentially involve the carrying of four SD streams or one HD stream and two SD streams, many cable operators are not likely to carry every digital stream from each local broadcaster. The innovativeness and negotiation skills of the broadcaster will determine the ability of the broadcaster to receive must-carry of its multicast channels (Brown & Chan-Olmsted, 2004).

Major Network Digital Initiatives

The major broadcast networks have certain digital initiatives either in development or currently in use to capitalize on the new technologies of multicasting and ancillary services.

National Broadcasting Company (NBC)

NBC has attempted more multicasting than any of the other networks. It has created NBC Weather Plus, a new all-digital 24/7 weather network that includes a mix of national and local elements provided by the network and its affiliates. Since local weathercasts are the first source people go to for breaking weather information and forecasts, NBC felt that a network dedicated to local weather was of value to viewers. In a recent NBC Universal study, local broadcast stations were considered the primary source of weather information for 67 percent of television viewers polled (TVB, 2006).

NBC Weather Plus is a 50/50 affiliate-network partnership. The network launched in November 2004 and is now affiliated with station groups in 85 markets, reaching 75 percent of U.S. households. All 14 of NBC's O&O stations are broadcasting Weather Plus as well as affiliate-owned stations in the Gannett, Raycom, Clear Channel, Belo, Post-Newsweek, Hearst-

Argyle, and New York Times broadcasting groups. The service can be seen by about 20 million US digital cable households. Also, it is available in the top 20 markets (Donohue, 2006).

NBC Weather Plus uses an L-bar design to provide current temperatures and hour-by-hour forecasts while running ads at the same time. Local personalities and technologies are used in conjunction with national news resources to create an alluring digital network (TVB, 2006).

Roger Ogden, head of the NBC Affiliate Board, acknowledged that NBC Weather Plus would be slicing an already fragmented audience, but he still sees a business there, noting “a lot of efficiency associated with it. You don’t have to have tremendous revenue streams to support it.” Ogden expects his sales department to sell the weather service to advertisers for a “relatively modest” charge as part of an overall station buy (Eggerton & Kerschbaumer, 2003).

The network launched a website, nbcweatherplus.com, in January 2006. The website contains national and local weather forecasting, on-demand video, and links to stations’ traffic cameras, weather reports, and airport information (TVB, 2006).

American Broadcasting Company (ABC)

The ABC network has also been a leader in developing multicast programming. The network is currently distributing AccuWeather Inc.’s Local AccuWeather Channel as a multicast channel (TVB, 2006).

ABC AccuWeather

The AccuWeather product gives stations a 24/7, flexible, low-cost service that can be offered as a multicast channel. A station has great flexibility in that it can use either AccuWeather’s forecasters or their own and the station can use as much content as it deems necessary from AccuWeather. This ability to tailor the presentation to the liking of the individual station is what sets it apart from Weather Plus, according to R. Lee Rainey,

AccuWeather's VP of marketing. "The stations can structure the presentation," he states (Romano, 2005).

In addition, AccuWeather plans to generate the largest portion of its revenue from new emerging media platforms. According to Brian Kisslak, AccuWeather Executive Director of Media Sales, "There are so many emerging platforms right now...I think the best thing about AccuWeather is our portfolio is in every one of these markets. If they all converge, we all succeed. If some stay and some go away, we succeed," (Donohue, 2006).

ABC News Now

In addition to the AccuWeather network, ABC unveiled a 24-hour news service called ABC News Now. Originally an idea by Peter Jennings to offer viewers gavel-to-gavel coverage of the Democratic and Republican conventions, it first appeared on July 26, 2004. ABC aired ABC News Now during the 14 weeks leading up to the November 2004 Election in several markets both over-the-air and through cable systems. The network received cable carriage under retransmission rules by which large TV programmers, such as ABC, sometimes get sister cable channels onto systems in lieu of cash payments. However, the network could not get paid and the channel had to be pulled from cable systems in these markets (Grover, 2005).

ABC News Now, in its present form, has two dedicated anchors and hourly updates. It also has live coverage of breaking events, typically satellite feeds of news conferences or government hearings. ABC News Now is currently available to digital cable subscribers, broadband subscribers, and cell phone users. The service has limited television distribution on Verizon Communication's FiOS TV, overbuilder Siegcom, Cablevision Systems Corp., and some small cable operators. However, ABC News Now has a wider distribution through broadband and cell phones. As a broadband channel, the service is free to Comcast Corp., AOL, Bell South Inc., SBC Yahoo, and Verizon subscribers, or by ABC subscription for \$4.95 per

month. For mobile subscribers, it is available from AT&T Inc., Verizon, Sprint-Nextel Inc., Alltel Corp., and Midwest Wireless Holdings LLC (Lewis, 2006).

Bernie Gershon, Senior Vice President & General Manager ABC News Digital Media Group states, “We recognize that people have different locations where they’ll access our content whether it’s a mobile device, a wirelessly connected PC, broadband or TV. We’re trying to formulate a product that will be available wherever and whenever they want.” ABC News President Dave Westin agrees by saying that it is critical to be on all of those devices (Kerschbaumer, 2004b).

Columbia Broadcasting System (CBS)

Although CBS has been the network leader in high-definition television, it has lagged behind NBC and ABC in developing its own multicast digital network . At a June 2004 network affiliates meeting, CBS proposed multicasting as an important part of its digital strategy. According to Executive Vice President Martin Franks, “We want to explore strategies to exploit all digital opportunities together” (Albiniak, 2004). These options include using multicasting, video-on-demand, and Web content to “help promote network priorities” (Albiniak, 2004). Many CBS affiliates have yet to tie up their digital spectrum because CBS has not identified a network-affiliate digital partnership as NBC has with its NBC Weather Plus and ABC with its AccuWeather.

The CBS multicasting strategy will mean sometimes using the digital channel to counter what is on the network, such as using news against soaps or vice versa. As said by Martin Franks, other times it will mean complementing or supplementing what is on the network on a digital channel; for instance, using a digital channel to track Tiger Woods throughout a round of golf or offering alternative camera angles during tennis or football coverage (Greppi, 2005a).

In addition to countering and complementing network programming, sometimes stations broadcast alternative sporting events or breaking news on digital channels when they cannot accommodate them on their main feed. Some CBS affiliates have done so in an effort to air as many games as possible during the NCAA basketball tournament. As of June 2004, some 11 affiliates had aired one game of the NCAA tournament in high-definition on the main channel and three other games in standard-definition on the digital subchannels. According to Bob Lee, chairman of the CBS affiliate board and president of WDBJ Roanoke, VA, “That kind of programming puts the viewer back in the driver’s seat” (Albiniak, 2004).

Martin Franks, at the 2005 affiliates meeting, sought support for the launch of a “high-quality” digital entertainment channel to be carried on the digital tiers of CBS O&O stations and affiliates. The channel, now known as CBS 2, will be comprised primarily of entertainment fare in the form of “behind-the-scenes” glimpses of series, TV stars, and athletes. This will include such programming as *The Making of Survivor*, and out takes from CBS comedies or *The Amazing Race*. As said by Franks, “It’s like DVD extras.” One possibility for accommodating local content is morning-show-style cutaways within the CBS-produced programming. However, Franks says, “We’ve got a lot more work to do and a lot more research” (Greppi, 2005a).

CBS 2, which currently has no official launch date, would rival NBC’s weather and ABC News’ multi-platform offerings (Benson, 2005). Franks feels that the startup channel would be inexpensive and would be more appealing to cable operators and many affiliates than a second weather or news station in a market. The CBS channel could give CBS O&Os and affiliates an opportunity with cable providers, even if the networks fail in their attempts to get mandatory digital coverage for broadcasters (Benson, 2005).

Fox Broadcasting Company, The CW Television Network, and My Network TV

Fox, and the newly-created networks, The CW, and My Network, do not currently have any multicast plans underway. The Fox network has, however, recently launched an HDTV version of the National Geographic Channel and is planning to launch Fox HD, which will pull from sporting events and popular TV series from broadcast network Fox, cable sister FX, and other networks (Donohue, 2005). Some of the Fox affiliates in various markets do multicast, but, in most cases, it is simply a simulcast of the programming being aired on the main channel.

While NBC and ABC see multicasting as advertiser-supported, other networks believe they could collect subscriptions just like cable, although that would require scrambling and, at least initially, set-top boxes. John Tupper, a small-market broadcaster who heads the Fox affiliate board, believes in pay multicasting. He states, "Broadcasters could be the low-cost provider of HBO and provide more local content than anyone else." He estimates that, with a 5 percent penetration of the market, each station could double the cash flow it generates from its ad-supported business (Eggerton & Kerschbaumer, 2003).

Fox should offer a wireless cable service comprising news, movies, time-shifted programming, and demo-targeted channels, Tupper says. "Technically, it could be done tomorrow. Politically, I don't think it will ever happen. Fox is going to be hesitant to go into a business that competes with cable while it is negotiating rate increases for its news programming or regional sports channels" (Eggerton & Kerschbaumer, 2003).

The CW and My Network are offered as multicast channels on the digital subchannels of many stations across the United States. However, the two networks themselves do not have any multicast initiatives underway at this time.

Specialty Digital Networks

There are several new networks that have been developed which broadcasters across the country are using to provide unique content to their viewers via their multicast channels.

Qubo Network

Qubo is a new 24-hour network which began broadcasting in September 2006. The channel, which originally launched with a rolling four-hour block of children's programming, is aired on the digital signals of ION Media Network's affiliates. Although the channel airs programming exclusive to that channel, it will soon begin airing programming from the main qubo block on NBC or shows from other producers. The major goal for qubo is to promote literacy and positive values through fun, interactive entertainment (NBC Universal, 2007).

LATV Network

LATV is a bilingual music and entertainment network. The network debuted in 2001 in the Los Angeles market as KJLA. The network offers Latino-themed programming targeted at young adults 12-34. The network can be found on the digital subchannels of stations in markets with a heavy concentration of Latino residents (LATV.com, 2007). It was developed as a multicast channel by ATV Broadcast, which specializes in providing additional content for multicast channels and negotiating arrangements between programmers, broadcasters, cable, and satellite providers (Auto Channel.com, 2006).

Motor Trend TV

Motor Trend TV is a 24/7 digital network which began airing in 2008. It consists of 80% original programming drawn from the various automotive properties of Primedia, the leading targeted media company in the United States. Primedia's full-line of properties include some 57 magazines that reach 67 million subscribers. Motor Trend TV includes programming centered around trends in the automotive industry, first drives, and road tests. Primedia partnered with

ATV Broadcast, the company specializing in the use of multicast technology that developed LATV as well (Auto Channel.com, 2006).

World Championship Sports Network

Although more widely accessible to viewers through broadband and cable television platforms, the World Championship Sports Network (WCSN) is being utilized by some broadcasters to fill their digital subchannels with unique and compelling content for the sports enthusiast (Careless, 2007). WCSN offers comprehensive coverage of over 60 different Olympic and lifestyles sports, including track & field, cycling, swimming, skiing, and gymnastics. The sporting events can be seen on their website, www.wcsn.com, and on television through WCSN's weekly syndicated television program. This program is available in more than 45 million homes in major markets across the U.S. (WCSN.com, 2007).

Multicast (Standard-Definition) Business Model

Mindful of the opportunity that multicasting presents, many U.S. broadcasters are utilizing this unique technology to increase their audience base and to build station revenue. According to Mike Ruggiero, chairman of ATV Broadcast and the ALL TV Companies, "Hundreds of stations are currently multicasting" (Careless, 2007). ALL TV Companies, as mentioned in the prior section, is the company that runs the Spanish-language multicast channel LATV and the group behind the development of Motor Trend TV. In addition to LATV and Motor Trend TV, a growing number of commercial stations are multicasting local news and weather, NBC Weather Plus, The CW, My Network, World Championship Sports Network, AccuWeather, and qubo.

Model of Program Choice

The implications of an increase in the number of SDTV signals broadcast due to applications of digital compression will lead to an increase in the diversity of programs. The model of program choice, first issued by Steiner in 1952 before being expanded by Beebe and

Owen, Beebe, and Manning in the 1970s, predicts that the diversity of programs offered to viewers should increase as the number of channels increases. Broadcasters will match each other by introducing new programs of the most preferred type, with also the largest number of viewers, and carve up its audience until a new program's share of the audience for the most popular program type would be smaller than the audience accessible to a broadcaster offering the next most popular type of program (Wildman, 2001).

The result of expanding the number of channels while keeping the number of broadcasters the same will be an even larger increase in program diversity than would have occurred if each new channel had a separate owner for the simple reason that multiple channel operators will be disinclined to duplicate programming on channels they already operate. Offering a channel that draws viewers away from a competitor's offering is a net gain and an addition to profits whereas transferring audience from one to another of a station's channels, makes no contribution to revenue (Wildman, 2001).

Allowing each broadcaster to control a number of channels will help to increase the overall number of channels offered and, subsequently, the variety of programming. However, the audience for each channel will drop as the number of channels increases. This will lead to broadcasters producing less expensive programs as increases in production expenditures will result in smaller increases in advertising revenues (Wildman, 2001).

Dual Carriage in a Multicast Environment

In addition to offering a multitude of free over-the-air television channels, multicasting allows for new potential revenue streams for broadcasters. From now until the analog signals are turned off in February 2009, broadcasters have the difficult task of maintaining their analog channels while also expanding their digital channels. Stations need to have creativity in developing ways in which they can use their new digital feeds to help them gain revenue to

overcome the high expenses of running both an analog and a digital signal simultaneously and the cost of converting from analog to digital. The areas of promotion, programming, and ad sales all need to be focused on and used in conjunction to build station revenue and overcome these expenses.

Advantages of Multicasting

The technology of multicasting provides broadcasters with a number of potential strategic advantages. These advantages are primarily driven by the media technology characteristics of the technology discussed earlier in the chapter. This section reviews the advantages of multicasting and the primary media technology characteristic associated with the advantage. The advantage is first listed followed by the characteristic.

Improved affiliate/network relations: Complementarity

One key advantage of multicasting is that the new channel space will lead to improved affiliate/network relations. By having additional digital channels at their disposal, stations can continue coverage of a breaking news story on either their digital subchannels or their main channel while continuing to carry network programming. This capability has led to a reduction in the need for affiliate preemptions of network programming. In Augusta, Georgia, in January 2005, WRDW-TV simply moved its CBS lineup to then UPN affiliate (now My Network) WRDW-DT to allow for 18 straight hours of coverage of an area train crash. Gray Television, which owns the station, places a premium on news on its major-network affiliates and on profits (Greppi, 2005b).

Creation of new national networks: Newness

Second, multicasting has allowed both affiliates and networks to work together to create new national digital-only networks, such as NBC's Weather Plus and ABC's AccuWeather. These new digital networks allow affiliates and their networks to combine resources in such a

way that the viewer sees a product that is a unique meshing of local and national features (Halonon, 2003).

Ability to target advertising to particular market segments: Utility observability and efficiency

A third advantage of multicasting is that it allows broadcasters the ability to target their advertising to particular market segments. The technology gives stations an opportunity to reach different audiences with different channels, similar to what is done at the cable systems. For multicasting to make sense, it must not cannibalize revenue the station already earns from selling commercial time on its primary station. One way to avoid that is specialization. “When you go to multicasting, you start to specialize,” says Paul Turner, vice president of product marketing for Omneon Video Networks, a producer of video server infrastructure. He continues by stating, “As you do that, you can deliver more targeted advertising. So, if someone is doing a home do-it-yourself (DIY) channel, they can guarantee potential advertisers that viewers are interested in DIY.” By delivering targeted programming to viewers with a specific interest, stations could get advertisers to pay premiums to advertise on these channels because they hit the precise audience advertisers are trying to reach (“Re-Thinking Broadcasting,” 2004).

One example of utilizing multicasting to reach specific audiences is that of offering a Spanish-language channel on one of the digital subchannels (Decherd, 2004). The Hispanic population is the fastest-growing segment of the U.S. population today and advertising agencies have separate budgets allocated for Spanish-oriented programming. Because of these two factors, the Hispanic market represents a valuable audience to broadcasters. Many broadcasters, including NBC Universal, had mentioned offering a Spanish-language channel, but it was not until the ALL TV Companies developed LATV was one actually broadcast (Careless, 2007).

Not only could stations offer a variety of channels for different audience types with multicast technology, but they could also target their advertising to particular geographic segments within their coverage radius. NBC had put together a proposal that would allow their affiliates to target local news to towns in a coverage area and then sell more affordable ads to the local businesses in these towns. As stated by Roger Ogden, head of the NBC affiliate board, “We get to play at that party,” referring to the flexibility that cable systems have in targeting their advertising to particular segments of a viewing area (Davidson, 2004). The proposal has not been carried out as of yet; however, the technology is available.

Outlet for extended/enhanced news programming: Content distribution

A fourth advantage of multicasting is that it can offer a local station an outlet for extensive news or public affairs programming. Local information that currently goes unreported or under-reported on television can make a station invaluable to viewers, and multicasting is a logical way to distribute such programming (“Re-Thinking Broadcasting,” 2004). When a station becomes one of the primary sources for news and information in a local market, sizeable ratings and revenue will follow. This is especially the case when a station is the first in a market to offer a new local news and informational broadcast (“Re-Thinking Broadcasting,” 2004).

Not only can a local station have access to an additional outlet for extensive news programming, but multicasting can actually enhance and expand the news product. Digital technology creates the possibility of new programming forms, utilizing data, graphics, and different camera angles to make television a more interactive and informative experience (Decherd, 2004).

Relatively inexpensive once infrastructure is in place: Technology cost

A fifth advantage of multicasting is that once the infrastructure is in place, it is relatively inexpensive to add multicast channels. It typically will only cost 10 percent per additional

channel when compared to the initial DTV start-up costs. Furthermore, it usually requires the same level of human resources as a single-channel operation as well (Boston & Brown, 2004).

Opening up bandwidth for multicasting for locals could mean additional 24-hour local news or sports channels, claims Tim Hanlon, senior vice president and director of emerging contacts, Starcom MediaVest Group, a full-service media agency. “Since those formats are so popular in the cable universe, it makes perfect sense to extend those kinds of franchises into other channels,” he says. “It’s a great way to amortize your talent costs, to amortize all the footage that never makes it to the 6 or 11 news; it’s a great way to amortize your editorial resources. The 11 o’clock news could just be a ‘best of’ all the things that ran on your other channels. All the signs point to that being the route” (Kaplan, 2004).

Cross-market penetration: Complementarity

A sixth benefit of running a multichannel operation is that it allows for cross-market penetration. If a newscast is to be cannibalized by another channel, the same broadcast outlet might as well do it, thus conserving its views and advertising revenue (Boston & Brown, 2004).

In addition, a station can run spots promoting programs or specials on the other multicast channels. By doing this, stations can fill their unsold airtime with content that will draw viewers’ attention to their other multicast offerings.

Similar to existing business model: Compatibility

A seventh advantage of multicasting is that it is similar to the existing business model, programming-viewership-ratings-commercial-sales (“Re-thinking Broadcasting,” 2004). This makes it initially more attractive to television broadcasters than other digital technologies, such as datacasting or video-on-demand. However, these ancillary services could prove to be more lucrative for broadcasters in the future.

Other Uses of Multicast Technology

Broadcasters are utilizing the advantages offered by multicasting in other ways. They are using the additional channels to air programming from different networks as well as using the digital subchannels to get stronger signal carriage for their low-power stations.

Digital signal used to air programming from different networks: Content distribution

Multicasting not only means sending programs formatted differently at the same time, but it also means using the digital signal to air programming from different networks. There are a lot of cases of this taking place ever since the merging of WB and UPN and the subsequent creation of the My Network and The CW networks. One example of this is Media General's WNCT, which began doing this in September 2006. The Greenville, NC station simulcasts CBS and the CW programming on digital channels 9-1 and 9-2 respectively (WNCT.com, 2007). This arrangement demonstrates another advantage of multicasting, the ability to reach specific demographics with different channels. WNCT is able to reach an older demographic, P25-54, with CBS and a younger audience, P18-34, with The CW.

Better carriage for low-power stations: Utility observability and efficiency

Some stations, like WKPT, an ABC affiliate in Kingsport, TN, begin multicasting to get better carriage for their low-power stations. WKPT currently airs their My Network affiliate, WAPK, a low power station, on digital channel 27-2 while airing their full-power ABC affiliate on channel 27-1 (WKPT.com, 2007). WKPT General Manager George DeVault says, "We're reaching a wider audience with a clearer, more consistent signal. Cable carriage is very important, and low power does not have must-carry. If you're not on the cable system, you've got a problem" (Berger, 2001).

Revolutionary Uses of Multicast Technology

There are several revolutionary uses of multicast technology currently being considered. Broadcasters are looking into the potential to utilize multicasting to deliver flight information from local airports as well as traffic reports to viewers in their coverage areas.

Broadcast of flight arrival and departure information: Newness

Airports are requesting that local stations broadcast flight arrival and departure information. “It’s of value to someone wishing to check the status of his or her flight before leaving for the airport, and it’s an advertising value to operators of companies such as taxi services or airport shuttle businesses- or even a company like Starbucks,” according to Glen Sakata, director of sales for broadcast and telecom at Harmonic, a leading provider of video delivery solutions (“Re-Thinking Broadcasting,” 2004).

Traffic reporting: Newness

An additional area with a recognized worth to viewers is traffic reporting. About 14 years ago, Los Angeles started distributing information from on-ramp cameras and metering to a cable carrier to show “traffic-flow density in a high-level way.” Roadmaps with arteries displayed in red signified traffic was stopped; green meant it was moving. Similar local traffic coverage could provide local viewers of a multicast station with timely and important information (“Re-thinking Broadcasting,” 2004).

Benefits to Advertisers Through Use of Multicast Technology

Brian Wieser, National TV Analyst for media negotiator Magna Global, sees multicasting as a chance for advertisers to more narrowly target consumers and to invest directly in the new programs needed to fill the digital channels. Such investment, he says, may involve taking an interest in someone else’s multicast offering, supplying infomercials for a new digital channel, or developing networks/channels and pitching them directly to stations. He refers to Coke’s \$15

million investment in digital cable net College Sports TV as a potential model, mentioning that Coke is positioned to mix its marketing efforts with the channel and to benefit directly from its success (Eggerton, 2004).

Wieser argues that multicasting provides a “more compelling business case” for advertiser-created nets than digital cable does, if must-carry protection is granted (Eggerton, 2004). As examples of advertiser channels, he advocates an automobile-enthusiast channel developed by a car company or a baby boomer channel supported by a pharmaceutical company. According to Wieser, broadcasters could strike deals with various advertisers to carry prefab networks (Eggerton, 2004). At this point, however, there is no mandated must-carry requirement so there will probably be limited development of advertiser-created channels.

Challenges of Multicasting

Although the technology of multicasting provides broadcasters with a number of potential strategic advantages, it also brings with it a number of unique challenges. These disadvantages are primarily driven by the media technology characteristics of the technology discussed earlier in the chapter. This section reviews the challenges of multicasting and the principal media technology characteristic associated with each challenge. All but one of the challenges listed below are primarily due to the technology cost characteristic.

Securing the capability to digitally deliver a signal: Technology cost

The greatest challenge facing stations is securing the technical capability to digitally deliver a signal. First, broadcasters need transmission apparatus that will allow a standard-definition signal, or multiple SD signals, to be broadcast alongside a station’s HD feed. The equipment is expensive as it costs about \$50,000 to put the technology in place for one HD and one SD channel. Second, stations will also need available bandwidth. As previously mentioned, a station’s digital bandwidth allocation is 19.39 Mbps. The typical SD channel will require only

about 2 Mbps, which leaves a lot of room for a station's HD signal. However, there may be a bandwidth crisis if a station is multicasting a weather service or some other channel simultaneously (Kerschbaumer, 2004b).

Producing more with the same staff or same capital expenditure: Technology cost

A second major challenge that many broadcasters face is producing more with the same staff or same capital expenditure. According to Thomas Zugmeyer, the product manager in charge of the DaletPlus Media Library, having access to the ideal digital equipment is key to combating this problem. He says, "Technology allows you to use more shared content by one station to rebroadcast it on another station, all from a central repository" ("Re-Thinking Broadcasting", 2004). Sakata from Harmonic agrees. "I'll always go back to the operational side. There's not much incremental cost to put it on another station," he says ("Re-Thinking Broadcasting", 2004).

Acquiring programming to fill secondary channels: Complementarity

A third serious obstacle for broadcasters wishing to multicast is programming. Many broadcasters wonder where they will acquire the programming to fill secondary channels as they are already challenged enough in filling up their primary channel with compelling content. Repurposed newscasts and magazine shows provide one potential source of multicast content. Fortunately for broadcasters, they will not face the same rights issues as they would if they were broadcasting syndicated programming. Therefore, repurposing their own station-originated programming is a sensible way to generate content to be run on their digital subchannels ("Re-Thinking Broadcasting," 2004).

Adding more channels does not mean there are more advertisers: Technology cost

A fourth major challenge of multicasting stems from the fact that adding more channels to a market does not mean there are more advertisers. This creates a problem in a case in which a

broadcast operation has to start paying for content in any meaningful way and because it is not reaching a large enough audience with its multicast channels, the station struggles financially. Advertising revenue is critical to cover the expense of buying the rights to programming since distributors, particularly cable operators, are not paying high enough subscriber fees to offset these costs (Chunovic, 2003). However, since the industry is committed to pushing digital penetration forward, the audiences for multicast channels will continue to grow. Larger audiences mean that not only can broadcasters generate more advertising revenue, but broadcasters will be able to ask the cable and satellite industries to start paying subscriber fees or to pay higher fees for the carriage of their multicast programming.

Although multicast channels may be able to generate solid advertising revenue for broadcasters, “Those channels won’t generate as much as the main channel and that’s why automation will be important,” according to Dave Polyard, Omnibus Vice President of Sales and Marketing (Kerschbaumer, 2004a). Stations are working to make the multicast business model more efficient by automating their facilities and infrastructure.

Automation in a Multichannel Operation

According to Robert Johnson, president of automation vendor Sundance Digital, “The broadcast operations of today are simply too complex to be run without automation. Certainly, efficiency is a word with which we are all well acquainted, but in many cases, stations are adding more channels and want to operate with the same staffing levels” (Kerschbaumer, 2004a). Station automation is about easing the content-gathering process, regardless of the content’s final form, commercials, programming, or interstitials. Adding a multicast that includes a 24-hour loop of newscasts (with new commercials) and a 24-hour weather channel may sound like basic additions, but both represent the growing complexity of broadcasting today (Kerschbaumer, 2004a).

“If a station wants its multicast offspring to have the same quality of appearance as the big channel, the challenge is even greater,” says John Wadle, Omnibus Vice President of Technology (Kerschbaumer, 2004a). Setting up the secondary channels can actually be more time-consuming and labor-intensive than the main channel. Inserting squeeze-backs, the graphic device that shrinks the onscreen image as one show ends to allow space for another image, becomes problematic. This is also the case with other transitional graphic elements that give viewers the visual cues they have come to expect from technically advanced broadcasters. Viewers do not want to watch multicast channels that look low-budget and these transitional graphic elements are an important part of broadcasting a quality channel (Kerschbaumer, 2004a).

In addition, the type of content carried on secondary channels is a major factor in the level of difficulty involved in automation. Brian Lay, Harris director of product marketing, automation solutions, states, “Channels that are primarily based on prerecorded content require very little manual intervention. But channels that contain live sports or news may require an operator per channel” (Kerschbaumer, 2004a).

Communication between the automation and traffic systems is a critical interaction and it continues to be a challenge. The modules use Transmission Control Protocol/Internet Protocol [TCP/IP] connectivity to allow changes to be made to the current on-air schedule directly from the traffic system. Also, a graphic timeline display lets operators make last-second schedule changes (Kerschbaumer, 2004a).

Ancillary Services

Ancillary services can provide stations with new, largely untapped, business possibilities. The technologies of datacasting, subscription television, teletext, and interactive television are possible when there is a return path from the home, school or business to the source of the broadcast.

Media Technology Characteristics

Ancillary services are inherently different from broadcasting, according to Glen Sakata, who, as mentioned previously, is the director of sales for broadcast and telecom at Harmonic. “There’s a push vs. pull paradigm,” he says. “Broadcasters can push all the data they want. It goes back to video over IP. It could be data or video, but it has to be persuasive enough for a consumer to want it.” For these ancillary services to be successful, they must improve the availability of local information in a way that is not real-time. “There are a number of video and data services that don’t have to be delivered in real time, and if they don’t it can be a data model. For example, airport schedules don’t have to be on a real-time video channel. They could be streaming,” claims Sakata (“Re-Thinking Broadcasting,” 2004).

The Return Path Will Have Major Impact on Television Advertising

When it comes to ancillary services, there are two basic variations. First, there is the direct viewer interaction with program content and broadcasters. This could be in the form of choosing on-screen items for purchase or clicking on a player during a live sporting event to view their stats. Second, there is the less direct information that might be gathered about the audience members of a program. This is the information that is made possible through a return path. Such facts as buying behavior, lifestyles, and viewing habits make up this less direct information. Over time, the viewing habits of a viewer or household could be stored in a set top box for access by broadcasters and cable companies that may either sell or lease the boxes (Wildman, 2001).

Currently, the advertising model used by advertisers and broadcasters is centered around audience demographics. These demographics are used to predict viewer purchasing habits. If ancillary services are utilized to an interactive extent, then broadcasters and advertisers alike would be able to see the true buying preferences of the audience for a particular program. This

information would provide broadcasters with the ability to price and sell their advertising time much differently than they do presently (Wildman, 2001).

As digital television and its ancillary services develop, broadcasters can expect a significant increase in revenues due to more accurate and in-depth information on viewers' product preferences and buying behavior. Furthermore, at some point in the future, it will be possible to target advertisements to individual viewers regardless of the programs they are watching. This targeting could be accomplished by preloading advertisements in an individual's set top box so that in-program cues could signal the box to play a particular commercial. Also, with regards to ad content, the actual broadcast could be interactive (Wildman, 2001).

Ancillary services also will affect the ability of the television medium to compete with other mediums for advertising dollars. For instance, the ancillary services of the future will be able to provide viewers with detailed information on products right on their television screens. Viewers looking for a particular make and model of a automobile would be able to watch a program and then click on a car showcased in either a commercial or a program and receive in-depth information about the vehicle. This type of detailed information is normally accessed exclusively through the newspaper or the Internet (Wildman, 2001).

Variations of Ancillary Services

There are questions about whether datacasting is truly feasible in the near future. A high-end interactive TV show, one in which most all of the interactive elements are video, can be three or four times the budget for a non-interactive, linear TV program (Carey, 1999). Not only is the expense a consideration, but also there exists a great deal of confusion over an appropriate business model for datacasting.

Versions of interactive TV that mix interactive text over a one-way path (instead of one with a return path) or interactive still images and sound may provide an interim, less expensive,

business model for broadcasters. These interim forms of interactive TV are a good match for such services as banking, home shopping, and some interactive games (Carey, 1999). Once a broadcaster successfully integrates this form of interactive TV into its current offerings then it can more easily transition into a full interactive video model.

Another version of ancillary services that broadcasters will be able to utilize to encourage viewers to stay with a program that has just gone into a commercial break is a model in which some content is provided on part of the screen while a commercial airs. This is considered to be a newspaper model of content in that advertising and content are shown on the same screen much as a newspaper provides both news stories and ads on the same page (Carey, 1999).

Nevertheless, advertisers, both locally and nationally, will be able to benefit from the various capabilities that interactive TV provides, particularly the ability for consumers to click on the screen to order a product. Direct marketers, especially, have the means to pursue advertising in an interactive format since they typically have an open-ended budget. This open-ended budget, for example, would allow them to test out advertising on an interactive channel without affecting their existing analog budget (Knight, 2004).

WRAL-TV 5: A Digital Pioneer

HD pioneer Jim Goodman, owner of WRAL-TV (CBS) and WRAZ-TV (Fox) in Raleigh, NC, is a convert to multicasting. He says, "I believe that HD is the primary driver of digital, though SD is great, too. We're a much better TV station because we can televise a local event or trial on the news channel (WRAL NewsChannel)." WRAZ's digital station offers two simulcast digital stations, one provides HD when it is available (SD the rest of the time) and the other offers only an SD signal. Also, WRAZ carries a 24-hour local weather channel on its third digital subchannel (Eggerton & Kerschbaumer, 2003).

WRAL, the station which pioneered digital broadcasting nearly 11 years ago, splits its digital bandwidth allotment into an HD channel, an SD channel, and a 1MB/s to 1.5MB/s channel for datacasting. Through a process known as statistical multiplexing, bandwidth is dynamically assigned to the channels as needed (“Re-Thinking Broadcasting,” 2004). In statistical multiplexing, a fixed bandwidth communication channel is divided into several variable bit-rate digital channels. This, along with efficient encoding, the process in which a signal is transformed into a form optimized for transmission or storage, maintains optimum picture quality on the SD and HD channels (Chandra, 2003). “The picture WRAL delivers using statistical multiplexing and efficiency of encoding is superb,” says Goodmon. “We can deliver HD and SD with no degradation, and we expect to see a 10 percent to 15 percent improvement in the encoding process every year” (“Re-Thinking Broadcasting,” 2004).

Multicasting

As discussed previously, the technology of multicasting has the potential to provide broadcasters with a number of promising strategic advantages. This section reviews the benefits of multicasting of which WRAL-TV has taken advantage. The advantage is first listed followed by the associated media technology characteristic.

Outlet for extended/enhanced news programming: Content distribution

In July 2001, the station launched the WRAL NewsChannel. The channel includes local news, special local coverage, original programming, and weather updates every half-hour. The WRAL NewsChannel replays newscasts, letting viewers watch the latest headlines at almost any hour of the day. Besides rebroadcasting WRAL-TV’s newscasts, the digital channel offers live coverage of local events, including press conferences, trials, and special celebrations. Recent coverage on the NewsChannel included news conferences following the ACC Tournament and coverage of local forums, including Emerging Issues and Horizon 2100. WRAL NewsChannel’s

on-screen format offers scrolling news headlines from WRAL.com and updated weather forecasts. The channel provides the Raleigh-Durham area with the latest poll results and race coverage, during the election season. Also, during inclement weather, the channel airs constant school and business closing information (WRAL.com, 2007).

In addition, WRAL also offers the WeatherCenter Channel, a 24-7 digital weather network providing local, regional, and national forecasts. The channel, which launched in February 2003, is carried over-the-air on digital channel 50.3 and on Time Warner digital cable on digital channel 252. The channel works on a 10-minute wheel that is repeated six times an hour. The 10-minute wheel includes a two-minute video forecast by WRAL's meteorologists. The local video forecast is usually updated four times a day, following each daily newscast (WRAL.com, 2007).

Improved affiliate/network relations: Complementarity

The WRAL NewsChannel has allowed for a stronger affiliate/network relationship while also providing viewers with important local information. When a major storm hit Raleigh in May 2005, the station preempted its analog channel and moved *As The World Turns* and other CBS soap operas to a multicast channel (Donohue, 2006). The NewsChannel has provided WRAL with another outlet to accommodate both network and local programming at times when distributing live information to the public is critical, such as during a weather crisis.

Relatively inexpensive once infrastructure is in place: Technology cost

Repurposing material from the Web site and the news operation of WRAL-TV allowed management to put WRAL NewsChannel on the air for a fraction of the price of starting a station from scratch. "With very low personnel and equipment costs, we have started a new channel," says Goodmon. "We need to be clear that it is a balancing act," he explains. "We don't want to

take anything away from the capacity of WRAL news. We want to use it to add to the NewsChannel when we have extra capacity” (“Re-Thinking Broadcasting,” 2004).

The station has a producer and designates its digital media manager to assimilate material for the station’s Web site onto the NewsChannel. Otherwise, the WRAL NewsChannel draws on existing resources from what Goodmon calls “the big news operation” to shoot, gather, produce, and air news (“Re-Thinking Broadcasting,” 2004).

One example of using the resources of the primary channel for the WRAL NewsChannel is a car chase that occurred in the area several years ago. Goodman explains, “We broke into coverage on WRAL news but couldn’t stay with it the whole time as it unfolded. But on WRAL NewsChannel, we could punch right in and stay with the chase. All that required was a producer/director and font coordinator, and we were live” (“Re-Thinking Broadcasting,” 2004).

Datacasting: Newness/Utility Observability and Efficiency

Not only does multicasting bring with it a number of advantages, but also datacasting as well. The two primary media technology characteristics which drive these benefits are newness and utility observability and efficiency.

WRAL uses the 1 Mb/s to 1.5 Mb/s committed to datacasting for a variety of offerings, including distribution of video-on-demand from WRAL news, the WRAL.com microsite, games, software, and other local programming. “This is program content that we couldn’t deliver before,” says Goodmon (“Re-Thinking Broadcasting,” 2004).

While the current offerings are good, Goodmon asserts that the future will be even better. He made this clear by saying, “We have been experimenting with ideas that will be great for the future- approaches that are not interactive per se but send information out that can be stored in the memory of the users’ computers that they can access as desired.” Moreover, ancillary services, such as datacasting, will allow for an enhanced experience for the sports enthusiast.

According to Goodmon, “If you are watching WRAL News and our sportscaster comes in with news about Duke basketball, with datacasting you will be able to get instant stats from the game. That’s the future” (“Re-Thinking Broadcasting,” 2004). Since introducing datacasting to the Raleigh-Durham, NC market, the number of people for WRAL’s service has expanded beyond the introductory test audience of 100, but Goodmon does not know by how much. However, he expects the role of datacasting to grow as interactivity becomes achievable. “Interactive is growing- one step at a time,” he says. “That is an important move for broadcasters to make” (“Re-Thinking Broadcasting,” 2004).

There are three primary lessons concerning multicasting and datacasting that can be observed from the experience of WRAL-DT in Raleigh-Durham, NC. First, multicasting and datacasting may, ultimately, lead to significant revenue for the station, but they have not as of yet. Second, the new technologies should be utilized to position a station to compete with cable and satellite broadcasting in the future and be able to thrive in that environment. Third, multicasting and datacasting need to result, ultimately, in delivering a better product. WRAL Programming and Special Projects Manager Jimmy Goodmon Jr. explains this point further by saying that multicasting and datacasting are about being more competitive. All of these things are made possible through these digital technologies and their ability to help stations maximize their branding capabilities (“Re-Thinking Broadcasting,” 2004).

Successful branding in the broadcast business is about enhancing a station’s presence in a market by becoming an indispensable resource to residents of that market. “We are guided by a person who believes in long-term branding,” states Jimmy Goodman Jr. “These things (datacasting and the NewsChannel) will enhance our image in the community. We have to be

everywhere that viewers or seekers want to find us. It's not a revenue play at this point, but a branding play" ("Re-Thinking Broadcasting," 2004).

KUSA-TV 9: A High-Definition Newscast Pioneer

One approach stations are taking to obtain a competitive edge is by capitalizing on the transition to high-definition. While most national sports events and network prime-time schedules are broadcast in HD, local HD broadcasts have lagged, demonstrating a growth area. "It will drive more viewership that we can translate into revenue," says Fred Reynolds, president and CEO of Viacom Television Stations Group (Bachman, 2005).

High Definition

The technology of HD brings with it a number of potential strategic advantages. The primary media technology characteristics which affect the adoption of an HD newscast, in particular, are discussed in this section.

Content Distribution

A few TV stations such as KUSA-TV, Gannett Broadcasting's NBC affiliate in Denver, have launched local newscasts in HD. Some Viacom TV stations are also broadcasting local sports in HD, such as the NBA's Lakers on CBS owned-and-operated KCAL in Los Angeles and baseball's Red Sox on CBS O&O WBZ in Boston. "HD is a game changer, offering broadcasters a huge competitive advantage," says Chris Rohrs, president of the Television Bureau of Advertising (Bachman, 2005).

HDTV news is flourishing in the Denver market. KUSA Denver was the first station to transmit live HD video from a helicopter to a station. Microwave-transmission-system manufacturer MRC and KUSA worked together to solve the difficulty of sending large amounts of HD data, allowing this transmission to become possible (Kerschbaumer, 2004c).

The station began investigating the idea of airing an HD newscast in 2003. Roger Ogden, KUSA general manager and president and Gannett senior vice president, says the station contemplated three factors: the price of HD sets was falling, more HD shows were available from NBC, and the local Comcast MSO offered an HD tier (Kerschbaumer, 2004c).

When Comcast and Soundtrack, a local retailer, became HD advertisers on KUSA, the decision to move forward with an HD newscast was finalized. Even though the rates are much lower than spots on the SD broadcast, Ogden had expected to recover the incremental cost of HD gear within two years. “It’s actually a fairly short return,” he says, “when you look at the normal way of doing business.” There is not any information confirming whether or not the HD start-up costs have been recouped as of yet (Kerschbaumer, 2004c).

Technology Cost

The complete newscast is not in HD yet because the electronic news gathering (ENG) gear is still too costly to allow shooting in HD. The camera operators, however, shoot in wide-screen 16:9 aspect ratio (see Appendix A). Don Perez, KUSA Chief Engineer, says that a mix of HD and SD material during a newscast is still compelling for the viewer. “Standard-definition 16:9 provides good-quality images, so not everything has to be shot in HD,” he says. Furthermore, Perez declares that the most important thing to remember in strong upconversion of SD material is to be certain that the material was obtained digitally (Kerschbaumer, 2004c).

Cable Is Using High-Definition Advantage in Battle With Satellite

According to Glen Sakata, the strongest motivator for cable multiple service operators (MSOs) to accommodate broadcasters’ need for multicast carriage is the threat from direct broadcast satellite (DBS). “The number-one issue with cable MSOs is HD,” Sakata says. “They are in a hot battle with DBS. DBS will have problems having a lot of HD. Cable is realizing their take rate for HD set-top boxes is growing exponentially, and local HD programming could

be something that gives them an edge in the market over DBS” (“Re-Thinking Broadcasting,” 2004).

Considering the significance of HD to cable in doing battle with DBS providers, Sakata says he believes MSOs will be inclined to work with broadcasters to carry multicast SD channels as long as part of their offering during the day is HD. “Cable would just rather take the HD,” he states. “They will give you the bandwidth and let you play around with it. They’ll commit the 6 MHZ to broadcasters. Then the cable operator won’t mess around with the broadcaster’s signals” (“Re-Thinking Broadcasting,” 2004).

The cable industry has been willing to carry multicast channels as long as the programming will attract a significant viewing base. If cable operators are offered a “mix of compelling local and national shows,” Martin Franks says, they will be more likely to carry all of the stations’ digital offerings (Albiniak, 2004). An example of this has been Time Warner Cable’s Raleigh, NC division carrying four multicast channels simultaneously for WRAL of the NCAA Basketball Tournament since 2000 (Donohue, 2006).

Rather than arranging a formal must-carry agreement between DTV broadcasters and the cable industry, Sakata proposes that cable operators be flexible with television broadcasters on an individual basis. “These cable MSOs would really rather deal at the individual level,” he states (“Re-Thinking Broadcasting,” 2004).

In addition to the competition that cable operators feel from broadcasters, carriage of broadcasters’ SD signals also creates a management issue for cable operators. This is especially true in cases in which broadcasters air HD for a portion of the day and then switch to multiple SD channels later in the day. According to Glen Sakata, “In the beginning, it was a philosophical objection, but now it’s a management issue” (“Re-Thinking Broadcasting,” 2004).

The cable systems would rather not manage all of these channels coming and going. Sakata says, “If a broadcaster sometimes has two channels, sometimes five, and sometimes one channel, that’s hard for the cable system to manage. On the cable electronic program guide (EPG), they’ll indicate a channel is there but just off the air” (“Re-Thinking Broadcasting,” 2004). These management issues and others will need to be effectively dealt with in order for broadcasters and cable operators to be successful in collectively serving their market areas.

USDTV: A Low-Cost Alternative

In an effort to provide a low-cost, over-the-air alternative to cable, USDTV chief Steve Lindsley asked broadcasters to combine their capital and their digital TV channels in a jointly-owned pay multicasting venture. Lindsley felt that such an endeavor would be an opportunity to create a direct relationship with consumers and eliminate the cable and satellite middlemen who have relied on broadcasters to create \$350 billion in value for themselves (Jessell, 2004). The company rented extra digital bandwidth from broadcasters and then used the bandwidth to send channels to subscribers using set-top boxes. After four years of offering a service that was being utilized by some 7,200 subscribers, USDTV ceased operations in March 2007 (Moss, 2007).

While in operation, USDTV offered a package which included 12 cable channels and sold for \$19.95 per month. The package also included another 18 or so over-the-air channels, which brought the total number of channels to 30. The cable networks included Fox News Channel, Disney Channel, Toon Disney, ESPN and ESPN2, Lifetime Television, Lifetime Movie Network, Home & Garden Television, Food Network, Discovery Channel, Starz, and TLC. In addition, USDTV served four markets: Salt Lake City, UT; Dallas/ Fort Worth, TX; Las Vegas, NV; and Albuquerque, NM (Moss, 2007).

The company finally ran out of money and had to file for Chapter 7 bankruptcy. One of the major problems faced by the company was that it was challenging and expensive to acquire

new customers. The company lost around \$100 for every \$99 box sold and their customer base was largely lower-end customers that in many cases did not pay their bills. A second major challenge faced by USDTV was that it had high customer churn, which averaged 4 percent monthly. A major part of this was due to the fact that many subscribers were not satisfied with the limited number of channels offered (Higgins, 2006).

Conclusion

In this chapter, the researcher looked at the theoretical, regulatory, and technological issues surrounding digital television, specifically multicasting and ancillary services. The digital initiatives pursued by industry participants to capitalize on the capabilities of this new technology have been detailed.

The theoretical basis of the adoption and evolution of digital technology are reflected in the principal drivers of the new technology, the core, supporting, and environmental factors which make up the framework of new media adoption by media firms. The elements were discussed in detail early in the chapter and then applied to multicasting and datacasting at the local station level later in the chapter. The social movement theory was detailed to demonstrate the actions taken by various groups which interacted to give the digital transition momentum.

The regulatory issues are addressed and the FCC rulings discussed, which include the mandate for TVs to be digital over-the-air compatible and digital cable ready, the bill calling for complete shut of analog on February 17, 2009, and the denying of cable carriage of multicast channels for broadcasters. The debate over the carriage of broadcaster's secondary streams has been ongoing for both broadcasters and cable operators as both groups have plenty of rationale in defense of their positions. The technological issues behind HD and SD, the various uses of multicast and datacast technology, and the complications involved in running these varied formats have been requiring that broadcasters have flexibility in their business strategies.

There are a number of digital initiatives being pursued at the network, corporate, and local levels. CBS, NBC, and ABC each have several digital undertakings either currently in operation or being developed. In addition to these major networks, several networks have been created solely for the purpose of use as multicast channels or ancillary offerings. At the local level, stations will have many options to consider and they will need to weigh the advantages of this new technology to the challenges that it presents. The media technology characteristics of each advantage and challenge are highlighted as well to emphasize the variables which are affecting the adoption of these technologies. One station, WRAL-TV, has been a pioneer in the area of multicasting and datacasting whereas stations such as KUSA-TV have been capitalizing on HD specifically. The efforts of the local broadcasters further complicate the battle going on between cable operators, satellite companies, and other service alternatives such as, now defunct, USDTV.

CHAPTER 3 METHODOLOGY

In this chapter, the research method used in this study is discussed. The rationale for choosing an interview methodology, the selection of study participants, and the procedure that was followed prior to the actual interviews are discussed. Next, the chapter focuses on the research questions and the ways in which the actual interviews were administered. The chapter closes with detail as to the procedure used for analyzing the respondents' comments.

Data Gathering Method Used

Semistructured interviews were utilized for this study. According to Hollifield and Coffey (2006), a semistructured interview consists of preset questions, but the interviewer will add or remove questions as seems relevant or pursue new topics or lines of inquiry that may be suggested by the respondent. Information regarding the appropriate research method was also ascertained from Wimmer and Dominick (2000).

Since the investigator was conducting exploratory research, this method was considered for several reasons to be the optimal research method. According to Hollifield and Coffey (2006), gathering data from senior media executives needs to be in the form of an interview method as these executives will usually not respond to telephone or mail surveys. Wimmer and Dominick (2000) cite several key advantages of what they refer to as an unstructured intensive interview. It is proposed that these same advantages apply to a semistructured interview methodology as well. First, a large variety of detail can be ascertained. This is a result of the flexibility of the method and the ability of the interviewer to ask follow up questions relating to the unique answers given by each of the study participants. The majority of responses made by the subjects differed in such a way that the information gathered by the follow up questions was vital to this study. Second, this research method provides for more accurate responses on

sensitive issues which can be the result of the rapport established between the interviewer and the subjects (Wimmer & Dominick, 2000). The executives were asked about the monetary investments they have made to realize the capabilities of digital television as well as their thoughts on their relationship with the cable providers in their coverage areas, subjects that may not be answered or elaborated on using another research method due to their sensitive nature. Third, intensive interviewing is truly the only practical technique for assessing the thoughts of television station general managers on digital multicasting and ancillary services. For example, it would be difficult to get these busy television executives to take the time to fill out surveys. Similarly, it would be quite challenging to coordinate the schedules of a number of executives to make a focus group possible.

Although there were many advantages to this research method, it did bring with it some challenges. First, it required an enormous amount of resources, in terms of both time and money, to travel to the various television stations within the four D.M.A.s (see Appendix A). Second, since the interviews were semistructured, each of the participants may have answered different versions of the same question or different questions entirely. Third, there was the possibility of bias by the researcher both in terms of the way in which he asked the questions, but, also, the way in which the executives' answers were interpreted. This is discussed further in Chapter 5 under the limitations of the study section.

Selecting the Study Participants

The researcher began by determining the characteristics of the ideal interview subject. The first determination made was that the subjects needed to be executives familiar with the strategic direction of the commercial television stations they represented. The reasoning for this is that the researcher aimed to evaluate how stations are utilizing digital technology to more effectively compete and generate revenue for their broadcast operations and only commercial

stations are in the pursuit of revenue. Ideally, the investigator wanted to only interview general managers, but he decided that he would be willing to speak with an operations or engineering manager, in certain cases, if he was referred to these people by the general manager. After careful consideration, it was decided that the best way to investigate the research questions was to compare the executives' answers to the interview questions using their market area size as a means of identification and grouping. To do this, the researcher considered the fact that there are 211 designated market areas (D.M.A.s) in the United States. From this, the researcher arbitrarily chose to divide these D.M.A.s into four distinct groupings based on size. In addition, the investigator only wanted to analyze stations affiliated with one of the Big 4 networks, ABC, NBC, CBS, and Fox, because these stations would have the greatest likelihood of being sufficiently invested in digital technology.

This strategy represents a purposeful sample. According to Patton (1990), a purposeful sampling strategy selects information-rich cases for comprehensive study. Specific numbers and types of cases are deliberately and strategically selected and are suitable to the evaluation's purposes and resources. This type of sampling is used in cases in which a researcher wants to ensure that certain cases varying on preselected parameters are included. In this case, market size was the primary parameter intended to vary. Although this kind of sampling is statistically nonrepresentative, it is, from a purposeful sampling standpoint, informationally representative (Troost, 1986).

Using a stratified purposeful sampling technique, interviews were set with managers of Big 4 affiliated and independent stations from the four different television designated market areas (D.M.A.s). These D.M.A.s ranged in size, and they included one from a 1-25 sized D.M.A., one from a 26-75 sized D.M.A., one from a 76-125 sized D.M.A., and one from a 126+ sized D.M.A.

The stratified sampling technique is ideal for this study in that its aim is to illustrate characteristics of particular subgroups of interest, in this case the four different groupings based on size, and then to make comparisons between each of the groupings. The preselected parameter in this case is market size and the various core, supporting, and environmental factors which affect the adoption of multicasting and ancillary services are the groupings which are to be compared. These sizes were chosen because the dynamics of these market sizes suggested that these D.M.A.s would substantially differ and would provide for the widest diversity of market characteristics and competitive situations. The aim of the researcher was to interview executives from several stations within each market size. Three were interviewed from 1-25 sized D.M.A. (2 from the same station), three from 26-75 sized D.M.A., two from 76-125 sized D.M.A., and one from 126+ sized D.M.A. As previously mentioned, the investigator intended to interview executives at stations whose primary channel was affiliated with one of the Big 4 networks. However, one of the stations, the station in which 26-75 ES is employed, is an independent station. Although this station fell out of the initial selection criteria, the researcher thought it would be valuable to see what differences might exist between this station and the stations affiliated with the four largest networks.

The stations represented varied in size from 25 employees on the low end to 150-175 on the high end. After deciding on the criteria of the ideal study participant and the markets to be used in the study, the researcher gathered basic contact information for each of the stations and then proceeded to contact each of the stations.

Pre-Interview Procedure

After gathering contact information online, the investigator called each Big 4 affiliate station in each market and attempted to speak with the general manager. In cases in which the names of the general managers were not found on the stations' websites, the researcher would

telephone each station and ask the receptionist for the name and phone number for the general manager. Subsequently, an introductory letter was mailed out that introduced the researcher and the details of the study. This was done so that the station executives and their assistants would be somewhat familiar with the researcher and his intentions by the time he made his first follow-up phone call to the station. During this follow-up call, the researcher began by introducing himself and indicating that he needed 45 minutes of the executive's time to discuss the station's multicasting and ancillary/datacasting initiatives and the challenges they were currently facing. The investigator mentioned that he was a graduate student in telecommunications at the University of Florida and that this interview would be part of a graduate thesis. Then, the researcher gained verbal approval to conduct the interview in-person and with the use of a tape recorder. The tape recorder was used to ensure an accurate and detailed account of the interviewees' comments and insight.

Before conducting the research, the study methodology needed approval from the University of Florida Institutional Review Board (IRB). A submission form was completed and submitted and contained such information as the scientific purpose of the investigation as well as the research methodology. The IRB asked about the selection process used to gather subjects as well as the potential benefits and any anticipated risks that the subjects might experience. Also, the IRB asked for a copy of the informed consent letter that would be sent to the television executives. After the submission form was reviewed by the IRB, an approval letter was mailed to the investigator. Since the study was to involve interviews with the removal of all identifiers, the IRB approved the study and mailed the approval out in about two weeks.

Conducting the Interviews

For this study, nine television executives at eight different commercial television stations were interviewed. Seven were interviewed in person and two were interviewed by phone over

the course of approximately two months. The first interview was held on September 21, 2006 with the last taking place on November 16, 2006. The in-person interviews were conducted with the use of a tape recorder to record exact responses while handwritten notes were used in the phone interviews. Prior to the interviews, the researcher had each of the participants sign an informed consent form which confirmed their willingness to participate in the study. It detailed the way in which the information shared would be used by the researcher and it promised the interview subjects that all identifiers would be removed during the transcription stage. The phone interviews were completed as a back up plan for the researcher. Two of the executives were not able to meet in person and did not feel comfortable having their phone conversation recorded. Therefore, the methodology and the informed consent form were amended to allow for this as the viewpoints of these executives were valuable to the study. The researcher submitted a protocol revision form to the IRB including the option of allowing the researcher to take notes while on the phone. The interviews were put on hold for two weeks until the researcher received a letter of approval from the IRB for the revision.

The researcher aimed to interview only general managers, but, in two of these cases, the researcher was referred to another department. In one case, the researcher was referred to the station operations manager and, in another, he was directed to a supervisor within the engineering department. In these two instances, these people were considered by station management to be the most knowledgeable on the topic area and, therefore, the best sources to answer the questions of the study.

Research Questions and the Actual Interviews

After a thorough review of the literature, the investigator was able to generate some questions which would be used to gauge the executives' understanding of multicasting and how their stations were utilizing the technology to their benefit. The questions were open-ended and

there was no set order for them so that the interviewer could gain the widest variety and most in-depth information possible. The interviews ranged from 20 minutes to 2 hours, with the majority of them lasting about 45 minutes.

Following a basic question to confirm the broadcast ownership group that each station belonged to, the interviews consisted of subquestions that were drawn from the three major research questions. Since these subquestions collectively answer the major research questions, the study is considered internally valid. The questions were grouped into three sections. The first section included questions intended for an understanding of multicasting and the factors influencing multicast programming stations were planning to broadcast on their digital streams.

The first section relates to research question #1 (See Interview Question Protocol in Appendix D).

RQ1: What are the primary factors which are driving the adoption of multicasting at broadcast outlets?

The interviewees were asked about the number of digital streams they are currently broadcasting and whether they are, in fact, multicasting. For the purposes of this research study, multicasting will be referred to as the use of two or more digital streams to broadcast two or more “separate and unique” programming streams. For example, if a station is simply simulcasting the programming of the primary stream on a second channel, this is not considered multicasting in the eyes of the researcher. In addition to the question concerning multicasting, the executives were asked about the level of influence that the networks had over their selection of multicast channels and whether they were aware of any multicasting initiatives within the broadcast group. Other questions included the costs involved in carrying these multicast channels as well as the methods for selling these streams to potential advertisers. Lastly, the

interviewees were asked about whether they were familiar with USDTV, the now out-of-business, low-cost alternative to cable, discussed in Chapter 2, and whether they felt that the service was a viable business concept. At the time of the interviews, USDTV was still in operation, although it had already declared bankruptcy.

The second research section asked about ancillary services such as datacasting, subscription television programming, teletext, and interactive services. This section relates to research question #2 (See Interview Question Protocol in Appendix E).

RQ2: What are the primary factors which are driving the adoption of various ancillary services (datacasting, subscription television programming, teletext, and interactive services, etc.) at broadcast outlets?

The interviewees were asked whether they were familiar with these digital ancillary services and whether or not they were currently offering them to viewers in their respective market areas. A similar line of questioning followed that mirrored that of the multicasting questions, such as the influence of the network, any potential station group initiatives, the costs involved in carrying these channels, and the selling of advertising on these channels.

The third section deals with the cable carriage of multicast channels. This section pertains to research question #3 (See Interview Question Protocol in Appendix F).

RQ3: How is the current FCC decision mandating that cable systems only have to carry a broadcaster's "primary video" programming stream effecting the multicasting and ancillary service adoption decisions being made at broadcast outlets?

The executives were asked whether or not they felt that their digital strategy would be any different if cable systems were mandated by the FCC to carry every multicast channel offered by broadcasters. Furthermore, the interview subjects were asked whether or not they felt that

affiliates in small markets have more or less of a chance of getting their multicast channels on cable systems. Similarly, the following question asked whether affiliates of the Big 4 networks have any more or less of a chance of getting their multicast channels on cable systems than affiliates of the smaller networks or independent stations. Furthermore, the executives were asked whether cable systems currently carried their multicast channels or not and what steps were involved in the process of enticing these cable systems to carry these channels. The final question asked whether or not the interviewees felt that their network affiliation or the clout of their broadcast group had any bearing over their ability to get cable carriage of their multicast channels.

Data Analysis

Following the interviews, detailed transcriptions were completed of the seven audio-taped interviews and the notes, taken during the two phone interviews, were summarized and organized by research question. After reading each of the transcriptions and notes twice, several key themes were identified and the sections pertaining to these themes were highlighted using a color-coded scheme. The findings were first grouped into the three groupings of factors identified in the framework of new media adoption discussed in Chapter 2, core, supporting, and environmental. After findings were placed into each of these three major groupings, findings were further divided into subgroupings. For instance, those characteristics dealing with the firm and media technology, in this case, multicasting and ancillary services, were separated. The perceived overall strategic value, managerial knowledge/incentives, and strategic networks made up the three subgroupings of the supporting factors. Data pertaining to the environmental factors were classified into three subgroupings: market conditions, competition, and regulation/policy.

Conclusion

A stratified purposeful sample and semistructured interviews with these sample groupings were the chosen method by which the researcher looked to answer the research questions. Since this study was exploratory in nature, this methodology made the most sense as the investigator was not sure what themes would arise from the interviews not to mention the plethora of information given by the interview subjects. The researcher had a clear understanding of the ideal participant and had a pre-interview procedure that maximized the possibility of scheduling this subject for an interview. The first two major research questions focus on multicasting and ancillary services and the factors which are driving the decision whether or not to adopt the technologies and in what form. The third major research question focuses on the effect of the current FCC decision mandating that cable systems only have to carry a broadcaster's primary video stream on the decisions that broadcasters are making in regards to multicasting and ancillary services. Following the administration of the interviews, the researcher identified themes and then segregated each theme into one of three categories based on the framework of media adoption: core, supporting, and environmental. Using these groupings as a guide, the researcher systematically reviewed the comments of each interview respondent and placed them into one of the three groupings.

CHAPTER 4 FINDINGS

In this chapter, the answers and comments provided by the study participants in response to the interview questions posed are detailed. After profiles are provided for each of the respondents, their answers and comments regarding the three research questions are examined. The responses of the interviewees are ordered in a format following the framework proposed by Chan-Olmsted (2006) of new media adoption by media firms. The themes will be highlighted such that the characteristics that deal with the core, firm and media technology, are first discussed. The second group of themes will focus on the supporting areas which include the perceived overall strategic value, the managerial knowledge/incentives, and the strategic networks within which media firms become involved. Third, the environmental factors which include market conditions, competition, and regulation will be detailed. As discussed in Chapter 2, all of these variables collectively influence the adoption of new media technology, in this case, multicasting and ancillary services.

The first research question asks about the multicast business model stations are planning to adopt and the factors leading up to these decisions. There were a variety of subquestions that dealt with this major research question and, subsequently, a variety of answers provided. The subquestions ranged from the number of digital streams being offered and the programming offered on these streams to questions pertaining to the influence of the network and the multicasting initiatives which may be in place at the ownership group level. The broad range of these questions evoked an equally diverse array of answers. Questions were also posed about the methods by which advertising is sold on the digital subchannels offered by the broadcasters questioned. The final subquestion tied to research question #1 asked the study participants about their thoughts on USDTV, the wireless alternative to cable which is now out of business.

The second research question asks about the types of ancillary services that stations are planning to offer and the variables which are influencing these decisions. Although the original list of interview questions mirrors that of the first research question, only a few of the subquestions are discussed in this chapter due to the limited involvement of the interview subjects with ancillary services at the time the study was conducted. The interview questions asked, and the answers provided, deal with the plans that broadcasters have to offer these advanced services and the types of content they are intending to broadcast.

The third research question delves into the impact of the current FCC decision requiring that cable systems only have to carry a broadcaster's primary video stream on the digital business models being developed. There were a number of subquestions that dealt with this major research question. The comments provided by the interview subjects detailing their thoughts on the strategic differences that would exist in reaction to an FCC mandate requiring cable systems to carry all the secondary streams broadcast by stations are reviewed. Next, the interview participants were asked about the effects of market size and a network affiliation with one of the Big 4 networks on the likelihood of broadcasters receiving carriage of their secondary digital channels. Another question asked about the current cable carriage arrangement that each station is receiving and the elements involved in the negotiation process.

As an aside, the researcher promised anonymity to the interview subjects. Whenever a specific identifying word was provided in the interviews, it was replaced with a generic word in parenthesis during the transcription process. These generic words and their format have been transferred from the interview transcriptions to this chapter.

Profile of Interview Participants

Before exploring the research findings, the investigator feels that it is necessary to provide a brief descriptive profile of each of the interview participants. Each of the interview subjects is

identified as either in-person or over the phone, depending upon the nature of the actual interaction.

1-25 GM A (in-person) is a vice president and general manager of a Big 4 network station in a Top 25 D.M.A. He has an extensive news management background and serves on the executive committee for the Florida Association of Broadcasters.

1-25 GM B (phone) is general manager of a Top 25 D.M.A. Big 4 network station. He also serves as senior vice president for a major broadcast ownership group and has extensive sales and sales management experience.

1-25 OM (in-person) is the director of broadcast operations and engineering for a Top 25 D.M.A. Big 4 network station. He has a comprehensive background in television engineering.

26-75 GM A (phone) is the general manager of a 26-75 D.M.A. duopoly. This duopoly is made up of two Big 4 networks and includes an analog and digital channel for each network. Also, this broadcast operation carries a digital subchannel for one of the two stations. He serves on the executive committee for the Florida Association of Broadcasters as well.

26-75 GM B (in-person) is the general manager of a 26-75 D.M.A. duopoly. The duopoly consists of two Big 4 networks and includes an analog and digital channel for each network. She has an extensive background in sales management and as a general manager and she serves on the affiliate board of one of the Big 4 networks.

26-75 ES (in-person) is an engineering supervisor for a 26-75 D.M.A. independent station. He has an extensive background in radio and television engineering. Also, he has a Masters degree from the University of Florida in telecommunications.

76-125 GM A (in-person) is the general manager of a 76-125 D.M.A. digital duopoly. This duopoly is possible as one of the networks is first broadcast off of a low-power transmitter

and then microwaved to a full-power transmitter and broadcast on the digital subchannel of the primary network. He has a comprehensive background in news, sales, and sales management.

76-125 GM B (in-person) is the general manager of a 76-125 D.M.A. digital duopoly. This duopoly is possible as one of the networks is broadcast on the digital subchannel of the primary network. This executive also serves as a regional vice president for a major broadcast ownership group.

126+ GM (in-person) is the general manager of a 126+ D.M.A. digital duopoly. This duopoly, similar to that of 76-125 GM B’s station, is made possible through broadcasting of the secondary affiliation on the digital subchannel of the primary network. He has an extensive background in radio and television sales and sales management.

Status of Multicasting as of Interview

Before delving into the framework of new media adoption by media firms, the status of multicasting will be discussed. The status is considered as of the date of the interview with each of the stations’ executives.

As the researcher expected, all of the executives were quite familiar with multicast technology. As mentioned in Chapter 3, multicasting refers to the use of two or more digital streams to broadcast two or more “separate and unique” programming streams. Although the executives were familiar with multicasting, not all of them were utilizing the technology as of

Table 4-1. Stations Multicasting as of Interview Date

Broadcast Outlet	Multicasting?	
	Yes	No
1-25 GM A/1-25 OM		x
1-25 GM B	x	
26-75 GM A (duopoly)	x	
26-75 GM B (duopoly)		x
26-75 ES		x
76-125 GM A	x	
76-125 GM B	x	

their interview, as illustrated in Table 4-1. The station where 1-25 GM A and 1-25 OM served as managers was not multicasting as of the interview date. Also, the stations, where 26-75 GM B and 26-75 ES were employed, were not multicasting as well.

To fully assess the multicasting that was taking place at the various television stations as of their interview, it is necessary to examine the specifics of the digital streams broadcast.

As seen in Table 4-2, the majority of the stations were offering two digital streams. 1-25 GM A and 1-25 OM's station was broadcasting two digital streams, one HD (primary stream) and one SD stream, which simulcasted the content of the primary stream. Naturally, the only content on the primary stream that was in HD was the network HD programming, such as some prime programming, select sporting events, and a few news programs and talk shows. Also, 26-75 ES's station simulcasted its analog content on its .1 and .2 digital subchannels. The .2 digital

Table 4-2. Number and Format of Digital Streams Broadcast

Broadcast Station	Number & Type of Digital Stream		
	1 HD	1 HD & 1 SD Simulcast	1 HD & 1 SD Simulcast "Separate & Unique"
1-25 GM A/1-25 OM		x	
1-25 GM B			x
26-75 GM A 1			x
26-75 GM A 2	x		
26-75 GM B 1	x		
26-75 GM B 2	x		
26-75 ES		x	
76-125 GM A			x
76-125 GM B			x
126+ GM			x

channel was being used to help feed cable companies in outlying areas that were unable to pick up the analog signal. This is not considered multicasting under the researcher's aforementioned definition. However, 1-25 GM B, 76-125 GM A, 76-125 GM B, and 126+ GM offered one HD

and one SD stream with “unique and separate” programming broadcast on the second channel, which was considered multicasting under the definition used by the researcher for the purposes of this study. 26-75 GM A was broadcasting one HD and one SD channel for one of his two stations while 26-75 GM B was broadcasting only one digital channel for each station.

Two of the broadcast operations planned to begin multicasting within six months, whereas another broadcaster was not sure (see Table 4-3). 1-25 GM A and 1-25 OM who, as previously mentioned, represented the same station, stated that they would begin multicasting “in the next month or two” and would thus cease the digital simulcast that they were currently broadcasting (1-25 GM A, personal communication, October 16, 2006). In addition, 26-75 GM

Table 4-3. Time Frame for Non-Multicasters to Begin Multicasting

Broadcast Outlets Not Currently Multicasting	Time Frame to Begin Multicasting	
	Within 6 Months	Not Sure
1-25 GM A/1-25 OM	x	
26-75 GM B (duopoly)	x	
26-75 ES		x

B mentioned that her multicast channel would be launched at the first of the year (2007) on the digital subchannel of one of her two existing channels. 26-75 ES, however, did not know when his station would start multicasting. He stated that his company had entertained the idea and may have been in negotiations to carry a couple of multicast channels, but no agreement had been made as of the time of the interview.

Viewpoints on USDTV: The Wireless Alternative to Cable

Before discussing the framework of new media adoption proposed by Chan-Olmsted, it is necessary to briefly look at the perception the respondent’s had of USDTV’s wireless alternative to cable. The study subjects were asked whether or not they believed the company had a viable business concept.

Reasons cited for why USDTV’s business model was not viable

As summarized in Table 4-4, nearly all of the executives believed that the business model was not viable. 26-75 GM B said that since USDTV had declared bankruptcy, then apparently it did not have a viable business concept. She mentioned that the industry has reached “a plateau, a point where we’ve been prodded and picked at from all corners now in the television

Table 4-4. Reasons Why or Why Not that USDTV was a Viable Business Concept

Broadcast Outlet	Was USDTV a Viable Concept?	
	Yes	No/Ahead of Its Time
26-75 GM B		x •Problems with churn •Limited channel offering •Difficult to deal with variety of owners
26-75 ES		x •Competition from established cable & satellite companies •Having to compete with consumer habits
76-125 GM A		x •Challenging road ahead •Could ultimately succeed as people become educated about the days when people picked up over-the-air signals with antennas
76-125 GM B	x •Legitimate, especially in markets in which the Big 4 affiliates are broadcasting 3 or 4 subchannels	
126+ GM		x •Could not offer service in smaller markets because of lack of bandwidth •Needs to be in market where all of the transmitters are in one location

business and we're pretty consistent" (personal communication, November 7, 2006). When looking into broadcasters using their own spectrum to deliver cable signals, 26-75 GM B did not know if there was that much demand. She felt that the cable companies and the satellite providers do a pretty decent job of delivering a wide variety of content.

The second problem with USDTV was that people are accustomed to receiving a wide variety of channels. She stated, "If you're going to belly-up for cable or DirecTV, you know the basic packages include significantly more [channels] than a station's ability to provide [various channels] using their spectrum as a cable provider" (26-75 GM B, personal communication, November 7, 2006).

The third problem with USDTV's wireless cable alternative, as stated by 26-75 ES, was that it was "at best, ahead of its time" (personal communication, November 7, 2006). One of the major challenges that the company faced was that it tried to compete with some well-established cable and satellite companies not to mention the "habits of the consumer" (26-75 ES, personal communication, November 7, 2006). Consumers are accustomed to a cable installer coming to their home, hooking up their television set to a cable and cable box, and, immediately thereafter, receiving nearly one hundred channels.

The fourth major challenge faced by USDTV was that although its overall service price was lower than other multichannel video program distributors (MVPDs) (see Appendix A), the cost-per-channel was higher than either cable or satellite. This higher price per channel coupled with the limited variety of channels represented, in the opinion of 26-75 ES, two obstacles that made it especially difficult for USDTV to draw subscribers from either cable or satellite (personal communication, November 7, 2006).

Although USDTV eventually went out of business, as of November 1, 2006, 76-125 GM A said that he would love to see them succeed. However, he felt that it would be a challenging road ahead for the company. He felt that there was a chance that USDTV could ultimately succeed as people become more educated about what it was like in the days before cable when antennas were used to pick up free, over-the-air television signals. If people could be reeducated that they can pick up a variety of channels for free over the airwaves, or for only \$20 a month, then it could, potentially, be a whole different story (76-125 GM A, personal communication, November 1, 2006).

126+ GM said that one of the problems that was experienced by USDTV was that for the company to service a particular market, it would need to have sufficient bandwidth available. He states, “They couldn’t do it in (*126+ market*) because they couldn’t get enough bandwidth, there’s not enough stations” (126+ GM, personal communication, September 21, 2006). Not only would it have to be a larger market, but it also would have to be a market in which all of the television transmitters are in one location (personal communication, September 21, 2006).

Reasons cited for why USDTV’s business model could have been viable

76-125 GM B felt that the business concept used by USDTV was legitimate; especially when you look at a local market in which the ABC, CBS, NBC, and Fox affiliates are each broadcasting three or possibly even four digital subchannels. This means a “potload” of stations that people can pick up either over-the-air for free or through an MVPD, such as another USDTV-type service, cable, or satellite operator (76-125, personal communication, November 1, 2006). If a distributor were to add a 24-hour weather channel, a 24-hour news channel, or yet another network to the mix, then a company like USDTV would be able to start competing with the satellite and cable companies (personal communication, November 1, 2006).

Core Characteristics

The first major segment of factors to be discussed is that of the core. The core consists of both firm characteristics and media technology characteristics. The firm characteristics in this research study deal with the affiliation of the station as well as the broadcast ownership group to which it belongs. An important part of this is also the organizational strategic traits of the station, its degree of entrepreneurship, and its competitive repertoire. Also of consideration are current new media holdings, historical performance, size, and age. All of these components apply to the network to which the station is affiliated, the ownership group to which the broadcaster belongs, and the management of the television operation itself.

Firm Characteristics

The first variable to be discussed is that of a station's affiliation and its affect on the multicast and datacast model chosen by the broadcaster. Although a station's affiliation does serve as an example of a strategic, for the purposes of this research study, the affiliation is classified as a firm characteristic. The reasoning for this is that a station's affiliation is one of three entities, the others being the ownership group and the station's management team, which dictate the station's organizational strategic traits, degree of entrepreneurship, and competitive repertoires. The current new media holdings, historical performance, size, and age of the network to which the station is affiliated are also of influence to the broadcaster.

Station affiliation

In this research study, the network being referred to is the network which is carried on the station's primary video stream not the network being carried on the secondary stream.

As demonstrated in Table 4-5, there was a strong consensus among the executives interviewed that the network had very little influence over what multicast channels their stations

Table 4-5. Level of Influence of the Network over Local Multicasting

Broadcast Outlets Currently Multicasting	Level of Influence of Network			
	None	Moderate	High	No Answer
1-25 GM B	x			
26-75 GM A		x (partnership)		
26-75 GM B	x			
76-125 GM A	x			
76-125 GM B				x
126+ GM				x

were broadcasting. 1-25 GM B, 26-75 GM B, and 76-125 GM A all claimed that the network had no influence over the content carried on their multicast channels.

1-25 GM A mentioned that his network has “toyed with the idea of doing a 24-hour news channel, but those talks have languished and have probably fallen apart.” He continued, by saying, “And as far as I know, those talks have stalled over revenue models and how to split potential revenue from a second channel that would be an all-news channel” (1-25 GM A, personal communication, October 16, 2006).

Naturally, however, the networks do have some influence in cases in which they distribute programming to their affiliates. 26-75 GM A mentioned that although his network, one of the Big 4, conceived the idea of (weather multicast channel), it is not something that they mandated that all of their affiliates carry. The idea behind the weather multicast channel was to be a partnership between the network and its affiliates. 26-75 GM B mentioned that one of the Big 4 networks that she carries had discussed providing programming for a subchannel, but the idea just never materialized.

Effect of Big 4 affiliation. The effect of having a Big 4 affiliation is further assessed by comparing it to the effect of carrying an affiliation with one of the smaller networks, such as The CW or My Network, or broadcasting as an independent station.

As illustrated in Table 4-6, four of the executives claimed that there is more of a chance for a Big 4 affiliate to receive multicast carriage. 1-25 GM B remarked that “there is more value associated with the four major networks” (personal communication, November 15, 2006).

Table 4-6. Likelihood that Having a Big 4 Affiliation Will Influence Multicast Cable Carriage More Than Will a Smaller Network or Independent Station

Broadcast Outlet & Its Primary Affiliation	More or Less of a Chance to Receive Multicast Carriage?		
	More of a Chance	Less of a Chance	Depends on Other Factors
1-25 GM B (Big 4)	<ul style="list-style-type: none"> •More value associated with the four major networks •Gives a broadcaster more leverage 		
26-75 GM A (Big 4 Duopoly)	<p style="text-align: center;">x</p> <ul style="list-style-type: none"> •Offering compelling content is the way to increase value •Big 4 networks have the greatest capacity to do this 		
26-75 GM B			<p style="text-align: center;">x</p> <ul style="list-style-type: none"> •Based on market demand and politics (corporate deals that are already in place)
26-75 ES	x		
76-125 GM A	x		
76-125 GM B (Big 4 Digital Duopoly)			<p style="text-align: center;">x</p> <ul style="list-style-type: none"> •What matters is carriage on the cable analog tier •Timing of retransmission negotiations is important

Having one of the top four network affiliations gives a broadcaster more leverage in their negotiations with cable systems. In the case of his station, 1-25 GM B stated that if a cable system wants to carry (*Big 4 network*), then the cable system will also have to carry (*local multicast weather channel*) (personal communication, November 15, 2006).

26-75 GM A felt that affiliates of the Big 4 networks in a market do have more of a chance of getting their multicast channels on cable systems than affiliates of the smaller networks or independent stations. He declared that “offering compelling content is the way to increase value and the Big 4 networks have the greatest capacity to offer the most alluring content” (26-75 GM A, personal communication, November 16, 2006).

26-75 ES felt that the Big 4 networks have a greater chance of getting their multicast channels on cable systems than the smaller affiliates and independent stations. As mentioned earlier, his station is an independent. He mentioned that (*local MSO*) carries the digital streams of the Big 4 affiliates as well as PBS in his market, while The CW and his independent station are not carried. Both his station and The CW affiliate were in negotiations for cable carriage at the time of the interview (26-75 ES, personal communication, November 7, 2006).

26-75 ES claimed, “Part of our handicap, right now, is getting high-def programming to showcase” (personal communication, November 7, 2006). A good deal of the syndicated versions of many television series are not being distributed in high-definition. For instance, when his station first began running the syndicated version of CSI, he was told that they could not gain access to the high-def version as it was being reserved to run on the network (CBS). 26-75 ES believed that stations did not contest this much because many of them were unable to play high-definition. As suggested by 26-75 ES, “It’s kind of chicken and the egg. You don’t go out

and try high-def because it's been expensive, unless you've got something you can play with it" (personal communication, November 7, 2006).

76-125 GM A responded to this issue by saying that there is "absolutely" more of a chance for an affiliate of one of the Big 4 networks to negotiate carriage of its digital secondary channels than if the station were an affiliate of one of the smaller networks or an independent station (personal communication, November 1, 2006). He continued by agreeing with 1-25 GM B that when a broadcaster has a Big 4 affiliation, they have more leverage. 76-125 GM A then mentioned a competitor in his market that threatened to take their primary, Big 4 affiliation channel away from the cable company since the cable operator would not carry its digital subchannel on its analog tier. He said that the broadcaster really could not afford to have the cable operator not carry its Big 4 affiliate signal and, therefore, it was an empty threat. He maintained that there has to be other ways to negotiate carriage in situations in which you cannot really threaten the local cable operator.

Strong effect of network affiliation on cable carriage. Since to date there is no multicast carriage mandate, stations need to rely on voluntary carriage. The interview subjects were asked about network affiliation and its effect on a station receiving voluntary carriage. Three of the current multcasters felt that network affiliation is a strong determinant of voluntary multicast cable carriage (see Table 4-7). 1-25 GM B stated that "the network has a lot to do with our ability to get cable carriage of our programming" (personal communication, November 15, 2006).

26-75 GM A said that he believes that his network affiliation was key to his ability to receive multicast cable carriage. He remarked, "We are a strong (Big 4 affiliation) and (Big 4 affiliation) affiliate and we are in a growth mode so cable companies will want to carry our

Table 4-7. Multicasters' Views on the Effects of Network Affiliation and Broadcast Ownership Group on Ability to Receive Cable Carriage

Current Multicasters	Dominant Factors & Their Level of Effect on Multicast Cable Carriage
1-25 GM B	<ul style="list-style-type: none"> •Network has a lot to do with ability to get carriage •Most negotiating done on a local level
26-75 GM A	<ul style="list-style-type: none"> •Network has a strong influence on ability to receive cable carriage •Station has two strong affiliations and the operation is in a growth mode
76-125 GM A	Respondent provided no comment
76-125 GM B	Respondent provided no comment
126+ GM	<ul style="list-style-type: none"> •Network affiliation has a great deal to do with ability to get carriage •If he still had only a minor affiliation, he would have some problems

programming” (26-75 GM A, personal communication, November 16, 2006). In addition, he mentioned that “high-profile programming, such as the Olympics and the Super Bowl, help (Big 4 network) and (Big 4 network) affiliates a great deal in their negotiations with cable providers” (26-75 GM A, personal communication, November 16, 2006).

126+ GM answered this question by claiming that his network affiliation had a lot to do with his ability to get cable carriage of his digital subchannel. He said that if he still had only a minor affiliation then he would have some problems. He added, “Frankly, (*multicast digital channel*) is on because of the (*Big 4 network*) and the HD” (126+ GM, personal communication, September 21, 2006).

Ownership group

The second variable to be discussed is that of the ownership group to which a television station belongs. The ownership group can have a strong impact on the multicast and datacast

model chosen by a broadcaster. As with affiliation, the ownership group also could fall under the category of a strategic network, when its relationship with a broadcaster is taken into account. However, in this study, the ownership group is considered a firm characteristic. The reasoning for this is that a station’s ownership group is one of three entities, the others being the network with which the station is affiliated and the station’s management team, which dictate the station’s organizational strategic traits, degree of entrepreneurship, and competitive repertoires. The current new media holdings, historical performance, size, and age of the ownership group are also of influence to the broadcaster.

Involvement of ownership group with multicasting. As illustrated in Table 4-8, two of the station executives interviewed mentioned definite multicast initiatives being realized at the

Table 4-8. Multicast Initiatives Within Station Group

Broadcast Outlets	Multicast Initiatives Within Station Group
26-75 GM B	<ul style="list-style-type: none"> •Creation of a multicast channel (not music or weather) •Negotiating completed at the corporate level, but was done locally in the past
26-75 ES	<ul style="list-style-type: none"> •Local weather channel launched in a Top 25 market •Internet and webchannel full of news & video
76-125 GM B	<ul style="list-style-type: none"> •Picking up My Network, The CW & Fox to run on digital channels

the station group level. The first television executive mentioned that her ownership group was actually creating a channel for multicast. 26-75 GM B said that the channel will not be a syndicated product and that it will not be a type of weather or music channel. The channel will be primarily programmed by the broadcast group; however, stations will have the option of

incorporating their own local programming as they see fit. 26-75 GM B mentioned that her station will be “developing local programming as time moves on” for the channel (personal communication, November 7, 2006). The second executive (26-75 ES’s comments are detailed below), 76-125 GM B, claimed that “(*station ownership group*), as a company, has really gotten into multicast” (personal communication, November 1, 2006). The executive mentioned that his group had picked up My Network and The CW to run as multicast channels for both of their Florida stations as well as one of their Alabama stations. Another station, in Georgia, had picked up My Network and, in smaller markets, the broadcast group had picked up Fox to run on its digital subchannels.

Furthermore, several television executives mentioned that they have a lot of autonomy in deciding how multicasting can most effectively meet their stations’ needs. 1-25 GM B, 26-75 GM A, and 26-75 GM B all claimed that their station groups allow them a lot of control over what they feel is best for their individual communities. However, as mentioned by 1-25 GM B, “the more stations that group together in a multicasting effort, the more clout that these stations will individually have” (personal communication, November 15, 2006).

Broadcast ownership groups in many cases work with cable systems in determining cable carriage of their broadcasters’ signals. 26-75 GM B’s digital subchannel is also carried on the cable systems in the market. In this case, the negotiations with the cable systems took place at the corporate level. At one point, the broadcast ownership group gave its broadcast stations the autonomy to negotiate cable carriage individually. 26-75 GM B felt that it is “probably most beneficial if they’re negotiated locally because generally you can get to know the people and you work a good deal” (26-75 GM B, personal communication, November 7, 2006). However, she was satisfied with the deal her station received.

1-25 GM A says that his broadcast ownership group has more leverage with the cable companies than most in that it owns two popular cable networks in addition to broadcast television stations. His broadcast ownership group gives his station some “bargaining chips because most cable companies want to clear those channels” (1-25 GM A, personal communication, October 16, 2006).

Ownership group explores multicasting in another market. 26-75 ES mentioned that his broadcast ownership group is looking into different ways in which multicast technology can be utilized to generate revenue. The ownership group has a station in a Top 25 market that is currently broadcasting its version of a local weather channel. That weather channel includes a radar box, a box containing news clips and promos, and a ticker along the bottom, much like CNN or Fox News Channel. However, in the case of 26-75 ES’s station, the company wants “to be careful because they don’t want to detract from the independent and doing eight hours of news a day” (26-75 ES, personal communication, November 7, 2006). Whatever multicast model is chosen, it needs to “supplement” not “detract” from their primary, news-focused channel. Currently, the broadcast ownership group is delving into the Internet and is focused on providing a webchannel full of news and video which will be of interest to not only viewers, but advertisers as well (26-75 ES, personal communication, November 7, 2006).

Ownership group’s effect on development of HD news. In exploring the new options arising from the conversion from analog to digital, 1-25 OM’s station is considering HD news. He mentioned that if he gets the appropriate funds and it is what management wants to do, then his station will move forward. The station ownership group has introduced it in a few markets already.

Involvement of ownership group with ancillary services. As ancillary services are a relatively unexplored digital phenomenon, the involvement of the ownership groups in the individual stations’ development of these services vary greatly.

As detailed in Table 4-9, some of the executives felt that the decision to pursue ancillary services is more of a corporate decision. 1-25 OM stated that his broadcast ownership group had looked into datacasting and other ancillary services. (*Broadcast ownership group*) was a member of a consortium of companies that had an interest in a firm that would develop datacasting. This entity would supply data and other content, whether it was in the form of movies, games, or software, to broadcast stations. 1-25 OM felt that the company had “what appeared to be a good business model” (personal communication, October 16, 2006). Despite the business model and the number of ideas shared by the various companies within the consortium, the ancillary/datacasting service just never materialized (1-25 OM, personal communication, October 16, 2006).

Table 4-9. Involvement of Ownership Group in Decision to Pursue Ancillary Services

Broadcast Outlet	Involvement of Ownership Group in Decision to Pursue Ancillary Services	
	More of a Local Decision	More of a Corporate Decision
1-25 GM A/1-25 OM		x
1-25 GM B	x	
26-75 GM A (duopoly)	x	
26-75 GM B (duopoly)		x
26-75 ES		x
76-125 GM A	x	
76-125 GM B	x	
126+ GM	x	

26-75 GM B affirmed that she was familiar with datacasting and ancillary services, but she did not have plans to provide this kind of service. Furthermore, she stated that it is possible that her station could do it in the future. She declared that providing ancillary services, such as

datacasting and subscription television, would be more of a corporate initiative than a local decision. However, if her broadcast ownership group were to approach her and say that it had solidified a deal with AT&T or whomever and the ownership group provided specifics as to the bandwidth they would be necessary among other things, then she would be confident in moving forward with the technology. As of the interview, this had not happened.

26-75 ES responded to this issue by saying that he was not aware of any plans to datacast or provide subscription programming, although he admitted that some plans could be in the works. He said that the broadcast ownership company tends to look at ways of building nontraditional revenue first. 26-75 ES mentioned that his company is always open to considering new and innovative ways of generating revenue, but it is careful in implementing these ideas. Most importantly, he stated, “They don’t want to throw money at something that would detract, or take away, resources from the core, existing business” (26-75 ES, personal communication, November 7, 2006). Also, the company considers how long it will take before it sees a return on its investment when considering new business ventures.

Various ownership groups created one of the biggest challenges for USDTV. One of the potential reasons for USDTV not working out is that it did not have all of the local stations on board with the service. According to 26-75 GM B, it was very difficult to do this because the company had to negotiate with different ownership groups, network owned-and-operated stations (O&Os), and independent stations. To prove this point she stated, “The objectives and the priorities of the ABC television network are going to be substantially different than the priorities of the Emmis or the priorities of a Harry Pappas who, you know, an individual owner who’s really the wild card” (26-75 GM B, personal communication, November 7, 2006).

Media Technology Characteristics

The next set of variables deal with the nature of new media technology, in this case, multicasting and datacasting.

1-25 GM A stated that it is the hope that local television stations will have what the FCC promised years ago, a multicasting system allowing each station to have as much as 16 MHz of bandwidth. According to 1-25 GM A, broadcasters are “dug” in as an industry because four distinct signals could potentially be sent out from one station (personal communication, October 16, 2006).

Nevertheless, 26-75 ES sees the challenges that lay before the cable systems in dealing with multicasting and datacasting. He said that if he were the technical guy over on the cable side he might feel differently about having “to try and squeeze everything into a cable.” He continued by stating, “I’ll say, being a technical person, I feel his pain” (26-75 ES, personal communication, November 7, 2006).

USDTV and its media technology characteristics

One of the primary problems with the business model that was used by USDTV, according to 26-75 GM B, was that its customer base was a lower-income household as the company was offering only a basic package with a limited number of channels. 26-75 GM B felt like there probably was a lot of churn as people neglected paying their bills and later got shut off.

Newness and content distribution

Multicasting and ancillary services can be examined by looking into their degree of newness to a station and a local market. In addition, the need to distribute a content product more efficiently is an important factor in determining the feasibility of these digital technologies.

126+ GM said that his station produces a local show about various destinations within a short distance from the city served by his station. The station will also be producing and

carrying a high school basketball program in addition to several political shows that it is doing in conjunction with the local cable franchise. 126+ GM stated, “We have more room to run them on (*multicast channel*). We actually can use that multicasting digital tool to run more local stuff because we have more avails on that than we do (*Big 4 affiliate*)” (126+ GM, personal communication, September 21, 2006). Also, local churches, a college coach’s show, a local police show, and a locally-produced program for sportsmen are run on its multicast channel.

To gauge the amount of new programming being offered by broadcasters, a look at the types of in-house programming being developed on these multicast channels is necessary.

The broadcasters involved in this study were producing weather, news, and local interest in-house programming. 1-25 GM B said that his station was running a 24-7 local weather channel and that it was fully automated. “Every three hours a meteorologist shoots a new segment. There is a 5-minute wheel which continually airs throughout the day that includes one minute of commercials” (1-25 GM B, personal communication, November 15, 2006).

Table 4-10. Type of In-House Programming Being Aired on Multicast Channels

Broadcast Outlet	Type of In-House Programming Being Aired		
	None Weather	News	Local Interest
1-25 GM B		x	
26-75 GM A	x		
76-125 GM A	x		
76-125 GM B			x
126+ GM			x

76-125 GM B stated that he ran news on his digital subchannel. In regards to the news, he said, “We do a potluck. I mean, we’re the dominant station in this market” (76-125 GM B, personal communication, November 1, 2006). His station currently runs a 7pm. newscast on his multicast channel.

Complementarities

Complementarities in terms of digital television refer to a situation in which multiple channels broadcast are more valuable than simply offering a single channel. The new program content on the secondary channel is an example of horizontal complementarity. There is a variety of content being broadcast by the operations of the executives interviewed. There were also a variety of reasons behind the selection of a combination of programming.

Reasons cited by stations currently multicasting for a particular combination of multicast programming. As highlighted in Table 4-11, there were are a number of reasons provided for the current multicasters to carry a particular combination of programming.

Table 4-11. Reasons Provided by Current Multicasters for Carrying This Combination of Programming

Broadcast Outlets Currently Multicasting	Reasons for Carrying this Combination of
1-25 GM B	<ul style="list-style-type: none"> •Weather is the #1 area of interest in news studies •Wanted to offer completely local weather
26-75 GM A	Respondent provided no comment
76-125 GM A	Respondent provided no comment
76-125 GM B	<ul style="list-style-type: none"> •Wanted to have flexibility to program channel •Wanted to offer local news as station dominates the market
126+ GM	<ul style="list-style-type: none"> •Wanted to provide an outlet for local businesses •Local involvement •Place for syndicated programming that did not have an outlet

1-25 GM B decided to air a 24/7 local weather channel on his multicast channel for two major reasons. First of all, weather is the #1 area of interest in many news studies. Second, the

weather product differs from NBC Weather Plus, which airs on a competitor's station in the market, because it is completely local (1-25 GM B, personal communication, November 15, 2006).

76-125 GM B is pleased to air My Network as it gives him flexibility to program the channel the way he prefers. He actually had an opportunity to carry The CW on digital, but he did not for the simple fact that he would lose the flexibility to program the channel. My Network only ties up two hours of prime at night five days per week and these two hours are all he is losing by using this network as a digital multicast channel. When his station carried UPN in the past, his local programming had better ratings than UPN Prime so he felt that carrying My Network would be the best avenue for his digital subchannel. Also, he liked the idea of being able to carry a local news product as his station, as previously mentioned, dominates the market in news (76-125 GM B, personal communication, November 1, 2006).

126+ GM claimed that his station uses its combination of programming to "get some local flavor and give them [local businesses] an outlet for their shows" (126+ GM, personal communication, September 21, 2006). By having a multicast channel available, it allows 126+ GM's station to bring more shows to the marketplace, such as syndicated programming that did not have an outlet. His station carries a lot of the syndicated shows that cater to an African-American audience, like My Wife & Kids, One on One, and Girlfriends, that did not have an outlet on which to air in the market (126+ GM, personal communication, September 21, 2006).

Reasons cited by stations not currently multicasting for a particular combination of future multicast programming. Two of the stations, represented by 1-25 GM A/1-25 OM and 26-75 GM B, are not currently multicasting. However, they did provide rationale as to why they

would be launching digital subchannels in the few months following their interview with the researcher (see Table 4-12). 1-25 GM A stated that his station is going to launch a weather channel because that is the “smart thing to do as far as business goes and marketing yourself goes and making the commitment to the community goes, and having our brand of weather on” (1-25 GM A, personal communication, October 16, 2006). He also mentioned that some people like (*local meteorologist*), his station’s main meteorologist, and they want his opinion as to what is going on in regards to the weather. Furthermore, 26-75 GM B mentioned that her station’s plans to broadcast a channel created by its broadcast ownership group is an appropriate avenue

Table 4-12. Reasons Provided by Future Multicasters for Carrying This Combination of Programming

Broadcast Outlets Planning to Multicast	Reasons Cited for Particular Combination of Multicast Programming
1-25 GM A/1-25 OM	<ul style="list-style-type: none"> •Marketing/branding •Commitment to community •Popularity of local weathercaster
26-75 GM B	<ul style="list-style-type: none"> •Ability to localize to their market •Branding by providing a unique product

because her station will have the authority to localize it to its particular market. She said, “We believe in the localness of the whole thing and that we will differentiate ourselves by providing something that no one else can. And the only thing that we can provide that others can’t are purely local” (26-75 GM B, personal communication, November 7, 2006).

Station considers an additional multicast channel. 1-25 GM B said that his station is considering a Spanish-language channel and a Motor Trends channel as of now. The Spanish-language and Motor Trends channels would be aired only during the day as the necessary bandwidth will not be available during the evening hours since most of the programs at this time will be broadcast in HD.

Technology cost

The cost of implementing multicasting is considerable and a major factor in the desire of broadcasters to adopt the new technology. The executives were asked about these technology costs.

Table 4-13. Costs Involved in Carriage of Multicast Channels

Broadcast Outlets	Costs cited in the carriage of multicast channels
1-25 GM A/1-25 OM	<ul style="list-style-type: none">•More money spent on analog side as compared to digital•HD cameras cost \$100K and studio anchors and sled cost \$50K
1-25 GM B	<ul style="list-style-type: none">•Major expense is on a server capable of handling multiple channels
26-75 GM A	<ul style="list-style-type: none">•Major expense is on a server capable of handling multiple channels
76-125 GM B	<ul style="list-style-type: none">•Electricity expense is substantial when broadcasting both analog an analog and a digital signal•\$30K per month for both analog and digital
126+ GM	<ul style="list-style-type: none">•\$100-150K to acquire equipment to run 1 stream in addition to HD and SD streams•\$50K for multiplexing of 4 signals•\$100K for conversion of signals to digital and then broadcasting them

As illustrated in Table 4-13, there are a variety of costs associated with the upgrade to a digital multicast facility. Some of the television executives mentioned similar technology costs, while others mentioned differing technology expenses.

1-25 OM went into great detail about the necessary equipment needed in the analog to digital conversion. On the digital side, the equipment includes the transmitter, the antenna, the transmission line, and encoders. This includes the equipment that would allow the station to switch back and forth between a local digital upconverted signal and network HD. On the analog side, a fair amount of equipment is also needed, much of it simply to convert an analog signal to digital. 1-25 OM mentioned that his station uses serial digital interface (SDI) type of

video where when an operator flips the switching device he is ensuring that when a video signal comes out of the switcher, it is digital instead of analog. This conversion from analog to digital is not part of the original capital expenditure for the DTV station. He said that he has spent a little more since the conversion in 1999 in additional equipment for the DTV side, but it is small compared to what he has spent for the analog side (personal communication, October 16, 2006).

As mentioned previously, this station is in the process of exploring the possibility of an HD news. An HD camera with a field lens runs about \$100,000 and studio anchors and a sled, to mount the camera on, cost about \$50,000. Although this sounds expensive, the prices have gotten quite low on the HD gear as compared to what they once were in relation to the SD cameras. According to 1-25 OM, it is advantageous to go ahead and purchase HD cameras even if you only use the SD output for a while (personal communication, October 16, 2006).

1-25 GM B and 26-75 GM A mentioned that major costs are associated with getting multicast channels up and running. "A major part of getting these channels operating properly is a server capable of handling these multiple channels," according to 26-75 GM A (personal communication, November 16, 2006). 1-25 GM B cited the computer server as the biggest component to getting multicast channels operational. He said that the station's weather bug and a variety of other information pull from this server (personal communication, November 15, 2006).

According to 76-125 GM B, the electricity expense alone is pretty substantial for broadcasting a digital signal alongside an analog one. His analog transmitter costs about \$8,000 a month in electricity and his digital is about three times as much. 76-125 GM B did not specify as to the reasoning behind the significantly higher cost of electricity for his digital transmitter over his analog. Nevertheless, he pays over \$30,000 a month in electricity alone for both the

analog and the digital, which is frustrating for 76-125 GM B when he considers just how few people are actually picking up his digital signal (personal communication, November 1, 2006).

According to 126+ GM, it would cost \$100,000 to \$150,000 just to acquire all of the equipment that would be necessary to run an additional stream or two on top of the HD and SD streams already being broadcast. It costs around \$50,000 to actually do the multiplexing of four signals and about \$100,000 converting the signals to digital and then getting those streams broadcast (126+ GM, personal communication, September 21, 2006).

Supporting Factors

These factors include the perceived strategic value of the new media technology, the level of knowledge that managers have of the technology in question as well as the incentives they have in pursuing a new alternative. In addition, the various strategic networks to which a broadcast operation belongs also is a major supporting factor.

Perceived Strategic Value

The value of a new media technology can be analyzed by examining its perceived contribution to the firm's overall strategic posture. Porter (1980) suggested three major approaches: market segmentation, low cost, and differentiation. The methods by which the broadcast outlets represented by the respondents are currently or planning to sell advertising on their multicast channels serve as examples of these major approaches.

Methods of selling advertising on multicast channels: Stations currently multicasting

Table 4-14 details the methods of selling advertising for the broadcasters currently multicasting. As can be seen, most of the broadcasters are utilizing more than one method.

Both 1-25 GM B and 26-75 GM A, are selling advertising on their multicast weather channels. 1-25 GM B has his sales staff sell most of the advertising on long-term contracts of 6-

Table 4-14. Current Multicasters' Methods of Selling Advertising

Current Multicasters	Method of Selling Ad Time on Digital Channels			
	Spots Packaged with Primary Station	Spots Bundled with Website	Fixed Billboard Only	Spots on Digital Channel Only
1-25 GM B	x	x	x	x
26-75 GM A	x	x	x	x
76-125 GM A	x			x
76-125 GM B				x
126+ GM	x			x

12 months or more. Both stations sometimes sell just a fixed billboard to be placed on the screen throughout the weather forecasts. Other times, they sell both the logo space and 30-second spots. According to 26-75 GM A, he is given 12 minutes per hour to sell on his network-developed multicast channel (personal communication, November 16, 2006).

In addition, the selling of advertising on the weather multicast channel is sometimes bundled with that on the core channel as well as the stations' websites. 26-75 GM A claimed that "there is no opportunity that we wouldn't look at, but at what point do you reach critical mass. It is important to reach critical mass before you have invested too much into the business model" (personal communication, November 16, 2006).

The smaller market stations are all selling advertising on their existing multicast channels, which are either affiliated with The CW or My Network. They are primarily selling 30-second spots on these digital subchannels.

76-125 GM A said that it was hard to tell whether or not he would sell spots specifically for yet another digital multicast channel. He revealed that there were plenty of advertising schedules bought that were for (*Big 4 network*) that his account executives ended up selling some CW time on as well. He realized that some of these advertising dollars are cannibalized from his primary station, but, for the most part, the sales team keeps the stations separate. The other

factor that 76-125 GM A pointed out about carrying digital subchannels is that it is critical to have must-carry on the area’s cable systems. His CW station is in a unique situation in that it is first broadcast off of a low-power 200 ft. tower and then microwaved to a full-power 2,000 ft. tower. From the full-power tower, it is rebroadcast as a secondary digital subchannel on channel *(number)*.² (personal communication, November 1, 2006).

When asked whether his sales staff packages advertising on the digital subchannel with that of the main channel, 76-125 GM B stated that they do not really package it together, but they sell both. Having both stations available provides the salesperson with “more tricks in his bag.” He said, “You can walk in and go, well look, if you want to get in that time period, and you’re looking at that demo, or you’re looking for some cheap spots, I’ve got some on *(multicast network)*” (76-125 GM B, personal communication, November 1, 2006).

Methods of selling advertising on multicast channels: Stations not currently multicasting

In looking at the three future multcasters, two of them are planning to sell advertising on multicast channels (shown in Table 4-15). 1-25 GM A reported that he could sell 30-second

Table 4-15. Future Multcasters’ Methods of Selling Advertising

Current Multcasters	Method of Selling Ad Time on Digital Channels			
	Spots Packaged with Primary Station	Spots Bundled with Website	Fixed Billboard Only	Spots on Digital Channel Only
1-25 GM A/1-25 OM			x	x
26-75 GM B	x			x

spot ads or he could sell space on the L-bar of his planned multicast weather channel, which will be a national multicast weather product tailored by his station for the local market. He stated, “The revenue model is they get a percentage of advertising space and time and you get a revenue percentage space and time. They sell nationally, you sell locally” (1-25 GM A, personal communication, October 16, 2006). He claimed that since the viewership numbers will be

fractional compared to what, for instance, a football game gets on a Sunday, the sales department will sell it for “peanuts” (1-25 GM A, personal communication, October 16, 2006). He continued by saying that you have to start somewhere and that if you become valuable and actually start to get ratings, then you can make a fair amount of money. 1-25 GM A completed his comments by mentioning that he did a calculation that even if his station were to sell a spot for \$30 on average, then, over the course of a year that equates to \$5 million, if he were to sell out full (personal communication, October 16, 2006).

26-75 GM B mentioned that since her multicast channel will also include My Network, her sales department will have a slightly different product to sell than just selling a new digital subchannel with new content 24/7. She mentioned that the channel will be sold in a number of ways. 26-75 GM B made the following point with respect to selling airtime on the channel instead of simply giving it away. She declared, “If you position your product that it doesn’t have value, then your clients aren’t going to give it any value” (personal communication, November 7, 2006). She continued by saying that the sales department has to start from the beginning positioning this as a valuable product. Nevertheless, the channel will be sold much like the website is sold, as a separate product. Advertisers will have the option of buying it separately or in conjunction with the other stations. When bought along with the other stations, advertisers will, most likely, receive a more competitive price (personal communication, November 7, 2006).

Managerial Knowledge/Incentives and Multicasting

The role of the executives interviewed as part of this research and their influence on the multicast business model chosen cannot be undervalued. The managers, in particular, the general managers, have power in terms of the strategic direction of the television stations. 126+ GM had very specific thoughts on the likelihood of his operation selling advertising on future

multicast channels. 126+ GM does not intend to sell advertising on any additional digital channels he may pick up in the future unless he is able to pick up one of the Big 4 networks or if he is able to first garner ratings from a digital-only or non-network digital channel. As mentioned previously, however, he already broadcasts a digital subchannel and sells 30-second spots as well as local 30-minute programs on the channel (126+ GM, personal communication, September 21, 2006).

126+ GM would sell spots if he could on any channel, but his station would have to get the spots into his automation system and then have them trafficked through VCI (Sales/AR software). Doing these two things would require that his station pay fees. He mentioned that he could end up spending “\$10,000 a month and stuff trying to get a dollar a spot from somebody” (126+ GM, personal communication, September 21, 2006). (*Digital-only national network*) does the traffic and insertions for you, but the other digital-only networks do not. If a future digital channel is picked up by the cable companies and it starts to get ratings, then, at that point, his sales staff will start to sell commercials on it. He declared, “In this business, if you don’t have ratings, then you really don’t have a product to sell” (126+ GM, personal communication, September 21, 2006).

126+ GM said that there are two ways of approaching multicasting. His boss thinks of multicasting in terms of whether or not the digital stream will be able to receive cable carriage. 126+ GM looks at multicasting as an opportunity to compete with the cable systems and build a larger over-the-air audience.

None of the executives interviewed by the researcher are utilizing any ancillary services. However, as seen in Table 4-16, some do express an interest in them.

1-25 GM B asserted that his station has an interest in datacasting and that it is in the process of considering the technical and business issues associated with the technology. One of his concerns is the “degradation of the primary and secondary digital streams” (1-25 GM B, personal communication, November 15, 2006). Currently, his station has three streams which could be utilized without affecting video or audio quality.

Managerial Knowledge/Incentives and Ancillary Services

Table 4-16. Stations Planning to Offer Ancillary Services

Broadcast Outlet	Plans to Pursue Ancillary Services?	
	Yes	No
1-25 GM A/1-25 OM	x	
1-25 GM B	x	
26-75 GM A (duopoly)	x	
26-75 GM B (duopoly)		x
26-75 ES		x
76-125 GM A		x
76-125 GM B		x
126+ GM		x

26-75 GM A mentioned that he is familiar with ancillary services. However, his broadcast operation has only looked into several opportunities and potential revenue models. He declared that the most important thing, with regards to ancillary services, is that “we [26-75 GM A’s station] need to have value in whatever is broadcast” (26-75 GM A, November 16, 2006).

26-75 GM B admitted that ancillary services, such as datacasting, are a business in which a lot of managers are not that familiar. She said that managers may say that they do not have a business model and give other excuses for not utilizing the technology, but what they are really saying is that “we don’t understand that business, and that’s not our business, and I wouldn’t even know how to approach it, if you asked me” (26-75 GM B, personal communication, November 7, 2006).

76-125 GM A stated that ancillary services are something that his station has discussed briefly. However, he admitted that he does not know enough about it and he is not sure whether he has the necessary bandwidth available for such a service. He does not know what kind of services will be available with it in the future as it is “too early in the game” to find out (76-125 GM A, personal communication, November 1, 2006). 76-125 GM A felt strongly that if there is no money in the business model for various ancillary services, then they are not likely to be developed. He said that unless he were charging subscribers for his signal, he does not feel that he could rely on ancillary services and datacasting as a solid business model. He suggested that broadcasters have to depend on “actually entertaining people and getting ratings to get the eyeballs so that we can generate the advertising [revenue]” (76-125 GM A, personal communication, November 1, 2006).

76-125 GM B said that he does not currently broadcast any types of ancillary services such as datacasting. As a matter of fact, as of the interview, he had no plans to pursue the idea. His response to the interviewer’s question, besides claiming he had no plans for ancillary services, was “Tell me how that would work?,” as both the researcher and 76-125 GM B joined in laughter (76-125 GM B, personal communication, November 1, 2006).

126+ GM claimed that he does not have any plans for ancillary services or datacasting at this point. His engineer has some ideas on how to move forward with the technology, but 126+ GM does not think he is ready to delve into it. The station’s engineer was primarily considering delivering cable programming through various data lines, including high-speed Internet data lines. 126+ GM said that he believes that the phone companies are going to be increasingly involved in this in addition to the cable and satellite companies.

Strategic Networks

Strategic networks play an important role in the digital business models used by the television executives interviewed. Although strategic networks can take the form of either the network with which a station is affiliated as well as the broadcast ownership group to which it belongs, in this study, the strategic networks encompass only the partnerships between a station and its network to develop specific multicast programming (i.e. NBC Weather Plus) or datacast services.

Table 4-17. Type of Network Programming Being Aired on Multicast Channels

Broadcast Outlet	Type of Network Programming Aired on Multicast Channels			
	None	Major Network	Weather	News
1-25 GM B	x			
26-75 GM A			x	
76-125 GM A		x		
76-125 GM B		x		
126+ GM		x		

Network-broadcaster partnerships

As shown in Table 4-17, 26-75 GM A is airing a 24/7 network-developed weather channel as his multicast channel. It is “a revenue share that the (*Big 4 network*) is doing with its affiliates. Not only is (*network 24/7 weather channel*) broadcast over-the-air, but it is also carried on digital cable” (26-75 GM A, personal communication, November 16, 2006). In addition, at one time, the broadcast outlet had carried a 24/7 network-developed multicast news product as an experiment during a political window in 2004.

The three smaller market stations are using their digital streams to carry other major networks such as My Network and The CW. These newer networks need an outlet in each market and they have developed partnerships with broadcasters to get the nationwide coverage

they need to be successful. These stations are represented by 76-125 GM A, 76-125 GM B, and 126+ GM.

Broadcaster-cable provider relationship

There are a variety of reasons cited for the voluntary carriage of multicast channels, as illustrated in Table 4-18. However, three of the respondents stated specifically that it is the broadcaster-cable relationship that is the most important variable affecting the ability of broadcasters to receive voluntary carriage of their additional digital channels and services

26-75 GM B agreed and stated that the ability to receive voluntary carriage of multicast channels by cable systems is “purely a function of the relationship you have with the cable company, corporately and locally” (personal communication, November 7, 2006). According to 26-75 GM B, the preferred relationship is one in which the stations and the cable systems work together. When this happens, the customers and viewers in the market are satisfied. She continued by revealing that she is not going to fight the cable companies by holding her digital channel or analog channel “hostage” (26-75 GM B, personal communication, November 7, 2006). She said that she would like to receive compensation for her signal, however, and she felt that her signal is much more valuable than any cable channel.

26-75 GM B conveyed her belief that cable carriage of digital secondary channels is a demand thing. She said that if a secondary channel is operated by a strong independent station, then it will have leverage. However, if it is, for instance, run by an ex-UPN station that is now independent, then it will have a problem. She also mentioned that politics definitely enter into this as well. She stated that “cable companies are fairly consistent in the way they work with stations in a given market excepting to the degree that they have corporate deals that are already in place” (26-75 GM B, personal communication, November 7, 2006). In addition, she claimed

Table 4-18. Rationale Provided for Voluntary Carriage of Multicast Channels

Broadcast Outlets	Key Considerations Provided in Explaining Voluntary Cable Carriage
26-75 GM B	The relationship a station has with the cable company, corporately and locally
26-75 ES	The channel capacity of the cable system Large markets have more capacity, but also have more signals to carry
76-125 GM A	<ul style="list-style-type: none"> •The relationship a station has with the cable company and the overall market •Channel capacity of the cable systems Large market stations may have more of a chance because the cable systems are more likely to be upgraded
76-125 GM B	The competitiveness of the cable market (which cable systems are in the market) If no dominant player, then competition is a factor Cable operator may choose to place a station on a digital tier
126+ GM	The relationship a station has with the cable operators The content of the digital channels is a factor in receiving cable carriage Big cable operators have been told by their corporate offices not to carry digital subchannels

that she does not think that smaller stations or non-network affiliates have any disadvantage in a market.

76-125 GM A believed that the ability of affiliates to receive cable carriage is individual. He said that it depends on the relationship between the station and the cable system as well as the market. He did mention, however, given the fact that cable systems in larger markets are more likely to be upgraded, it may be easier for these larger market stations to receive cable carriage. He mentioned that in his market, there are cable systems which do not have the capacity to add

any more channels unless the systems were to spend a “couple million dollars” for the necessary infrastructure for an upgrade (personal communication, November 1, 2006).

According to 76-125 GM A, broadcasters are going to soon start asking cable systems for subscriber fees in nearly all of their retransmission negotiations. As a result, television stations will be more willing to stand firm and deny cable systems the ability to carry their signals. The executive mentioned, however, that it might hurt broadcasters some in the short term, but that it would not take long for cable systems to reevaluate their stance and decide to make the necessary changes to their retransmission agreements to pay subscriber fees to broadcasters for carriage of their signals. The reasoning for this, as stated by 76-125 GM A, is that the cable companies really want to avoid getting phone calls from unhappy customers. The cable operators want to avoid letting customer complaints reach the franchising authority. When that happens, “it can cause some serious problems, very serious problems” (personal communication, November 1, 2006). 76-125 GM A concluded his comments on the subject by saying that if residents in his market could not see NFL Football or one of the top-rated programs on the Big 4 networks, like American Idol, the phone lines at the local cable systems would “melt” (personal communication, November 1, 2006).

One of the greatest challenges to receiving voluntary carriage of digital subchannels is planning to hold the negotiations at the opportune time, according to 76-125 GM B. If his station had known it was going to be carrying UPN when it went into retransmission negotiations with the cable operators, then he could have demanded that cable operators carry the digital subchannel (which was affiliated with UPN) in addition to the primary Big 4 network channel. In other words, the cable operators would have to take the secondary digital channel and air it on the basic cable tier to also receive the primary, Big 4 affiliate station. The primary Big 4 affiliate

stations are extremely important to cable systems as a large portion of their subscribers view these channels. 76-125 GM B continued by saying that there is no way that a cable system can say that it has everything and it does not need a (*Big 4 network*). It becomes especially important during major sporting events, such as a big college football game, that cable systems carry all of the major affiliates. “It’s the sporting stuff that just absolutely draws people” (personal communication, November 1, 2006).

126+ GM responded to this topic by saying that as of now cable is fighting carrying these digital channels in all markets. He mentioned, as did 26-75 GM B, that a big part of receiving cable carriage is the relationship that a particular broadcaster has with a cable system. The content of those digital channels also has a bearing on their likelihood of being carried. 126+ GM mentioned that on his digital subchannel, he has good content, but the cable companies still have fought carrying his channel. He added that his digital channel has sports (college and professional), comedies, dramas, and local programming, some of which is produced by the station, but the dominant cable system in the market still says “we’ve got a lot of that [already]” (126+ GM, personal communication, September 21, 2006). In addition, 126+ GM declared that the big cable companies are fighting carrying these digital subchannels because they have been mandated to do so by their corporate offices. Also, the cable companies are using these digital channels as leverage to extend their retransmission agreements in cases in which they are not having to pay subscriber fees to broadcasters for carriage of their signals. In turn, broadcasters are not willing to extend these agreements and are having to, in many cases, tolerate not receiving cable carriage of their digital signals (126+ GM, personal communication, September 21, 2006).

Current multcasters and cable carriage. As shown in Table 4-19, three of the five current multcasters are carried only on the digital tier of the cable systems in their markets. Two of the smaller market broadcasters have been granted a channel on the analog tier; however, one of them is considered must-carry and, therefore, does not represent any special negotiation process between the broadcaster and the cable operators.

Table 4-19. Multcasters Receiving Current Cable Carriage

Current Multcasters	Current Cable Carriage of Multicast Channels	
	Digital Tier Only	Analog Tier
1-25 GM B	x	
	<ul style="list-style-type: none"> • All four of the primary systems in the market • Required a good deal of negotiation 	
26-75 GM A (duopoly)	x	
76-125 GM A		x <ul style="list-style-type: none"> • All systems in market • Considered must-carry
76-125 GM B	x	
126+ GM		x

With respect to their relationship, 1-25 OM stated that the local cable companies have been pretty good to his operation, especially (*cable MSO*). However, none of the cable systems carry his digital subchannel, which is simply a simulcast of the primary channel. He felt pretty confident that when his station starts offering a multicast weather channel that it will receive carriage (1-25 OM, personal communication, October 16, 2006).

1-25 GM B said that the local cable systems are, in fact, carrying his multicast channel. The channel is carried on the digital tiers of all four of the primary cable systems in the market.

However, he does mention that it took a good deal of negotiation for this carriage. One thing that made it easier in 1-25 GM B station's negotiations was station management's belief in the value of (*local multicast weather channel*). As with 1-25 GM B's station, 26-75 GM A's station is carried on the digital tier of the cable systems throughout his market (personal communication, November 16, 2006).

76-125 GM A said that all of the cable systems in his market are carrying his multicast channel because it is considered must-carry. He mentioned that his station did have to buy the cable operators converter boxes to convert the digital signal back down to analog so that it could be placed on the analog channel tier. The process was simple, 76-125 GM A sent out a must-carry letter and then his station was, without any hesitation, placed on the area's local cable systems. In regards to a local competitor with a multicast channel that is not considered must-carry, he said that his competitor is receiving carriage on the digital tiers of the local cable companies. 76-125 GM A asserted that this is the "solution that most systems offer." He added, "They won't offer an analog position next to all the other stations, that'd put you way up there" (personal communication, November 1, 2006). He claimed that the cable systems will make your digital multicast channel available to viewers, but that is as far as they will go.

76-125 GM B declared that his digital station does not currently have must-carry status, and consequently, is not carried on the basic analog tier. He mentioned that one of his competitors has must-carry even though his digital subchannel is first carried on a low-power analog transmitter and then microwaved to the main digital transmitter. He continued by saying that he could have a low-power, independent station and still receive must-carry status as many small, religious networks are doing in his market.

126+ GM stated that the local cable systems do carry his digital subchannel. He maintained that if he were to add another digital channel that the dominant cable operator in the market would fight carrying this other channel. However, he said that the smaller cable systems would probably carry the additional channel without any hesitation. 126+ GM claimed that the smaller systems are quite a bit easier to deal with than the larger systems because they want free content for their customers and they are not in the business of selling advertising as are the major MSOs. GM 126+ stated, “They want all the free channels they can get because it means that they don’t have to pay Home & Garden \$.50 [per subscriber]” (126+ GM, personal communication, September 21, 2006). He mentioned that the systems, however, will want to place this multicast channel on their digital tiers. In fact, the cable systems wanted to put his multicast channel on their digital tiers. In order to persuade the cable operators to carry the channel on the analog tiers, he emphasized that his station is a community station with a plethora of local community programming. The cable systems, however, will request to place any additional multicast channels on the digital tiers because they also carry local community programming and they feel that 126+ GM’s station is in competition with them in serving the local community (personal communication, September 21, 2006).

126+ GM negotiated a deal with the cable company in that the cable system would get to carry (*Big 4 network*) and HD if it also carried the digital multicast channel. Although the two parties reached an agreement and both stations are carried on the analog tier of the local cable system, the cable operator is now attempting to break the deal. 126+ GM replied to the cable system by saying, “If you don’t want that [multicast digital channel], then you don’t get any of my stuff because that wasn’t the deal” (personal communication, September 21, 2006). At the

time of the interview, he was working with the cable company on a retransmission agreement as the current agreement is set to end in 2008.

Future multicasters and cable carriage. As previously mentioned, the local cable companies are not carrying the digital subchannel of 26-75 ES's station, a simulcast of the primary channel. His station, at the time of the interview, was in negotiations with the local systems. He felt that his station will probably be able to settle on retransmission agreements with the cable systems as his station is a strong independent with respectable ratings and market-dominating newscasts (personal communication, November 7, 2006). In addition, 26-75 ES remarked that it is going to be a real challenge to get cable carriage for those independents that do not have a strong viewer base (personal communication, November 7, 2006).

26-75 GM B discussed the first station that she worked at and the fact that it did not have a lot of clout, but it did have a great relationship with the local cable operator (as detailed in Table 4-20). The relationship even helped the station achieve its revenue goals as the cable company was one of their biggest clients. 26-75 GM B said, "There is just a lot more to it than just the carry my signal question" (26-75 GM B, personal communication, November 7, 2006). She continued by saying that there are a number of ways to reach an agreement with a cable provider. She declared, "There's trade, there's promotional opportunities, there's VOD, there's all sorts of things we can do together and, ultimately, it benefits the viewer" (26-75 GM B, personal communication, November 7, 2006). Furthermore, she claimed that her goal is to bring more people to the television set. She would rather see viewers tune to another television channel, such as NBC or CNN, than have them go to their MP3 player or somewhere else.

26-75 GM B said that her station negotiated an agreement with Comcast and they are going to carry a multicast channel which is set to launch after the first of the year (2007). She

Table 4-20. Future Multicasters' Views on the Effects of the Broadcaster-cable relationship on the ability of broadcasters to receive multicast Cable Carriage

Future Multicasters	Dominant Factors & Their Level of Effect On Multicast Cable Carriage
1-25 GM A	<ul style="list-style-type: none"> •His broadcast ownership group has more leverage than most because it owns two popular cable networks •Most cable companies want to clear those channels
26-75 GM B	<ul style="list-style-type: none"> •It depends on the relationship between the station and the cable operators •There are a number of ways to reach an agreement with a cable provider (trade, promotional opportunities & VOD)
26-75 ES	<ul style="list-style-type: none"> •Level of clout in market and respectable ratings

affirmed that her station has a very good relationship with Comcast and she realized that this relationship was important as the cable MSO has a 90 percent share of the cable homes in her market. When looking at all viewing whether cable, satellite, or over-the-air, Comcast has a 60 percent market share, half of that being digital subscribers. The cable company has been supportive as well because the new multicast channel gives the prominent MSO something else it can offer its subscribers. Comcast can push their digital tier and if 26-75 GM B's broadcast operation offers unique programming on this new channel then "that just gives them (Comcast) something else that puts them in a unique position" (26-75 GM B, personal communication, November 7, 2006). 26-75 GM B did reveal that if she did not have the relationship she has had with Comcast and a negotiated agreement for cable carriage, she might launch the digital subchannel differently. She would, in that case, probably have to use her own air to promote the channel and it would be strictly an over-the-air offering.

Environmental Factors

These factors make up the condition of the market and affect a firm’s adoption decision of new media technologies, such as multicasting and ancillary services. These variables include the regulation of the entire broadcast/multichannel video programming distribution (MVPD) industry, various market conditions, and the competition experienced by the various cable systems..

Regulation of the Broadcast/Multichannel Video Programming Distribution Industry

The regulation of the broadcast/MVPD industry is a critical driver of the digital strategies incorporated by various television stations. The executives commented on issues centering around a hypothetical multicast carriage mandate requiring cable systems to carry all the digital subchannels of the broadcasters in their respective markets.

As shown in Table 4-21, four of the executives claimed that their strategy would be different and that such an FCC mandate would have a major impact on a lot of broadcasters. Three of the other respondents stated that their strategy would not differ if the FCC mandated multicast cable carriage.

Table 4-21. Responses of Executives When Asked if Their Strategy Would Differ

Broadcast Outlet	Would Multicast Mandate Result in a Different Strategy?		
	Yes	No	No Answer Provided
1-25 GM A/1-25 OM			x
1-25 GM B		x	
26-75 GM A	x		
26-75 GM B		x	
26-75 ES		x	
76-125 GM A	x		
76-125 GM B	x		
126+ GM	x		

Reasons cited for differing strategy

First, an examination of the comments of the executives which maintained that an FCC mandate requiring cable systems to carry all of the multicast streams of every broadcaster would change their strategy needs to be conducted. There were a wide variety of comments made concerning the perceived effects of a hypothetical multicast mandate requiring cable systems to carry each and every multicast stream broadcast by television station (as shown in Table 4-22).

Table 4-22. Comments and Perceived Effects of Multicast Mandate for Broadcasters Claiming Their Strategy Would Differ

Broadcast Outlets Claiming Their Strategy Would Differ	Comments/Perceived Effects of Regulatory Change
26-75 GM A	Broadcasters have the opportunity and the right to be carried on cable systems (especially when a station provides for a sizeable portion of the primary viewership in a market)
76-125 GM A	Would motivate his station and a lot of broadcasters to more aggressively air multicast content
76-125 GM B	<ul style="list-style-type: none">•Would result in a major impact on his station•Key consideration is that you have carriage on the cable systems' analog tiers
126+ GM	<ul style="list-style-type: none">•Mandate would be groundbreaking•Most all broadcasters would begin multicasting, including the big stations in the big markets

The first respondent, 26-75 GM A, replied that his strategy probably would be different. He felt that a broadcaster should have the opportunity and the right to be carried on cable

systems, especially in the case in which a particular station provides for “a sizeable portion of the primary viewership in the market” (26-75 GM A, personal communication, November 16, 2006).

The second respondent, 76-125 GM A, mentioned that such a mandate would motivate his station as well as a lot of other broadcasters to more aggressively air multicast content. Most importantly, it would also “spur on a lot of programmers and writers and producers and directors to get out there and start producing more content” for all the new channels that will be carried on cable systems (76-125 GM A, personal communication, November 1, 2006).

76-125 GM B declared that such an FCC mandate would have a major impact on his digital strategy. However, when the analog signals finally do go dark, everything will change and then, most likely, his strategy would not differ as much. 76-125 GM B stated that the key consideration is whether or not you have carriage on the cable system’s analog tier, the lower tier of which all of a cable system’s subscribers have access. His digital subchannel is currently carried on the digital tier of the local cable companies, the largest one of which is Comcast (76-125 GM B, personal communication, November 1, 2006).

126+ GM said that a mandate requiring carriage of every multicast channel broadcast by television stations would be “huge” (personal communication, September 21, 2006). He mentioned that then you would see most all broadcasters multicasting, including the big stations in the major markets. 126+ GM mentioned that the attitude of many broadcasters today is that if they cannot get cable coverage, then multicasting is not going to do them any good. Furthermore, he stated that if the FCC were to come down with such a ruling that it would probably mandate just one extra stream, not three or four.

Reasons cited for not differing strategy

As detailed in Table 4-23, there were a few reasons provided by these station executives for not differing their digital strategies in response to a multicast carriage mandate. 1-25 GM B and 26-75 GM B provided specific rationale while 26-75 ES commented on the issue.

Table 4-23. Rationale Stations Gave for Not Differing Their Strategy

Broadcast Outlets Claiming Their Strategy Would Not Differ	Rationale for Not Differing Strategy
1-25 GM B	The cable systems will want to carry his programming because the content is compelling
26-75 GM B	<ul style="list-style-type: none">•She has a good relationship with the dominant MSO in the market•A new multicast channel on the cable system will give MSO something else to offer its subscribers
26-75 ES	Respondent provided no rationale

1-25 GM B said that his strategy would not be different because his station is “airing, and will continue to air, programming that people want to see and; therefore, the cable systems will want to carry it (our programming)” (personal communication, November 15, 2006). 26-75 GM B would not differ her strategy. She felt that because she has a strong relationship with the dominant MSO in her market she would not differ her strategy in reaction to an FCC multicast carriage mandate.

26-75 ES did not believe that his station’s strategy would be any different if it were to have mandated cable carriage of all its multicast channels. However, he felt that multicast must-carry would be “nice to have for the future and to have that option open” as the station negotiates deals

(26-75 ES, personal communication, November 7, 2006). As of his interview, 26-75 ES felt that mandated carriage would not lead to any immediate negotiations or changes in business strategy.

Market Conditions/Size

26-75 ES felt that stations in both small and large markets will have some problems getting cable carriage of their multicast channels. He stated, “Typically, the smaller market cable companies don’t have the channel capacity of the larger ones. But, on the other hand, the [cable systems in the] larger markets have more signals to have to put on them” (26-75 ES, personal communication, November 7, 2006). The larger cable companies have a larger “pipe” in which to carry multicast channels while the smaller ones have a smaller “pipe.” Because of the limited capacity of cable systems, 26-75 ES believed that cable systems are now becoming “gatekeepers” (personal communication, November 7, 2006). With this unique position within the video programming supply chain, cable companies have the ability to place “premiums on their bandwidth” (26-75 ES, personal communication, November 7, 2006).

In addition, 26-75 ES discussed his opinion that the smaller market stations are investing more in newer technologies than are the larger market stations at this point in time. The smaller market stations are in more need of revenue and are, therefore, more willing to risk the capital expenditure required to buy the necessary equipment to do such things as multicasting. According to 26-75 ES, manufacturers are further enabling these smaller market stations to begin multicasting by developing more inexpensive ways for stations to get multiple streams broadcast to a market area. Also, larger market stations, as opposed to the smaller markets, do not want to interfere with their current revenue streams too much and, consequently, will move in the direction of new technology very cautiously (26-75 ES, personal communication, November 7, 2006).

Table 4-24. Structure of Sales Team Selling Multicast Channels

Broadcast Outlets	Structure of Sales Team Selling Multicast Channels			
	One Sales Team Sells Primary & Secondary	2 Sales Teams Sell Own Primary Plus Secondary	Separate Team For Secondary	No Answer Provided
1-25 GM A				x
1-25 GM B				x
26-75 GM A		x		
26-75 GM B		x		
26-75 ES				x
76-125 GM A	x			
76-125 GM B	x			
126+ GM	x			

In looking at the differences existing between large and small markets and how this affects the digital business model chosen, a look at the structure of the sales department is necessary. This structure is developed primarily in reaction to the affiliations carried and the size of the particular D.M.A.

As shown in Table 4-24, the structure of the sales teams for each broadcast facility seems to vary depending upon the overall market size and the affiliations carried. The large market broadcasters have only one sales team, the mid-sized stations operate with two sales teams that each sell one station, and the small market stations each have one sales staff that sells both the primary and secondary digital streams.

The large market stations are only affiliated with one network at this time, and; therefore, each of them operates with only one sales team. No comments were provided by the large market broadcasters (1-25 D.M.A.s) with respect to the structure of the sales team and their selling of multicast channels.

The mid-sized affiliated stations, ranging from D.M.A.s 26-75, operate duopolies and operate with one sales staff per affiliation. Each of the affiliations is with one of the Big 4

networks. 26-75 GM A stated that he not only has a sales team for each affiliate, but that he also has a convergent sales manager who “creates packages and pursues opportunities that involve the selling of banner ads on the website and billboards on our primary and secondary channels” (personal communication, November 16, 2006). Each affiliate sales team is involved in the selling of the digital weather network broadcast on his station’s digital subchannel. 26-75 GM B said if her station were to add a third channel, a digital subchannel, then she would have each sales team sell advertising on that additional channel. It would be handled similarly to that of non-traditional revenue (NTR), she uttered. She continued by estimating, “When sales gets to the point where its justifiable, what will happen is, they [sales managers] will hire salespeople” (26-75 GM B, personal communication, November 7, 2006).

The smaller market stations each have one sales staff at the moment that sell advertising on their primary channel, which is a Big 4 affiliation, along with either The CW or My Network. If 126+ GM were to pick up another Big 4 affiliation, then he would split his sales staff into two separate teams. One team would sell their existing Big 4 affiliation along with My Network while the other team would sell the new Big 4 affiliate in addition to My Network (personal communication, September 21, 2006).

Competition

There are three basic forms of competition that were referenced in this study. They are competition between various stations in a market, the competition that broadcasters have with area cable operators, and the level of competition experienced by a cable operator as a result of the actions of other cable operators.

Station vs. station

Competition exists between various broadcasters and their management teams. The area of competition is primarily covered in the section on strategic networks. However, the

competition that exists between large market broadcasters in the area of HD news is important to discuss in this section. For instance, 1-25 OM's station management will monitor the other stations in the market to see if these other stations might attempt HD news. 1-25 OM mentioned that there is the potential for three local competitors to run an HD news, especially one whose ownership group has introduced it in other markets. Nationally, there are differences amongst the stations broadcasting an HD newscast; however, as some are bringing footage from the field in as HD while others are only using HD with the cameras in the studio (1-25 OM, personal communication, October 16, 2006).

Broadcaster vs. cable operator

Competition takes place between broadcasters and cable companies. This has become increasingly intense as the cable industry has increased its audience share to the dismay of broadcasters. In the area of content, one of the cable companies does directly compete with 1-25 GM B's station. The cable system carries its own local weather channel (1-25 GM B, personal communication, November 15, 2006).

1-25 GM A cited the phone companies as a new source of competition of which cable can expect to experience. He believed that such a development would benefit broadcasters. "The phone companies are coming along and saying fiber optic is limitless and we can deliver it so if you cable companies can't deliver it, then maybe we can and who knows if, years from now, the phone companies win out over cable and you look at cable the way you used to look at an 8-track" (1-25 GM A, personal communication, October 16, 2006). He stated that cable's viewpoint is that it does not have room for these additional digital channels and the MVPD would not be able to maintain the signal quality of these channels. 1-25 GM A believed that cable companies are using these reasons as an excuse instead of admitting that carriage of

multicast channels presents too much competition for them. He claimed that the compression technology is available to carry these multiple channels.

126+ GM made the point that through all of these technological changes, broadcasters will be the one constant because their signals are going to be carried by all of the MVPDs. The phone companies, however, are the most interesting. According to 126+ GM, they spoke a couple of years ago to the Florida Association of Broadcasters and they claimed that they would carry all of the broadcasters' digital signals. They said, "We want everything you've got" (126+ GM, personal communication, September 21, 2006). To the contrary, the cable and satellite companies have claimed that they either do not want some of the digital streams or that they do not have the capacity to carry the broadcasters' digital streams. 126+ GM mentioned nevertheless that the phone companies were speaking at a broadcaster's conference so, naturally, they are going to speak of accommodating broadcasters in every way possible (personal communication, September 21, 2006).

126+ GM claimed that he does not, however, want the cable system to have all of his content. He does not mind going to the cable companies and showing them what he has if it is a good product. He said that they are so "anti-broadcasters" that they do not want to carry a multicast channel because "they're in the advertising business too" (126+ GM, personal communication, September 21, 2006). He likened the scenario to that of going to another broadcast station in town and trying to get that station to air one of your station's programs.

Cable operator vs. cable operator

Competition also exists between the various cable providers. The television executives commented on this form of competition extensively.

As shown in Table 4-18, 76-125 GM B stated that what when it comes to multicasting and ancillary services what really matters is "the set-up of the particular market, whose there,

whose not, whether there's a competitive cable set-up there or not" (76-125 GM B, personal communication, November 1, 2006). He said that in his market Comcast dominates so broadcasters are limited in their ability to influence the cable systems, but in (nearby small market), where you have Mediacom and CNS competing, the situation is different. "One's not going to let the other have something," he added (76-125 GM B, personal communication, November 1, 2006). Moreover, 76-125 GM B made the point that the cable systems have "created monopolies on the distribution channel," which is bad for consumers and broadcasters. He continued by mentioning that if the telephone companies start carrying video in the form of cable networks and broadcasters' signals, then everyone will benefit. He said that he does not mind competing with other television stations, but he finds it extremely difficult competing with the distribution channel (76-125 GM B, personal communication, November 1, 2006). 76-125 GM B cited an example in which his local cable system took his secondary affiliation and moved it to the digital cable tier and replaced it with a weather channel and a shopping channel on the analog tier. He remarked that if the cable operator had 100 percent digital penetration in the market then he would have been more accepting of this move. However, it has a digital penetration of less than 50 percent. He mentioned that if the analog truly goes away in 2009 then Comcast will have a basic tier which will, most likely, include all of his digital channels (76-125 GM B, personal communication, November 1, 2006).

Not only do cable MSOs compete with each other, but they also compete with other MVPDs, primarily satellite operators. 26-75 GM B made the point that cable is going to be more challenged in the future as satellite providers continue to siphon off potential cable subscribers. She mentioned that anytime a business reaches a point of maturity, as the cable industry has, different challenges will arise (26-75 GM B, personal communication, November 7, 2006).

Conclusion

In this chapter, the responses of the nine television executives that were interviewed for this study are reviewed. The respondents comments are grouped under each of the eight factors included in the proposed framework of new media adoption by media firms detailed in Chapter 2. To aid reader understanding, tables have been placed throughout the chapter as a means of clearly comparing and contrasting the various interview responses.

Research question #1 covered the topic of multicasting and it looked at the current adoption of the technology by broadcasters in terms of the number of digital streams, the types of programming aired on these multicast channels, and the kinds of network and local programming run on these streams. It was found that all but one of the broadcasters are either currently offering multicasting or would be shortly following the date of the interview. The smaller market broadcasters, D.M.A. sized 76 and higher, are airing My Network or The CW on their multicast channels, whereas, the larger market stations are airing local and network-developed weather multicast channels. In the area of in-house programming, the stations both large and small are offering a variety of formats, weather, news, and local interest. The reasoning behind these formats was provided as well. In the case of weather programming, it was chosen because it is considered the number one area of interest in news studies. As far as news and local interest are concerned, the rationale had hinged upon effectively branding a station and having the ability to tailor programming to the local market. Furthermore, the influence of the network over the selection of the multicast channels and the multicasting plans of the broadcast ownership groups are reviewed. The network appeared to have a limited effect on the choosing of particular multicast formats whereas the multicast initiatives at the corporate level focused on the creation of a multicast channel, a local weather channel, and the picking up of My Network, The CW, and Fox in the smaller markets. Next, the costs involved in carrying these multicast channels were

discussed and it was found that the major expenses surround the expenses of acquiring the equipment to run multiple streams of SD alongside an HD stream, the server needed to handle multicast channels, and the cost of electricity, particularly prior to the actual shutoff date for analog. Furthermore, the area of advertising sales is discussed and it was found that stations, for the most part, plan to sell their advertising on multicast channels both separately and in conjunction with spots on the primary channel. Also, the larger market stations appear to also sell these digital secondary channels as part of a package that includes a presence on the stations' websites as well as fixed billboards on the digital weather channels. The television executives, who responded to the question concerning sales team structure, all claimed that they would use their existing sales teams to sell the multicast channels. 126+ GM mentioned that if he were to pick up a second Big 4 affiliation on a digital multicast channel in the future that maybe he would hire a second team to sell advertising on this channel. In addition, the executives' thoughts on the, now defunct, USDTV are detailed. It was found that all but one of the television managers felt that USDTV was not a viable business concept because it was unable to effectively compete with cable and satellite operators.

The second research question covered the topic of ancillary services, primarily that of datacasting. The questions posed to the television executives centered around the types of ancillary services being adopted, the involvement of the broadcast ownership groups versus the local stations in deciding which format to invest in, and the type of content to be provided. The answers indicate that the larger market stations, those D.M.A.-ranked 75 and larger, had plans to pursue ancillary services. Also, the majority of the executives claim that the decision whether or not to pursue these offerings were more of a local decision than a corporate one. Also, only 1-25 GM B's station had any specific ideas for content in mind.

The third research question and the interview questions tied to it were focused on the adoption of multicasting and ancillary services by broadcasters as a result of the current FCC decision to only carry a station's primary broadcast stream. The responses indicate that four of the eight stations included in this study would differ their strategy if multicast must-carry were mandated by the FCC. These broadcasters felt that such a mandate would be major and would result in a lot more multicast content. The stations which felt that their strategy would not differ felt that way because they consider their content to be compelling and something that the cable operators will voluntarily carry. Furthermore, the issues surrounding the voluntary carriage were assessed and were based on such factors as market size and station affiliation. The answers to the questions illustrate that market size has no bearing on the ability to receive multicast carriage whereas station affiliation has a big impact. Instead of market size, the study subjects referred to the importance of the relationship they have with local cable operators, the channel capacity of cable systems, and the cable competition present in the market. Station affiliation of the primary channel with one of the Big 4 networks, and their ability to offer HD and other compelling content, give broadcasters leverage in their negotiations with cable systems. The current carriage of digital subchannels is looked at and it was found that two of the current stations multicasting are carried on the digital tier only of local cable systems whereas two of them are carried on the analog tier of local cable operators. The stations carried on the analog tiers have this carriage because, one of the stations is, technically, a must-carry station while the other is a digital stream of My Network. The final subquestion dealt with the dominant factors involved in the ability of broadcasters to receive multicast cable carriage. It was found that the network has a strong influence on the ability of stations to receive carriage of their secondary channels. In addition,

one other factor was discussed in great detail, the relationship between a station and the cable operators in that market.

CHAPTER 5 DISCUSSION

In this chapter, the findings from the interviews with the nine television executives are examined and their relevance to the field of telecommunications is discussed. There are a variety of themes that will be uncovered which pertain to the topics of multicasting, ancillary services, and multicast cable carriage.

Multicasting was examined through the comments relating to research question #1. This research question asked about the primary factors that are driving the adoption of multicast technology at broadcast facilities and the form this adoption is taking. The executives were questioned as to whether they were broadcasting multiple streams and the types of content they were currently airing or looking to air on these digital subchannels. In addition, the respondents were asked about the costs associated with multicast technology, the ways in which advertising would be sold on these digital streams, and their thoughts on the wireless alternative to cable that was USDTV.

Ancillary services were examined through the comments dealing with research question #2. This research question inquired about the principal factors that are driving the adoption of ancillary services. The respondents were asked about whether they were currently offering any ancillary services and the form of services they hoped to offer in the future. Furthermore, the executives were questioned as to their reasoning for choosing these services, which include datacasting, subscription television programming, teletext, and interactive services.

Multicast cable carriage was examined through the comments relating to research question #3. The third research question analyzed the adoption of multicasting and ancillary services by broadcasters as a result of the current FCC decision that cable operators only have to carry a station's primary broadcast stream. The executives commented on the effect that a hypothetical

mandate requiring cable systems to carry every stream broadcast by television stations in a market and the effect that such a mandate would have on the digital model adopted.

The Multicast Business Model

The following list includes five critical themes discovered that explain the current form that multicast technology is taking. The themes also analyze some of the key factors influencing the adoption decisions that broadcasters are making with respect to multicasting. The themes are as follows:

- Weather for the large market stations
- My Network and The CW for the small market stations
- Networks have a limited influence on digital model adoption
- Broadcast ownership groups are a primary factor in digital model adoption
- Importance of cable carriage to assigning value to a digital multicast channel
- USDTV failed because of its inability to successfully compete with cable and satellite providers

Weather Is the Most Popular Multicast Format, Particularly in the Larger Markets

The first area to be discussed is that of the multicast format chosen by the broadcasters interviewed. Weather is, far and away, the most prominent multicast format that the television stations included in this study are adopting.

Managerial knowledge (supporting)

There are several key reasons for weather being the most prominent multicast format used. These reasons are centered around the supporting factor of managerial knowledge. First, numerous news studies show that weather is the greatest area of audience interest. Second, the localness of weathercasts helps to differentiate a station not only from the other stations in the market, but also from the national cable networks as well. Successful differentiation results in effective station branding.

Media technology characteristics/technology cost (core)

The media technology characteristic of technology cost is also a primary driver of the weather format. This is the case because broadcasting a multicast weather channel is cost-effective. Stations have already invested in the weather forecasting, presentation software, and talent needed to produce such a channel. In most cases, the morning, noon, 6pm, and 11pm weather forecasters on the primary channel record a quick segment to run on the multicast channel. This segment airs until the next meteorologist arrives to do the weather on the main channel. Also, the same set, or one slightly altered, can be used to record these segments. In some cases, a station may run a 24-hour weather radar loop on a multicast channel. This form is certainly inexpensive, but it does not produce very compelling programming.

The value of this information is that industry professionals who are investigating the multicast business model need to consider using weather as a means of, at least, initially delving into the use of the new digital technology. It is a way of getting another channel operational without having to spend a great deal or having to develop entirely new content. It is also a way to brand a station which, in today's world of intense audience fragmentation, is extremely important.

Smaller-Market Stations Are Multicasting My Network TV and The CW Network: Market size (environmental)

The second noteworthy theme is that there may be more alluring content being multicast by the smaller-market stations. This is because the smaller-market stations have the opportunity to carry such networks as The CW and My Network, popular national networks that may not already be airing in the smaller markets. In the larger markets, all of the major network affiliations are spoken for, including the newer My Network and The CW networks. The only

opportunity to pick up a national network in these markets might be with such a network as LATV or WCSN, national digital networks lacking the popularity and viewership of The CW or My Network.

Market characteristics, such as market size, have an effect on the digital content chosen by the broadcasters interviewed as part of this study. The significance of this is that the smaller-market stations have a better opportunity to acquire a multicast channel that will have compelling content. In the larger markets, nearly all of the major affiliations are going to belong to a broadcast outlet currently and the stations are going to have to be a little more creative in finding compelling content for their multicast channel. However, the fact that these larger market stations are generally bigger operations, they tend to have more resources from which to pull from to either produce or purchase programming that has the potential to garner sizeable ratings.

Networks Have a Limited Influence on Digital Model Adoption: Managerial knowledge (supporting)

The broadcast networks do not have much influence over what their affiliates carry on their secondary channels. Aside from network owned-and-operated stations, networks cannot require any affiliate to carry its digital service. Those affiliates that choose to carry a network-developed secondary channel are under some influence by the network in that the network has developed the primary content for the channel. For instance, NBC, with its NBC Weather Plus, obviously dictates to an affiliate the programming to be aired on this secondary digital channel. However, NBC would not have the authority to dictate to this same affiliate the types of programming it can air on a third digital channel, such as a local, 24-hour public-interest channel.

The importance of this finding is that it truly is the local broadcaster's decision to select and air the programming it feels will generate the greatest return on investment while also serving the local community in the best manner possible. The decision is lead by the station's

management team, especially the general manager. It is a good idea for broadcasters to observe stations in other markets to see what kinds of multicast programming these stations are airing and to try and gain an understanding of how profitable these multicast channels are for these broadcasters.

Broadcast Ownership Group Makes a Difference

The broadcast ownership group to which a station belongs can have an influence on the multicasting content offered by the station. Broadcast ownership groups vary greatly in their approach to multicasting. Also, the ownership groups appear to be important to broadcasters that are in need of support in developing and broadcasting HD newscasts.

Diverse strategic postures: Firm/entrepreneurship (core)

There is a great amount of variation when it comes to the broadcast ownership groups and their approach towards multicasting. Some broadcast groups are extremely proactive, such as Gray Television, in that they are running additional digital streams and then acquiring The CW, My Network, and even Fox affiliations to air on these channels. Some broadcast groups are even going to the extent of creating their own multicast channel for their stations to broadcast, as in the case of 26-75 GM B's broadcast ownership group. On the other end of the spectrum, you have broadcast groups that give their local stations complete decision-making authority to air the multicast programming they prefer. It is the philosophy of a number of the broadcast ownership groups that it is best to give stations the ability to do what they feel best serves the needs of their market areas.

The implications of this fourth theme are that a station's ability to develop an appropriate multicast strategy is largely a function of the broadcast ownership group to which it belongs. Some broadcast ownership groups are going to dictate to stations the types of programming that it can air, especially in the case of the groups that are producing their own multicast

programming channel. Many stations will prefer this arrangement, but many more will be more comfortable developing the content which they feel will best work for their communities. It all depends on the management teams of these stations and whether they prefer to adhere to a directive and air previously produced programming or instead make their own decisions and take on the task of developing their own multicast programming.

Broadcast ownership groups are important in providing funding and support of HD newscasts: Firm/entrepreneurship/organizational strategic traits (core)

It is important for broadcasters to run an HD news in cases in which one or more of its competitors in a local market are already doing so. A large portion of the capability of the broadcaster to offer an HD news product stems from its ability to receive funding and support from its broadcast ownership group. Therefore, those stations which belong to a broadcast group that have begun running an HD news in other markets have an advantage in that their company believes in the technology and is willing to invest in it.

The relevance of this theme is that a broadcaster needs to maintain a good relationship with its ownership group. Since the ownership group helps to provide the resources that a station will need to run an HD news, the broadcaster needs to value this relationship because the station will reap financial rewards from the ownership group's investment. As the broadcaster begins to air an HD newscast, its value in the local marketplace can potentially rise significantly allowing the station to achieve the leverage it needs to successfully negotiate multicast cable carriage.

Cable Industry as a Mediator of Strategy: Managerial knowledge and broadcaster-cable provider relationship (supporting)

The sales departments of broadcast stations must position their multicast channels as valuable. In order for these channels to be sellable, the channels must be seen to have value in the eyes of the advertiser. It is the responsibility of the management team to ensure that the multicast channels have value from the perspective of the advertiser. Although some

cannibalization of the primary channel will take place, the audience of the secondary channel will also be made up of viewers that were drawn from the fare of competing broadcasters. One very important part of demonstrating that a multicast channel has value is its carriage on the local cable systems within a market. Many station executives realize that once a multicast stream is picked up by the cable companies and starts to get ratings, then it can be looked at as valuable and broadcasters can start generating revenue from it. One consideration that station managers must make, though, is at what point does a station reach critical mass and can start to profit from the airing and selling of spots on multicast channels. Critical mass, in this case, refers to the minimal level of viewership necessary to enable a television station to overcome the start-up costs of broadcasting a digital channel. Not only must management consider the costs of converting to digital and the investment in the servers, multiplexers, and transmitters, but it must also consider the expense of an automation and traffic system for this digital multicast channel.

The value of this information is that the management team must, first, work with the cable companies to get cable carriage of their multicast channels. Once the channel has cable carriage, the broadcaster must promote the station through various mediums and avenues to ensure that the channel will generate some sizeable ratings. The management team must clearly communicate the value of the multicast channel to the sales department so that the sales team can sell the channel at a rate high enough to overcome the expenses of carrying the channel and running advertising on it. If a station were to try and sell a multicast channel without cable carriage, it would be difficult to convey a level of value to the potential advertiser in airing his/her spots on the channel. Even if a broadcaster is able to secure cable carriage, it might want to delay setting up the automation and traffic systems until it sees an audience for the channel.

USDTV Failed to Successfully Compete with Cable and Satellite Providers

USDTV was an over-the-air, low-cost alternative to cable that once operated in four major U.S. markets. The company utilized unused bandwidth on digital television stations to send around a dozen cable channels in addition to all the local digital streams to subscribers with special set-top boxes for a price of only \$19.99 per month. In July 2006, the company filed for Chapter 7 Bankruptcy before ceasing operations in March 2007.

Competition (environmental)

USDTV struggled to compete in the video programming arena for several reasons. First, USDTV tried to grapple with well-established cable and satellite companies that carry many more channels at a cost-per-channel that was lower than USDTVs. Consumers certainly viewed receiving 30 channels instead of, approximately, 100 as a step backwards, even if these consumers never watched the majority of the channels.

Market conditions (environmental)

Second, the company tried to counter the habits of the consumer. These habits are largely centered around the fact that a majority of people are accustomed to receiving their television through either a cable or a satellite provider. Viewers are controlled to a large extent by their habits and their perceptions and they, for the most part, are comfortable paying a cable or satellite company for television service. Those that do not subscribe to cable or satellite are accustomed to receiving their over-the-air signals for free with the use of an antenna, not for a subscription fee and the use of a set-top converter box.

Firm/entrepreneurship (core)

Another major challenge that USDTV had to deal with was the variety of station ownership groups which, as previously mentioned, vary widely in their philosophies on multicasting. This made it especially difficult to negotiate with these ownership groups because

they each not only operated differently, but they looked at digital technologies and content differently.

Market conditions (environmental)

In addition, the company was limited to only larger markets because the smaller markets did not have enough stations and, therefore, not enough bandwidth for USDTV to have carried much of a selection of channels.

The value of this information is that other potential future low-cost wireless alternatives to cable and satellite will have difficulty gaining market share as did USDTV. Most consumers have it ingrained in their minds that they must pay for television service through either cable or satellite or receive it over-the-air for free. Also, they have a need to have access to a large variety of channels from which to choose to watch and be entertained. The consumer demand for USDTV's service was just not what it needed to be in order for the company to survive the overwhelming competition provided by the cable and satellite companies.

Ancillary Services/ Datacasting

There is only one major theme uncovered that relates to research question #2, the limited adoption of ancillary services by broadcasters. Before discussing this theme, research question #2 needs to be restated. The question asked about the major factors which are driving the adoption of ancillary services. The respondents were asked about the services they were planning to offer as well as the rationale behind their decisions. Also, the method stations would use to achieve profitability with these ventures was ascertained.

There appears to be limited adoption of ancillary services/datacasting at this point in time. Many television executives do not understand the business and they do not view it as part of the familiar business of broadcasting. Executives are concerned about investing money in something that could detract from the core, existing business of broadcasting, the airing of

programming to gain viewership and then selling advertising based on the audience for this programming. One major concern of television professionals is that these ancillary services will use up the bandwidth necessary for a clear signal to be broadcast on both the primary and secondary digital streams.

Of the nine executives interviewed, only 1-25 GM B could discuss any specifics in regards to his station's intentions to utilize ancillary services. This, in conjunction with the fact that the larger markets stations, those in D.M.A.s ranked 75 and larger had intentions to pursue ancillary services, demonstrate a possible increased adoption level at larger market stations. However, more research needs to be conducted to determine whether or not this is true.

The importance of this finding is that television executives need to invest the time to understand the capabilities of ancillary services. The stations that truly embrace the broad-range of capabilities will have a strategic advantage over those stations that do not invest the time or effort to understand the wide array of possibilities that these services can provide. The reason for this is that station management will have a variety of digital services that may be possible methods of generating revenue. Only those stations whose management teams place a focus on these potential services would be capable of reaping the financial benefits. Furthermore, these additional services are the result of the digital revolution and stations need to embrace them in order to remain competitive. Otherwise, broadcasters will eventually lose market share in their respective D.M.A.s for not having the foresight to invest in these new technologies.

Current Federal Communications Commission Decision to Not Mandate Multicast Cable Carriage

There are four themes which relate to research question #3. Before reviewing these themes, research question #3 needs to be restated. The question asked about the adoption of

multicasting and ancillary services by broadcasters as a result of the current FCC decision to only carry a station's primary broadcast stream.

The first area reviews the far-reaching effects of the FCC mandating multicast cable carriage. The focus is that of the cable industry and its ability to act as a gatekeeper to the video service distribution channel. Three different themes account for the propensity of cable systems to voluntarily carry a broadcaster's multicast channels. They are as follows:

- the broadcaster-cable relationship
- a station's affiliation and access to HD programming
- the competitiveness of the cable market.

The first of the themes concerning the likelihood that cable systems will voluntarily carry multicast channels states that it is the relationship between the broadcaster and the cable operator that has the strongest impact. Topics covered that directly relate to this relationship begin with the need to tie carriage of the digital subchannels to that of the primary channel when it comes to negotiating retransmission agreements. The second theme suggests the idea that it may be easier for broadcasters to deal with the smaller cable systems. Also, the fact that broadcasters will soon be asking for subscriber fees, and, in some cases, higher subscriber fees, is mentioned in this section of the chapter.

The station's affiliation and access to HD programming have a strong influence on the ability of broadcasters to receive cable carriage. A key consideration is a station's affiliation with a Big 4 network on its primary channel because this affiliation gives the station the leverage it needs to successfully negotiate cable carriage of its secondary digital channels.

The last of the themes, the competitiveness of the cable market, also appears to impact the ability of a broadcast outlet to receive cable carriage for its digital subchannels. In a competitive

market, cable operators do not want one of the other cable systems to carry a channel to which it does not have access.

Mandate in Favor of Multicast Cable Carriage Would Be Significant

All but one of the broadcasters who claimed that their strategy would differ in reaction to a multicast carriage mandate stated that such a regulatory change would have a major impact by encouraging a lot of broadcasters not currently multicasting to begin doing so. Not only broadcasters, but the entire distribution channel, including producers and programmers, would be affected. They would be motivated to start producing more content for all the new channels that would be carried on cable systems.

This finding has major ramifications for the broadcasting industry. Multicast cable carriage is very important to broadcasters, especially carriage on the analog tier. There are a lot of people and companies waiting in the wings for such a mandate, and if it were to be approved by the FCC, which, at this point, seems unlikely, there would be a mass of people ready to capitalize on the technology. Multicasting has recently become fairly widespread without such a mandate, allowing one to only imagine the influx of new content that would flood the market in the event of a multicast carriage mandate.

The Cable Industry Has Become a Gatekeeper: Competition (environmental)

Cable companies have become gatekeepers because of the limited capacity of their systems. The cable companies have created monopolies on the distribution channel as they determine which programming will actually reach their subscribers, which make up the dominant share of television viewers in the United States. The cable industry uses the lack of available bandwidth and its effect on the ability to maintain clear signal quality as reasons for not carrying multicast channels. In the view of some of the executives interviewed, this means that cable operators are experiencing too much competition from broadcasters and their new multicast

channels and, thus, feel the need to stifle the competition by using bandwidth limitations as an excuse.

This finding shows a lack of trust between broadcasters and cable providers. If the two entities are to work together in a way in which both parties will benefit, they need to develop a stronger sense of trust. Broadcasters need to attempt to break through the excuses of the cable operators and see if they can convince them that by carrying their stations' multicast channels, cable systems will be providing a better-quality product to their subscribers. Cable operators, on the other hand, need to be careful in evaluating these multicast channels so that they do not disregard a channel with compelling and unique content that could be a valuable part of their channel lineup. Concurrently, they need to be cautious not to retransmit a multicast channel lacking in alluring content or one that directly competes with one of the national cable networks already airing on their systems.

Themes of Multicast Carriage

The results indicate market size has no bearing on the ability of broadcasters to receive cable carriage of their multicast channels. Instead, three possible themes which may explain the likelihood of a cable system carrying a broadcaster's multicast channel(s) were found: the relationship between the broadcaster and the cable systems in a market area, the competitive nature of the cable industry in a market, and the affiliation of the broadcaster's primary channel.

Multicast carriage theme 1: Broadcaster-cable provider relationship impacts multicast carriage

The ability of broadcasters to receive multicast cable carriage correlates to the relationship that a broadcaster has with a cable company, corporately and locally. At the corporate level, the broadcast ownership groups meet with the corporate offices of multiple service operators (MSOs) to work out an arrangement in which the cable operator will carry some or all of the

digital channels the broadcast ownership group's stations air in each of the markets in which the MSO operates. However, in many cases, the broadcast ownership group is not very involved in the negotiating of cable carriage as it is completed at the local level. At the local level, stations work with the various cable companies to arrange a carriage agreement. As stated by one of the television executives interviewed, there are a number of ways for stations to reach an agreement with cable operators, trade, promotional opportunities, and video-on-demand, to name a few. Furthermore, given the fact that the larger-market cable systems have a larger channel capacity than the smaller-market cable systems, one might think that it would be easier for broadcasters in larger markets to receive carriage. However, this is often not the case as the larger market cable operators have more broadcasters and, therefore, more multicast channels to place on their systems than do smaller-market cable systems.

The importance to a broadcaster of having a strong relationship with a cable operator cannot be overemphasized. Sometimes a great relationship with a cable company is more important than having a lot of clout in an effort to receive multicast cable carriage. It is important that broadcast stations try to work together with cable operators on local promotional and community events in order to strengthen the bond that they have with the cable companies. The relationship could go a long way in improving the likelihood of receiving cable carriage, including placement on the analog tier instead of the digital tier.

The relevance of this finding is that if a broadcaster wants to receive cable carriage of its multicast channels, it should focus on developing a strong partnership with the cable companies in its market. If a broadcaster has an adversarial relationship with the local cable companies, it may only be impeding its ability to receive cable carriage of its digital signals.

Important for broadcasters to tie carriage of secondary channels to that of the primary channel. In Chapter 2, some attention was focused on retransmission consent and the fact that the current regulatory environment calls for the carriage of only a broadcaster's primary channel in the case of a digital broadcaster. The findings of this study suggest that broadcasters may be able to receive carriage of their secondary channels in their retransmission consent agreements with cable operators. For instance, a broadcaster, who is an affiliate of CBS and has a variety of HD programming to offer a cable system, could tie the carriage of this channel to carriage of its secondary channel, on the analog channel tier, which could be a 24-hour all-news channel. The cable system could refuse this offer and counteroffer by stating that it could, instead, place the 24-hour all-news channel on its digital tier. Many cable systems, instead of denying broadcasters carriage of their multicast channels altogether, will offer broadcasters multicast carriage on their digital tiers. These are the high-numbered channels that only a cable system's digital subscribers can receive. This is the solution that many cable companies will choose to offer as it does make the channel available to viewers and it will not compete directly with cable networks such as the Discovery Channel, which can be found on both the digital and analog tiers. This solution keeps broadcasters from complaining that they are not receiving carriage, while ensuring that the viewership on these channels will not be high enough to negatively affect viewing of the cable networks.

The relevance of this finding is that a broadcaster needs to be prepared to negotiate for carriage on the analog tier of a cable system, the channel tier that all of their subscribers receive. A broadcaster needs to be sure to emphasize the uniqueness of its programming and how it can positively add to the program diversity of a cable system's analog tier. Not only will this argument be effective for broadcasters on the basis of providing greater variety of programming,

but also on the fact that this unique programming, by its very nature, is less likely to siphon viewers from the cable networks. On the other hand, if cable operators are willing to consider granting a broadcaster carriage on their analog tier, they need to be sure that the broadcaster's programming does contribute to the diversity of programming found on the cable system's lineup. If it appears that the channel will not effectively add to the diversity of programming of the cable system's analog lineup or that the channel will draw viewers away from some of the cable networks, the cable operator needs to take measures to defend its decision to relegate the broadcaster's channel to the digital tier.

Broadcasters' negotiation with smaller cable systems may be easier. The smaller cable systems in a market may be easier for broadcasters to deal with because these systems want all the free content they can get and they are not in the business of selling advertising. These smaller systems, in many cases, do not have the resources of the larger systems to pay the subscriber fees to receive a wide array of cable networks. The multicast channels of broadcasters give these cable systems a wide variety of channels without having to pay subscriber fees for these channels, or, at least, not very high subscriber fees for these channels. In addition, these smaller cable systems are not in the business of selling advertising so they are not as concerned with carrying broadcast stations with similar content to that of their cable networks.

The importance of this finding is that broadcasters need to capitalize on these facts and get as many of their multicast channels on these smaller systems as possible. This will give broadcasters a wider audience base and it may also help to apply some competitive pressure to the larger cable systems so that they might be more willing to carry a broadcaster's multicast channels.

Subscriber fees paid by cable operators to broadcasters will become much more prevalent. According to the executives interviewed as part of this study, broadcasters, in the near future, will start to ask cable operators for subscriber fees for their secondary channels and higher subscriber fees for their primary channels. In this case, broadcasters will be willing to deny cable systems retransmission of their signals if they are not adequately compensated for providing them to the cable operators. It is the belief of some of the television executives interviewed that the cable companies may follow the directives of the broadcasters, if reluctantly, because they want to avoid receiving customer complaints.

The significance of this finding is that broadcasters need to remain steadfast in their willingness to deny programming to the cable companies in cases in which they are not being adequately compensated. Broadcasters need to band together in a market to ensure that all of the stations in their market do not agree to less compensation than the value of their signals dictate. If one station is willing to accept a disproportionately lower level of compensation, it could jeopardize the value of the other stations in the market. Broadcasters should be in a position of influence for not only carrying compelling content that only they have available, but also because cable companies have not fared well in a number of customer satisfaction studies. The cable companies desperately want to and have been trying to reposition themselves in the minds of consumers. As a result, they may be especially willing to work with broadcasters if it means avoiding receiving complaint calls from unsatisfied customers.

Multicast carriage theme 2: Affiliation and access to high-definition programming influence multicast carriage

A station's primary affiliation has a strong bearing on its ability to receive carriage of its multicast signals. The television executives interviewed were nearly all in agreement that there is more value associated with the Big 4 networks and that these networks have a greater capacity

to offer compelling content. A station has more leverage and more market influence when it carries a Big 4 affiliation, especially when one considers the sporting events carried by these networks. Other than ESPN, the only way to receive most marquee sporting events is through one of the Big 4 networks. The Big 4 networks also carry a wide range of high-definition programming, with the prime schedule of the CBS network, for instance, almost entirely broadcast in HD. This highlights one of the areas of difficulty for independent stations and stations affiliated with networks other than the Big 4; these stations have difficulty attaining high-definition programming to showcase. Most syndicated series only come in standard-definition format and it is expensive for independent stations, particularly, to produce their own HD programming. However, some independent stations do have significant leverage and those are the ones that have a strong news product as well as a diverse line-up including popular syndicated dramas and sitcoms as well as local community affairs programming.

The significance of this is that affiliated stations need to consider the leverage they have with the cable companies and realize that in their retransmission agreements, they have significant power. They have the ability to offer the cable systems something that they cannot get anywhere else and that is new dramas, sitcoms, and sporting events all in HD. What is most important for cable operators to consider is that these networks carry the programming that will, most likely, be viewed by a greater share of the television viewing public than will the programming carried by the cable networks. The major broadcast networks have the greatest resources and positioning within the marketplace to offer the most alluring content of any of the networks available.

Multicast carriage theme 3: Level of competition experienced by cable operators influences multicast carriage

The third theme is as follows: the level of competition experienced by cable operators in a given market influences the ability of broadcasters to receive carriage of their multicast channels. The level of competition refers to which cable systems are there and which ones are not and the market power than any one particular cable provider has in that market. A cable system which has a lot of market power is one that exclusively serves, or nearly exclusively serves, a particular market and one that operates within a D.M.A. dominated by the delivery of video programming via cable.

The cable industry needs to brace itself for increased competition, according to the responses of the broadcast executives. The telephone companies are now stepping in the arena of video program distributors as they are claiming to have the ability to carry every multicast stream a broadcaster sends out. They say that their bandwidth is limitless unlike the cable operators who claim they have limited bandwidth. This new form of competition to the cable industry is good for both broadcasters and consumers alike.

The relevance of this finding is that a competitive cable market will work in the favor of broadcasters receiving carriage of their multicast channels. This will be a strong factor in determining the likelihood of cable cooperation with broadcasters in the carriage of their digital signals. To the contrary, in a non-competitive cable market, one in which a cable company has a monopolistic position, broadcasters may be less likely to receive cable carriage of their multicast channels.

Limitations of the Study

The major limitation of this study was its scope. Due to the fact that the interviewer conducted in-depth interviews with each of the television executives, he was unable to gather

information from a wide variety of subjects representing various television stations. Since the researcher was conducting exploratory research, interviewing fewer subjects with each providing a plethora of detailed information was the necessary approach. Because only nine executives were interviewed, this research cannot be generalized to the overall population and its results are intended to only reflect the views and thoughts of a few industry practitioners.

A second limitation of this study was that each television executive was not asked the same series of questions in the same order. As this research was exploratory, the researcher had to tailor each question to each specific interview and he chose particular follow up questions that in some cases were only asked of one professional, which led to some gaps in the research findings. The reasoning for this method of questioning was that the researcher's objective was to try and gather as much information as possible from each of the executives. Had the research questions focused on an area more widely explored then the researcher would have been more strict in adhering to a specific series of questions in a specified order.

A third limitation of the study was that the researcher's personal biases may have entered into some of the questions asked and the voice inflection he used in asking particular questions. This may have been evident in both the actual interviews as well as the investigator's interpretations of the interviews found in this chapter and Chapter 4. This is always a concern of qualitative research and cannot be avoided.

Areas for Future Research

There are a number of areas of future research interest to the investigator. The areas of interest are separated out by the topics affiliated with each of the research questions, multicasting, ancillary services, and multicast cable carriage.

Multicasting

An area of future research would be to survey viewers in different markets and see if the most popular multicast content broadcast by television stations will change, or remain the same, over time. It would be of interest to see if another genre of local programming would be able to surpass weather. The advantages of the weather format will make this difficult. It will be sometime, if ever that another format will be able to take the place of weather as the number one area of audience interest. The localness and cost-effectiveness of weathercasts also add to the allure of the multicast format for television stations. One possibility might be a locally-produced entertainment channel in that many people may find the content more intriguing, however, the program would be more expensive to produce.

A second area of future investigation pertaining to multicasting involves a look into the model of program choice. Since multicasting is just now becoming widespread, it would be interesting to see, in perhaps, five or ten years, to what extent the larger selection of multicast channels contributes to program diversity. Also, it would be of interest to see to what extent broadcasters will imitate the way in which cable companies currently operate by repeating programs over their multicast channels.

A third area of future research would be to take a look at a variety of television stations that are broadcasting multiple streams and see in what cases they decide to dedicate a separate sales team to the multicast channels. When a station adds a third or fourth channel, the station will have much more programming that it can broadcast and sell to potential advertisers, but are the potential revenue gains substantial enough to warrant the focus of an entire sales team? Along with the number of multicast channels, it would also be of interest to see what types of content will increase the likelihood that a separate sales team will be dedicated to the multicast channels.

Ancillary services

An area involving ancillary services that warrants future investigation relates to the fact that the larger market stations are further advanced in developing ancillary services as compared to the smaller market broadcasters. The research could focus on the possibility that the smaller market stations could achieve a similar level of development to that of the large market stations in the case of ancillary services. Particularly, the ability of the smallest markets, those 126 D.M.A. sized and smaller, to reach a similar level to the largest markets, those stations in the top 25 of D.M.A.s in terms of size. It would be fascinating to see what variables come into play that effect this in a positive or negative manner. Such variables may include various initiatives of the broadcast ownership group to which a station belongs, technologies being employed by competitors to a station in a market, and the vision of the broadcaster's management team.

Multicast cable carriage

An area of further research would be to investigate the relationship between broadcasters and cable systems within particular markets to see what impacts a positive relationship between the two entities would have on the prevalence of multicasting in a market. A researcher could conduct surveys of both television station executives and cable system managers to ascertain the status of the relationship between the two. The status would be considered to either be positive or negative. From this information, a comparison could be made between the positive and negative broadcaster-cable relationships to see if there are significant differences between the two status groups when considering the amount of multicast channels that the television stations are broadcasting.

A second area of interest for future research is that of the relationship between the competitiveness of the cable market and the prevalence of multicasting in that market. Such research would be based on the idea that the more likely cable systems are to carry multicast

channels, the more multicast channels that would be offered by broadcasters. In other words, cable carriage would drive the creation and development of these channels by broadcasters. Some evidence does suggest that the more competition there is in a market to the cable companies, the more likely that these companies may carry multicast channels in an effort to avoid a situation in which their competitors are carrying programming that they are unable to distribute to their subscribers.

A third area of further research would be to look at the relationship between stations that have strong leverage and the amount of multicasting they are conducting as compared to stations that have weak leverage. Leverage could be measured in terms of a station's affiliation with a Big 4 network or a station which broadcasts a significant amount of HD programming.

A final area of further research could be to look specifically at cable companies that sell advertising and those that do not and see what differences exist as they relate to the carriage of multicast channels. There is evidence to suggest that cable companies that sell advertising on their systems may be less likely to carry multicast channels of broadcasters because they are concerned that these channels will draw viewers and, subsequently, advertising revenues from their networks and systems.

Conclusion

In this chapter, the researcher has summarized the results from Chapter 4 and has grouped them together as common themes. These themes look at the implications of the information provided by the nine television executives to the current and future states of the broadcasting industry. As can be seen, there are a variety of themes that were uncovered in the process of this research study. These themes were grouped into three major areas, the multicast business model, ancillary services, and multicast cable carriage.

The first of the major groups is that of the multicast business model. It was found that weather was the most popular format to be multicast, particularly in the larger market stations. The other trend in multicasting content was that of My Network and The CW being broadcast on secondary digital channels in the smaller markets. When the researcher looked at the influence of the network on the content carried on the multicast channels, there was a limited influence. However, when the investigator looked at the broadcast ownership group and its impact on multicasting content, there was a strong correlation. Furthermore, it was discovered that cable carriage is an important part of assigning value to a multicast channel. Lastly, in regards to the multicast business model, it was discovered that the efforts of USDTV were unsuccessful mainly because the business model used by the MVPD failed to compete effectively with the dominant industry players, cable and satellite.

The second group contained only one major theme and that was the limited adoption taking place of ancillary services. This seems to be the result of the limited understanding of the technology and the fact that it is quite unlike the typical broadcaster's business model.

The third group contained a number of themes that centered around the current FCC decision not to impose a mandate on cable operators to carry all of the secondary channels of broadcasters. The first item discussed, as part of this theme, was that a mandate in favor of multicast carriage of all of a broadcaster's signals would be a major development. The second item discovered was that the cable industry has become a gatekeeper along the video distribution supply chain.

Moreover, there are three major themes of multicast carriage. The first of these themes is that the relationship that exists between broadcasters and cable operators has a major impact on the ability of broadcasters to receive carriage of their multicast signals. The second of the three

major themes of multicast carriage is that the affiliation of a broadcaster's primary station and its access to HD programming have a strong influence on the broadcaster's ability to receive carriage of their secondary streams. The third of the major themes of multicast carriage is that the competitiveness of the cable market influences the ability of broadcasters to receive voluntary carriage of their secondary channels.

Furthermore, the researcher mentioned some of the limitations of the study. They include the limited scope, the fact that the same series of questions were not asked of each study participant nor were they asked in the same order, and the researcher's own unintended personal biases and their effect on the actual interviews and the investigator's interpretations of the information provided. The chapter concludes with a discussion of a few areas in which further research is needed.

CHAPTER 6 CONCLUSION

The digital revolution is rapidly advancing. Digital television set prices are falling, HD programming is now more prevalent than ever, more television stations than ever before are broadcasting multicast channels, and cable and satellite providers have more content than ever to offer their subscribers. It is a time of great confusion and conflict, but also of tremendous opportunity. Broadcasters and the multichannel video program distributors of cable and satellite need to be constantly aware of new developments and new technologies which will be available to their industries. Those companies that have the vision and flexibility to ride this wave of change will be the ones that will successfully navigate their way to the shore. It is in this place, where they will await the arrival of a tide of new technologies while remaining firmly poised in the sand to, once again, ride the waves of change.

APPENDIX A
LIST OF KEY DEFINITIONS

Digital Television (DTV)	a new technology for transmitting and receiving broadcast television signals. It delivers better pictures and sound, uses the broadcast spectrum more efficiently, and adds versatility to the range of applications. There are two levels of DTV:
(1) High-Definition Television (HDTV)	This is the highest quality DTV, with resolution of 720p to 1080i or higher and being produced in a 16:9 (wide-screen) aspect ratio with up to six channels of Dolby Digital sound.
(2) Standard Definition Television (SDTV)	This refers to a signal that is lower in clarity than that of HDTV, but higher than the analog signal being used today. This is usually in the format of 480i or 480p and is comparable to today's digital satellite and DVD picture quality.
Multicasting	A technique by which two or more channels (programs) are simultaneously broadcast on one major channel.
Ancillary Services	This refers to various advanced digital services such as datacasting, subscription television, teletext, and interactive TV.
Datacasting	A technique by which additional program data or interactive information is transmitted along with a program, such as catalog pages or even Web content.
Designated Market Area (D.M.A.)	A region where the population can receive the same (or similar) television station offerings.
Aspect Ratio	The ratio of a TV picture's width to its height. Our current system uses a 4:3 aspect ratio, whereas HDTV uses a wider 16:9 aspect ratio.
Scanning Formats:	
(1) Interlaced (i)	A process where even-numbered lines are scanned first followed by odd-numbered ones.
(2) Progressive (p)	A process in which lines are scanned in sequences, from top to bottom

Lines of Resolution	A measure of horizontal resolution in a video system. The actual measure is how many vertical black-white lines can be resolved on a display. The current NTSC format provides for 525 horizontal lines while an HDTV standard provides for either 720 or 1080 horizontal lines.
Multichannel Video Programming Distributor (MVPD)	An entity such as, but not limited to, a cable operator, a Multiple System Operator (MSO), a multiple channel distribution service, a Direct Broadcast Satellite (DBS) service, or a television receive only satellite program distributor who makes available for purchase by subscribers or customers multiple channels of video programming. MVPD encompasses all providers of multichannel TV, including MSOs, Private Cable Operators (PCO)s, Competitive Local Exchange Carriers (CLEC)s and DBS systems.

APPENDIX B
INTRODUCTORY LETTER

Todd Holmes
Graduate Student
University of Florida
(My address here)

(Name typed here)
General Manager
(Address for Station)

Dear (Name of Executive):

I am a graduate student at the University of Florida and, as part of a Master's Thesis, I am conducting interviews with television station general managers in various markets. The purpose of these interviews is to see what digital business model stations are currently using, or looking to use, to increase audience share and, subsequently, revenues. I am contacting you because I believe that your thoughts on (broadcast station)'s digital strategy as well as your opinion as to the best ways for television stations to remain competitive during the current transition to digital will prove to be of great value to the research study.

The interview will take no more than 45 minutes. Specifically, I will be asking you questions about multicasting (simultaneous broadcasting of two or more channels at the same time) and ancillary services (additional program data and/or interactive content being transmitted along with a program). Your responses to these questions will be kept confidential and your identity will not be revealed in the final copy of the thesis.

I will be contacting you early next week to discuss the possibility of us setting up a meeting. Realizing that you have many demands on your time and various important issues with which to deal, I would like to set up this interview for a time that would be of most convenience for you. In the meantime, if you have any questions about this research study or would like to take a look at the questions I will be asking, please don't hesitate to give me a call at (352) 339-1515.

I look forward to speaking with you soon to discuss the possibility of an interview. I hope to have the opportunity to meet you in the near future and I am very appreciative of your time and your consideration of my request.

Sincerely,

Todd A. Holmes
Graduate Student
University of Florida

APPENDIX C
INFORMED CONSENT LETTER

Dear Station Executive:

I am a graduate student at the University of Florida. As part of my Master's Thesis, I am conducting in-depth interviews. The purpose of these interviews is to see what digital business models stations are utilizing to increase their audience share and revenues as the digital transition unfolds. Specifically, I am looking into multicasting (simultaneous broadcasting of two or more channels at the same time) and ancillary services (additional program data and/or interactive content being transmitted along with a program). I am asking you to participate in one of these interviews because you have been identified as a TV station executive with a great deal of knowledge about your station's digital business model and the industry-wide transition to the new digital standard.

Interviewees will be asked to participate in an interview lasting no longer than 45 minutes. The schedule of questions is attached to this form. You will not have to answer any question you do not wish to answer. Your interview will begin after I receive a copy of this signed consent from you. With your permission, I would like to audiotape this interview. Only I will have access to the tape which I will personally transcribe, removing any identifiers during transcription. The tape will then be erased. If you decide to not allow me to audiotape the interview, I would like to take handwritten notes of your comments instead with your permission. Whether the interview is tape-recorded or handwritten notes are taken in lieu of an audiotape, your identity will be kept confidential to the extent provided by law and your identity will not be revealed in the final manuscript.

There are no anticipated risks, compensation or other direct benefits to you as a participant in this interview. You are free to withdraw your consent to participate and may discontinue your participation in the interview at any time without consequence.

If you have any questions about this research protocol, please contact me at (352) 339-1515 or my faculty supervisor, Dr. David H. Ostroff, at (352) 392-0463. Questions or concerns about your rights as a research participant may be directed to the UFIRB office, University of Florida, Box 112250, Gainesville, FL 32611; ph (352) 392-0433.

Please sign this copy of the letter and hand to me if and when you wish to proceed. A second copy is provided for your records. By signing this letter, you give me permission to report your responses anonymously in the final manuscript to be submitted to my faculty supervisor as part of my Master's Thesis.

Thank you,
Todd A. Holmes

I have read the procedure described above for the Digital Business Model Interview research. I voluntarily agree to participate in the interview and I have received a copy of this description.

Signature of Participant: _____ Date: _____

Signature of Investigator: _____ Date: _____

APPENDIX D
INTERVIEW QUESTIONS: RESEARCH QUESTION 1

General:

1. What is your name and job title?
2. What are your primary job responsibilities?
3. What network(s) does your station carry?
4. What station group do you belong to?

Research Question 1:

What are the primary factors which are driving the adoption of multicasting at broadcast outlets?

1. Are you familiar with multicasting?
 - a. Is it something your station is currently offering viewers?
 - b. If so, how many digital streams are you offering?
 - c. If not, when are you looking to begin using the technology?
2. What types of programming are you offering on these digital streams?
 - a. What kind of network programming are you airing?
 - b. What kind of in-house programming are you airing, if any?
 - c. How did you decide to use this combination of programming?
3. How much influence does the network have over your selection of multicast channels?
4. Are there multicasting initiatives you are aware of within the station group?
5. What are the costs involved in carrying these multicast channels?
6. Are you currently selling advertising on these channels?

a. If so, how are you selling ad time?

1. Are you offering program or channel sponsorships or selling individual spots?
2. Are you tying in your spot sales on the secondary channels with those on the main channel?
3. Do you have or do you plan to have a separate sales team for these secondary channels?

b. If not, why aren't you selling advertising on these secondary channels?

7. You may have heard of USDTV or Emmis Communications and how they are purchasing unused spectrum from broadcasters in select markets to offer a low-cost alternative to cable. If they were to call on you, would you be willing to sell them some of your unused spectrum/bandwidth?

a. Do you believe that these companies have a viable business concept?

APPENDIX E
INTERVIEW QUESTIONS: RESEARCH QUESTION 2

Research Question #2:

What are the primary factors which are driving the adoption of various ancillary services (datacasting, subscription television programming, teletext, and interactive services, etc.) at broadcast outlets?

1. Are you familiar with ancillary services, such as datacasting, subscription television programming, teletext, and interactive services?
 - a. Is your station currently offering any of these digital services?
 - b. If so, how many streams of ancillary services are you offering?
 - c. If not, when are you looking to begin utilizing these services?

2. What types of information/ entertainment are you offering on these digital streams?
 - a. What kind of network-provided information are you datacasting?
 - b. What kind of in-house information are you providing, if any?
 - c. How did you decide to use these combination of digital services?

3. How much influence does the network have over your selection of digital services and the type of information that your station sends out?

4. Are there any digital service initiatives you are aware of within your station group?

5. What are the costs involved in carrying these data/entertainment channels?

6. Are you currently tying advertising in with these digital services?
 - a. If so, how are you selling advertising on these ancillary services?

1. Are you offering providing advertiser sponsorships on these digital channels?
 2. Are you tying in these sponsorships with spots sales/sponsorships on the main channel?
 3. Do you have or do you plan to have a separate sales team for these ancillary services?
- b. If not, why aren't you selling advertising on these digital services?
7. Are you currently or do you plan to charge subscription fees for the use of these services?

APPENDIX F
INTERVIEW QUESTIONS: RESEARCH QUESTION 3

Research Question #3:

How is the current FCC decision mandating that cable systems only have to carry a broadcaster's "primary video" programming stream effecting the multicasting and ancillary service adoption decisions being made at broadcast outlets?

1. For some time, the FCC has been debating the carriage of multicast (secondary) channels on cable systems. Do you feel that your business strategy would be different if cable systems had to carry every multicast channel offered by local broadcasters?
 - a. If your strategy would be different, why?
 - b. What would be different about your strategy?
 - c. What are the factors which are contributing to the ability of some broadcasters to receive voluntary carriage?
2. Do you feel that affiliates in smaller markets have more or less of a chance of getting their multicast channels on cable systems than affiliates in larger markets? If so, why?
3. Do you feel that affiliates of the Big 4 networks (CBS, NBC, ABC, FOX) in a market have more or less of a chance of getting their multicast channels on cable systems than affiliates of the smaller networks or independent stations?
4. Do local cable systems currently carry your multicast channels?
 - a. If so, which cable systems?
 - b. What did you have to do to entice these systems to carry your multicast channels?

c. What it difficult or fairly routine?

5. Do you feel that your network affiliation or the clout of your broadcast group have anything to do with your ability to get cable carriage of your multicast channels?

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BIOGRAPHICAL SKETCH

Todd Holmes was born in Greenville, TX, on June 5, 1973. He spent his early years in Texas before moving to Pennsylvania with his mother and brother. Holmes was active in high school as he participated in sports and student government. In June 1991, he graduated from Camp Hill High School in Camp Hill, PA. Holmes attended college at James Madison University where he earned a BBA in marketing in 1995. He was active while in college as he was a member of Delta Sigma Pi, a professional business fraternity, the Madison Marketing Association, and student government.

Since college, Holmes has worked in a variety of sales positions, primarily in the telecommunications field. He worked in inside sales for Dish Network before moving into outside sales with MCI WorldCom, where he covered the Baltimore, MD, territory. After spending a year at MCI WorldCom, Holmes relocated to Gainesville, FL, to work in the television industry and pursue a childhood interest in television broadcasting. He went to work at, then, WGFL WB 53 in August 1999 as an account executive. Holmes decided to stay with the sales track after several months in the business, and he ended up working in sales for the station, which later became known as WGFL CBS 4, for nearly seven years. During his time at the station, Holmes built a strong client base of both local and agency business and was promoted to senior account executive in February 2005. In addition, during this time, he was accepted to the Graduate School at the University of Florida in the College of Journalism and Communications, where he began attending school part-time studying telecommunications.

In May 2006, however, he left the media business to work in the office supply and furniture business at DOCS Business Interiors as an account executive. After a short stint with DOCS, Holmes found himself missing the media business and promptly found employment with Sunshine Broadcasting, a radio broadcasting company, as a media consultant.

Holmes plans to graduate with his Master of Arts in Mass Communication degree in August 2008. In the fall of 2008, he plans to begin pursuing a Ph.D. in marketing at Mississippi State University.