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**BROADCAST v. BROADBAND?
A SURVEY OF THE REALLOCATION OF BROADCAST
SPECTRUM FOR WIRELESS BROADBAND**

Karen R. Sprung*

“America’s future competitiveness and global technology leadership depend, in part, upon the availability of additional spectrum. The world is going wireless, and we must not fall behind. . . . We are now beginning the next transformation in information technology: the wireless broadband revolution.”¹ On June 28, 2010, President Obama issued an Executive Memorandum which committed the Federal government to nearly double the amount of commercial spectrum available over the next ten years, in order to unleash the innovative potential of wireless broadband.

The contribution of wireless services to overall gross domestic product in the U.S. grew over 16% annually from 1992–2007, compared with less than 3% annual growth for the remainder of the economy.² The demand for mobile broadband services is increasing with the introduction of new devices, as well as the availability of 3G and the emergence of 4G networks. The mobile broadband industry is expected to “drive innovation, job growth and investment through the next decade,” while both usage rates and revenues in broadcast television have declined significantly over the past decade.³ An inventory and possible repurposing of some television broadcast

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¹ Memorandum on Unleashing the Wireless Broadband Revolution, 75 Fed. Reg. 38,387 (June 28, 2010).

² FCC, CONNECTING AMERICA: NATIONAL BROADBAND PLAN, at 75 (2010) [hereinafter NATIONAL BROADBAND PLAN] (citing Harold Furchtgott-Roth, *The Wireless Services Sector: A Key to Economic Growth in America 1* (Jan. 2009) (unpublished manuscript) (on file with the FCC)), available at <http://download.broadband.gov/plan/national-broadband-plan.pdf>.

³ *Id.* at 89.

spectrum for wireless broadband is therefore a logical strategy to insure efficient utilization of the scarce resource.

Section I of this paper defines spectrum.⁴ Section II provides an historical context for spectrum scarcity and regulation. Section III discusses the solution to spectrum scarcity proposed by the National Broadband Plan. Section IV addresses broadcasters' responses.

I. WHAT IS SPECTRUM?

The term spectrum, originally used in reference to light, refers to a range of frequencies at which information can be transmitted through the air.⁵ Frequency is measured in hertz ("Hz") or cycles per second. The different propagation characteristics of various frequencies make certain bands more suitable for specific uses. High frequency waves can carry information, but not through walls, trees or across long distances. Low frequency bands are considered the very best, because those frequencies can carry signals through walls, trees and across long distances in rural areas.⁶ The lower bands, which are used for broadcast, are also most suitable for wireless broadband. These bands are considered the most valuable or the "beachfront" property. Television broadcast bands comprise about 30% of spectrum between 225 MHz and 1 GHz.⁷

High usage and/or the presence of more than one service on a particular band are significant considerations for spectrum planning purposes. Two parties, for example, cannot broadcast on the same frequency at the same time in the same area, without causing interference to the other party.⁸ In addition, some types of service may be more likely to cause interference on neighboring bands than others. This problem occurred in the 800 MHz band, when police, firefighters and first responders transmitted radio dispatch messages on the same

⁴ Spectrum is sometimes referred to as capacity or bandwidth.

⁵ STUART MINOR BENJAMIN, DOUGLAS GARY LICHTMAN, HOWARD SHELANSKI & PHILIP J. WEISER, *TELECOMMUNICATIONS LAW AND POLICY* 5-6 (Carolina Academic Press 2d ed. 2006).

⁶ *The Communicators: Management of Broadband Spectrum Use* (C-SPAN television broadcast Mar. 23, 2010), available at <http://www.c-spanvideo.org/program/292688-1>.

⁷ FCC, SPECTRUM ANALYSIS: OPTIONS FOR BROADCAST SPECTRUM OBI TECHNICAL PAPER No. 3, at 1 (2010) [hereinafter OBI TECHNICAL PAPER], [http://download.broadband.gov/plan/fcc-omnibus-broadband-initiative-\(obi\)-technical-paper-spectrum-analysis-options-for-broadband-spectrum.pdf](http://download.broadband.gov/plan/fcc-omnibus-broadband-initiative-(obi)-technical-paper-spectrum-analysis-options-for-broadband-spectrum.pdf).

⁸ BENJAMIN ET AL., *supra* note 5, at 31.

band that Nextel used for its mobile services. If the first responders' radio transmission was made at 850 MHz near a Nextel cell tower broadcasting at 851 MHz, the result was interference which rendered the first responders' broadcast inaudible. The Federal Communications Commission ("FCC" or "Commission") resolved the problem by relocating the mobile service to a different band.⁹

An additional consideration is the amount of bandwidth required for a particular use. The requisite amount of bandwidth depends upon the amount and type of information that needs to be carried. For example, an analog transmission will require more bandwidth than a digital one, because digital transmission compresses content.¹⁰ Following the transition from analog to digital television ("DTV"), broadcasters now can offer multiple channels of digital programming simultaneously, using the same amount of spectrum as one analog program.¹¹

II. SPECTRUM SCARCITY AND REGULATION

Spectrum is a finite resource and subject to interference; therefore, in the public interest, commercial spectrum is regulated by the FCC under the authority granted by the Communications Act of 1934.¹² The Supreme Court reiterated the importance of regulation by the agency in the seminal *Red Lion Broadcasting v. FCC* case:

⁹ Associated Press, *FCC, Nextel Agree to End Cell Phone Interference*, FoxNews.com (Feb. 7, 2005), <http://www.foxnews.com/story/0,2933,146645,00.html> (last visited Sept. 5, 2010).

¹⁰ BENJAMIN ET AL., *supra* note 5, at 8.

¹¹ *What is DTV?*, FCC, <http://www.dtv.gov/whatisdtv.html> (last visited Sept. 9, 2010).

¹² Communications Act of 1934, 47 U.S.C. § 151 (2006). The FCC has statutory authority to grant, transfer, renew and terminate broadcast licenses. Historically, under the *Ashbacker* Doctrine, the Commission held comparative hearings for bona fide competing parties before one party was granted a license to the exclusion of another. *Ashbacker Radio Corp. v. FCC*, 326 U.S. 327, 333 (1945). Subsequently, the Commission developed "comparative criteria" for the comparative hearings, see *Policy Statement on Comparative Hearings*, 1 FCC 2d 393 (1965). However, following the DC Circuit decision in *Bechtel v. FCC*, 10 F.3d 875 (D.C. Cir. 1993) (holding that some of the "qualitative factors" in the comparative criteria were "arbitrary and capricious"), the Commission ceased comparative hearings until the issues raised in *Bechtel* could be resolved. In 1997, a Congressional amendment to 47 U.S.C. § 309 granted the Commission the authority to conduct competitive bidding procedures to resolve mutually exclusive applications for commercial broadcast stations. Unless filed before July 1, 1997, the Commission does not currently resolve disputes for competing applications by comparative hearing, reasoning that it is generally "fairer and more expeditious" to grant mutually exclusive licenses by competitive

[T]he rapidity with which technological advances succeed one another to create more efficient use of spectrum space on the one hand, and to create new uses for that space by ever growing numbers of people on the other, makes it unwise to speculate on the future allocation of that space. It is enough to say that the resource is one of considerable and growing importance whose scarcity impelled its regulation by an agency authorized by Congress.¹³

However, government regulation was not viewed as the best solution by everyone. Nobel Prize-winning economist, Ronald Coase, proposed to the Commission in 1959 that the licensing process arbitrarily enriched private operators, that spectrum should be treated similarly to traditional property rights, and that the market would correct itself.¹⁴ Nonetheless, Coase still recognized that some form of government regulation was necessary in order to prevent the interference caused by multiple parties transmitting simultaneously on the same spectrum.¹⁵ Furthermore, because spectrum is a public good, the policymakers determined that a market solution by economic pressures in buying and selling frequencies was not appropriate.¹⁶

More recently, in 1993, Congress authorized spectrum auctions. From 1994 through 2009 there have been 75 spectrum auctions which have yielded more than \$52.6 billion for the federal government.¹⁷ In addition, the DTV transition in 2009 freed up 108 MHz of spectrum, 52 MHz of which was sold through the FCC's 700 MHz auction,

bidding. Implementation of Section 309(j) of the Communications Act – Competitive Bidding for Commercial Broadcast and Instructional Television Fixed Service Licenses, First Report and Order, 13 FCC Rcd. 15920, para. 34, para. 55 (Sept. 6, 1998).

¹³ *Red Lion Broadcasting v. FCC*, 395 U.S. 367, 399 (1969).

¹⁴ Ronald Coase, *Why Not Use The Pricing System in the Broadcast Industry?*, Testimony before the FCC (Dec. 1959), reprinted in BENJAMIN ET AL., *supra* note 5, at 34 (theorizing that between two stations in competition for use of the same band, the station which uses the spectrum most efficiently (with the greatest “monetary measure of cost and benefit”), will ultimately pay the most for the spectrum and retain ownership).

¹⁵ Ronald Coase, *The Federal Communications Commission*, 2 J.L. & ECON. 1, 25 (1959).

¹⁶ BENJAMIN ET AL., *supra* note 5, at 46 (citing Ronald Coase, *Comment on Thomas W. Hazlett: Assigning Property Rights to Radio Spectrum Users: Why Did FCC License Auctions Take 67 Years?*, 41 J.L. & ECON. 577, 580 (1998)).

¹⁷ THOMAS M. LENARD, LAWRENCE J. WHITE & JAMES L. ROSO, TECH. POLICY INST., *INCREASING SPECTRUM FOR BROADBAND: WHAT ARE THE OPTIONS?* (2010), http://www.techpolicyinstitute.org/files/increasing_spectrum_for_broadband1.pdf.

generating almost \$20 billion in federal revenues.¹⁸ If broadcasters are permitted to reap the economic benefits, spectrum auctions could potentially provide some economic incentive to broadcasters as well, thereby encouraging efficient use of spectrum and the auctioning of unutilized spectrum.

III. NATIONAL BROADBAND PLAN

Mobile broadband use in America is growing at an exponential rate, and analysts predict that within five years more users will connect to the Internet via mobile devices than desktop computers.¹⁹ The sales figures for new devices, such as the iPad, may be an indicator of a shift in consumers' preferences. Apple sold nearly 3.3 million iPads during the quarter following its launch in April 2010,²⁰ and is predicted to sell 16 million iPads by first quarter 2011.²¹ As users increase and the technology becomes more sophisticated, applications will require even greater amounts of bandwidth to operate, further compounding a spectrum scarcity concern. Among the recommendations to remedy a possible spectrum shortage, the National Broadband Plan ("NBP" or "Plan") proposes a reallocation of broadcast spectrum for wireless broadband.

According to the Plan, the process for revising spectrum allocations has historically taken between six and thirteen years,²² and therefore the reallocation must occur now, in order to make spectrum available to meet consumers' future demand for wireless broadband. The NBP recommends that the Commission initiate a rulemaking proceeding to reallocate 120 MHz from the broadcast television bands for wireless broadband use. The Plan further recommends the establishment of a licensing framework allowing two or more stations to share a 6 MHz channel assignment, as well as rules for the auction of broadcast spectrum reclaimed through repacking and voluntary channel sharing.²³

¹⁸ *Id.*

¹⁹ NATIONAL BROADBAND PLAN, *supra* note 2, at 75.

²⁰ *Scorching iPhone, iMac & iPad sales boost Apple stock*, DAILY NEWS, July 21, 2010, at 46.

²¹ David Barbosa, *Apple iPad: The Most Popular Mobile Device Ever?*, TABLETPCREVIEW.COM (June 9, 2010), <http://www.tabletpcreview.com/default.asp?newsID=1436>.

²² NATIONAL BROADBAND PLAN, *supra* note 2, at 79.

²³ *Id.* at 88.

Recommendation 5.8 proposes that the FCC should make available an additional 500 MHz within the next ten years, 300 of which should be between 225 MHz and 3.7 GHz and available for mobile flexible use within the next five years.²⁴ In the bands below 3.7 GHz, 547 MHz is licensed as flexible use spectrum that can be used for mobile broadband. Currently, 170 MHz is being used by cellular and PCS bands, and the majority of the remaining 377 MHz is just now becoming available for mobile broadband use. Wireless providers estimate future needs will range from 40 to 150 MHz per operator.²⁵

The NBP also recommends that Congress should consider granting the FCC and the National Telecommunications and Information Association the authority to impose fees on spectrum that is not licensed for flexible use.²⁶ If implemented, the U.S. would not be the first country to impose such license fees. The United Kingdom has a user fee system in place called Administrative Incentive Pricing (“AIP”) for commercial and government spectrum. A recent review of the program has conclusively found that the AIP program is indeed meeting the objective of incentivizing users “to make optimal use of their spectrum.”²⁷

IV. BROADCASTERS’ RESPONSE

Broadcasters are concerned about preserving their ability to provide consumers with broadcast content and distribution, particularly after undertaking significant effort and expense to upgrade facilities in connection with the DTV transition.²⁸ Broadcasters also are working to develop “Mobile DTV” service, which would operate on the broadcasters’ current 6 MHz spectrum alongside their other broadcast service. The National Association of Broadcasters (“NAB”)

²⁴ *Id.* at 84.

²⁵ *Id.*

²⁶ *Id.* at 82.

²⁷ *Id.* at 83.

²⁸ The transition to DTV collectively cost broadcasters approximately \$10 billion for technical changes. Individual television stations spent \$1–2 million for construction of facilities, which includes new equipment and studios for transmission of the high definition technology. ROBERT TANNER, FCC, DIGITAL TELEVISION TRANSITION IN UNITED STATES 9 (May 7, 2010) (slide presentation), http://aimp.apec.org/Documents/2010/TEL/TEL41-LSG-RR/10_tel41_lsg_rr_008.pdf.

asserts that any reduction in that spectrum allocation would hinder broadcasters' ability to roll out this new technology.²⁹

Maximum Service Television, Inc. ("MSTV") and the NAB are proposing that to the extent that more spectrum is needed for broadband uses, the Commission should not assume that broadcast spectrum is the best place to find it.³⁰ The comments also emphasize four ideas: (1) broadcasting and broadband are not "either/or" propositions; (2) local television broadcasting offers social benefits which are not replaceable by other services; (3) by both policy and directive, the FCC should provide universal communications for all communities as well as *local* service; and (4) consumers have spent approximately \$109 billion in HD receiving equipment in the DTV transition relying on the broadcasting services which cannot be duplicated or replaced by wireless broadband, cable, or satellite services.³¹ The comments further suggest that consumer demand for mobile video is focused on the content that broadcasters offer, including local news programming.³²

On the other hand, according to a study by The Brattle Group, "the over-the-air portion of broadcasting is becoming less economically relevant to broadcasters."³³ Furthermore, CTIA – The Wireless Association ("CTIA") asserts that the benefits of over-the-air ("OTA") broadcast services can be enjoyed without the use of broadcast spectrum, as the majority of Americans do through their cable service. CTIA's comments further state that the number of consumers who use OTA broadcast services has decreased by 56% over the past ten years, whereas the number of people using smartphones has grown 690%

²⁹ *Connecting Main Street to the World: Federal Efforts to Expand Small Business Internet Access: Hearing Before Comm. on the Small Bus. and Entrepreneurship*, 111th Cong. 9 (2010) [hereinafter *Hearing*] (statement of former Sen. Gordon H. Smith, President and Chief Exec. Officer Nat'l Assoc. of Broadcasters), available at http://sbc.senate.gov/public/?a=Files.Serve&File_id=1b174400-fb5f-4098-b4c3-3f821a8c966b.

³⁰ ASS'N FOR MAXIMUM SERV. TELEVISION, INC. & NAT'L ASS'N OF BROADCASTERS, COMMENTS – NBP PUBLIC NOTICE #26 at 4 (Dec. 21, 2009), in FCC GN Docket Nos. 09-47, 09-51, 09-137, available at <http://fjallfoss.fcc.gov/ecfs/document/view?id=7020354401>.

³¹ *Id.* at 4–6.

³² *Id.* at 6.

³³ COLEMAN BAZELON, THE BRATTLE GROUP, THE NEED FOR ADDITIONAL SPECTRUM FOR WIRELESS BROADBAND: THE ECONOMIC BENEFITS AND COSTS OF REALLOCATIONS 11 (2009), www.brattle.com/_documents/uploadlibrary/upload809.pdf.

over the past four years.³⁴ According to a survey by the Pew Internet and American Life Project, 61% of Americans get at least some of their news online,³⁵ and just over a quarter now read their news on a cell phone.³⁶ More than 80% of those surveyed receive news from emailed links.³⁷

A. Emergency Services

The NAB and musicFirst, a recording industry trade group,³⁸ propose that Congress mandate that every mobile phone sold in the United States contain a chip to enable FM radio reception.³⁹ They argue that having the tuner in the device would offer news and guidance in emergency situations.

While an FM chip in a smartphone might give a user access to approximately 30 local stations, a smartphone user streaming on an internet radio application has hundreds, or even thousands, of stations available online.⁴⁰ Moreover, wireless broadband applications can improve public safety services. Location-based services can offer faster location and recovery of missing persons and stolen property through a Commercial Mobile Alert System (“CMAS”). CMAS will enable emergency operations centers to reach targeted audiences with emergency alerts on the device that most people almost always have with them.⁴¹

B. Morality and Community Concerns

In the NAB State of the Industry Address, the Association President and CEO Gordon Smith suggests that because broadcasters

³⁴ CTIA – THE WIRELESS ASSOCIATION, COMMENTS ON NBP PUBLIC NOTICE #26, USES OF SPECTRUM 5 (Dec. 22, 2009), in FCC GN Docket Nos. 09-47, 09-51 and 09-137, available at <http://fjallfoss.fcc.gov/ecfs/document/view?id=7020354548>.

³⁵ Doug Gross, *Survey: More Americans Get News From Internet Than Newspapers or Radio*, CNN TECH (Mar. 1, 2010), <http://www.cnn.com/2010/TECH/03/01/social.network.news/index.html>.

³⁶ Andrew Vanacore, *Survey: 26 Pct of Americans Get News Via Phone*, ABC NEWS (Mar. 1, 2010), <http://abcnews.go.com/Technology/wireStory?id=9975310>.

³⁷ *Id.*

³⁸ See generally MUSICFIRST, <http://musicfirstcoalition.org> (last visited Sept. 17, 2010).

³⁹ Jonathan Takiff, *Radio-Chips in Cell Phones Debated*, PHILA. DAILY NEWS, Sept. 1, 2010 at 33.

⁴⁰ *Id.*

⁴¹ OBI TECHNICAL PAPER, *supra* note 7, at 12.

are required by statute to “observe community standards” and the Internet is rampant with lewd material, any move which favors broadband therefore supports the distribution of obscene material. He argues that “if broadcasting loses spectrum and grandma’s new HDTV is rendered useless, at least she will have the consolation of knowing her grandson can get lewd material on his cell phone.”⁴² Even if this scenario were plausible, the fact is that broadcasting is not devoid of indecent content either. The ongoing issue of fleeting profanity in broadcast programming was recently argued in the Second Circuit by broadcasters in *Fox v. FCC* (holding that the FCC’s policy banning fleeting expletives violates the First Amendment).⁴³

As for other public policy concerns, the FCC continues to support the policy goals of localism and diversity of views in broadcast television.⁴⁴ It should be noted, however, that localism and diversity can be supported by mobile broadband as well. For example, mobile broadband devices have enabled innovation in journalism. In 2009, the images of democratic protests in Iran were captured and transmitted to social networking websites via mobile devices,⁴⁵ which has expanded First Amendment expression to diverse viewpoints and to communities which were previously excluded from conventional forms of media.⁴⁶

C. Efficient Spectrum Use

In his testimony before the U.S. Senate Small Business and Entrepreneurship Committee, Gordon Smith asserted that because broadcast is one-to-everyone, it is indeed the most efficient use of

⁴² Gordon Smith, CEO, Nat’l Assoc. of Broadcasters, 2010 NAB Show Inaugural State of the Industry Address at the 2010 NAB Show (Apr. 12, 2010), available at <http://www.nabshow.com/2010/newsroom/pressRelease.asp?id=2260>.

⁴³ *Fox Television Stations, Inc. v. FCC*, 613 F.3d 317 (2d Cir. 2010). On August 25, 2010, the FCC filed a Petition for Rehearing En Banc in the Second Circuit, asserting that the decision went too far in overruling the indecency regime and that the decision should have focused on the longstanding context-based approach to indecency enforcement that was sanctioned in *FCC v. Pacifica Foundation*, 438 U.S. 726 (1978). Brief for Respondents, *Fox Television Stations, Inc. v. FCC*, 613 F.3d 317 (2010) (No. 06-1760-ag(L), 06-2750-ag, 06-5358-ag), 2010 WL 3463628.

⁴⁴ OBI TECHNICAL PAPER, *supra* note 7, at 12.

⁴⁵ *Twitter Emerges as News Source During Iran Media Crackdown*, CBC NEWS – TECHNOLOGY & SCIENCE (June 16, 2009), available at <http://www.cbc.ca/technology/story/2009/06/15/iran-twitter-election-protest.html>.

⁴⁶ OBI TECHNICAL PAPER, *supra* note 7, at 12.

spectrum, whereas broadband, which is one-to-one, is “spectrum hogging.”⁴⁷ Smith refers to the type of wireless broadband architecture in which each user has his or her own path in the cellular network.⁴⁸

However, the development of mobile ad hoc networks could change this traditional cellular architecture. In a mobile ad hoc network, each device in the network acts as both a sender and a receiver, as well as a relay point for other devices.⁴⁹ Ad hoc network technology has been in development for more than three decades,⁵⁰ but the large amount of battery power required for mobile operation has prohibited implementation of this technology for mobile commercial use. Recently, researchers at Stanford University announced a breakthrough in the development of a lithium-sulfur battery, which will have 80% more capacity and ten times the power density of lithium-ion technology.⁵¹ If the new battery type can be integrated into the next generation of smartphones, mobile ad hoc networks could be commercially available in the near future. Mobile ad hoc network technology would not replace all cellular infrastructure,⁵² but it could vastly improve efficiency, as it would rely on fewer cellular towers.

Additionally, there have been great advancements in the area of digital data compression. By employing techniques which reduce the wireless bandwidth required to send data such as photos, email, text and flash content, wireless broadband technology remains efficient in its optimization of available spectrum.⁵³

⁴⁷ Grant Gross, *Broadcasting Group Defends Its Spectrum Turf*, PCWORLD (Apr. 27, 2010), http://www.pcworld.com/article/195071/broadcasting_group_defends_its_spectrum_turf.html.

⁴⁸ *Hearing*, *supra* note 29, at 8 (statement of former Sen. Gordon H. Smith, President and Chief Exec. Officer Nat'l Assoc. of Broadcasters).

⁴⁹ Michelle Effros, Andrea Goldsmith & Muriel Médard, *The Rise of Instant Wireless Networks*, *Sci. AM.*, Apr. 2010, at 72.

⁵⁰ *Id.*

⁵¹ Sarah Perez, *Battery Breakthrough Could Revolutionize Mobile Computing*, REDWRITEWEB (Mar. 15, 2010), http://www.readwriteweb.com/archives/battery_breakthrough_could_revolutionize_mobile_computing.php.

⁵² Effros, *supra* note 49.

⁵³ See generally *Accelerated Broadband*, PROPEL, http://www.propel.com/propel_direct/learn/broadband_propel.html (last visited Sept. 12, 2010); *Solutions: Technology*, VENTURI WIRELESS,

Whether the usage is one-to-one, one-to-everyone, or anything in between, any inefficient use of spectrum can be viewed as wasteful or “hogging.” To further carry out the objective of ensuring that “our nation’s spectrum is put to its highest and best use,”⁵⁴ Chairman Genochowski recently announced the launch of the Spectrum Task Force,⁵⁵ whose purpose is to carry out the NBP’s roadmap for creating greater spectrum efficiency.

In addition, the FCC has conducted extensive modeling and analysis to determine the best spectrum repacking solutions. The spectrum analysis in *Options for Broadcast Spectrum, OBI Technical Paper No. 3* explains that “through channel sharing, the FCC may be able to repack channel assignments more efficiently to fit current stations with existing 6 MHz licenses into fewer total channels, thus freeing spectrum for reallocation to broadband use.”⁵⁶

For the first time, the FCC has launched a “spectrum dashboard” which allows the public to view spectrum usage in the bands from 225 MHz to 3.7 GHz. The dashboard allows for greater transparency, showing how spectrum is being used, who owns the licenses and what spectrum is available.⁵⁷ The NAB notes that the dashboard does not currently cover all bands,⁵⁸ and believes that a comprehensive inventory of spectrum allocation, including that spectrum allocated for Federal government use, would be in the public interest.⁵⁹

<http://www.venturiwireless.com/solutions/Vtechnology.html> (last visited Sept. 12, 2010).

⁵⁴ Press Release, FCC, Chairman Julius Genachowski Announces Launch of Spectrum Task Force (Apr. 26, 2010), available at

http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-297722A1.pdf.

⁵⁵ The Spectrum Task Force will be co-chaired by Julius Knapp, Chief of the Office of Engineering Technology, and Ruth Milkman, Chief of the Wireless Telecommunications Bureau and “will play a critical role in the execution of the spectrum recommendations in the National Broadband Plan, including long-term spectrum planning.” *Id.*

⁵⁶ “‘Channel sharing’ involves two or more stations combining their transmissions to share a single six-megahertz channel.” OBI TECHNICAL PAPER, *supra* note 7, at 14.

⁵⁷ *Spectrum Dashboard, Beta*, FCC, <http://reboot.fcc.gov/reform/systems/spectrum-dashboard>, (last visited Sept. 12, 2010).

⁵⁸ *Hearing, supra* note 29, at 11 (statement of former Sen. Gordon H. Smith, President and Chief Exec. Officer Nat’l Assoc. of Broadcasters).

⁵⁹ *Id.* at 10.

V. CONCLUSION

Efficient spectrum use is not a zero-sum situation. Consumers do not want to choose between broadcasting and broadband. As spectrum management policies are developed for the public good, a collaborative spirit will serve both broadcasters and wireless carriers alike in reaching maximum efficiency. To this end, Sprint Nextel recently announced that it cleared 35 MHz of broadcast auxiliary service spectrum to free more spectrum for mobile broadband use.⁶⁰ The project involved replacing 100,000 pieces of television broadcasting equipment at more than 1,000 television broadcast stations nationwide. This work is an example of cross-industry collaboration, and was lauded as such by David Donovan, president of MSTV. The NAB and the Society of Broadcast Engineers also worked closely with Sprint Nextel on the project and are pleased with the result achieved.⁶¹

The wireless broadband revolution is upon us. As we move forward, the industry players and regulators must continue to work together to create balanced policies to support consumers' ever increasing demand for wireless broadband while protecting the community's interest in broadcast distribution and content.

⁶⁰ Press Release, Sprint, Sprint Clears 35 MHz of Spectrum for Future Broadband Use (July 20, 2010), *available at* http://newsroom.sprint.com/article_display.cfm?article_id=1583.

⁶¹ *See id.*