

**Before the
Federal Communications Commission
Washington, DC 20554**

In the Matter of:)	
)	
International Comparison and Consumer Survey Requirements in the Broadband Data Improvement Act)	GN Docket No. 09-47
)	
A National Broadband Plan for Our Future)	GN Docket No. 09-51
)	
Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996, as Amended by the Broadband Data Improvement Act)	GN Docket No. 09-137
)	

**REPLY COMMENTS – NBP PUBLIC NOTICE # 6
THE BROADCASTING SERVICE COALITION**

The Broadcasting Service Coalition (“BSC”),¹ hereby submits the following joint reply comments in response to the Public Notice released on September 23, 2009 in the above-referenced proceedings.² The *Public Notice* sought comments on the sufficiency of current spectrum allocations in spectrum bands for purposes of the Commission’s development of a National Broadband Plan pursuant to the American Recovery and Reinvestment Act of 2009,³ and for related purposes.

In response to the *Public Notice*, which is but a part of a much larger discussion about developing a National Broadband Plan, a number of parties have asserted that the United States

¹ The members of the BSC are LIN Television Corporation, MPS Media, LLC, Manship Media, New Age Media, LLC, Nexstar Broadcasting Group, Inc., Pappas Telecasting Companies and Sinclair Broadcast Group, Inc.

² *Public Notice, Comment Sought on Spectrum for Broadband, NBP Public Notice # 6*, GN Docket Nos. 09-47, 51 and 137, DA 09-2100 (rel. Sept. 23, 2009) (“*Public Notice*”).

³ Pub. L. No. 111-5, 123 Stat. 115 (2009).

faces a great shortage of spectrum for wireless broadband and have urged the FCC quickly to identify spectrum that can be reallocated and auctioned for wireless broadband.⁴ Some of the same commenters also contend that the spectrum presently allocated for television broadcasting is inefficiently used because most households subscribe to a multichannel video service and do not rely over-the-air signals as their primary means of receiving local broadcast programming.

These assumptions are erroneous and the conclusion urged – that the FCC should reallocate some or all of the broadcast spectrum to licensed wireless service and sell it at auction – would be terrible public policy. Broadcasting services bring vast efficiencies to our national communications infrastructure through their ability to serve “one to many” in small bandwidth segments, and those efficiencies cannot be achieved in any other way. For instance, the robustness of broadcast reception and use is not affected whether there are 100 viewers or 100,000 viewers, unlike contention access platforms such as mobile wireless, on which service is seriously degraded or even lost as the number of users increases. Moreover, the efficiency of broadcasting will grow exponentially as the availability of mobile broadcast television grows and as entrepreneurs bring innovation to in-home broadcast services.

Broadcasters, which have only just completed their long and enormously expensive transition to digital transmission, are rapidly developing and launching new services to

⁴ See, e.g., Comments of CTIA – The Wireless Association® (“CTIA”), submitted October 23, 2009; CTIA Written Ex Parte Communication, GN Docket No. 09-51, submitted September 29, 2009; Coleman Bazelon, “The Need for Additional Spectrum for Wireless Broadband: The Economic Benefits and Costs of Reallocations” (“Bazelon Study”), appended to Comments of the Consumer Electronics Association (“CEA”), submitted October 23, 2009. CEA specifically states that it does not necessarily endorse the results of the Bazelon Study, noting that it “does not take into account the advent of digital television broadcasts to mobile and handheld devices using the newly adopted A/153 ATSC Mobile DTV Standard, which has the potential of serving millions of American consumers with live, local DTV content on a new generation of devices.” CEA Comments at 4. As discussed below, the Bazelon Study also fails to account for other very basic factors, and many of its assumptions are simply wrong. BSC supports rigorous assessment of the current and future use of all of the nation's spectrum resources, but that assessment should be based on accurate assumptions and a complete accounting of all relevant factors.

essentially the entire population with no incremental spectrum allocations (actually with reduced amounts of spectrum, having relinquished the upper UHF band). The commitment and efforts of broadcasters to continually improve service to Americans is exemplified by the recent adoption by ATSC of the A/153 Mobile DTV broadcast standard that works within the current service. Indeed, the only policy changes needed to accelerate continued improvement in the efficient use of television broadcast spectrum is not the reallocation of spectrum, but rather the modernization of the FCC's archaic ownership rules and unnecessarily restrictive technical regulations.

Discussion

A. There Is No Evidence of a "Spectrum Crisis"

Several commenters state that the U.S. does not have enough spectrum allocated to wireless broadband to meet growing demand.⁵ In support, they cite predictions and projections by others who share the same view, but they provide little or no hard data. Essentially all of the "facts" CTIA cites in its comments come from CTIA's own prior statements or reports, or reports it has commissioned.⁶

It is tempting to believe generalized claims of a "looming spectrum crisis" that "threatens our global competitiveness" when they are repeated over and over.⁷ No one needs statistics to be convinced that smart phones and mobile broadband access cards are becoming extremely popular. People also understand that these services require spectrum, and that more users of more devices providing more applications and services will require more spectrum over time, if those service providers are unable to increase the efficiency of their spectrum use. There is little

⁵ See, e.g., Comments of CTIA and Bazelon Study.

⁶ For example, the *Mobile Broadband Spectrum Demand* paper CTIA cites repeatedly is one CTIA itself commissioned. See <http://www.rysavy.com/papers.html> (last visited November 13, 2009): ("Report commissioned by CTIA on the rapidly growing demand for mobile broadband services and resulting spectrum impacts. Released at CTIA Wireless March 31, 2009").

⁷ Comments of CTIA at 2.

doubt demand is growing. Notably missing is any information about the geographic dispersion of demand, the amount of spectrum available but unused in areas of heaviest demand, the demand-mitigating effects of WiFi capability in smartphones and other devices, the growth in “hot spot” coverage, the relative efficiency of cellular technology for delivery of different kinds of data, or discussion of any number of other factors that can greatly affect supply and better meet demand. Considering that the reallocation proponents propose to eliminate a service that has been a cornerstone of American social, political and economic life for decades, they offer strikingly little discussion of less severe alternatives that would not disrupt consumers use of the broadcast spectrum.

CTIA provides some estimates of average network demand per user⁸ but it provides no information about how many users can be supported by existing FCC recognized licensed and unlicensed spectrum and no information about when (if ever) existing wireless spectrum will be fully utilized. Proponents of broadcast spectrum reallocation provide no empirical data about wireless usage patterns, so the record does not reflect how much wireless demand arises at home or in the workplace, where it can be met more easily and more efficiently by standards based wireless systems such as WiFi or femtocell links.⁹

Reallocation proponents also do not focus on the extent to which demand differs in different geographic areas. While the comments reflect that demand is not uniform nationwide (i.e., it is correlated to population density) the reallocation proponents do not differentiate between Miami, Florida and Glendive, Montana. Major wireless carriers naturally take a national view, but consumers in the local markets where broadcasters operate are entitled to

⁸ See *Mobile Broadband Spectrum Demand*, Rysavy Research, December 2008 at 18-19, appended to CTIA Written Ex Parte Communication, GN Docket No. 09-51, submitted September 29, 2009.

⁹ The differentiated characteristics of spectrum also play a major role in determining a proper spectrum ‘fit’ to the ‘need’. For example, the use of a meshed network topography can fill many needs based on existing standards (think “one laptop per child” infrastructure).

more granularity and specificity from anyone who would impair or extinguish a free service and put a pay service in its place. Even if carriers eventually may need more spectrum in some places (and there is no evidence that they will) that does not mean that a catastrophic nationwide shortage looms. Moreover, the obvious financial windfall that would befall proponents of spectrum reallocation from a free, over-the-air service to a subscription-based service provided by those proponents cannot be overstated nor must be overlooked.

Interestingly, CTIA advocates just one possible solution to the supposed spectrum deficit, and it is a particularly self-serving one: allocation of more spectrum for the exclusive use of subscription mobile broadband services. Unlicensed spectrum today carries enormous amounts of mobile data traffic and, as anyone with a WiFi access point at home knows, unlicensed spectrum greatly improves the value and utility of “wired” broadband service. The cost of chips and other parts to make WiFi devices is so low that the capability has been added to tens of millions of devices (such as video game consoles and iPods) in which wireless connectivity is not an essential feature. Moreover, WiFi cells are small, permitting levels of frequency re-use that a licensed service could never match, and coverage is ever-expanding. Indeed, carriers are adding WiFi capability to mobile devices they distribute, and the opening of the devices market presages even more traffic agility. When multiple networks are available, devices will use the least congested and lowest cost option. Even if traffic is growing exponentially, that does not prove that licensed wireless base stations will be overloaded with traffic beyond what existing spectrum can support.

Consumers and businesses pay nothing to use the unlicensed spectrum. Yet, according to CTIA, unlicensed bands cannot possibly handle the CTIA-projected increase in wireless traffic¹⁰

¹⁰ See Comments of CTIA at 23-26.

(some of which, apparently, CTIA envisions to consist of HD movie downloads by people who are at home).¹¹ Stated differently, CTIA does not want more spectrum for broadband and less for TV. It wants more spectrum that people pay to use and less spectrum that provides services for free. CTIA members sell bandwidth, and video uses a lot of bandwidth. The availability of television, which is free digital video, dampens demand for mobile wireless bandwidth, so CTIA naturally would like to see free over-the-air broadcast services disappear regardless of whether that results in more efficient use of the nation's spectrum resources.

B. The Television Broadcast Spectrum is Heavily and Efficiently Utilized

CEA and CTIA proffer a variety of arguments to support their contention that the 294 MHz of authorized television broadcast spectrum is underutilized. The basic argument is extrapolated from the premise that roughly 90% of consumers subscribe to multichannel video service, which delivers local broadcast stations to their homes. No mention is made of the tens of millions of households that subscribe to multichannel service, but also use over-the-air service for second, third or fourth sets. Assuming for the sake of argument that 90% of households subscribe to multichannel service today, BSC members disagree that the figure says anything about the economic and societal value of television broadcasting today or that it predicts anything about the future. First, at even 10% in-home penetration, broadcasting represents by far the most efficient use of spectrum. Second, broadcast efficiency is improving, so extrapolating today's conditions into conclusions about future consumer use patterns of over-the-air television could lead to devastating policy choices. The public's growing demand for portable, mobile and

¹¹ CTIA's "Mobile Broadband Spectrum Demand" report (at 10) notes that one of the drivers of mobile broadband demand is "fixed-mobile substitution", meaning that CTIA expects people who have access to wireline broadband at home will abandon it and rely exclusively on mobile broadband service. The same reports cites (at 17) increased use of video, including "HD movie downloads" as another demand driver.

even pocket-sized entertainment devices (to say nothing of the expected growth in ancillary services) underscores the value of the mass media platform of broadcasting.

Broadcasting is spectrally efficient. What is unfortunately not in the foreground of discussion is that broadcasting offers efficiencies that can never be achieved by wireless “directcasting”, one-to-one infrastructure, regardless of any amount of spectrum being allocated. Broadcasting is the original wireless broadband platform and continues to be the most efficient for delivery of widely used rich media content. One broadcast signal can serve an infinite number of people because each user puts no incremental burden on the spectrum. For example, all of the one million people living in the Toledo Designated Market Area can use the same six MHz broadcast signal at the same time, with no diminution of service quality for anyone. If the actual over-the-air usage is 10 percent (100,000 people) or two percent (20,000 people), the spectral efficiency still vastly exceeds that of any point-to-point service – a wireless carrier with its individual “directcasting”, one-to-one architecture cannot serve anywhere close to 20,000 simultaneous high definition video streams in six megahertz of spectrum. Time shifting allows consumers to get even higher utilization from television spectrum. Transmission of multiple channels by broadcasters, plus widespread time shifting capability and emerging easy-to-use in-home and ATSC Mobile DTV devices together permit broadcasters to deliver, and consumers to use, a staggering amount of digital content with a real spectral efficiency that wireless services, designed to provide high levels of spectrum reuse, will never be able to match.¹²

Broadcast spectrum efficiency is improving and has no theoretical limit. Less than six months after the DTV transition, and on the eve of Mobile DTV broadcasting being widely

¹² Wireless carriers can provide service with multicast protocols, but the cellular architecture dilutes the efficiency. Moreover, if it is multicast video services for which wireless carriers need spectrum, that begs the question of why spectrum should be reclaimed from the free broadcast service and assigned to those who would provide similar services on a subscription basis.

introduced, it is illogical to assume that the usage patterns of today's broadcast television reflect its future. It is worth noting that within the ATSC, efforts to evolve DTV are ongoing with promising discussions regarding standards compatible with increased efficiency as one major objective. As multichannel providers pack more and more channels into lower tiers and drive monthly subscriber costs higher, and as more and more "long tail" content becomes available online, entrepreneurs have ample tools and massive economic incentives to develop lower cost alternatives tailored to meet consumers needs. With the digital transition complete, innovators are eagerly working to enable consumers to more easily access free, high definition broadcast programming and "long tail" Internet-delivered content. TiVo pioneered timeshifting, and its newest units include dual ATSC tuners.¹³ Sezmi has focused on making ATSC easier to receive and to use, and plans to pack even more television service into existing broadcast channels. To unlock the unique delivery efficiency of ATSC broadcast, Sezmi created a "smart reception system", that provides "cutting edge indoor reception."¹⁴ Sezmi created a hybrid network that uses the spectral efficiency of ATSC broadcast to distribute popular broadcast, cable and movie content, while using broadband to deliver long tail niche content. Sezmi provides consumers an alternative ATSC/broadband television experience that, according to its website, allows consumers to "forget high-priced cable and satellite services or piles of cobbled-together set-top boxes and tangled cables."¹⁵ Sezmi recently premiered its service in Los Angeles.

Moreover, as has been widely reported, just a few months after the nationwide conversion to digital broadcasting, mobile services have already been launched on the digital spectrum by the majority of U.S. broadcasters. These efforts, coupled with other technologies in

¹³ <http://bit.ly/4vVrNu>, last visited November 11, 2009.

¹⁴ <http://bit.ly/4lswVx>, last visited November 11, 2009.

¹⁵ *Id.*

¹⁷ 47 U.S.C. § 307(b).

development, will make broadcasting's locally relevant content even more accessible to America's diverse population. While it may be in government's narrow interest to raise cash from spectrum auctions, the greater issue is whether the public interest is being advanced so as to ensure an informed citizenry and a "fair, efficient, and equitable distribution" of broadcast service among the states and communities.¹⁷

American consumers currently spend several billions of dollars on cable service every month. But less than a year ago, broadcasters completed the nationwide digital television transition and entrepreneurs now have the platform and the incentive to help consumers save some of those billions by enabling consumers to access more easily free, high definition broadcast programming and "long tail" Internet-delivered content. Emerging in-home integrated broadcast/broadband services and new ATSC Mobile DTV broadcast services, along with new consumer devices that have enormous storage capabilities, portend a massive growth in direct utilization of television spectrum. Every new over-the-air television viewer, whether using free high definition services in home or using robust mobile television anywhere, improves spectrum efficiency, and maximum efficiency is limited only by the population in the service area.

C. Broadcasters Can Provide Far Better Service if Given the Flexibility

CTIA asserts that wireless carriers do a better job than broadcasters of using spectrum to provide services to consumers.¹⁸ For the reasons explained above (and many more), the BSC disagrees. Television broadcasters deliver considerable locally-relevant content to viewers nationwide in addition to network-affiliated and syndicated television programming. Only the broadcast industry provides ubiquitous, unrestricted service to urban and rural populations, with diverse high value nationally distributed programming including programming of interest to

¹⁸ See Comments of CTIA at 30-32.

minority audiences coupled with hyper local news, sports, weather, traffic, school closing announcements, public service announcements vital to local community charity efforts, community event notices, public safety information, emergency alerts (including Amber Alerts), local election coverage, and local business advertising. No such services are offered by wireless carriers – certainly not at the price at which they are offered by broadcasters. For decades, there have been continuing efforts to make America’s consumers pay for content and services that broadcasters have offered for free and these spectrum proposals are intended to preclude the benefits of even more free services being offered in the future by broadcasters using digital broadcast spectrum.

CTIA and CEA seem to argue that wireless licensees are somehow intrinsically better at responding to market changes than broadcast licensees. One cannot make meaningful comparisons between broadcasting and wireless services without reference to the different regulatory environments in which licensees operate. Broadcasters can and will provide even better service if and when the FCC permits them to do so. At bottom, the reclamation proponent’s proposals are anti-competitive and intended to make consumers pay for many of the services they now get for the most advantageous price: *free*.

The FCC permits wireless licensees to control ten or twenty times the six megahertz of spectrum the FCC permits a single licensee in the broadcast service to control, and the FCC permits wireless carriers to hold those vast swaths of spectrum in every market nationwide. The FCC lets wireless licensees aggregate extensive amounts of spectrum in every market to support, simultaneously, multiple generations protocols in multiple frequency bands, so they can adopt new technology, abandon old technology and test new services without disenfranchising anyone. Within the broad bounds of highly flexible technical rules, wireless carriers can deploy and use

their spectrum in whatever way they believe best responds to market demands without any second-guessing by the government.

In contrast, with limited exceptions, broadcasters can hold just one six megahertz license in each market and they must use technology the FCC mandates. Ownership limits make it impossible for any broadcast licensee to launch a new, coast-to-coast service, and the ownership and technical rules prevent anyone from using broadcast spectrum to introduce a game-changing service in any local market. Ironically, the fact that wireless carriers enjoy “liberal use” of their spectrum is one of CTIA’s main arguments in favor of reallocation.¹⁹ This merely underscores the urgent need for the FCC to modernize its ownership and technical rules for television broadcasting.²⁰

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¹⁹ See Comments of CTIA at 21-26.

²⁰ Further, clearly defined receiver standards will greatly aid broadcasters as new services are rolled out and will give consumers the confidence that the consumer electronics products they purchase will deliver these new services without degradation, loss or interference.

Conclusion

Spectrum is a valuable, limited resource, and both broadcasting and wireless services are critical elements of the nation's communications infrastructure. It is vital that the FCC continually reexamine its template for how licensees use the spectrum and how the FCC regulates the structure and operations of those licensees. BSC welcomes the dialogue and looks forward to constructive improvements coming out of the FCC's Quadrennial Review. Broadcasters have worked wonders within the constraints of an archaic regulatory template, and they can do even more if given the flexibility to compete freely in the 21st century communications marketplace.

Respectfully submitted,

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