This paper was presented at the Practicing Law Institute's annual Institute on Telecommunications Policy and Regulation on December 4, 2008.

MAJOR WIRELESS POLICY DEVELOPMENTS SEPTEMBER 2007 - SEPTEMBER 2008

ARI Q. FITZGERALD

HOGAN & HARTSON, L.L.P.

WASHINGTON, D.C.

TABLE OF CONTENTS

Page

Major Wireless Policy Developments
September 2007 - September 2008

Ari Q. Fitzgerald*

Wireless policy developments at the Federal Communication Commission ("FCC" or "Commission") during the past 12 months have been affected by three major developments: (1) the further establishment of wireless voice as an essential consumer service (a service to which certain expectations regarding quality, reliability, and usefulness attach) and the growing consensus among policy makers that wireless data and video will attain similar status in the future; (2) increased consolidation within the wireless industry and the emergence of two clear industry leaders, AT&T and Verizon Wireless; and (3) the further movement by the Commission away from the *laissez-faire* approach to spectrum management that characterized Commission spectrum policy in the late 1990s and early parts of this decade, towards a more interventionist regime to facilitate the achievement of certain social policy goals.

Wireless voice is now a mature market in the United States ("U.S."). More than 260 million Americans currently

---

* Ari Q. Fitzgerald is a partner in the Communications Group at Hogan & Hartson, L.L.P. Also contributing material for this article were Mark Brennan, a member of the Firm's Communications Practice Group, and Ari Meltzer, a Hogan & Hartson L.L.P. summer associate during the past year. The materials in this paper cover events and decisions through September 24, 2008. The views expressed herein are solely those of the author and not of Hogan & Hartson, L.L.P. or any of its clients.

own a wireless phone, and wireless voice penetration currently stands at 84 percent.[1] In addition, an increasing number of consumers, especially young consumers, now rely on their wireless phone as their only phone. According to the most recent Commercial Mobile Radio Services ("CMRS") Competition Report, "[d]uring the second half of 2006, 11.8 percent of U.S. adults lived in households with only wireless phones[,] "one in four adults aged 18-24 years lived in households with only wireless [phones], and nearly 30 percent of adults aged 25-29 years lived in wireless-only households."[2] Wireless minutes of use have increased significantly. According to CTIA, the average number of wireless minutes used by Americans today is 812 per month.[3]

The increasing use of wireless services has not gone unnoticed by the FCC. Aware that wireless devices have become commonplace, and cognizant of the fact that more and more Americans now rely exclusively on wireless devices to make and receive calls, the Commission has for some time been working to ensure that certain capabilities that consumers have come to expect from their wireline phones and other communications devices are (or will soon be) also available over their wireless phones.

Because the wireless market had for a number of years been nascent, and because retail competition among wireless providers was much fiercer than retail competition among wireline providers, the Commission, during the later part of the 1990s and early parts of this decade, had been reluctant to impose all but the most basic social obligations on wireless carriers. However, with wireless penetration now at 84 percent, the Commission appears to have decided that the wireless industry has "grown up" and must now reliably provide many of the capabilities that have been provided by more mature and well-established services such as wireline telecommunications and broadcasting. For example, since September 2007, the Commission has: (1) mandated that the accuracy of wireless carrier-provided E911 automatic

location information eventually be required at the public safety answering point ("PSAP") level;[4] (2) moved forward, despite a pending court appeal and stay, to have modified emergency back-up power rules approved by the Office of Management and Budget ("OMB") and thus put into effect; (3) established new obligations on commercial mobile service ("CMS") spectrum licensees that decide to provide emergency alerts; and (4) moved forward with a Notice of Proposed Rulemaking ("NPRM") implementing the requirements of the NET 911 Act,[5] which was passed by Congress and signed into law by President Bush in July 2008.

At the same time that wireless voice has emerged as an essential consumer service, wireless data, despite a few early set-backs, has finally started to emerge as not only an engine of new revenue growth for wireless carriers, but also as a key component of the Commission's broadband policy agenda. As discussed in more detail below, recent Commission actions confirm that the Commission now believes wireless will play a significant role in expanding the deployment of broadband networks, applications and services, especially in rural areas. Motivated in part by this belief, and aware that some wireless providers had previously engaged in the blocking of third-party devices and applications, the Commission imposed open device and application obligations on Upper 700 MHz C Block licensees in 2007 and is currently considering whether to impose similar obligations on the ultimate licensee or licensees in the 2155-2175/2180 MHz ("AWS-3") band.

Like the consensus among regulators and policymakers that wireless is now an essential consumer service, the trend toward further industry consolidation (and the emergence of AT&T and Verizon Wireless as the wireless industry's clearly dominant providers) has also had a significant impact on wireless policy developments over the past 12 months. As discussed more fully below, several mergers and spectrum-related transactions or proposed

transactions involving AT&T and Verizon Wireless have occurred over the past 12 months, resulting in the two companies acquiring (and being poised to acquire) significant additional subscribers, network assets, and spectrum resources. In many markets, these transactions also have eliminated or will eliminate a competitor to one or both of the two companies. In addition, AT&T and Verizon Wireless were the most active participants (and the biggest winners of spectrum licenses) in the recently completed 700 MHz auction, combining to spend nearly $16.3 billion of the over $19 billion spent overall. These developments have created a greater level of anxiety among the remaining wireless carriers regarding the market power of AT&T and Verizon Wireless, and this level of anxiety has been reflected in recent advocacy before the Commission. For example, wireless carriers other than AT&T and Verizon Wireless have cited concerns regarding the increasing influence and leverage of the two carriers when: (1) urging the Commission to modify its automatic roaming rules to eliminate the "home market" exception and require data roaming; (2) urging the Commission to eliminate incumbent local exchange carrier ("ILEC") special access pricing flexibility and impose tougher restrictions on ILEC provision of special access (dedicated facilities used to enable wireless carriers to "backhaul" wireless traffic from wireless carrier cell sites to certain points within the wireless carriers' networks); (3) urging the Commission to impose restrictions on the ability of the largest providers of wireless services to negotiate exclusive arrangements with handset manufacturers and (4) urging the Commission to bar the largest wireless carriers from bidding on new spectrum licenses and impose aggressive build-out and service-related requirements.

As discussed more fully below, while the Commission has not yet taken final action in response to these proposals, the growing influence of AT&T and Verizon Wireless, including their domination thus far of the wireless

data and video markets, has increased the chance that the Commission will seek in the future ways to counteract the emerging power and influence of these two companies. In the meantime, increased industry consolidation and the emergence of AT&T and Verizon Wireless as clear industry leaders will continue to impact wireless policy advocacy and Commission policy going forward.

Finally, in the area of spectrum management, the Commission, recognizing the tremendous potential for wireless carriers to expand the geographical reach of commercial and public safety broadband networks, has in the past 12 months been far more aggressive than previous Commissions in using its spectrum management powers to promote broader social policy goals. This new, "interventionist" approach was on display last year in the FCC's 700 MHz proceeding, in which the Commission not only imposed very prescriptive and aggressive network construction obligations on new spectrum licensees in order to promote broadband deployment, but also required the licensee of one licensed block, the D Block, to enter into a public/private partnership with the public safety community to deploy and operate an interoperable, broadband public safety network, and imposed open device and application requirements on the licensees of another spectrum block, the Upper 700 MHz C Block. This interventionist trend has continued with a recent proposal for a free, content-filtered broadband service using unpaired spectrum in the AWS-3 band.

I. "ESSENTIAL SERVICE" MANDATES

As noted above, Commission policy over the past 12 months continued to reflect the growing consensus that wireless service is now a well-established and widely used service upon which consumers and government officials have come to rely to satisfy their basic and advanced communications needs. The discussion below highlights

some of the most important regulatory actions to emerge out of this growing consensus over the past 12 months.

A. Warn Act Emergency Alerts

As part of its continuing implementation of the WARN Act,[6] the FCC issued three orders during the past 12 months in its Commercial Mobile Alert System ("CMAS") proceeding. On April 9, 2008, the Commission issued a Report and Order addressing the technical and architectural aspects of the CMAS, including wireless carrier capability requirements and uniform specifications regarding the interface between participating wireless carriers and the governmental entity that will coordinate the alerts.[7]

On July 8, 2008, the FCC released a Second Report and Order and Further Notice of Proposed Rulemaking[8] implementing Section 602(c) of the WARN Act, which requires the Commission to adopt rules requiring non-commercial educational and public broadcast television station licensees and permittees "to install necessary equipment and technologies on, or as part of, any broadcast television digital signal transmitter to enable the distribution of geographically targeted alerts by commercial mobile service providers that have elected to transmit emergency alerts . . ."[9] The Commission also adopted rules implementing Section 602(f) that require CMS spectrum licensees participating in the CMAS to participate in required monthly testing and additional periodic testing of the interface between the Federal Alert Gateway and the participating CMS provider gateway.[10]

On August 7, 2008, the FCC released a Third Report and Order implementing Section 602(b) of the WARN Act.[11] In that order, the Commission adopted procedures by which CMS spectrum licensees may elect to participate in the CMAS and recover costs associated with the development and maintenance of equipment supporting the transmission of

emergency alerts. It also adopted subscriber notification requirements for CMS spectrum licensees that elect not to participate (or that elect to participate only in part) in the CMAS.[12] Moreover, the Commission adopted a rule allowing subscribers the ability to opt out of receiving certain alerts.[13] Finally, the FCC adopted a timeline for CMS providers to begin deploying CMAS services.[14]

Under the rules imposed in the Third Report and Order, wireless spectrum licensees were required to indicate their election decisions by September 8, 2008. All of the major wireless carriers filing elections on that date indicated that they would participate only in part in the CMAS, and most also indicated that their ability to participate in part would depend on the timely implementation by the Federal Emergency Management Agency ("FEMA") of the federal emergency alert system gateway that will provide the information communicated through the CMAS.[15] Ultimately, the success and usefulness of the CMAS will depend on this implementation, which is not expected to occur for another 24 months.

B. Emergency Backup Power

Another example of increased expectations for (and obligations imposed on) the maturing wireless industry relates to emergency backup power. In October 2007, the FCC issued an Order on Reconsideration regarding the emergency backup power rules that it adopted earlier that year in light of the recommendations of the Katrina Panel.[16] The emergency backup power rules require wireless carriers to have at least eight hours of emergency backup power at their cell sites and remote terminals and 24 hours of backup power to switches and related equipment located inside central offices.[17] The rules provide an exemption where such compliance is precluded by: (1) federal, state, tribal or local law; (2) risks to safety of life or health; or (3) a private legal obligation or agreement.[18] In addition, non-nationwide

carriers with no more than 500,000 subscribers are exempt from the backup power requirements and related reporting.[19]

Pursuant to the Order on Reconsideration, wireless carriers are required to file a report with the Commission's Public Safety & Homeland Security Bureau within six months of the effective date of the rules.[20] The report must detail the carrier's compliant and non-compliant assets, and must explain which exemption, if any, applies for any non-compliant assets.[21] Wireless carriers are required to bring non-exempt facilities into compliance with the emergency backup power rules within 12 months from the effective date of the rules or file with the FCC a "certified emergency backup power compliance plan" detailing how the carrier intends to meet the requirements (the compliance plan is subject to FCC review).[22]

The Commission's modified emergency backup power rules are not yet in effect. Parties that appealed the modified rules have been granted a stay of the rules by the U.S. Court of Appeals for the District of Columbia Circuit and have filed petitions for review of the rules with the same court, arguing that the rules exceeded the FCC's statutory authority and violate the Administrative Procedure Act ("APA").[23] In July 2008, the court deferred a decision on the merits of the appeal because OMB had not yet approved information collections related to the FCC's decision.[24] The court left the stay of the rules in place, however, pending OMB's decision.[25] Trade press reports at the time this article was written indicate that the FCC has begun the process of securing OMB approval for its rule modifications, [26] setting the stage for a showdown at the court regarding the legality of the FCC's modified commercial mobile carrier emergency backup power rules.

C. E911

In October 2004, the Association of Public-Safety Communications Officials-International, Inc. ("APCO") filed at the Commission a Request for Declaratory Ruling regarding the geographic area over which wireless carriers must provide the Phase II location accuracy levels required under Section 20.18(h) of the FCC's E911 rules.[27] In particular, APCO requested that the FCC clarify that wireless carriers must satisfy the location accuracy requirements at the PSAP level, rather than over larger geographic areas (*e.g.*, across a state, across the carrier's network).[28] The FCC sought comment on the proposal, along with many other issues related to improving E911 accuracy, in a June 2007 Notice of Proposed Rulemaking.[29]

On November 20, 2007, over the protest of most major wireless carriers, the FCC released a Report and Order holding that wireless carriers must meet the E911 location accuracy requirements at the PSAP level by September 11, 2012.[30] The FCC also adopted several interim benchmarks to ensure that wireless carriers make progress in complying with the new standard.[31] Several parties appealed the decision to the U.S. Court of Appeals for the District of Columbia Circuit, and the court stayed the FCC's new rules in March 2008.

In July of this year, APCO and the National Emergency Number Association ("NENA") filed an *ex parte* letter with the FCC stating that they now favor measuring E911 location accuracy at the county, rather than PSAP, level.[32] Verizon Wireless and AT&T also filed ex parte statements indicating support for rules measuring E911 location accuracy at the PSAP level.[33] In response, the FCC asked the court to vacate the 2007 Report and Order so that the Commission can adopt new rules. On September 17, 2008, the court granted the FCC's motion.[34]

Although it appears that wireless carriers will no longer be expected to achieve location information accuracy

at the PSAP level, any new "county level" requirements would impose a significant cost on the wireless industry, especially those carriers with less extensive networks or (for those using GPS-based location technology) a low number of handsets with GPS capability in circulation. As consumers increasingly rely on wireless services for essential communications, however, issues surrounding E911 location accuracy will continue to surface, and public safety organizations will likely continue to demand more reliable location information from wireless carriers.

D. Net 911

On August 25, 2008, the FCC issued a Notice of Proposed Rulemaking[35] to implement the New and Emerging Technologies 911 Improvement Act of 2008 ("NET 911 Act").[36] Under the Act, the FCC must issue regulations no later than October 21, 2008 that, among other things, ensure that providers of IP-enabled voice services have access to the capabilities they need to provide 911 and E911 service.[37]

One issue upon which the FCC sought comment in the *NET 911 NPRM* relates to the capabilities that are necessary for mobile interconnected VoIP providers (including CMRS providers such as T-Mobile that offer dual-mode CMRS and VoIP handsets) to provide 911 and E911 services, including the capabilities that are necessary for them to provide accurate location information.[38] In particular, the FCC sought comment on what capabilities roaming partners should be required to make available to mobile VoIP providers, including whether a duty should be placed on the roaming partners of dual-mode service providers to provide access to location information (*e.g.*, providing "last known cell" information) regarding the dual-mode service providers' subscribers.[39] For example, T-Mobile uses CMRS default routing and "last known cell" information for VoIP 911 calls made when a caller is within the T-Mobile footprint. Outside

its footprint, however, T-Mobile's roaming providers do not provide "last known cell" information.[40]

The FCC has not yet issued rules in response to the *NET 911 NPRM*. However, the public safety issues raised by the increased use of mobile VoIP services (including dual-mode CMRS and VoIP services) could result in substantial additional E911 obligations being imposed on wireless providers. In this case, the new requirements could apply to some providers that do not even offer VoIP services, but merely provide roaming services to wireless carriers that provide mobile VoIP.

II. COMPETITION AND MARKET STRUCTURE

A. Mergers and Market Consolidating Transactions

Several transactions involving wireless carriers have occurred or have been proposed since September 2007. These transactions have increased consolidation and the potential for consolidation within the wireless industry, and increased significantly the amount of spectrum held by AT&T and Verizon Wireless. In November 2007, AT&T, following Commission approval, acquired control of Dobson Communications Corporation ("Dobson") and its 1.7 million subscribers, network covering large rural and suburban areas, and cellular and PCS licenses. In approving the transaction, the Commission took the opportunity to revise an important aspect of its three-part, initial merger review screen for identifying local markets where a more granular review is required to ensure effective local competition among wireless providers. Specifically, the Commission increased the amount of spectrum considered available for commercial mobile service from 200 to 280 MHz by incorporating within the relevant spectrum basket spectrum authorized for mobile use in the 700 MHz band and increasing the threshold for further review of the combined holdings of spectrum

controlled by any one entity in a given local market from 70 MHz to 95 MHz.[41]

Other approvals involving spectrum acquisitions by AT&T or Verizon Wireless followed the *Dobson* decision. In February 2008, the Commission, applying the same 95 MHz initial spectrum aggregation screen, approved AT&T's acquisition of Aloha Partner's Lower 700 MHz C Block licenses, each of which consisted of a paired 12 MHz (2x6 MHz) block and together covered an estimated "196 million people in 281 markets[,] including 72 of the top 100 and the top 10 markets in the United States."[42] In August 2008, the Commission, once again applying the 95 MHz initial spectrum aggregation screen, approved with minor operating unit divestiture conditions (relating to six local markets) the acquisition by Verizon Wireless of Rural Cellular Corporation ("RCC") and its approximately 790,000 subscribers in rural areas in 15 states, its cellular and PCS licenses and spectrum leases covering approximately 7.2 million people, and its CDMA and GSM networks.[43]

Finally, the Commission is currently considering an application by Verizon Wireless, currently the nation's second largest wireless carrier in terms of subscribers, and Alltel Corporation ("Alltel"), currently the nation's fifth largest wireless carrier and a significant provider of roaming services, for permission to merge.[44] If approved, the resulting entity would become the largest wireless provider in the nation in terms of subscribers, surpassing AT&T.[45]

B. 700 MHz Auction

The 700 MHz auction began on January 28, 2008 and ended on March 18, 2008. In the auction, the FCC put up for sale 62 MHz of commercial spectrum in varying block sizes in the vicinity of 700 MHz. The spectrum blocks auctioned included one 12 MHz paired (2x6 MHz) block licensed on a CMA (734 nationwide) basis (the "B" Block); two blocks

(one 12 MHz paired and one 6 MHz unpaired) licensed on an EA (172 nationwide) basis (the "A" and "E" Blocks, respectively); one 22 MHz paired block licensed on a REAG basis (12 licenses nationwide, but effectively 8 if you consider that 4 licenses cover sparsely populated U.S. territories) (the "C" Block) and one 10 MHz paired block auctioned on a nationwide basis with rules requiring that it (and the network operating on it) be available for public safety use in emergencies, pursuant to a public/private partnership (the "D" Block).

The auction was largely a success, if one defines success in terms of the amount of funds received by the U.S. Treasury as a result of the auction. Total auction revenues exceeded $19 billion and, with the exception of the D Block (discussed further below), the reserve prices for all of the spectrum blocks offered were met. There was criticism of the auction, however, by those hoping that it would serve as a vehicle for allowing a new, national wireless carrier to enter the market and allowing significant 700 MHz spectrum holdings by rural and small and minority businesses. As noted above, the two biggest winners of licenses offered in the 700 MHz auction were AT&T and Verizon Wireless; in terms of auction license payments, they paid $6.64 billion and $9.63 billion respectively.[46] They also garnered the most valuable licenses. For example, Verizon Wireless acquired all of the Upper 700 MHz C Block licenses needed for a nationwide footprint[47] and did so at an average price per MHz POP of $0.76.[48] AT&T, on the other hand, acquired 227 of the most valuable B Block licenses.[49]

C. Policy Implications of Increased Wireless Industry Consolidation and the Emergence of AT&T and Verizon Wireless as Clear Industry Leaders

As noted above, a number of wireless policy issues pending before the Commission grow out of the increased consolidation (in terms of subscribers and spectrum assets) that has occurred over the past year and the growing influence of AT&T and Verizon Wireless. As a result of various mergers and spectrum acquisitions (through both the secondary market and spectrum auctions), and transactions in the pipeline that are subject to Commission approval, AT&T and Verizon Wireless have emerged as the clear leaders of the wireless industry in terms of subscribers, spectrum resources, network coverage, handsets and services. As of April 2008, CTIA estimated their combined share of the wireless market nation-wide at 53.2 percent.[50] Moreover, while the other two national wireless providers, Sprint Nextel and T-Mobile, have begun to provide broadband services, the broadband networks of AT&T and Verizon Wireless are much more extensive and their spectrum holdings (in the frequency bands that have traditionally been used to provide wireless services and in newly auctioned frequency bands where incumbency issues that could slow down network deployment have been largely addressed and where wireless broadband based on advanced technology such as Long Term Evolution ("LTE") is likely to predominate), are much more significant. Citing these facts, a number of wireless carriers have raised consolidation or competition-related concerns before the Commission while urging the Commission to increase its regulation of various aspects of the wireless business where AT&T and Verizon Wireless might be able to exercise inappropriate leverage over competitors.

D. Roaming

In 2007, the Commission clarified that automatic roaming is a common carrier obligation for CMRS carriers, requiring them to provide the service to each other on just, reasonable, and non-discriminatory terms, pursuant to Sections 201 and 202 of the Communications Act.[51] In making this decision, however, the Commission fashioned an exception to the automatic roaming requirement where the roaming request is made by another carrier that holds a wireless license or the right to use wireless spectrum in the same local geographical market.[52]

Since the 2007 decision, wireless carriers other than AT&T and Verizon Wireless have sought diligently to eliminate the home market roaming exemption.[53] Many of these same wireless carriers have also sought to expand the Commission's automatic roaming requirement to include roaming on wireless broadband networks. Roaming has also emerged as a key issue in the Commission's pending review of the Verizon Wireless/Alltel merger, with petitioners seeking either outright denial of the merger or conditions requiring that roaming rights afforded under existing roaming agreements with Alltel be preserved.[54]

With respect to the home market exception, the wireless carriers seeking its elimination argue that the exception insulates those carriers with strong market positions from competition by making it impossible or very costly for competitors to provide the nationwide coverage that wireless consumers have come to expect. They point out that the significant costs associated with network construction make it impossible for smaller nationwide, regional or rural carriers to simultaneously construct networks in all of their licensed areas, and argue that without roaming these carriers would have no means to provide service to their subscribers located in the unbuilt areas. Given the reality that wireless consumers have come to expect the ability to use their wireless devices wherever they travel, the wireless carriers seeking expanded roaming rights

argue that AT&T and Verizon Wireless have strong incentives to deny roaming to their competitors in areas where their competitors have not yet constructed networks.[55]

In the *Roaming Order*, the Commission appeared concerned about creating rules that would discourage the deployment of new network facilities. Similarly, in their advocacy against the roaming-related petitions, AT&T and Verizon Wireless have argued that a disincentive for network construction would be created if roaming were made available in areas where requesting carriers held spectrum use rights.[56] Ultimately, the Commission, in resolving the pending roaming petitions and arguments in favor of roaming-based merger approval conditions, will have to consider the facilities-based network deployment arguments made by AT&T and Verizon Wireless, as well as the recent consolidation that has empowered those two companies with respect to the rest of the wireless industry, in crafting its decision.

E. Special Access

Thus far, despite vigorous advocacy by T-Mobile and Sprint Nextel, the Commission has refused to issue any decisions in the pending Special Access proceeding, which has been open since 2005. The impact of wireless industry consolidation, and the unique leverage of AT&T and Verizon Wireless, has played a key role in that proceeding as well, as T-Mobile and Sprint Nextel have taken strong positions that the current pricing flexibility rules allowing the ILEC affiliates of AT&T and Verizon Wireless to avoid price-cap regulation of special access rates have placed independent wireless competitors to AT&T and Verizon Wireless at a significant competitive disadvantage by allowing the affiliates of AT&T and Verizon Wireless to raise significantly the backhaul costs of the smaller wireless carriers.[57] Again, although a majority of the current FCC Commissioners does not appear inclined to modify the

special access rules at this time, the current structure of the wireless market - *i.e.*, its increased consolidation and the emergence of AT&T and Verizon Wireless as its dominant players - has brought these concerns into sharp relief.

F. Exclusive Handset Agreements

In May 2008, the Rural Cellular Association ("RCA"), a trade association comprised of facilities-based wireless carriers serving rural markets, filed a petition for rulemaking with the FCC seeking a proceeding to investigate the competitive impact of exclusive contractual arrangements between handset manufacturers and the nation's five largest wireless carriers, AT&T, Verizon Wireless, Sprint Nextel, T-Mobile and Alltel.[58] In the Petition, RCA cited a number of examples of popular wireless handsets that are unavailable to its membership because of exclusive contractual arrangements negotiated by the major wireless carriers.[59] Examples of handsets subject to exclusive arrangements cited by RCA included the LG Voyager, which is exclusive to Verizon Wireless, and the Apple iPhone, which is exclusive to AT&T.[60] RCA stated that "as a result of these exclusive arrangements, consumers are forced to pay premium prices for their desired handsets since competition for the desired handset is non-existent."[61]

RCA made a number of arguments in its petition regarding how exclusive handset arrangements conflict with core Commission responsibilities and objectives. Because carriers with exclusive handset arrangements sometimes do not provide service in rural areas, RCA argued that these exclusive arrangements often prevent consumers in rural areas from gaining access to the most attractive and innovative handsets.[62] It also argued that such exclusive arrangements violate Sections 201 and 202 of the Communications Act, which, as stated previously, prohibit unjust or unreasonable discrimination in the provision of common carrier telecommunications services.[63]

Thus far, the Commission has not taken action on the *RCA Handset Petition*. Moreover, in the past, the largest wireless carriers have zealously defended their arrangements with handset manufacturers, arguing that handset features provide a key way for providers to distinguish themselves among subscribers.[64] Nevertheless, market participants that view themselves as negatively affected by the economy-of-scale and other advantages associated with the market power now enjoyed by the larger wireless carriers in their dealings with handset manufacturers will continue to press for Commission redress of their grievances.

III. SPECTRUM POLICY AS SOCIAL POLICY

As noted above, spectrum management at the Commission has undergone a significant transformation from its activities under recent, previous Commissions, where flexible spectrum use policies and relatively flexible technical requirements were the norm. This more prescriptive and interventionist approach could be due, in part, to a desire by the Commission to promote a greater role for wireless in the deployment of both retail and public safety-related broadband services. The current Commission's more prescriptive and interventionist approach, as reflected in its spectrum management activities over the past twelve months, is discussed below.

A. 700 MHz D Block

The 700 MHz auction featured a decidedly interventionist approach to facilitating the development of a public safety interoperable broadband network. In its July 31, 2007 Second Report and Order, the Commission designated a 10 MHz block of commercial spectrum in the 758-763 and 788-793 MHz bands, the D Block, for the construction of a nationwide, interoperable broadband network serving both the needs of commercial customers and the needs of state and local public safety agencies. [65] The FCC decision was

modeled largely on the proposal of a participant in the 700 MHz proceeding, Frontline Wireless. Under the decision, the Public Safety Broadband Licensee ("PBSL") would have priority access to the D Block spectrum during an emergency, while the D Block licensee would have preemptible, secondary access to 10 MHz of adjacent band public safety spectrum at other times.[66] Many of the details of the public/private partnership, however, were left to a Network Sharing Agreement ("NSA") to be negotiated between the D Block licensee and the PBSL.[67] In his statement accompanying the FCC's decision, Chairman Martin highlighted the need for a national public safety broadband network and the lack of funding to construct a network devoted solely to the needs of public safety, calling the partnership a "last, best chance to make this network a reality."[68]

To attract more interest from potential bidders, the Commission altered several generally applicable auction rules as they applied to the D Block spectrum. First, while the FCC valued the geographic area and spectrum size associated with the license at $1.7 billion, it set the reserve price for the nationwide D Block license at $1.33 billion to account for the conditions relating to the partnership.[69] Second, where a bidder defaulting on the A, B, or E blocks would face a penalty including 15 percent of the bid amount, that percentage was lowered to 10 percent of the bid for the D Block winner.[70] Finally, the Commission specified a process by which it could deny the application of the winning bidder for failure to negotiate the terms of the NSA.[71]

Although, as discussed above, the other license blocks in the 700 MHz auction commanded bids that exceeded their minimum reserve prices, the nationwide D Block license received just one bid (from Qualcomm) at 35 percent of the reserve price. There was significant speculation at the time that Qualcomm's bid was merely a "parking" maneuver to maintain eligibility to bid on other

spectrum licenses.[72] Thus, at the auction's completion, the Commission's goal of fostering the construction of a nationwide public safety broadband network had not been achieved.

Instead of immediately re-auctioning the D Block spectrum, as the 700 MHz auction rules required, the Commission chose to withhold the license while soliciting public comment on how to proceed.[73] Commenters offered several views as to why the auction failed. Some cited the high reserve price.[74] Others felt that the public/private partnership approach was inherently unworkable.[75] A significant majority felt that too much detail was left to the NSA negotiations, creating uncertainty among potential bidders.[76]

The comments produced a myriad of options for the D Block spectrum, ranging from establishing an RFP process to assign the license[77] to offering regional licenses instead of one nationwide license.[78] As of the date of this article, the Commission appears poised to propose incorporating some of these suggestions in its D Block rule modifications. Recent trade press reports indicate that a draft Further Notice now on circulation at the FCC would propose the possibility of having the D Block carved up into 58 regional licenses (based on the traditional local public safety regional planning committee structure), in addition to being preserved as a nationwide license.[79] Trade press reports also indicate that the Commission is considering relaxing slightly the license construction requirements applicable to the D Block and imposing a $5 million cap on the lease fee that could be paid annually by the D Block licensee to the PBSL for the right to lease the 10 MHz of public safety spectrum that is immediately adjacent to the D Block.[80]

FCC Chairman Martin has remarked that he does not expect the reauction of the D Block spectrum to occur until 2009.[81] In view of the current situation affecting the capital

markets, any prediction that a D Block reauction could occur in 2009 may itself be optimistic.

B. Upper 700 MHz C Block Open Devices and Applications

Public safety was not the only policy issue addressed in the FCC's 700 MHz rules. Another priority for the Commission has been expanding competition and consumer choice in U.S. wireless broadband market. Spurred in large measure by the emergence of AT&T's iPhone and the work of public interest groups and Columbia University Law Professor Tim Wu, one goal in particular was to facilitate wireless broadband networks that are open to any device and application, and that allow consumers to take their handsets with them when they switch their service to other carriers. Rather than rely (as suggested by Skype in early 2007) upon a *Carterphone*-like mandate to achieve this goal,[82] however, the Commission followed an approach advocated by Google to utilize Upper 700 MHz spectrum to facilitate open wireless networks.[83] Toward this end, the Commission placed certain open access requirements upon the license for spectrum in the 746-757 and 776-787 MHz bands, the C Block.[84] Specifically, licensees in this band must allow customers, device manufacturers, and others to use any device or application of their choice in the band, subject to certain network management considerations. Further, the Commission set aggressive build-out requirements with a provision to reduce the license-term from ten years to eight years if a four-year construction benchmark is not met.[85]

Unlike the D Block, where the attached conditions apparently discouraged some from bidding, the Upper 700 MHz C Block auction produced successful bids for all twelve licenses offered.[86] As noted above, Verizon Wireless won nine of those licenses, allowing it to provide nationwide service on the band.

The real winner in the C Block auction, however, may have been Chairman Martin and his push for open access. Despite Verizon Wireless's prior advocacy against rules requiring wireless carriers to allow any application to run on devices operating over the C Block spectrum, Verizon Wireless announced open network plans relating to its other spectrum holdings in late November 2007.[87] Under the new policy, Verizon Wireless will, by the end of 2008, allow customers to use any device on its network that satisfies certain minimum technical standards.[88] Further, those devices will be permitted to run any application of the customer's choosing.[89] Despite these commitments, skeptics were quick to question the sincerity of the announcement. Some questions posed include: Will there be an additional fee for customers to bring their own devices? Will Verizon Wireless use network security or reliability concerns to limit open access? How long will Verizon Wireless take to certify a device as meeting the minimum technical standards? Verizon Wireless has begun to answer some of those questions. For example, at two of its developer conferences, it promised certification in as little as four weeks.[90] But the cost of the service – for consumers and handset makers purchasing airtime at wholesale rates – remains an open question.[91]

Beyond the question of how Verizon Wireless's open access plan will work is the question of what drove Verizon Wireless to embrace open access in the first place. Many industry observers believe Verizon Wireless had to announce an open access initiative on its own to avoid more extensive open access obligations.[92] Verizon Wireless also may have been driven by the changing landscape of the wireless market place, which has begun a significant move toward open applications development.[93]

Verizon Wireless's open access announcement came just weeks after the much-anticipated announcement that Google would make its foray into the mobile market through

a partnership, dubbed the Open Handset Alliance, to develop its Android platform for mobile phones.[94] T-Mobile and Sprint Nextel were the first U.S. wireless carriers to sign on to the alliance, which initially planned to have phones on the market by the second half of 2008.[95] The Android platform is scheduled to be released in the fourth quarter of 2008.

Meanwhile, other U.S. carriers are jumping into the open handset mix. AT&T and T-Mobile are members of the Symbian Foundation, created in June 2008 when Nokia purchased all outstanding shares of Symbian and announced plans to turn the company into a non-profit foundation.[96] The Symbian platform has a 60 percent market share on smart phones worldwide, but just a fraction of the U.S. market.[97] Even Verizon Wireless, which has publicly criticized the European model of unlocked handsets,[98] signed on to the LiMo Foundation, which is dedicated to developing a Linux-based operating system for mobile devices.[99] Verizon Wireless has said that LiMo will be its preferred operating system when units ship in 2009.[100]

Open network alliances, however, may not be so open after all. The Android software license does not prevent wireless carriers from issuing handsets that limit a user's ability to install new applications.[101] The LiMo code also includes the ability for operators and handset designers to limit downloads to signed applications on the Linux-based system.[102]

While the larger wireless carriers are joining alliances, some smaller wireless carriers are attempting to use handset mobility to gain customers from the larger carriers. In 2008, regional carrier MetroPCS became the largest CDMA operator to allow customers to bring handsets from competitors' networks to its network through its MetroFlash program.[103] MetroPCS said it would reprogram CDMA phones (primarily from Sprint Nextel and Verizon Wireless) for its network and offer customers a credit for bringing their

own devices.[104] The carrier has always operated without contracts, but allowing customers to bring their own handsets overcomes the barrier to increased subscribership presented by high equipment costs. One limit on MetroPCS' plan, however, is the carrier's planned launch of a network in frequencies it acquired through the AWS-1 auction. Because existing Sprint Nextel and Verizon Wireless phones are not compatible with AWS-1 frequencies, customers using the MetroFlash program may not receive the same level of coverage as those purchasing phones from the carrier itself.

The next twelve months could provide significant insight into the future of open wireless networks in the U.S. Along with the items discussed above, Apple's high profile announcement that it will sell a contract-free version of the iPhone, albeit one at a high price, indicates momentum for the open handset movement. One of the key features of the newest iPhone software is the addition of third-party applications. Although applications developed through Apple's software development kit must be purchased from the iTunes store, this development brings options from streaming music to Facebook to the iPhone handset.[105]

Market economics, however, could end up stalling the open handset movement before it ever gets off the ground. In addition to charging for applications, AT&T is charging significantly for a contract-free iPhone.[106] While high subsidies for handsets may justify the price discrepancy, they may also be a signal of things to come. If wireless carriers charge a steep premium for unrestricted network services, open access may become merely a playground for techies rather than an industry mainstay. The upcoming rollout of wireless open access plans and devices will provide an indication of just how serious the major wireless carriers are about open access and whether the FCC's current, limited (spectrum band-specific) approach will be sufficient to spur the wireless competition of the future.

C. AWS-3

During the past 12 months, the Commission has also developed and sought comment on a proposal to allocate the unpaired 2155-2180 MHz band "(AWS-3)" for a new advanced wireless service that would attempt to stem the "Digital Divide." Chairman Martin has long been a proponent of the "third pipe" concept – introducing an alternative to cable and local exchange carrier ("LEC") provided broadband services in both urban and rural areas. Beyond just providing service availability, the proposal sought to expand the accessibility and affordability of broadband service while limiting access to certain objectionable content.

Much of the Commission's current direction for AWS-3 takes its shape from two applications rejected by the Commission in September 2007. Among the many proposals for the AWS-3 spectrum were applications for exclusive use by a single entity filed by M2Z and NetfreeUS.[107] The applications sought to develop a nationwide free, advertiser-supported broadband service alongside a fee-based premium service. M2Z, in particular, argued that the major wireless providers could not be trusted to use the AWS-3 spectrum to compete against wireline broadband offerings, citing the absence, thus far, of a viable, nationwide wireless substitute for such offerings.[108] In rejecting the M2Z and NetfreeUS proposals, the Commission acknowledged the potential of the AWS-3 spectrum to foster the expansion of broadband service, but indicated a desire to pursue such goal through an open rulemaking process that would allow the Commission to consider other options for the band as well.[109]

Following a broad Notice of Proposed Rulemaking for the 2155-2175 MHz band, the Commission issued in June 2008 a Further Notice built upon the concepts of the original proposals from M2Z and NetfreeUS.[110] The Further Notice sought comment on expanding the band to 25 MHz and other

technical and licensing issues, including whether two-way (uplink and downlink) operations in the AWS-3 band could be conducted without causing harmful interference to adjacent band mobile operations.[111] Under the proposal, twenty-five percent of the licensee's wireless network capacity would have to be dedicated to a free (*i.e.*, without recurring subscriber charges), two way broadband Internet service with downstream speeds of at least 768 kbps,[112] and the licensee would face an additional obligation to provide network-based content filtering for the free broadband Internet service.[113] In addition, the network would have to cover fifty percent of the U.S. within four years and ninety five percent by the end of the ten-year license term.[114]

Some public interest groups and most of the large wireless carriers have opposed the proposed rules, arguing that, if adopted, the proposed content filtering provisions would violate the First Amendment and that the proposed two-way use could interfere with the mobile operations of nearby AWS-1 and MSS license holders.[115] Additionally, some lawmakers have likened the Commission's approach of tailoring the AWS-3 rules to the M2Z proposal to its tailoring of the D Block rules to the Frontline proposal, suggesting the former is equally ripe for failure.[116] On the other hand, M2Z has argued that the adjacent band licenses have within their power the ability to minimize the potential for interference from two-way operations in the AWS-3 band, and that any additional interference will be rare and non-harmful under the FCC's precedents. In addition, Congressman Ed Markey, Chairman of the House Commerce Committee's Communications Subcommittee, is in favor of the Further Notice proposal, as well as a large number of public interest, educational advocacy, and anti-pornography groups.[117]

It is unclear at this point whether the proposed rules will be adopted. Commissioner Adelstein has stated that he would have considered issuing the license to M2Z from the start while Commissioner Copps was open to the concept as

part of a general rulemaking process.[118] Meanwhile, for Chairman Martin, the rules have the potential to deliver his long-awaited "third broadband pipe" while also providing free, content-filtered broadband service. FCC approval may not, however, be the final barrier for the current AWS-3 proposal. Given the strength and breadth of the views of all sides in this dispute, a court challenge, regardless of the outcome, is likely.

D. H Block

Another spectrum policy proceeding in which the Commission hopes to spur broadband deployment is the proceeding relating to proposed service rules for the 1915-1920 MHz and 1995-2000 MHz bands (the so-called "H" Block).

In the same Further Notice proposing service rules for AWS-3 spectrum at 2155-2180 MHz, the Commission also proposed service rules for AWS spectrum in the H Block. The Commission's H Block proposal calls for licensing of the H Block on a Basic Trading Area ("BTA") basis for 10-year license terms, and requiring licensees to provide signal coverage and offer service to at least 35 percent of the population in each licensed area within four years and at least 70 percent of the population in each licensed area by the end of the license term. In contrast to the technical rules proposed for the 2155-2180 MHz band, under the technical rules proposed for the H Block, base and fixed transmissions would be prohibited in the 1915-1920 MHz band to avoid mobile-to-mobile interference to adjacent band PCS mobile operations and to conform to the current PCS use of the 1.9 GHz band and, for similar reasons, mobile transmissions would be prohibited in the 1995-2000 MHz band.

In an effort to avoid intermodulation interference[119] from H Block mobile operations to PCS handsets receiving base transmissions in the 1930-1990 MHz band, the

Commission proposed to limit the transmit power of H Block mobiles to 23 dBm/MHz EIRP. In addition, the Commission proposed more stringent than usual out-of-band emission ("OOBE") limits for mobile transmissions in the 1915 - 1920 MHz band. Under the Commission's proposal, mobile devices in the band must attenuate their OOBEs by 90+ 10 log(P) dB, instead of the usual 43 + 10 log (P). Incumbent PCS providers, especially CDMA providers such as Verizon Wireless and Sprint Nextel, have continued to express concern, however, regarding interference from H Block mobiles to PCS mobile receive operations in the 1930-1990 MHz band. These parties have suggested that the Commission impose a bifurcated H Block mobile power limits regime whereby mobile transmissions in the spectrum closest to the 1930-1990 MHz mobile receive band (1917-1920 MHz) would be limited to 6 dBm EIRP, while mobile transmissions in the 1915-1917 MHz portion could be subject to the higher 30 dBm EIRP limit.[120] They have also proposed that, instead of 90 + 10 log (P) dB, the mobile OOBE limit be -76 dBm/MHz (based on a root mean square measurement).[121] As of the date of this article, the Commission has not yet promulgated final H Block rules. The limits ultimately established by the FCC will certainly have an impact on the spectrum block's value and the winning bids for the spectrum at auction.[122]

E. TV White Spaces[123]

In October 2006, the Commission issued a First Report and Order and Further Notice of Proposed Rulemaking in the TV White Spaces proceeding, touting the potentially beneficial advanced services that could be delivered over underutilized spectrum in the band. In the decision, the FCC concluded that *fixed*, low power devices can be allowed to operate on vacant television channels, subject to certain exceptions, but sought comment on the technical and regulatory aspects of *portable or mobile*, low power device operation in the band.[124]

Since October 2006, the main debate regarding new white space operations has focused on whether low power, portable, or mobile operations can occur without causing harmful interference to incumbent television, wireless microphone, medical telemetry and other existing licensed and unlicensed operations in the television bands, and, if so, how such new operations should be regulated. During the past 12 months, the FCC has conducted extensive laboratory and field testing of prototype white space devices in order to determine their compatibility with existing services. In addition, a variety of parties have weighed in on interference, licensing and other concerns. For example, in October 2007, the Rural Telecommunications Group ("RTG") and FiberTower Corporation ("FiberTower"), noting interference concerns regarding proposed new unlicensed, portable or mobile operations, proposed that the Commission license vacant television spectrum on a coordinated, site-by-site basis for use in connection with the provision of rural broadband and backhaul services.[125] Qualcomm and Aloha Partners, on the other hand, have proposed that vacant spectrum be licensed on an exclusive, wide-area geographic basis under flexible technical rules and auctioned to the public in a manner similar to the way less-encumbered spectrum is auctioned.[126] According to these parties, exclusive, wide-area licensing of the television white spaces, combined with flexible technical rules, would facilitate the deployment of valuable broadband and video services and ensure that the spectrum is put to its highest and best use. The proposals have been discussed by various parties in the proceeding, but the Commission has not yet addressed them.

As of the date of this article, the FCC is developing a draft decision to address the record compiled in response to the Further Notice. The FCC's decision should determine the extent to which low power, portable and mobile white space devices can operate in the television bands and address the competing proposals for use now before the Commission.

IV. CONCLUSION

The past 12 months have once again presented numerous important challenges for the wireless industry and the FCC. The public's increasing reliance on wireless technology, the industry consolidation that has occurred recently and the importance of wireless to expanding the reach and affordability of broadband networks have all been important drivers in the development of FCC wireless policy and advocacy. If recent history is any indication, the Commission will continue to grapple with many of the issues discussed herein over the next 12 months, as a new set of Commissioners take the stage to address the most salient policy issues facing the wireless industry.

[1] *See* CTIA Wireless Quick Facts at www.ctia.org/advocacy/research/indes.cfm/ID/10323.

[2] *Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993*, Twelfth Annual Report and Analysis of Competitive Market Conditions With Respect to Commercial Mobile Services, 23 FCC Rcd 2241 (2008).

[3] *Ex Parte* filing by CTIA – The Wireless Association, CC Docket Nos. 94-102, 96-45, 98-170, 01-92; WT Docket No. 05-194; WC Docket Nos. 05-337, 07-38, 07-52, 08-7; RM-11361, Attachment at 2 (filed Aug. 28, 2008).

[4] As discussed in more detail below, this decision was appealed to the Court of Appeals for the District of Columbia Circuit. An interim requirement that wireless carriers comply with the E911 location accuracy rules on an Economic Area ("EA") basis by September 11, 2008, was stayed by the Commission for six months until March 11, 2009. In September 2008, the Court at the request of the Commission, vacated the Commission's E911 decision completely and required the Commission to fashion new rules. Moreover, a new proposal, supported by public safety organizations and AT&T and Verizon Wireless, to measure location accuracy on a county-wide basis, is now before the Commission.

[5] New and Emerging Technologies 911 Improvement Act of 2008, Pub. L. No. 110-283 (amending Wireless Communications and Public Safety Act of 1999, Pub. L. No. 106-81, 113 Stat. 1286 (Wireless 911 Act)). .

[6] Warning, Alert and Response Network ("WARN") Act, Title VI of the Security and Accountability For Every Port Act of 2006, Pub. L. No. 109-347, 120 Stat. 1884 (2006).

[7] *See The Commercial Mobile Alert System*, First Report and Order, 23 FCC Rcd 6144 (2008).

[8] *The Commercial Mobile Alert System*, Second Report and Order and Further Notice of Proposed Rulemaking, 23 FCC Rcd 10765 (2008).

[9] WARN Act § 602(c).

[10] *See supra* n. 8.

[11] *The Commercial Mobile Alert System*, Third Report and Order, 23 FCC Rcd 12561 (2008).

[12] *Id.* ¶¶ 7-26.

[13] *Id.* ¶¶ 38-42.

[14] *Id.* ¶¶ 47-54.

[15] *See* "Wireless Carriers Cite Uncertainties in Deployment of Mobile Alert System," TR Daily (Sept. 10, 2008).

[16] *Recommendations of the Independent Panel Reviewing the Impact of Hurricane Katrina on Communications Networks*, Order on Reconsideration, 22 FCC Rcd 18013 (2007).
[17] *Id.* at Appendix B § 12.2(a).
[18] *Id.* at Appendix B § 12.2(b).
[19] *Id.* at Appendix B § 12.2(a), (c)(7).
[20] *Id.* at Appendix B § 12.2(c).
[21] *Id.*
[22] *Id.* at Appendix B § 12.2(c)(4).
[23] *CTIA v. FCC*, Case Nos. 07-1475, 07-1477, and 07-1480 (D.C. Cir.).
[24] Opinion, Case Nos. 07-1475, 07-1477, and 07-1480 (D.C. Cir. Jul. 8, 2008).
[25] *Id.*
[26] *See* "Backup Power Rules Set to be Published," TR Daily (Sept. 5, 2008).
[27] Request for Declaratory Ruling, Association of Public-Safety Communications Officials-International, Inc., CC Docket No. 94-102 (filed Oct. 6, 2004). APCO also requested clarification regarding the degree to which carriers must provide confidence and uncertainty data to PSAPs regarding location accuracy.
[28] *Id.* at 1.
[29] *Wireless E911 Location Accuracy Requirements*, Notice of Proposed Rulemaking, 22 FCC Rcd 10609 (2007).
[30] *Wireless E911 Location Accuracy Requirements*, Report and Order, 22 FCC Rcd 20105 (2007).
[31] *Id.* The FCC's decision regarding PSAP-level location accuracy compliance did not address the other outstanding issues on which the FCC sought comment in the June 2007 NPRM, and those issues remain pending.
[32] *Ex Parte* of Association of Public-Safety Communications Officials-International and National Emergency Number Association in PS Docket No. 07-114 and CC Docket No. 94-120 (filed Jul. 14, 2008).
[33] *See Ex Parte* of Association of Public-Safety Communications Officials – International, National Emergency Numbering Association and Verizon Wireless in PS Docket No. 07-114 (Aug. 20, 2008); *Ex Parte* of Association of Public Safety Communications Official-International, National Emergency Number Association and AT&T in PS Docket No. 07-114 (Aug. 25, 2008).
[34] Order, Case Nos. 08-1069, 08-1070, 08-1075 and 08-1076 (D.C. Cir. Sept. 17, 2008).

[35] *See Implementation of the NET 911 Act*, WC Docket No. 08-171, Notice of Proposed Rulemaking, FCC 08-195 (rel. Aug. 25, 2008) ("*NET 911 NPRM*").

[36] *See supra* n. 5.

[37] *NET 911 NPRM* ¶ 2.

[38] *Id.* ¶ 7.

[39] *Id.*

[40] *Id.*

[41] *See Applications of AT&T Inc. and Dobson Communications Corporation For Consent to Transfer Control of Licenses and Authorizations*, 22 FCC Rcd 20295, 20307-08 ¶ 17 (2007).

[42] *Aloha Spectrum Holdings Company LLC and AT&T Mobility II LLC Seeking FCC Consent for Assignment of Licenses and Authorizations*, 23 FCC Rcd 2234 ¶ 4 (2008).

[43] *Applications of Cellco Partnership d/b/a Verizon Wireless and Rural Cellular Corporation for Consent to Transfer Control of Licenses, Authorizations, and Spectrum Manager Leases*, 23 FCC Rcd 12463 (2008).

[44] *See Applications of Atlantis Holdings LLC, Transferor, and Cellco Partnership d/b/a Verizon Wireless Transferee, for Consent to the Transfer of Control of Commission Licenses and Authorizations*, WT Docket No. 08-95, Lead File No. 0003463892 (filed Jun. 13, 2008).

[45] The Commission is currently also considering an application by Sprint Nextel, Clearwire, a group of the largest cable operators, Google, and Intel for approval of a venture that would result in the combining of spectrum licenses and leases in the 2.5 GHz band for the operation of a wireless broadband network using WiMAX technology. *See Sprint Nextel Corporation and Clearwire Corporation Seek FCC Consent to Transfer Control of Licenses and Authorizations*, Public Notice, DA 08-1477 (rel. Jun. 24, 2008); *see also* FCC ULS File No. 0003462540.

[46] *See* "FCC Announces Winning Bidders; Verizon, AT&T Bid 16B for Lion's Share," Stifel Nicolaus (Mar. 20, 2008).

[47] *Id.*

[48] *See* "The Auction is Over, Now What?," Lehman Brothers Equity Research (Mar. 19, 2008).

[49] In addition to AT&T and Verizon Wireless, EchoStar won 168 E Block licenses, totaling $711 million. *See supra*, n.46.

[50] Comments of Christopher Guttman-McCabe, Vice President, Regulatory Affairs, CTIA at the Law Seminars International Spectrum Management Conference (Sept. 19, 2008)

[51] *Re-examination of Roaming Obligations of Commercial Mobile Radio Service Providers*, 22 FCC Rcd 15817 (2007) ("*Roaming Order*").

[52] *Id.* at 15836 ¶ 48.

[53] *See* Petition for Reconsideration filed by Leap Wireless International, Inc., WT Docket No. 05-265 (filed Oct. 1, 2007); Petition for Reconsideration of MetroPCS Communications, Inc., WT Docket No. 05-265 (filed Oct. 1, 2007); Petition for Reconsideration of T-Mobile USA, Inc., WT Docket No. 05-265 (filed Oct. 1, 2007); Petition for Reconsideration of SpectrumCo LLC, WT Docket No. 05-265 (filed Oct. 1, 2007).

[54] *See e.g.*, Petition to Deny of the Organization for the Promotion and Advancement of Small Telecommunications Companies and the Rural Independent Competitive Alliance in WT Docket No. 08-95 (Aug. 11, 2008); Petition to Deny of Denali Spectrum LLC, *et al* in WT Docket No. 08-95 (Aug. 11, 2008).

[55] *See* reply Comments of MetroPCS to the Opposition to and Comments on Petitions for Reconsideration in WT Docket No. 05-265 (Nov. 16, 2007) at 3-4 ("The reality is that [roaming] arrangements are not being offered on fair and reasonable terms and consumers who want to roam are being disadvantaged . . . In this particular case . . .the roaming market . . . is not working.").

[56] *See* Opposition to Petition for Reconsideration of AT&T in WT Docket No. 05-265 (Nov. 6, 2007) at 4-6; Opposition to Petition for Reconsideration of Verizon Wireless in WT Docket No. 05-265 (Nov. 6, 2007) at 7-8.

[57] *See, e.g.*, *Ex Parte* of Sprint Nextel in WC Docket No. 05-25 (Oct. 5, 2007) at 1 (urging the FCC to "act expeditiously to stop incumbent local exchange carriers . . . – in particular AT&T . . . and Verizon – from exploiting their market power in the provision of special access services").

[58] *See Petition for Rulemaking Regarding Exclusivity Arrangements Between Commercial Wireless Carriers and Handset Manufacturers,* (filed May 20, 2008) ("*RCA Handset Petition*").

[59] *See id.* at 4.

[60] *Id.*

[61] *Id.* at 4-5. *See* also RCA Petition at 2, n.5 (noting that unlike with most handsets, AT&T sells the iPhone without providing a subsidy).

[62] *Id.* at 6-7 (noting that all areas of Vermont, and many parts of Alaska, Arizona, Colorado, Idaho, Kansas, Maine, Montana, Nebraska, Nevada, New Hampshire, New Mexico, North Dakota, South Dakota, Utah, West Virginia, and Wyoming are without AT&T facilities-based coverage, thus making it impossible under AT&T service contracts for consumers in those areas to acquire and use the iPhone).

[63] *Id.* at 10-11.

[64] *See* Letter from Christopher Guttman-McCabe, CTIA, to Marlene H. Dortch, Secretary, Federal Communications Commission, WT Docket No. 08-27 (filed Mar. 20, 2008).

[65] *Service Rules for the 698-746, 747-762 and 777-792 MHz Bands*, Second Report and Order, 22 FCC Rcd 15289 ¶ 322 (2007) ("*700 MHz Second R&O*").

[66] *Id*. ¶ 412.

[67] *Id*. ¶¶ 446-54.

[68] *See* Written Statement of Kevin J. Martin, Chairman, Federal Communications Commission, *700 MHz Second R&O*, at 1-2 (July 31, 2007) .

[69] *Auction of 700 MHz Band Licenses*, Notice and Filing Requirements, 22 FCC Rcd 18141 ¶¶ 195, 200 (2007).

[70] *Auction of 700 MHz Band Licenses*, Revised Procedure, DA 07-4514 ¶ 5 (Nov. 2, 2007).

[71] *Id.* ¶ 7.

[72] Donny Jackson, *Verizon, AT&T Emerge as Big Winners of 700 MHz Auction*, MOBILE RADIO TECHNOLOGY (Mar. 21, 2008), *available at* http://mrtmag.com/policy_and_law/news/verizon-att-auction-0321/.

[73] *Auction of the D Block License in the 758-763 and 788-793 MHz Bands*, *Order*, 23 FCC Rcd 5421 ¶ 1 (2007).

[74] *See, e.g.*, Comments of Ericsson, Inc. in WT Docket No. 06-150 at 33; Comments of the National Ass'n of Telecommunications Officers and Advisors in WT Docket No. 150 at 20-21; Comments of Consumer Elecs. Ass'n in WT Docket No. 06-150 at 4.

[75] *See, e.g.*, Comments of MetroPCS Commc'ns, Inc. in WT Docket No. 06-150 at 5-6; Comments of Motorola in WT Docket 06-150 at 7-10; Comments of Verizon Wireless in WT Docket No. 06-150 at 7-11.

[76] *See, e.g.*, Comments of Stagg Newman in WT Docket No. 06-150 at 2.

[77] *See* Comments of AT&T, Inc., WT Docket No. 06-150 at 18; Comments of Verizon Wireless, WT Docket No. 06-150 at 19-21.

[78] *See* Comments of AT&T, Inc. in WT Docket No. 06-150 at 18; Comments of MetroPCS in WT Docket No. 06-150 at 20-21; Comments of Verizon Wireless in WT Docket No. 06-150 at 24-32.

[79] *See* "Martin Proposes D Block Auction Via Regional, National Licenses," TR Daily (Sept. 5, 2008).

[80] *Id.*

[81] Jeffrey Silva, *Martin: D-Block, AWS-3 Auctions May Wait Until Next Year*, RCR WIRELESS NEWS (Jul. 14, 2008), available at: http://www.rcrnews.com/apps/pbcs.dll/article?AID=/20080714/FREE/170487670/1103/rss01.

[82] *See Skype S.A.R.L.*, Petition to Confirm a Consumer's Right to Use Internet Communications Software and Attach Devices to Wireless Networks, RM-11361 (Feb. 20, 2007) (seeking an FCC requirement that wireless carriers allow non-harmful devices and applications to operate on their networks).

[83] *See* Letter from Richard S. Whitt, Counsel for Google, Inc., to Marlene Dortch, Secretary, FCC, WC Docket No. 06-150 (Jul. 9, 2007).

[84] *700 MHz Second R&O* ¶¶ 195-206.

[85] *Id.* ¶¶ 153-64.

[86] *Auction of 700 MHz Band Licenses Closes*, Public Notice, 23 FCC Rcd 4572 ¶ 2 (2008)

[87] Press Release, Verizon Wireless, Verizon Wireless to Introduce 'Any Apps, Any Device' Option for Customers in 2008 (Nov. 27, 2007), available at: http://news.vzw.com/news/2007/11/pr2007-11-27.html.

[88] *Id.*

[89] *Id.*

[90] Spencer E. Ante, *Open Questions for Verizon's Open Access*, Business Week (Mar. 20, 2008), available at: http://www.businessweek.com/technology/content/mar2008/tc20080319_832420.htm.

[91] The first product to market under Verizon Wireless's Open Development Initiative provides no hints about its plans for the general consumer market. The device, from a small company, monitors the supply levels in large storage containers and alerts the customer when they run low. Peter Svennson, *Forget Sexy Cell Phones: First Device on Verizon Wireless' Open Network is Tank Level Censor*, ASSOCIATED PRESS (July 7, 2008), available at: http://www.startribune.com/science/24343674.html.

[92] *See e.g.*, *Sound off – Industry Players Discuss Verizon's Open Access Announcement*, FIERCEWIRELESS (Nov. 30, 2007), available at: http://www.fiercewireless.com/story/sound-industry-players-discuss-verizons-open-access-announcement/2007-11-30; Om Malik, *Why Verizon Went Open and What it Means*, GIGAOM, Nov. 27, 2007, available at: http://gigaom.com/2007/11/27/what-it-means-why-verizon-went-open/.

[93] David Needle, *Mobile Vendors Debate the 'Open' Future*, INTERNETNEWS.COM, July 24, 2008, available at: http://www.internetnews.com/mobility/article.php/12220_3761196_1.

[94] Press Release, *Google Inc., Industry Leaders Announce Open Platform for Mobile Devices* (Nov. 5, 2007), available at: http://www.google.com/intl/en/press/pressrel/20071105_mobile_open.html.

[95] *Id*.

[96] *See* Kevin Fichard, *Nokia Pulls a Google*, TELEPHONY ONLINE, June 24, 2008, available at: http://telephonyonline.com/wireless/news/nokia-to-offer-symbian-royalty-free-0624/.

[97] *See* Dylan Tweney and Michael Calore, *A New Frontier for Mobile Phones*, Wired.com, June 25, 2008, available at: http://www.portfolio.com/news-markets/top-5/2008/06/25/Mobile-Age-Ushered-In-With-Nokia

[98] *See* posting of Jim Gerace to Verizon Policy Blog, http://policyblog.verizon.com/PolicyBlog/Blogs/policyblog/JimGerace9/387/Response-to-the-Wall-Street-Journal.aspx (Oct. 24, 2007, 13:46 EST).

[99] Press Release, Verizon Wireless, Verizon Joins LiMo Foundation (May 14, 2008), available at: http://news.vzw.com/news/2008/05/pr2008-05-14.html.

[100] Peter Svensson, *Verizon Wireless to Introduce Linux Phones*, ASSOCIATED PRESS, May 14, 2008, available at: http://biz.yahoo.com/ap/080514/verizon_wireless_linux.html?.v=4.

[101] Tom Spring, *What Google's Mobile OS Will Do for Your Next Cell Phone*, PC WORLD, Nov. 5, 2007, available at: http://pcworld.about.com/gi/dynamic/offsite.htm?site=http://www.pcworld.com/article/id,139293/article.html#locked.

[102] Peter Sayer, *LiMo's Linux Phone Platform Nears Launch*, INFOWORLD DAILY, 2008 WLNR 2121410 (Westlaw, Feb. 4, 2008).

[103] Peter Svensson, *Wireless Company to Allow Other Carrier's Devices*, ASSOCIATED PRESS, June 27, 2008, available at: http://news.yahoo.com/s/ap/20080627/ap_on_hi_te/tec_bring_your_own_phone.

[104] Kevin Fitchard, *MetroPCS Lures Sprint, Verizon Subs with 'Bring Your Phone,'* Telephony Online, June 26, 2008, available at: http://telephonyonline.com/wireless/news/use-sprint-verizon-phone-with-metropcs-0626/.

[105] *See, e.g.*, Andy Ihnatko, *3G, GPS are Fine, But App Store is Feature That Puts iPhone Above All Others*, Chicago Sun Times, July 17, 2008, available at: http://www.suntimes.com/technology/ihnatko/1060646,CST-FIN-andy17WEB.article; Jonathan Sessions, *Tech Advice: New iPhone Offers Significant Upgrade for Some*, Columbia Business Times, July 25, 2008, available at: http://columbiabusinesstimes.com/1672/2008/07/25/tech-advice-new-iphone-offers-significant-upgrade-for-some.

[106] *See* Andrew Lavallee, *AT&T Plans to Offer No-Contract iPhone*, WALL ST. J., July 2, 2008, at B5, available at:

http://online.wsj.com/article/SB121494195380420373.html?mod=googlenews_wsj.

[107] *See* M2Z Networks Inc., Application for License and Authority to Provide National Broadband Radio Service in the 2155-2175 MHz Band, WT Docket No. 07-16 (May 5, 2006); NetfreeUS, LLC, Application for License and Authority to Provide National Broadband Radio Service in the 2155-2175 MHz Band, WT Docket No. 07-30 (Mar. 2, 2007).

[108] *See* Consolidated Opposition of M2Z Networks, Inc. to Petitions to Deny in WT Docket No. 07-16 (Mar. 26, 2007) at 48 ("Opening an auction for this spectrum to incumbents . . . would ignore the poor track record that incumbent wireless carriers have in terms of deploying fixed and portable broadband services that serve as substitutes for – rather than mere mobile complements to – existing offerings of duopolistic wireline broadband service").

[109] *See Applications for License and Authority to Provide National Broadband Radio Service in the 2155-2175 MHz Band*, Order, 22 FCC Rcd 16563 ¶¶ 28-30 (2007) ("*M2Z/Netfree US Order*"); Written Statement of Kevin J. Martin, Chairman, Federal Communications Commission, *2155-2175 MHz Order*, Aug. 31, 2007; Written Statement of Michael J. Copps, Commissioner, Federal Communications Commission, *M2Z/Netfree US Order*, Aug. 31, 2007; *Cf.* Written Statement of Jonathan Adelstein, Commissioner, Federal Communications Commission, *M2Z/Netfree US Order* (Aug. 31, 2007).

[110] *Service Rules for Advanced Wireless Services in the 2155-2175 MHz Band*, Further Notice of Proposed Rulemaking, 23 FCC Rcd 9859 (2008) ("*AWS-3 FNPRM*").

[111] *Id.* ¶ 3.

[112] *Id.*

[113] *Id.*

[114] *Id.*

[115] *See* Comments of MetroPCS Commc'ns, Inc., WT Docket No. 07-195 at 15-20 (received Jul. 25, 2008); Comments of American Civil Liberties Union, WT Docket No. 07-195 at 8-12 (received Jul. 21, 2008); T-Mobile Reply to M2Z Networks, Inc. Opposition to Request for Extension of Time to File Comments, WT Docket No. 07-195 at 2-3 (received Jul. 8, 2008).

[116] *See* Letter to Kevin J. Martin, Chairman, Federal Communications Commission from Rep. Joe Barton, Ranking Member, H. Comm. on Energy and Commerce and Rep. Cliff Stearns, Ran, Ranking Member, H. Subcomm. on Telecommunications and the Internet (sent June 30, 2008), available at:

http://republicans.energycommerce.house.gov/Media/File/News/6.30.08_Letter_to_Martin_on_M2Z.pdf.pdf.

[117] *See, e.g.,* Anne Broache, *Politicos Want Free Wireless Broadband on Unused Airwaves*, CNET News.com, Apr. 18, 2008, available at: http://news.cnet.com/8301-10784_3-9922319-7.html?tag=cd.blog; Letter to Marlene Doritch, Secretary, Federal Communications Commission from Manuel Mirabal, Hispanic Telecommunications and Technology Partnership and David Honig, Minority Media and Telecommunications Council, WT Docket No. 07-195 (received Jun. 4, 2008); *Cf.* Comments of the Public Interest Spectrum Coalition, WT Docket No. 07-195 at 1-3 (received Jun. 5, 2008).

[118] Written Statement of Michael J. Copps, Commissioner, Federal Communications Commission, *M2Z/Netfree US Order* (Aug. 31, 2007); *Cf.* Written Statement of Jonathan Adelstein, Commissioner, Federal Communications Commission, *M2Z/Netfree US Order* (Aug. 31, 2007).

[119] Intermodulation interference can occur when a mobile transmit band is spectrally close to a mobile receive band and the mobile transmit signal of the spectrally close handset combines with the mobile transmit signal (transmitting on a different frequency further away spectrally), resulting in a signal appearing in the channel in which the victim handset is receiving.

[120] *See, e.g.,* Sprint Nextel Comments in WT Docket No. 04-356 (Jul. 25, 2008) at 12.

[121] *Id*. at 14.

[122] *Id.* at 14.

[123] For additional information and background regarding TV white spaces, *see infra, Future of Telecommunications,* by Laura H. Phillips.

[124] *Unlicensed Operation in the TV Broadcast Bands*, First Report and Order and Further Notice of Proposed Rulemaking, 21 FCC Rcd 12266 (2006).

[125] "Optimizing the TV Bands White Spaces: A Licensed, Fixed-Use Model for Interference-Free Television and Increased Broadband Deployment in Rural and Urban Areas," *Ex Parte* filing by FiberTower Corporation and the Rural Telecommunications Group, Inc., ET Docket Nos. 04-186, 02-380 (filed Oct. 2, 2007).

[126] *See, e.g., Ex Parte* filing by Aloha Partners, L.P., ET Docket No. 04-186 (filed Jun. 5, 2008); *Ex Parte* filing by Qualcomm Incorporated, ET Docket Nos. 04-186, 02-380 (filed Aug. 22, 2008).