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ABSTRACT

WIRELESS BROADBAND AND SPECTRUM REFORM May 2010

- *The rapid growth in the use of smart devices such as the iPhone and Droid when coupled with the development of 3G and 4G mobile broadband technologies have led to an exponential escalation in the demands placed upon our radio spectrum. Without serious increases in the amount of commercially available spectrum and innovative methods for using it more efficiently, our nation cannot be a leader in mobile broadband.*

- *The time has come for comprehensive spectrum policy reform that strives to maximize competition, innovation and the productivity of the spectrum itself. This ethos is reflected in the FCC's National Broadband Plan.*

Definition: The radio spectrum is the range of different electromagnetic frequencies that radio transmitters can use to send audio, video, or data to receiving devices, enabling all forms of wireless communication. Historically, the U.S. government allocates certain frequency ranges for private sector use and has assigned or licensed most of them to specific companies via rules, competitive applications or auctions. Some remain unlicensed intentionally and are used for things like Wi-Fi and garage door openers.

Background: The current legal framework for spectrum management evolved in the early 20th century as a compromise over the questions of who should determine the distribution of spectrum among competing interests. Initially, the responsibility for spectrum management was placed in the hands of the executive branch. Since 1927, this responsibility has been divided between the executive branch for managing federal government use (in 1978, the president delegated this authority to the National Telecommunications and Information Administration), and an independent commission for managing non-federal and commercial use (first the National Radio Commission and then the Federal Communications Commission). Under this divided system, both the FCC and NTIA must coordinate and cooperate in order to determine how to accommodate different entities competing for spectrum.

Currently, the increased use of cell phones and smart devices and the exponential increases in spectrum usage associated with them is putting much greater demands on already allocated and licensed spectrum. This trend will accelerate as mobile broadband technologies, including the new 4G family of standards, proliferate.

Auctions

The FCC has been conducting competitive auctions for spectrum since 1994 rather than assigning licenses for the best public use. In this, the FCC is not alone. Countries throughout the world are now using competitive auctions to assign spectrum. Generally perceived as a step in the right direction, the auction approach is a market-based method for assuring that useful

frequencies are being allotted to those that value them the most and (at least as the FCC believes) will use them most effectively. Also, these auctions provide governments with additional revenue; however, these spectrum auctions have not been without their detractors. Recently, auctions have done little to spur competition in the telecommunications arena, and the process itself has often been manipulated through collusion and coercion by large telecoms. The 700 MHz Auction, once looked on as the best hope for new competitive networks and services, saw Verizon and AT&T completely dominate the auction (contributing $16 billion of the total $19.6 billion in auction receipts) and solidify their dominance of the wireless market.

CCIA's Position: CCIA believes the time has come for comprehensive spectrum policy reform that strives to maximize competition, innovation and the productivity of the spectrum itself. This includes support for the current Radio Spectrum Inventory Act.

Future auctions must be reformed to allow for competitive entrants and new technologies. Although well-designed auctions are a useful way to allocate spectrum, CCIA believes that the rapid pace of technological innovation has created a new paradigm that necessitates updated models of spectrum management and allocation. Auction success must not be measured solely by auction receipts, as many in Congress tend to do. Instead, policymakers must take into account all the costs and benefits, and strive to ensure this valuable resource is used to its fullest potential. Furthermore, companies should be encouraged to experiment with new models of spectrum sharing. For example, new technology could allow a primary license holder certain rights while still reaping benefits from the spectrum when they are not using it by opening it up for use by secondary licensees. In this vein, Congress and the FCC should consider open access rules for the spectrum that allow third parties (resellers) to lease wireless capacity from license holders on reasonable, non-discriminatory terms.

Spectrum sensing technologies could help utilize dormant spectrum, such as white spaces, to inject more competition into the mobile broadband marketplace. This would also spur innovation in the device markets by driving capital towards new technologies that use spectrum more efficiently.

Currently, innovation in wireless technology has far outpaced the evolution of wireless policy. Policymakers must drastically revise the current framework governing spectrum allocation and management in order to pave the way for competition and wireless innovation. Decisions made now will reverberate long into the future, and could very well determine whether the U.S. remains a leader in both the innovation and adoption of wireless technologies.

Current Status:

National Broadband Plan
In March 2010, the FCC released its National Broadband Plan, which featured a detailed analysis of the current use of the radio spectrum and a slate of recommendations to increase the availability and productivity of the spectrum. Some highlights include:

- Focusing on increased transparency in spectrum allocation and utilization. This includes the establishment of an online "spectrum dashboard" that more clearly delineates who is allocated which spectrum and the conditions of its use.

- Encouraging Congress to expand the range of incentives and mechanisms at the FCC's disposal to ensure that spectrum ends up being used productively. These mechanisms include "incentive auctions" where incumbents who are underutilizing their allotted spectrum are encouraged to reallocate it in return for a portion of the auction proceeds and "spectrum fees" levied by the FCC and NTIA on license holders to better align the incentives with the actual value of the spectrum.

- Expanding the opportunities for more innovative spectrum access models. The suggested strategies include establishing a contiguous nationwide band for unlicensed use, expediting the current TV white spaces, proceeding to make available the recently freed spectrum from the digital television transition for innovative new uses including mobile broadband, and initiating proceedings to enhance research and development that will encourage innovation in spectrum access technologies.

- Revising rules to allow for increased spectrum sharing and greater flexibility in order to improve wireless backhaul, which is critical for smaller wireless carriers facing an explosion in demand.

- Revising rules on data roaming agreements to better facilitate competition. In this vein, the FCC recently eliminated the home-market restriction on roaming and initiated an inquiry into whether automatic roaming rules should apply to mobile data services. Both are designed to allow smaller competitors better service coverage so that competition can be sustained.

Radio Spectrum Inventory Act: This bill, recently approved by the House and soon to be voted on by the Senate, would require the FCC and NTIA to take an inventory of all radio spectrum bands they manage. It specifies that the inventory must take place within 180 days of passage and the results of the inventory must be made public.