Computer & Communications Industry Association
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ABSTRACT

MOBILE BROADBAND AND SPECTRUM USE **APRIL 2014**

The rapid growth in the use of smart mobile devices and tablets along with the development of 4G mobile broadband technologies have led to an exponential escalation in the demands on our radio spectrum.

The FCC is planning to auction voluntarily relinquished 600 MHz television broadcast spectrum in 2015; has finished auctioning H Block frequencies for $1.5B; is preparing for an imminent AWS auction; and is promoting "wifi" unlicensed wireless, innovative spectrum sharing technologies, and repurposing of certain underutilized federal government spectrum.

Comprehensive spectrum policy reform should minimize barriers to entry, promote competition among multiple mobile providers, and maximize innovation and efficiency of spectrum use.

Background: The radio spectrum is the full range of electromagnetic frequencies that radio transmitters can use to send audio, video, and data to receiving devices, thereby enabling all forms of wireless communication. Spectrum is licensed and allocated by the Federal Government for private commercial and government uses.

The US Government allocates certain spectrum frequency ranges for private sector use. Spectrum allocation responsibility is divided between the National Telecommunications and Information Administration (NTIA) and the FCC. NTIA manages Federal Government spectrum needs, while the FCC manages non-federal and commercial uses. Under this divided system, the NTIA and FCC must coordinate and cooperate in order to determine how to accommodate different entities competing for spectrum. Some frequencies have remained unlicensed for low power public uses ranging from such things as Wi-Fi hotspots to Bluetooth, and sports stadium microphones to industrial sensors and garage door openers.

The increased use of smartphones and tablets enabling bandwidth intensive applications, along with the proliferation of Internet connected appliances and industrial machinery, have put much greater demands on our finite spectrum.

The FCC has conducted competitive auctions for spectrum licenses since 1994. The auction approach is a market-based methodology for assuring that useful frequencies are being allotted to those that value them most highly and ostensibly, and by extension will use them most

effectively. Part of the proceeds from all auctions in 2014 and 2015 will be used to fund public safety network operations and return revenue to the US Treasury.

Verizon and AT&T completely dominate commercial spectrum holdings, having aggregated over 70% of mobile spectrum for their exclusive use. The corresponding dominance of the wireless market was built on legacy cellular licenses awarded to phone companies in the 1980s free of charge, along with their near-monopoly landline backhaul networks.

The FCC's 2010 National Broadband Plan called for the Federal Government to free up 500 MHz of spectrum for broadband within 10 years – including 300 MHz within 5 years. To meet this goal, the Plan called for repurposing 120 MHz of broadcast spectrum for mobile broadband via voluntary incentive auctions; making 90 MHz of MSS spectrum available for mobile broadband use; auctioning spectrum in the WCS and AWS bands, as well as in the D-Block and H-Block; and repurposing spectrum allocated to but underused by the Federal Government.

Recent Activity:
The Commission has made some progress toward meeting its goal of deploying more spectrum for mobile broadband and unlicensed uses.

In early 2012, legislation was enacted that allows the FCC to move forward with incentive auctions for television broadcast spectrum. The NTIA announced it found 95 MHz of spectrum currently used by Federal agencies that can be repurposed for mobile broadband by allowing commercial users to share those frequencies (1755 MHz – 1850 MHz) outside the geographic areas where the government uses them.

In late February of this year, the FCC concluded its auction of the H Block, which fetched over $1.5 billion. DISH Network successfully bid in that auction.

On March 31, the FCC was expected to approve 5 GHz frequencies for unlicensed use and to liberate more AWS spectrum for auction later this year.

CCIA's Positions: CCIA supports the Obama Administration's proposed policy reforms that seek to increase the amount of spectrum available for commercial use, both licensed and unlicensed, and maximize competition, innovation, and spectrum use efficiency.

Unlicensed Innovation
CCIA is a founding member of the WifiForward coalition, which champions the designation of more spectrum for unlicensed uses under simplified rules. WifiForward held a press conference on March 7 featuring FCC Commissioner Jessica Rosenworcel, and is planning a major event in Washington on May 5.

Innovation in TV white spaces, such as "super Wi-Fi," has the potential to deliver the first broadband connections to parts of rural America; spur new innovation in technology and devices, including cognitive radio; and create additional competition in the mobile broadband market.

Spectrum Auctions, Spectrum Holdings & Competition

CCIA believes that spectrum auctions must be designed to promote greater competition in mobile broadband, not greater spectrum aggregation resulting in even more dominant carriers.

The legislation authorizing spectrum incentive auctions bars the Commission from setting aside licenses for new entrants and competitors to the AT&T/Verizon duopoly; however, it does allow the FCC to set a cap for the amount of spectrum any single carrier may hold and establish spectrum holdings limits to prevent any carrier from winning auctioned spectrum that exceeds the cap. In late March, CCIA along with other industry associations, companies and public interest groups formally urged the Commission to establish spectrum aggregation limits particularly for the most valuable spectrum below 1Ghz. This would enable new entrants, such as small regional and rural carriers, and non-dominant national carriers to secure the financing necessary to participate in the 2015 incentive auction.

Data Roaming

CCIA believes the FCC policy must enable smaller wireless carriers to compete and meet the needs of a marketplace where demand has grown exponentially. Data roaming is essential for independent regional carriers to compete with the incumbent, national carriers, but is too vulnerable to contracts of adhesion at exorbitant monopoly rates.

The FCC has mandated that all mobile wireless carriers reach data roaming agreements on "commercially reasonable" terms. Strict enforcement of the FCC's rule should ensure that customers of all wireless carriers get seamless nationwide smartphone service.

Spectrum Sharing, Increasing Efficiency, & Innovation

In addition to promoting competition, the FCC should encourage companies 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.

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