ALERTS AND UPDATES

Mobile Internet Access: The Service That Ate the Radio Spectrum

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Amid the hurly-burly of Washington, D.C., politics, the Federal Communications Commission generally has a low profile. Unless the issue rises to the level of a Super Bowl "wardrobe malfunction," or perhaps net neutrality, the agency labors in relative obscurity. Nevertheless, FCC decisions can have a profound effect on the way Americans live and work. Nowhere is this better illustrated than in the arcane world of spectrum allocations—the earmarking of various chunks of the electromagnetic spectrum for discrete purposes, such as broadcasting, satellite, police or business use, etc. As discussed below, the FCC is on the verge of its most sweeping "reallocation" of spectrum in 60 years, driven by the exploding demand for mobile wireless Internet services. Significantly, the FCC's efforts are supported at the highest levels of government. The president of the United States just recently proposed to use $5 billion, of the $27 billion anticipated from spectrum auctions, for the deployment of 4G wireless services in rural areas. That $5 billion would be managed by the FCC.

The surging uptake of wireless devices, such as Apple's iPhone, the number of applications served by those devices and the deployment of networks with greater capability (4G) are revolutionizing the way Americans communicate. No longer will people be constrained to their desktops in order to access feature-rich content and data. Essential to realizing ubiquitous high-speed wireless service is an adequate supply of radio spectrum—the essential enabler for mobile communications.

The FCC has estimated that an additional 500 MHz will be needed within the next 10 years to meet broadband mobile demand, of which 300 MHz most conducive to mobile applications should be reallocated within five years. This conclusion is based on data showing an exponential growth in mobile data traffic. Data traffic on AT&T's network has increased 5,000 percent over three years, driven in good part by the iPhone. According to Cisco, North American wireless networks were used to transmit 17 petabytes per month in 2009, an amount equivalent to 1,700 Libraries of Congress. Cisco has estimated that by 2014, these networks will convey 740 petabytes per month.[1] In a recent speech, FCC Chairman Julius Genachowski cited data, suggesting that there will be a 35-fold increase in data traffic in the next five years alone—a scenario that he characterized as "conservative."[2]

The FCC has already made a down payment toward the 500 MHz. Last year, it relaxed its technical rules to make 20 MHz more useful for high-speed mobile service. The agency has also identified 280 MHz of additional spectrum for possible reallocation.[3] Since then, a separate agency within the U.S. Department of Commerce has identified 115 MHz more to be reallocated within five years (the FCC does not control spectrum earmarked solely for use by federal agencies, such as the Federal Bureau of Investigation or Department of Defense). In total, 2,200 MHz of federal spectrum is to be studied for possible reallocation by the executive branch.

However, 500 MHz of spectrum suitable for broadband wireless is not just lying around unused, and nature is not making any more of it. That leaves only one option: Examine who is using the spectrum today, and for what purposes. The net effect is to place many incumbent uses in play for possible reallocation to 4G ("repurposing" as the FCC refers to it).

For example, the FCC is proposing reallocation of 120 MHz of spectrum used for broadcast television, noting that approximately 90 percent of U.S. households receive television by means of a delivery mechanism other than over-the-air antennas, such as cable or satellite. The FCC is seeking authority from the U.S. Congress to auction that spectrum—if, that is, the broadcast operators in question agree to put their license up for sale. In return, the FCC proposes to allow broadcasters to share in the auction proceeds. This mechanism, a so-called "incentive auction," will

require congressional approval, and the FCC is seeking that approval. However, many in the broadcast community have questioned just how "voluntary" such an auction would be, especially since Washington would dictate how much of a share participating broadcasters might enjoy.

Developments like these can be unsettling for the incumbent license holders. It means that licensees accustomed to exclusivity against other users may need to consider sharing arrangements, with the increased risk of interference that could entail. It means technologies that facilitate sharing, such as radios which can sense the radiofrequency environment in which they operate, and adapt to that environment to avoid causing interference to other users, may be in increasing demand. It means that some users might find themselves losing access to their spectrum band entirely. It may not be surprising that TV broadcasters and other licensees, which have invested collectively many billions of dollars in equipment and infrastructure premised on continued use of their bands, have not been shy about raising their concerns to policy makers at the FCC and on Capitol Hill. This also goes for federal users like the Department of Defense and others that may face dislocations, which can impact operational capability and national security.

While the public may know little about this struggle, the outcome is likely to have a profound impact on the American economy, security and lifestyle for many years to come.

For Further Information

If you would like more details regarding the proceeding, please contact William K. (Ken) Keane, any of the attorneys in the Information Technologies and Telecom Practice Group or the attorney in the firm with whom you are regularly in contact.

Notes

1. Federal Communications Commission, Connecting American: The National Broadband Plan, at 76–77 (2010).

2. Julius Genachowski, Speech at the 2011 International Consumer Electronics Show, Las Vegas, Nev., at 4 (Jan. 7, 2011).

3. FCC, Broadband Plan, at 84.