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FCC to Decide in Battle for TV Spectrum

As Google, Others Push for Sharing, Broadcasters Fret

By **AMY SCHATZ**
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Landover, Md. -- After eight months of testing, a plan to employ unused TV channels to provide cheap, high-speed wireless Internet networks still faces determined opposition and an uncertain future.


The Federal Communications Commission will have the final say in the battle between the broadcasters -- which fear interference on the airwaves they'll still be using -- and the companies including **Google Inc.** and **Motorola Inc.** that want to share the television airwaves, using them for high-speed wireless service that could spur the development of new wireless gadgets.

In September, the FCC is expected to report its findings on tests of prototype "smart radios" that can pinpoint which local broadcast channels are being used and then avoid them. Shortly after that, its five commissioners are expected to take up the issue of whether those TV airwaves can be shared, with an eye to setting rules for their use by year end.

High-tech companies want to use empty TV channels to bolster their Wi-Fi network, but broadcasters oppose the idea. The FCC is running a series of tests to gauge whether or not open access would cause interference. WSJ's Amy Schatz reports.

possible," says FCC Chairman Kevin Martin. "The idea of trying to utilize the 'white spaces' from a consumer perspective would be a good win for everyone."

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White spaces are swaths of broadcast spectrum that will be left open after TV stations switch to digital broadcasting in February. This spectrum is valuable because signals can travel great lengths on it, and because it allows them to penetrate buildings, unlike airwaves used by some wireless phones and devices. The slivers of airwaves currently set aside for cordless phones, Bluetooth devices and Internet Wi-Fi networks are also getting crowded, and tech companies want more unlicensed airwaves to use.

"I like to think of it as Wi-Fi on steroids," Google co-founder Larry Page told FCC lawyers, congressional staff and lobbyists in June during his first lobbying trip to Washington. "It would make a huge difference for everybody."



Kevin J. Martin

White-spaces fans see a world in which empty TV channels could be used to deliver cheap, high-speed wireless Web access to consumers without forcing them to buy a latte. They envision installing a few antennas over a wide area to create a "mesh" network that delivers wireless Internet service. Previous efforts to do that with Wi-Fi antennas haven't been that successful, because their signals are weak and as a result the networks required a large number of antennas.

Letting wireless gadgets share TV-station airwaves could unleash a boom in new consumer electronics not seen since Wi-Fi took off about a decade ago, say companies including Google and **Intel Corp.**, which are lobbying heavily for sharing.

"We have medical devices, laptops, even toys that are starting to incorporate Bluetooth. We want the wireless revolution to continue, but the little spectrum we have won't get us there," says Neeraj Srivastava, director of technology policy at **Dell Inc.**

Broadcasters are fighting the effort, arguing that their signals will get messed up, along with their businesses. "The only way we operate as a business is if our viewers get a clear TV picture. Given the fact that there's been a series of failures (in testing) at the FCC it doesn't give us a lot of comfort," says Dennis Wharton, spokesman for the National Association of Broadcasters.

Wireless microphone companies have joined the opposition, worried the new devices could prompt their microphones to fail. Many of their users, including the Grand Ole Opry, Broadway theaters and the National Football League, have appealed to the FCC to proceed with caution.

The technology companies are trying to prove they can share some of those channels without harm. They say their wireless gadgets with "smart radios" can automatically sniff out local broadcast channels and avoid them.

So far, though, the FCC's tests of these prototypes -- in labs, a football stadium and even a Broadway theater -- haven't offered a clear conclusion. Recently, FCC engineers spent a day at FedEx Field, the home of the Washington Redskins. Several engineers roamed the football stadium for hours, testing two prototype boxes designed to figure out which TV channels and wireless microphones were in use.

Neither box worked perfectly. A prototype designed by **Philips Electronics** NV's Philips Electronics North America Corp. was too sensitive: It said every TV channel in the stadium was in use, which wasn't the case. The other, from a Singapore research group, picked up some channels in use in the area but not others.

On the sidelines, Bruce Franca, an engineer representing the Association for Maximum Service Television, a group that handles technical issues for broadcasters, argued with Monisha Ghosh, a Philips researcher who insisted that her company's device was doing what it was supposed to do: find TV channels in use.

"Our device is a little more sensitive," said Ms. Ghosh, to a snort from Mr. Franca. Nearby, representatives from the NFL, **Walt Disney** Co.'s ESPN and wireless-microphone manufacturer Shure Inc., crowded around the FCC engineers, some shaking their heads and muttering about the devices not working. For months, engineers from both sides have been claiming that the testing results prove their case.

It has been more than two decades since the FCC refereed a battle like this. Back then, in 1985, a staff engineer convinced the agency that unlicensed gadgets could share so-called garbage airwaves without disturbing the microwave ovens and other devices that already used them. It was a radical step for the agency, which had never set aside airwaves for unlicensed use by still-to-be invented gadgets.

Within a few years, industry standards were developed for those airwaves and Wi-Fi was born. Coffee-shop and home Internet hot spots flourished as a variety of other gadgets, including Bluetooth devices, also began using the unlicensed airwaves.

Technology company executives argue that if the FCC simply sets broad rules for sharing TV airwaves, engineers will come up ways to use them without disrupting TV channels or wireless microphones. Regulators in the U.K. did that recently, issuing rough guidelines that would allow unlicensed devices to share TV airwaves.

Four devices designed to figure out which TV channels are in use have been submitted for FCC testing. So far, FCC engineers aren't talking about their conclusions.

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