

# Cell phone mania forces scramble for more airwaves

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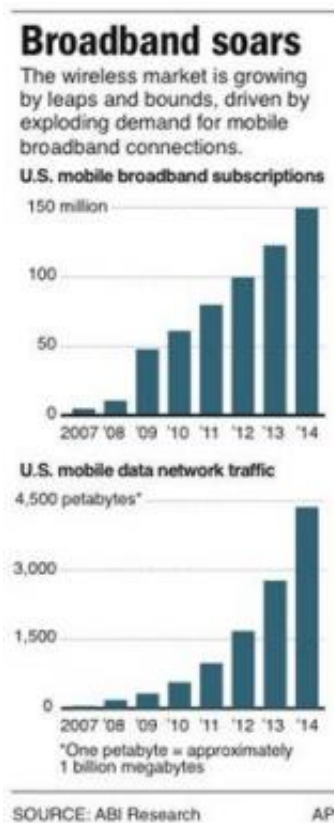


Chart shows the projected growth of mobile broadband subscriptions and traffic on mobile data networks from 2007 through

(AP) -- Wireless devices such as Apple's iPhone are transforming the way we go online, making it possible to look up driving directions, find the nearest coffee shop and update Facebook on the go. All this has a

price - in airwaves.

As mobile phones become more sophisticated, they transmit and receive more data over the airwaves. But the spectrum of wireless frequencies is finite - and devices like the [iPhone](#) are allowed to use only so much of it. TV and radio broadcasts, Wi-Fi networks and other communications services also use the airwaves. Each transmits on certain frequencies to avoid interference with others.

Now wireless phone companies fear they're in danger of running out of room, leaving congested networks that frustrate users and slow innovation. So the wireless companies want the government to give them bigger slices of airwaves - even if other users have to give up rights to theirs.

"Spectrum is the equivalent of our highways," says Christopher Guttman-McCabe, vice president of regulatory affairs for CTIA-The Wireless Association, an industry trade group. "That's how we move our traffic. And the volume of that traffic is increasing so dramatically that we need more lanes. We need more highways."

That won't happen without a fight. Wireless companies are eyeing some frequencies used by TV broadcasters, [satellite-communications](#) companies and federal agencies such as the Pentagon. Already, some of those groups are pushing back.

That means tough choices are ahead. But one way or another, Washington will keep up with the exploding growth of the wireless market, insists Rep. Rick Boucher, D-Va. He is sponsoring a bill that would mandate a government inventory of the airwaves to identify unused or underused bands that could be reallocated.

"It's not a question of whether we can find more spectrum," says

Boucher, chairman of the House Commerce Subcommittee on Communications, Technology and the Internet. "We have to find more spectrum."

CTIA, the industry group, is asking the government to make an additional 800 megahertz of the airwaves available for wireless companies to license over the next six years. That would be a huge expansion from the industry's current slice of roughly 500 megahertz. The Federal Communications Commission is preparing to make more frequencies available for commercial use, but has just 50 megahertz in the pipeline.

Two trends are driving the demand.

First, advanced new wireless applications - such as mobile video and online games - devour far more bandwidth than voice calls or basic text messages, says Neville Ray, senior vice president for engineering operations for T-Mobile USA Inc.

Second, consumers are flocking to wireless Internet connections, in some cases dropping landline accounts altogether. ABI Research projects U.S. mobile broadband subscriptions will climb to 150 million by 2014, up from 48 million this year and 5 million in 2007.

The predicament, says Jamie Hedlund, vice president of regulatory affairs for the Consumer Electronics Association, is that many users "assume the wireless experience should be the same as the wired experience, but the capacity is just not there for that."

The industry's concerns are finding a sympathetic ear in Washington.

Julius Genachowski, chairman of the FCC, says finding more room for the wireless industry will be an important part of his agency's broadband

plan. That plan, mandated by the 2009 stimulus bill, is due in February and will propose using wireless systems to bring high-speed Internet connections to corners of the country that are too remote for landline networks.

"If we are going to have a world-leading broadband infrastructure for the nation, wireless is an indispensable ingredient," says Genachowski aide Colin Crowell.

Lawrence Strickling, head of the National Telecommunications and Information Administration, the arm of the Commerce Department that manages the federal government's use of the airwaves, says the agency is also hunting for more frequencies the wireless industry can use.

Some of the crunch can be addressed with technologies that make more efficient use of airwaves and new equipment that lets users share bands. The FCC also wants to promote greater use of frequencies that aren't licensed to anyone, such as the "white spaces" between the bands used by TV channels.

But such solutions alone won't solve the crisis, the wireless industry warns.

The FCC's attention for now is on TV broadcasters, which hold nearly 300 megahertz of airwaves that are mainly used to serve just 10 percent of American homes - those that still rely solely on over-the-air TV signals.

The FCC is exploring multiple options, most of which would leave broadcasters with enough capacity to deliver a high-definition signal over the air. One possibility, which might require congressional approval, is a voluntary program that would let broadcasters sell excess bandwidth through an auction, to either the government or directly to

wireless companies. Although the FCC awarded spectrum licenses to broadcasters for free many years ago, those licenses are worth millions today.

"Fewer people are getting over-the-air TV and at the same time, more and more people are using mobile broadband," says Blair Levin, the official overseeing the FCC broadband plan. "So it only makes sense ... to get that asset into the hands of whomever can realize its greatest value."

The idea faces opposition from the powerful broadcast lobby. Dennis Wharton, executive vice president of the National Association of Broadcasters, says the proposal would stunt the industry's plans to make innovative use of the airwaves that became free when it turned off analog broadcasts and went entirely digital in June. Broadcasters have already returned more than 100 megahertz of those airwaves to the government and plan to use the rest to transmit high-definition signals, "multicast" multiple channels and deliver mobile TV to phones, laptops and cars.

"The FCC proposal would kill many of our future business plans in the cradle," Wharton says.

Wireless carriers are also setting their sights on frequencies held by companies that deliver voice and data services through satellites.

Hedlund, of the Consumer Electronics Association, notes that some of these companies have a lot of bandwidth but not a lot of customers. TerreStar Corp., for one, launched its satellite in July and is just building a subscriber base. And ICO Global Communications, which is running tests on a satellite launched last year, has not announced when it will begin commercial service.

But TerreStar General Counsel Doug Brandon believes the company has a strong argument for keeping its airwaves: Satellites can provide a critical lifeline in emergencies when other communications links go down and in rural areas where other carriers don't offer service.

If anything, added ICO Vice President Christopher Doherty, satellite phone companies are ideal partners for cell phone companies that want to expand coverage. TerreStar, for one, has a deal for AT&T Inc. to resell the satellite service.

More potential sources of frequencies are federal agencies that handle everything from emergency communications to surveillance operations. The Defense Department, for instance, needs the airwaves for such critical equipment as radars, precision-guided weapons and drone planes.

The Pentagon has vacated some frequencies and is developing technology that can make more efficient use of airwaves. It also says it is committed to finding compromises that work for the government and commercial sector, so long as those don't jeopardize military capabilities.

Karl Nebbia, head of the NTIA's Office of Spectrum Management, points out that federal agencies may be open to moving to different bands because the government is "a huge user of commercial broadband services." But one challenge will be to ensure federal users get the resources to relocate - including new equipment, potentially paid for with spectrum auction proceeds.

For now, one thing everyone agrees is that there are no easy pickings in the airwaves.

"There is no open space anywhere," says Kathleen Ham, vice president of regulatory affairs for T-Mobile.

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