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No, Obama's Not Giving You Free 'Super Wi-Fi'

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By Francie Diep, TechNewsDaily Staff Writer



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Does it wear a cape? Can it fly?

A recent [front-page Washington Post article](#) suggested that U.S. agencies want to build a nationwide "super Wi-Fi" network that would be free for anyone to use. That's far from the truth, however. What the U.S. Federal Communications Commission (FCC) is considering isn't fully built Wi-Fi. Instead, the agency is trying to make frequencies available to carry a new type of wireless Internet connection. If and when the network is built, it's unlikely to be free.

Yet, if it does go online, so-called super Wi-Fi would be pretty super, able to penetrate obstacles such as trees and reach users miles away. It could also enable futuristic, not-yet-invented devices. The FCC has been working to build the foundations of super Wi-Fi for a few years now, but it needs to overcome a lot of political uncertainty first. It will also require a lot of additional research, as most of the applications the Washington Post mentioned don't yet exist or are in their earliest prototype stages.

The Post article spawned three major misperceptions. Here we set them right.

1) It's not really Wi-Fi

So how does super Wi-Fi work? It's not the wireless Internet you pick up at the local coffee shop which uses 2.4-gigahertz frequencies. Instead, super Wi-Fi uses long-wavelength signals that are able to travel much farther than your average coffee shop signal, which reaches about 100 feet. Broadcast from a tall tower, it could reach users 10 miles away, said Edward Knightly, a Rice University engineer who has built his own test of a super Wi-Fi network in Houston. [SEE ALSO: [6 Ways to Get a Stronger Wi-Fi Signal at Home](#)]

It's not clear yet if the signal will go directly to laptops and other devices, the way Wi-Fi now does, or if it'll go to a modem in people's houses the way cable and DSL does.

Super Wi-Fi could be a boon for Americans living in rural areas, which usually have much slower and spottier Internet connections than the rest of the nation. Companies have not wanted to invest to bring expensive Internet connections out to sparsely populated areas. The FCC has been working to enable wireless Internet service for rural American for several years.

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2) The government isn't going to build it

What the FCC wants to give out isn't a ready-to-use connection that the average citizen's laptop could recognize. Instead, the agency hopes to make available certain parts of the electromagnetic spectrum that aren't available today. Various parts of the spectrum carry signals for TV networks, regular Wi-Fi providers, baby monitors, garage door openers and much more.

Right now, TV stations own most of the airwaves over which super Wi-Fi would work. The FCC has been trying to entice stations to sell their bandwidth for years. The agency has already made unowned, unused slices of spectrum located between owned frequencies free for use. Knightly's Houston super Wi-Fi uses those free, unlicensed "white spaces," as do some [experimental devices](#).

The FCC's plan now is to create "incentive auctions" to entice TV networks to give up some of the bandwidth they own. Exactly how many American towns could get super Wi-Fi depends in part on how many networks take the bait. Free white space exists mostly in smaller U.S. towns; major cities that get dozens of TV channels have no white space left.

"Unless the TV channels move, we'll have TV instead of wireless Internet," Knightly said.

3) It won't be free

The FCC isn't planning to offer free service. Instead, it hopes to make available more airwaves for paid and free services.

Because some portion of the spectrum will be sold by auction, whatever company buys those rights will want to recoup its investment. At the same time, the FCC says it is committed to setting aside some airwaves for unlicensed use, which means any individual or company could send signals over them. That's how regular Wi-Fi works today.

It's still unclear how much bandwidth will be available for unlicensed use and how much will simply be licensed to new owners.

If there's plenty of unlicensed bandwidth available in the future, the landscape might look a lot like regular Wi-Fi does today. Some places may still ask users to pay for wireless access, the way hotels do today, while others may offer free connections, the way Starbucks now does.

4) Bonus: Totally new tech

Super Wi-Fi isn't the only technology that could use newly freed, unlicensed airwaves. In theory, anything could transmit over this chunk of spectrum. That's why some companies, such as Google and Microsoft, support leaving super Wi-Fi-grade spectrum unlicensed. For example, citywide sensors and monitoring systems could communicate for free over this space, Knightly said.

"When 2.4 gigahertz opened up, the goal wasn't free Internet. The goal was baby monitors and nobody needed this spectrum anyway," Knightly said. Baby monitors and cordless phones were among the first users of 2.4-gigahertz spectrum. Then people invented Wi-Fi and Bluetooth. Knightly and other free-spectrum supporters hope unlicensed super Wi-Fi spectrum will kick-start the next generation of such inventions.

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