

A Blow for Open Wireless

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Included in the House legislation extending the payroll tax-cut is language to free up much needed spectrum for mobile communications. The House plan, passed on Tuesday, allows the Federal Communications Commission (FCC) to conduct incentive auctions, which will repurpose some TV broadcast spectrum for mobile use. Under the voluntary plan, TV broadcasters would offer to give up some or all of their spectrum in return for financial compensation. Mobile carriers would bid to buy licenses for the freed up spectrum.

The incentive auction is an important innovation that will benefit everyone. The gains from repurposing some of the TV broadcast spectrum to mobile use are large. The value of over-the-air TV broadcast has been in decline for over twenty years as more and more consumers get TV via cable, satellite or the internet. Meanwhile there has been explosive growth in the use and capabilities of smart phones, tablets, and other mobile devices. The TV spectrum is ideally suited for mobile use given its ability to pass through walls and difficult terrain.

So what's not to like?

The House legislation appears to require that all the freed up spectrum be auctioned for licensed use, thereby foreclosing the possibility that some of spectrum could be allocated to unlicensed use.

Mobile devices use both licensed spectrum and unlicensed spectrum for internet access. Thus, a key decision of the FCC is how the additional spectrum will be split between licensed and unlicensed use. Licensed spectrum provides strong incentives for the development of the spectrum resource by a small number of mobile carriers. The licensed use is exclusive, long distance, and high power; entry costs are high. In contrast, unlicensed spectrum provides a platform for innovation. The unlicensed use is shared, short distance, and low power; entry costs are low. Wi-Fi is good example of unlicensed use. Clearly, both licensed and unlicensed spectrum is needed, but how should we determine the mix?

Rather than decreeing that all the spectrum should be licensed, Congress should let the FCC make this critical regulatory decision. The FCC has done a fine job of managing the unlicensed/licensed tradeoff and Congress should not interfere.

One concern with setting aside some spectrum for unlicensed use is that doing so may adversely affect auction revenues. However, the revenue implications are far from clear. Indeed, diverting some spectrum to unlicensed may even increase auction revenues.

¹ My specialty is the design of complex auction markets. Since 1993, I have contributed extensively to the development of spectrum auctions. I have advised ten governments on spectrum auctions, including the United States. I am currently advising the United Kingdom, Canada, and Australia. I have advised 35 bidders in major spectrum auctions around the world. I have written dozens of practical papers on spectrum auctions. This research is available at www.cramton.umd.edu/papers/spectrum.

This may sound strange at first: how can the government gain by selling less?

First, prices in the auction depend on scarcity. By selling less licensed spectrum the auction price is higher. This has been observed in spectrum auctions around the world. If spectrum demand is inelastic, selling less will increase auction revenues.

Second, the complementary unlicensed use means better devices, apps, and content, all of which make the licensed spectrum more valuable to the mobile carrier.

Third, in an incentive auction in which TV broadcasters are paid to reduce their use, the way the government makes *any* revenues is by withholding supply (selling less).

The spectrum not used by the TV broadcasters or mobile carriers can be put to good use as unlicensed spectrum for broadband access. Use of the TV white space in this way would reap huge dividends in broadband access.

And that is what it is all about: how can we assure quality internet access wherever we are and promote a vibrant competitive wireless market? The answer is more spectrum, both licensed and unlicensed. Congress should not foreclose the possibility of additional unlicensed spectrum.