

## **Wireless Broadband – Beyond the Hotspot**

### **The Hotspot Phenomenon**

There have been fewer, bigger telecom stories than the recent growth of “hotspots.” These are wireless local area networks that use unlicensed spectrum and low cost, Wi-Fi equipment. Two years ago, hotspots and Wi-Fi were terms almost unknown outside the high-tech community. Today, virtually every new laptop is Wi-Fi enabled, and Wi-Fi-based hotspots are cropping up in various settings. Hotspots are routinely available in hotels, coffee shops, and other public places, and they are becoming more common in homes and offices around the country. They have succeeded not only because the technology works, but also because it is inexpensive and easy to deploy. Because hotspots use unlicensed spectrum, no government authorization is required to build one. You can simply buy the device, plug it in and turn it on.

### **New Possibilities for Broadband Networks**

A new class of broadband providers – wireless internet service providers or WISPs -- is attempting to capitalize on additional advances in wireless technology to create new, broadband last-mile networks. In contrast to hotspot systems, which cover small areas, WISPs are successfully setting up antennas on grain elevators, towers and buildings to establish broadband last-mile connections in areas otherwise lacking broadband access.

There are, however, challenges facing WISPs. Most significantly, the spectrum they must use makes it very difficult for the signals to penetrate foliage and walls, or to travel long distances. As a result, creating a residential network requires many access points and dishes attached to the outside of homes. Simply put, these networks have not yet been able to capitalize fully on the low-cost and ease-of-use characteristics that define unlicensed services such as hotspots.

### **The Policy Imperative**

Policymakers can dramatically increase the odds that wireless last-mile solutions will succeed by pursuing three strategies.

First, policymakers must make available better spectrum for unlicensed broadband. To be more precise, if spectrum below 1 GHz were allocated for unlicensed broadband, WISPs would have a much greater chance of developing a nationwide broadband platform. There is spectrum available at 700 MHz and below that will eventually be vacated by broadcasters that is ideal for this purpose. And there is enough of that spectrum that some of it could be auctioned and licensed, with enough left over so that WISPs can take advantage of the characteristics of unlicensed spectrum that have fueled the hotspot phenomenon.

Second, as the use of unlicensed devices mushrooms, policymakers must address the interference that unlicensed devices can cause to each other. Consumers have been willing to tolerate interference amongst unlicensed devices such as between cordless phones and baby monitors. However, consumers will not tolerate such interference when listening to music or watching video over an unlicensed broadband network.

Lastly, the FCC should continue to reform spectrum rules so that newer, smarter radios can make better use of existing allocations. Innovation in radio technology continues at a rapid pace, with manufacturers developing ever smarter antennas and transmission systems. Smarter radios can more easily find available spectrum and make use of it. Gladly, the FCC has underway a number of proceedings aimed at removing regulatory barriers to the deployment of the technology. Those efforts should continue.

These strategies should allow wireless broadband networks to emerge nationwide and speed the deployment of broadband connections in areas where it is simply too costly to build other networks.

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