

# From broadcast to broadband

November 16 2005

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Technology is on the way to use vacant television channels for wireless broadband Internet service, but critics from the broadcasting industry argue that using the channels for unlicensed wireless activity will interfere with reception of local television stations and dissuade viewers from tuning in.

Vacant channels are those not currently in use by a licensed broadcaster.

The proposal by wireless advocates would allow wireless Internet services providers (WISPs) to operate broadband Internet services on frequencies generally reserved for television broadcasting. The television frequencies are much stronger than what most wireless devices currently use, which advocates claim will allow delivery of low-cost Internet services over longer distances to benefit low-income and rural populations who currently do not have Internet access.

"It's location, location, location, like in real estate," said Michael Calabrese of the New America Foundation, a Washington-based think tank that held a panel discussion Tuesday on the issue. "It's better quality coverage at lower cost."

But broadcasters are afraid that running wireless services on empty channels will create interference with transmissions from local television stations, which in the face of a nationwide switchover to digital broadcasting would cause even more problems for television broadcasters.

"One of the fundamental issues right now in digital transmission is to get the consumers on board," said David Donovan, president of Maximum Service Television, a national association of over 430 local television stations dedicated to free, over-the-air broadcasting. "The worst possible thing you could do right now is to put potentially interfering unlicensed devices in the television band because it will directly impact that service."

Part of the problem is debate over the definition of "vacant." Advocates of using the channels for broadband say that if a channel is not licensed, it is potentially open to use. They claim that in any metropolitan area only a handful of the many channels are licensed to broadcasters, which leaves a lot of empty "white space" available for alternative uses. Critics counter that all unlicensed channels are not necessarily vacant, and therefore using them could still cause interference.

"The fact that you don't see anyone operating on a particular channel does not necessarily mean it's vacant," said Donovan. "We can get into a debate about what's vacant and what isn't, but it fundamentally depends on how you define it." Donovan argued that contrary to what his opponents claim, the Boston metropolitan area has little to no available TV frequencies if a stricter definition is used.

Proponents of wireless, which include the high-tech industry and a range of public interest groups, claim the technology will soon be available to prevent any such interference between the two signals. One idea is for a "smart" radio device that could detect when television signals are too close to a vacant channel and avoid using any frequency that might interfere with the broadcast.

Cisco Systems Inc. has been working on similar technology for sharing frequencies with military radar systems. Mary Brown, Cisco's senior counsel for telecommunications policy, says a device that can distinguish

competing signals and compensate in order to avoid interference is set for field testing in the next few weeks and could be available commercially within the year. According to Brown, if the device could avoid interference with military radar, which because of its mobile and secretive nature is more difficult to predict, it could easily be used to avoid interference with television programs.

"There's really nothing new here that we haven't already solved with devices for military radars, which are a lot more sensitive than what we're already talking about," said Brown. "We think the characteristics of the TV band are easier because they're more predictable."

It is still not known what such a device would cost users, but Brown is confident it will be "reasonable." The cost, however, depends on how strict rules set by the Federal Communications Commission will be, since a "smarter" more complex device would most likely cost more.

The Federal Communications Commission, then headed by Michael Powell, first issued a Notice of Proposed Rulemaking to allow broadband use on the channels in May of last year, but progress has been stalled since Powell's departure. In its recent mark-up of the digital TV transition bill, the House Commerce Committee called on the FCC to complete the proposed rulemaking to open up the channels.

The New America Foundation advocates using the frequencies for broadband. The discussion was held in conjunction with the offices of Reps. Jay Inslee, D-Wash., and Charles Pickering, R-Miss.

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