



The Wi-Fi Debate: Should Cities Be in the Business of Broadband?

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The city of Philadelphia's grand experiment to blanket its 135 square miles with wireless high-speed Internet access is being closely watched by municipalities across the U.S. that are pursuing similar initiatives. While Philadelphia's project, which edged closer to reality with an announcement on April 7, is more than a year away from completion, it has sparked an intense debate over whether cities have any business in the broadband industry.

At issue are the following questions: Are broadband services better handled by the public or private sector? Can a wireless broadband network, commonly known as Wi-Fi (wireless fidelity), be used to help more low-income people gain online access, bridging what is commonly known as the digital divide? Will projects become caught up in politics? Should Internet access be viewed as city infrastructure, like telephone poles or city streets?



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Big Cities vs. Small Cities

While the answers to those questions are yet to be determined, they are part of what makes Philadelphia -- the first city of its size to try a wireless broadband project on such a large scale -- so interesting, say experts at Wharton. "Until cities actually do [install Wi-Fi] it's hard to know what will happen," says Wharton legal studies professor [Dan Hunter](#).

On April 7, Philadelphia Mayor John Street announced the formation of a non-profit organization to build a city-wide wireless broadband network. The city is seeking bids from technology companies to construct the network and from Internet Service Providers (ISPs) to buy access to it, on a wholesale basis, for between \$10 and \$20 per user. The service would then be resold to residents, with low-income users getting price breaks.

Although Philadelphia's plan to build a Wi-Fi network is billed as a public-private partnership, it has increased tensions with broadband incumbents, such as Verizon and Comcast, which are concerned about losing customers. In November 2004, the state of Pennsylvania passed a bill that would require municipalities thinking about a wireless network to first pitch incumbent carriers, such as Verizon, on the idea. These carriers would then have right of first refusal for any municipal wireless broadband project slated after January 1, 2006 that charges a fee. Philadelphia and Verizon struck a separate deal to allow the city's project to proceed.

Despite the potential hurdles, the Wi-Fi movement has garnered interest from cities across the country.

On a national scale, it's hard to generalize about municipal projects because each effort is different, says Wharton business and public policy Professor [Gerald Faulhaber](#). Indeed, cities ranging from Nantucket, Mass., to San Francisco, Calif., either have wireless broadband access or are considering similar moves. Faulhaber makes the distinction between large cities such as Philadelphia, which have incumbent broadband providers, and rural areas, such as Glenwood Springs, Colo., which have been spurned by companies offering high-speed Internet access. "For small communities that have trouble getting broadband, municipal projects are a great idea," says Faulhaber. "For bigger cities the argument is a little problematic."

Faulhaber doesn't buy the argument that municipal broadband networks are like streets and other infrastructure. The big difference is that citizens will pay for broadband service and that makes it a business -- one that can be subject to political interference. Faulhaber doubts big cities can be more efficient at providing networks than private providers.

However, public policy professors also say municipal wireless broadband is an experiment worth taking, especially if it can get minorities and poor people online. "It couldn't hurt," says [Joel Waldfogel](#), business and public policy professor at Wharton. "From a public policy perspective it could make broadband available to people who don't know they want it."

In addition, suggests Wharton business and public policy professor [Betsey Stevenson](#), wireless broadband access can create "positive externalities" for cities, such as higher foot traffic in neighborhoods, a better business climate and enhanced overall image. "If a single coffee shop decides to supply customers with wireless broadband access for free, then it makes people more likely to go to the coffee shop. So one reason cities may want to make wireless broadband available is that it improves the attractiveness of the downtown in a way that no individual business can."

The Chicken-and-Egg Problem

For Philadelphia chief information officer Dianah Neff, a big reason for doing a Wi-Fi installation on a large scale is bridging the digital divide. The project is about revitalizing neighborhoods, spurring economic development and targeting the poor, she says. Although private companies will provide the service, there will be cheaper rates for users who are disadvantaged. Neff's goal is to offer broadband service at dial-up rates. "Each community is going to have different reasons [for offering wireless broadband], but for us this is a way to bring business into neighborhoods, connect kids with schools and provide better skills."

Waldfogel suggests that Neff is trying to tackle the chicken-and-egg problem that makes bridging the digital divide so difficult. "From a strictly market point of view, you look at demand and say there is none and that's the end of the story," says Waldfogel. "But there's this chicken-and-egg argument. Is there no demand, or is the higher cost for broadband a barrier?"

According to Faulhaber, however, it's not that simple. "The digital divide is more complicated than we think," he says, arguing that Philadelphia could meet its objectives by providing vouchers to subsidize broadband service. "It's not a supply problem. It's a demand-side issue. When people want it they will buy it. In Philadelphia, broadband is there for most of the population."

Wharton business and public policy professor [Justin Wolfers](#) believes the digital divide will subside over time, but notes that municipal projects can speed up the process somewhat. "Computers are simply a consumer durable, and as with past consumer durables (radios, TVs, washing machines), the rich adopt early and the poor adopt later," he says. "As this adoption proceeds, perceived divides tend to dissipate. The real problem is not so much the digital divide, but the income and wealth divide that gives rise to it."

That's why Neff sees the Wi-Fi network as just a start. According to the city's business plan, once the non-profit entity building the network generates cash flow in years four and five, it will begin distributing computers to the poor. Stevenson says lack of such computers will hamper efforts to bridge the Internet access gap: "If [Philadelphia] gave out laptops first they would address the digital divide faster." Ultimately, if the project brings broadband access to poor neighborhoods and gets minorities online, it will be worth it, adds Waldfogel.

Cheryl Leanza, principal legislative council for the National League of Cities, a Washington, D.C.-based lobbying group, says it would be short-sighted to squash municipal broadband projects. For one, the costs

aren't that high to install such a network, and there could be economic and social benefits. "We have to allow these cities to experiment," she adds. "Then we will see the results and determine a long-range plan. It would be a poor decision not to try anything."

Getting Down to Business

While Philadelphia sees its network as a way to help close the digital divide, for smaller cities getting into the broadband business it is a matter of survival. One such city is Glenwood Springs, Colo., population 9,000, nestled in a mountain river valley between Aspen and Vail. The problem: Broadband providers Qwest and AT&T's cable unit, which was later acquired by Comcast, didn't think running fiber optic lines through mountains into a small city would be profitable.

So in 2001, the city decided to offer its own broadband services and laid fiber optic cable along with its electric lines (the electric company is also run by the city). Glenwood Springs now offers broadband services, voice over Internet protocol, disaster recovery and wireless service. It wholesales the backbone to small Internet Service Providers, which then sell access to the public. To Faulhaber, the argument for rural cities to build wireless and wired broadband networks is stronger because it's an economic necessity. "If the city is 'smallish,' with no other options, it's a good idea."

According to Paul Braunschweig, broadband manager for Glenwood Springs, the city's effort was indeed an economic development issue. "We are catering to small business and local customers," says Braunschweig. "It's really about keeping business in town." Bruce Munroe, director for information systems at Glenwood Springs, adds that the city was dealing with the hand it was dealt. "Up here, there was a void of services and we used the tools we had to take care of it." He agrees with Faulhaber that not all municipal broadband projects will work out. "The question is whether municipalities can do it better, or as well as, established broadband providers. If you bring a government mentality to it, it will bog down."

Thinking like a business means Glenwood Springs has focused on wireless service in only a limited fashion, notes Munroe. "Wireless is a bonus to us," he says, adding that Wi-Fi doesn't offer a lot of value to his business customers. "Wireless is fraught with challenges, and the network can degrade quickly."

Incumbents Push Back

Not too surprisingly, the municipal efforts have been met with resistance on the legislative front for years, says Munroe.

When Glenwood Springs first proposed municipal broadband service in 2001, the city got pushback from incumbents AT&T and Qwest even though they weren't interested in offering service in the first place. "When we started, we were told that it wouldn't be profitable for them to provide service," says Munroe. "But they also said 'you can't do it either.' There was no interest in [pursuing] anything until we said we were going to do it." Glenwood moved ahead anyway after its city council approved a municipal service plan based on keeping businesses in town. "We were protecting our economic base," says Munroe, who noted that businesses were leaving because they didn't have speedy access to the Internet.

Neff says the argument that her service will hurt incumbent broadband providers doesn't hold up because the poor can't afford high-speed Internet access even in a bundle with phone and cable television service. "We didn't get into this to steal customers."

According to Faulhaber, it's not immediately clear what the impact will be on broadband providers across the country, but he does not advise ditching existing service for a municipal wireless network. The biggest reason is that wireless networks run on unregulated spectrum -- there can be many frequencies passing through. That means interference from digital phones and other devices degrades network quality. "Don't scrap your Comcast service just yet," he suggests.

In the short run, say two years, Faulhaber estimates that commercial broadband providers will lose a few customers to municipalities. In Philadelphia's case, where rates will be between \$10 and \$20 wholesale, it would make sense for customers to switch if they can save a few dollars a month. However, what happens next will determine whether customers stay. "Will this wireless network be run like SEPTA (the troubled commuter rail system in Philadelphia)?" asks Faulhaber. "If the service is spotty, then you can expect people to go back to Verizon and Comcast." Faulhaber says years three and four of a municipal wireless project will probably see customers moving back to commercial providers.

Neff acknowledges that servicing broadband accounts is beyond the city's expertise, but Philadelphia's plan is to partner with private companies to administer accounts. In any case the momentum seems to favor the cities. "The question being asked across the country is whether to offer this service," says Leanza of the National League of Cities. "Each decision will depend on the needs of the community, but I haven't seen a legitimate argument yet for blocking it."

As these projects play out in coming years, a number of wild cards will be worth watching. For example, Faulhaber says political issues could take center stage during the network rollouts. If these wireless networks become revenue makers for cities, municipalities may not stand aside and allow private upstarts with next-generation technology into the market. "Every city is starved for revenue. If these networks generate revenue, then cities are going to milk the situation to protect their franchises," says Faulhaber. "Any municipality can tax new infrastructure or prevent new technologies. Cities can easily erect barriers."

New technology is also a potential issue. Although today's wireless networks may be on the cutting edge, you can almost guarantee that they will be antique in a decade. Will cities continue to upgrade networks? In Philadelphia's business plan -- at least for now -- there is a pool of funds devoted to maintaining and upgrading the network.

Munroe adds that if cities operate their networks as a business would -- by chasing new opportunities and grabbing more market share -- services will be upgraded. Indeed, Glenwood Springs has expanded into other areas in addition to its traditional Internet access business.

And then there's the law of unintended consequences. If jobs are created to run the municipal networks, will an equal number be cut in the private sector? Munroe acknowledges that municipal projects can upset the economic balance. Cities have to weigh those risks. "The issue is complex," says Munroe, who adds that the fundamental question is whether the public sector should be competing with the private sector in business services.

While that question won't be answered anytime soon, Hunter says the cost of Wi-Fi is cheap enough that it is unlikely to become a big boondoggle. It will only cost \$10 million to cover Philadelphia with Wi-Fi access. "This is not a big bet and the payoff could be significant," says Hunter. "It seems to be a worthwhile social investment."

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