Municipal Wifi After the Pop

Galen Gruman on **September 13, 2007**

DailyWireless.com

Times appear to be dire for municipal wifi efforts, with Chicago and San Francisco backing out of their plans, MetroFi losing four cities as customers after insisting they commit to specific usage payments as "anchor tenants," and EarthLink laying off 900 of its workers, most of whom were in the municipal wifi group. The frenzy over free wireless Internet appears to be a bubble that has finally popped.

The bottom-line issue was money: The cities didn't want to spend it, and the providers had grown cautious about how much they could make from subscriptions (thus the push on cities to commit to a certain level of spend for access). Ad-based networks encountered similar skepticism. Essentially, the conclusion is now that there is no free ride, some municipal wifi proposals have been exposed as economic houses of cards.

Many initial efforts exposed that deploying wifi on a large scale is no easy feat, requiring more wireless access points per square mile than initial cost estimates assumed — and requiring subscribers to pay for booster antennas to get the signal in their buildings. And with broad deployments of WiMAX networks expected in the next two years, it's not clear if metro wifi is even necessary to provide cities and their citizens with broadly available Internet access.

Do these developments spell the end for municipal wifi?

Return to Needs Assessment

Not necessarily, although the high-profile failures may cause an excessive pendulum shift away from the unrealistic "let-someone-else-pay-for-it" model of the last few years to a "this-will-never-work" belief that is equally misguided, said Ken Fellman, mayor of the Denver suburb Arvada and a director of the National Association of Telecommunications Officers and Advisors. He points out there are several successful muni wifi deployments, such as those in Minneapolis; Corpus Christi, Texas; and Anaheim, Calif.

Fellman believes that what makes a successful municipal wifi effort is a focus by the city on its needs. "Those that do a needs assessment typically find there are multiple needs for and benefits of muni wifi but find that one or two reasons actually drive the effort," he said. For example, the lack of good broadband availability threatens the city's economic development, and encouraging economic development becomes the primary driver. Or the city sees real benefit to connecting its mobile employees — such as firefighters and building inspectors — to internal networks, providing a tangible reason to explore municipal wifi. The wrong reason to explore municipal wifi is because it's trendy or because other cities are doing it, Fellman noted. San Francisco's troubled effort may be a case in point: From its start, there has been no agreement on the fundamental goals for the project.

Marty Hale, CEO of Blue Moon Solutions Inc., agrees with Fellman. His company has deployed municipal wifi and WiMAX in many small towns over the last five years. In such towns, the rationale for municipal wifi is often clearer than in large cities, and it's easier for communities to rally around that rationale once it's identified, he said. That rallying provides the buy-in among all constituents so the service is designed for their actual needs, leading them to

actually use it. Cities that don't undertake those efforts will end up with a network that gets little use, he added.

Arvada's Fellman also thinks it's unrealistic for providers to insist that cities commit to being anchor tenants on any municipal wifi network. Such requirements just aren't realistic, he said. The cities need to see that the network actually delivers on its promises before committing to it for critical public services, and it also has to transition from its existing systems and providers once it knows it is safe to do so. "I've reminded my city clients that anchors are intended to sink, not float. It's not fun to be attached to an anchor. That, local governments get," said Jonathan Kramer, a radio-frequency engineer turned lawyer and government consultant on radio issues who runs Kramer Telecom Law Firm, P.C.

Fellman fears that providers who now doubt they'll get enough subscription revenue from citizens — and thus want the cities to guarantee their income instead — will give cities an ultimatum they can't accept, leading them to end their municipal wifi efforts or taken them on themselves. That appears to be the case in Chicago's decision to cancel its efforts: The city simply could not agree to the anchor tenancy requirements that AT&T and EarthLink insisted on, according to the Chicago Tribune. Fellman believes that cities and providers can in fact work out appropriate risk-sharing commitments, but that providers may need to calm down about recent failures before they can rationally discuss such approaches.

Fellman also said that the current climate may push some cities to manage their own muni wifi networks — and that can be the right thing for some. Although many providers tell cities that they don't have the skills and resources to build and manage their own wifi networks, Fellman called that claim "paternalistic" and "insulting." "They can just as easily work with a wifi network provider like Tropos Networks or Bel-Air Networks" as an EarthLink or an AT&T can to deploy the actual network, he said. After all, many cities run one or more public utilities and in fact do have the experience to run a utility. Fellman cites cities that run their own electrical utilities as being particularly well-suited for running their own municipal wifi networks, given their experience with both maintaining a complex infrastructure and managing citizen accounts — the role that private providers like EarthLink and MetroFi play.

And Fellman noted that despite the stereotype of governments being inefficient and private businesses being highly efficient, the truth is that there are successes and failures in both groups. "Most mayors and councilmen are not flippant about spending millions of dollars. They really do think things through," he added.

Is Wifi the Wrong Solution?

The economic issues of municipal wifi may obscure another fundamental question: Is wifi the answer either to a city's needs for its own field-force network or to the goal of bringing in broadly accessible Internet connectivity to the citizens?

Attorney Kramer doesn't think so. He argues that wifi is the wrong technology for blanket coverage of a city. "It's like taking Fred Flintstone's car and trying to make it a Cadillac," he said. Wifi was designed for covering relatively small areas — with a radius of 150 to 300 feet — and doesn't accommodate security and handoff between access points well, he noted. "Wifi is not scalable," he stated. Technologies like WiMAX and 3G cellular are better suited for blanketing large areas, he noted, but they are typically expensive. Such expense is one reason that cities looked at wifi in the first place; another was the higher speeds wifi offers compared to cellular networks, especially those available five years ago such as GPRS, EDGE and CDPD. Today, the speed differences between spread-spectrum technologies such as wifi and WiMAX and 3G cellular technologies such as EVDO and HSDPA are less pronounced, though high pricing remains an issue. Blue Moon's Hale cautioned that WiMAX networks can get saturated if too many people are using them at the same time, much as cell phone service often fails when a crowd of people try to use the system at once, such as at an event.

"I'm a devoted proponent of 'wireless everywhere,' but how you get to wireless everywhere is the issue," Kramer noted. To achieve that, he believes a mix of technologies and providers (commercial and government) is the answer. For example, governments may well want to own and manage their public safety networks, as Washington, D.C. does. And governments often serve as a provider of last resort when the private sector does not step in; a century ago, it was rural city and county cooperatives that brought electrical and phone service to areas the private sec-

tor wouldn't touch, for example. "But broadband and wireless are not utilities," Kramer argued, so unequal service does not justify similar government initiatives any more than unequal DSL speeds or cable TV offerings would. "Dial-up is still available. It's a difference of speed, not access," he added.

To serve populations that the private sector won't, Kramer recommended that cities use other approaches than a citywide wifi network. After all, such a network is very expensive relative to the population it is intended to serve and causes more affluent neighborhoods to want the same subsidized or free service, threatening any hoped-for reliance on subscription revenues. Cities also have to recognize that economically disadvantaged citizens need more than broadband access — they need computers and training, Kramer noted. Using government facilities such as libraries, community centers, public lobbies and schools as computing hubs can bring the entire package of resources needed in one place for such citizens. Providing hotspots at such locations for those citizens who do have laptops is fine, Kramer said, as is creating a hot zone for an economic development area — such as the city of Long Beach, Calif. — installed as part of a downtown redevelopment effort. In such cases, the scale is manageable and realistically serves the specific goal of the city. Because it's targeted at specific communities, it's easier to bring in nonprofits and foundations to help, as they know their resources are going to the specific mission they have, noted Arvada's Fellman.

As wireless networks become available — whether WiMAX, mesh wifi, 3G or something else — Kramer said that it could make sense for a city, or a foundation, to subsidize access for economically disadvantaged citizens if it decides that's an appropriate social mission to undertake. Or it could negotiate with a provider to offer such subsidies as part of signing up for its own use of the network, Kramer said. The difference between that approach and an anchor tenancy of the sort that Chicago rejected is that the city would be renting the network after it's up, running and proven — as it does for telecommunication services today. He favors these approaches over deploying a network (or having one deployed for it) because they keep the city out of the infrastructure business and instead focused on the actual social goal.

A Cautious Approach

Many cities continue to work on municipal wifi rollouts, despite the recent travails in high-profile cities. For example, the various cities within California's Silicon Valley are cautiously moving forward with plans to cover 1,000 square miles with wifi signals. A consortium of companies headed by IBM and Cisco Systems Inc. is building the infrastructure, which it will then lease to competing service providers that will then resell access, using the proceeds to rent the network and deliver a basic, slow, free service for residents. The companies' plan is to make the majority of their money selling wifi network access to cities and utilities for use by police, firefighters, building inspectors, meter readers and so forth, noted John Lang, an economic development officer for San Jose, the largest city in Silicon Valley.

The primary reason for the network is to create Internet connectivity for mobile city and utility workers, with residential access a "quality of life" add-on for most, Lang said. The cities and utilities would pay for the services and be the primary income source, though some providers will likely also try to sell higher-speed residential wireless service and/or use ads to bring in additional revenue, he noted. Many cities, like San Jose, have other broadband options available to all residents, so the "digital divide" reasons to ensure Internet access for underserved communities — a big issue in cities such as Chicago, Philadelphia, Houston and San Francisco — don't apply. (Some Silicon Valley cities do not have thorough broadband coverage, so the free basic service was important for them to bridge that gap, Lang noted.)

As ambitious as the Silicon Valley effort sounds, its cities are approaching it very conservatively. IBM and Cisco Systems are building test networks in two cities — San Carlos, Calif. and Palo Alto, Calif. — that will be test cases for the concept. Only if those networks actually deliver the promised connectivity and reliability, and service providers do come on board to offer the specific services, does Lang expect cities to move forward. Even then, he doesn't expect cities to commit to being anchor tenants. Instead, Lang expects there to be a more staged deployment that minimizes the risk at any stage for both the providers and the cities.

For example, Lang suspects that San Jose would first commit to supporting an expanded wifi network in its downtown area (it now has a small one that covers less than a square mile). The infrastructure and service providers

would then build out that area. If that expanded effort delivers on the San Jose's needs, the city would then expect the providers to go ahead and build out a little further on their own, and if the city uses the expanded network, the providers would then take the next step and build out from there. That step-by-step approach doesn't put the city at risk of agreeing up front to an unproven service, nor the providers at risk of building a network that doesn't earn enough money.

Other cities would likely follow the same approach, and the infrastructure would grow over time from a patchwork of deployments into what ultimately is a Valley-wide network — assuming that it is successful and gets that far, Lang noted. "We're moving slowly to see whether there is an appropriate level of service, the right business model and a sustainable approach," he said.

Given that there are basic economic, political and technological unknowns in any municipal wifi effort, Silicon Valley's incremental approach probably is one that other cities and their providers should consider, rather than proceed in blind faith or give up hope completely.