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# Beyond Municipal Wireless

BY STEVEN TITCH

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The harsh daylight of fiscal reality has rudely awakened city administrators across the country to the unfeasibility of funding or partnering in citywide consumer wireless-broadband services.

Over the past year, city after city has retreated from large-scale municipal wireless projects. Most, including Houston, Chicago, Los Angeles, and Anchorage, Alaska, backed away before committing any substantial funds or city assets.

The final nail in the municipal wireless coffin may have been EarthLink, Inc.'s May 13 announcement that it will be shutting down its system in Philadelphia. The City of Brotherly Love was the first major U.S. city to wade into the municipal wireless waters, announcing its deal with EarthLink in 2005. The agreement was launched with high hopes. Philadelphia's chief information officer, Diana Neff, who engineered the deal, was named the city's public official of the year. Meanwhile, EarthLink had hoped that municipal wireless would be the springboard to rebuild its flagging telecommunications business, which had never recovered from the dot-com bust. Three years and \$17 million later, EarthLink can't even give the network away. The company was set to begin dismantling the network June 12, after Philadelphia turned down its offer to take over ownership at no charge.

EarthLink's competitors fared no better. In late May, MetroFi closed down its remaining municipal systems in Portland, Oregon, and Naperville, Illinois, and dis-

closed that it was considering a bankruptcy filing. This followed the company's 2007 decision to limit partnerships to cities that agreed to purchase a significant level of wireless services themselves, thus providing the operation with immediate cash flow. Azulstar, which had won the contract to construct a multicity municipal wireless system covering much of Silicon Valley, was

forced to exit the deal after failing to raise the necessary capital. That followed Rio Rancho, New Mexico's decision to pull the plug on an Azulstar system there after the company failed to pay \$33,000 in electric bills owed to the city.

In policy circles municipal wireless, a subset of the larger municipal-broadband concept, intensified the debate over what role, if any, local governments should have in the funding, construction, and ownership of infrastructure designed to provide retail phone, cable-TV, and high-speed Internet services, often in competition with commercial providers.

The case for municipal wireless was founded on the premise that broadband service was equivalent to basic consumer utilities, such as electricity, water, or sewerage. Conventional wisdom considered broadband, like water and power, a universal need. San Francisco Mayor Gavin Newsom went so far as to call broadband a human right. Conventional wisdom

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also held that the market was failing to reach lower-income households because commercial providers believed they were unprofitable to serve. To some extent, these critics were correct. The first half of the decade, when most municipal plans were hatched, broadband buildouts were limited to wealthier areas as service providers calculated that it would take average monthly revenue of \$50–\$100 per household to justify a cable or digital-subscriber-line (DSL)—the two most common hardwired broadband platforms—investment in a given neighborhood.

Municipal advocates believed that wireless systems could be cheaper to build and could provide enough bandwidth to support no-frills high-speed Internet (no cable or phone) to the point where ubiquitous service could be offered for as little as \$10–\$20 a month, if not free. But cities, while hatching their plans two and three years ago, failed to take the speed of market and technology evolution into account. By the time they began to rev up for launch, commercial service providers, not to mention hotel chains, coffee shops, and shopping-mall food courts, had the same WiFi technology in operation that the cities had hoped to pioneer—in the very places that cities had hoped would generate early revenues.

### Falling Rates in the Private Sector

Meanwhile, rates for wired residential broadband services were dropping. Low-end DSL service, which was still faster than wireless, reached the \$20–\$25 per month level in 2006. Verizon in 2007 began an extensive rollout of more robust fiber-optic networks across all demographic markets. For example, in 2006 Nassau and Suffolk counties in New York, which make up suburban Long Island, proposed an extensive government wireless network in the belief that the private sector was leaving many Long Island communities behind. Municipal talks faded after Verizon began rolling out fiber-to-the-home service not just in towns like Laurel Hollow, where, according to the U.S. Census Bureau, per-capita income is \$83,366, but also in Massapequa, Mineola, Valley Stream, and

Roosevelt, where per capita incomes range from \$16,950 to \$32,532.

At the same time, wireless Internet services from the legacy cellular companies—AT&T, Verizon Wireless, T-Mobile, and Sprint Nextel—greatly improved. Verizon Wireless introduced V Cast, which delivers full-motion video to cell phones. AT&T and Apple teamed on the snazzy iPhone, which combines the functionality of a phone, web browser, and digital-video and music player into one pocket device that can use both cellular and WiFi networks. Google unveiled plans for Android, a new type of software for wireless phones that would allow users more freedom and control over wireless web surfing. Each of these developments required municipal officials and their wireless business partners to revise costs and budgets upward. Broadband was not

like water and power, where annual revenues and costs were predictable and infrastructure could be amortized over 20 to 30 years. The telecommunications industry seemed to change every six months, and cities just couldn't keep up.

Finally, the announcement that Sprint and Clearwire were planning a nationwide rollout of local wireless services using WiMax, a broadband platform that can cover areas measured in square miles, versus WiFi, which is measured in feet, forced most governments to realize that any networks they build today, to remain remotely competitive, would have to be substantially upgraded, if not replaced, in less than five years.

Smaller cities and towns that jumped on the municipal bandwagon early suffered the greatest financial penalties, but in doing so they gave pause to larger cities that, in deciding to back off, may have saved their already beleaguered taxpayers millions.

What's been learned so far? First, municipal broadband still is a bad idea. Even before municipal wireless became all the rage, government-owned broadband had a poor record. Since the 1990s numerous cities have attempted to finance, own, and operate competitive cable-TV and high-speed Internet networks. In the past several years the focus has been on extending fiber

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optics to the home, often at a cost of more than \$100 million. In a 2007 report the Pacific Research Institute estimated that 52 municipal broadband systems had consumed a total of \$840 million over the past 20 years, falling deeper into debt while failing to gain positive cash flow.

Municipalities that followed the government-ownership model for wireless fared no better. Even municipal wireless advocates were shaken when city officials in Chaska, Minnesota, who had long touted their system as one of the first municipal success stories, disclosed in June 2006 that it had gone over budget by \$300,000—some 50 percent. At the same time the city also reversed a long-standing claim that it had been providing citywide service since early 2005. TechDirt, an online technology publication, reported that most residents were unable to access the system until May 2006, a few weeks before the news of the cost overruns broke. The city has since privatized the system, selling it to Siemens Communications.

In addition to running over budget, cities struggled with the sheer physics of radio-system engineering and design. In April 2006 St. Cloud, Florida, reportedly became the first city to launch free (read tax-subsidized) WiFi service. Coverage was so bad that few residents could connect to it. Would-be users were soon told that to get “free” service, they had to purchase a special wireless bridge device for \$170. Most opted to go with wireline broadband service from local telephone or cable companies.

### Governmental Incompetence

Similarly, the Lompoc, California, city administrators found themselves red-faced when, after deploying a citywide WiFi network, they realized that most of the houses were built with stucco—something a radio-engineering team in the private sector would have made a point of checking at the outset. Stucco is reinforced with metal wire, which blocks radio waves at certain frequencies, including those used by WiFi. Lompoc, due to inexperience with basic radio properties, spent \$1.5 million on a wireless service few could use. It’s not funny. It’s what happens when cities buy into the idea that they can build wireless

telecom networks more efficiently and inexpensively than national businesses with more than 20 years of experience working with low-power, short-range radio technology.

Although proponents of municipal broadband and wireless often deny or rationalize the string of documented failures, the experiences of Chaska, St. Cloud, and Lompoc led many of the larger cities to pursue partnerships with companies like EarthLink, MetroFi, and Azulstar. Under this model, which was adopted in Philadelphia, the private-sector partner would finance, build, and operate the network, sharing a portion of the revenues with the city, or in the case of Philadelphia, a nonprofit corporation, Wireless Philadelphia, that would fund digital-inclusion programs in the city. In return for pledging citywide buildout, the partner would get exclusive, discounted access to city rights of way where it would place antennas and wireless access points.

The approach initially looked promising, chiefly because it took local governments out of the competitive telecom business. Still, in the end, the private sector underestimated the costs of covering an entire city. In a number of cities, including Philadelphia, EarthLink concluded it would need as many as twice the wireless access points than originally thought to cover the entire city—additional costs that not even discounted rights of way could overcome.

If municipal wireless is unfeasible either as a government-owned operation or in partnership with the private sector, what then is sound policy when it comes to encouraging broadband adoption?

Anaheim, California, took a different approach. It offered a low-cost right of way to any wireless company seeking to build a network. No one company was favored with exclusivity. From Anaheim Mayor Curt Pringle’s perspective, granting wide-scale access to the city’s right of way would do far more to encourage build-out than limiting it to one player. He was right. The moves sparked investment from a number of small wireless-service providers who now compete for local consumers.

As this shows, the taxpayers need not be the first, nor even the last, resource for broadband funding. 