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Broadband Financial Options for the City of Urbana

Bringing big broadband to Urbana and Champaign is an exciting goal, one that, if achieved, could prove to be an asset in helping attract new businesses and residents .

Nationally, about 45 communities have already implemented municipal big broadband service to residents. Benefits of a municipal broadband system include significant economic development advantages, as high-tech firms want to locate in communities with big broadband . Residents in those communities also generally see cost savings for Internet, cable television and telephone services.

The effort to bring big broadband to Urbana and Champaign is being led by the University of Illinois, which has voluntarily put together the \$28.3 million federal grant application and formed a consortium with Urbana and Champaign to oversee the project. The project is possible because the stimulus bill included \$7.2 billion for broadband nationwide.

The university's goal in participating is to make Urbana and Champaign a more attractive place for students and faculty, and to benefit the community generally, according to Mike Smeltzer, director of networking for the university and the point man on the project.

But in allowing the UI to lead the effort, the cities have not gotten as deeply involved in the details of the proposal as they otherwise might have. The cities need to get up to speed quickly to make sure the assumptions behind the UC2B proposal are what the cities want out of a broadband network.

Some facts and observations:

- Deadlines are fast approaching. By the end of September, the local consortium should know if its grant application has advanced to the next, "due-diligence" stage . Final grant awards are expected to be made in late November or early December, and it appears, according to one consultant, that awardees will have 30 days to accept or reject grant funds .
- Urbana is being asked to contribute \$555,000 toward the \$36.2 million overall project, which includes \$31.2 million for infrastructure, \$1.3 million to establish 46 public computing centers and \$3.7 million for Sustainable Broadband Adoption training, education and support. Champaign and the UI would each contribute over \$900,000.
- This is largely a "middle-mile" project to install 76 miles of network backbone. There is a last-mile, fiber-to-the-home project component involving 4,600 residences in 11 census blocks in both cities, where Internet penetration is below 40 percent. Of those 4,600 residences, it's estimated that 2,500 would sign up for fiber-to-the-home service . The UI has agreed to purchase Internet services to offer to these residents at a subsidized rate of \$19.95 per month, for up to five years. The grant estimates 54 percent of the eligible residences will subscribe after three years.

- Out of the \$31 million infrastructure grant (including state and local contributions) being sought, \$17 million is for the network backbone, \$11 million is for the pilot fiber-to-the-home project and \$4 million is for electronics.
- The local application also calls for providing big broadband to 137 “critical institutions,” such as schools, libraries, local government offices, hospitals and not-for-profits. These would also be able to use the \$19.95 per month UI-subsidized rate, through some institutions would need and be able to get higher megabit service, according to Smeltzer.
- The vast majority of twin city residents, more than 90 percent, still would not be able to get big broadband once this project is completed. Urbana would have about 1,500 households in the fiber-to-the-home pilot project, but there are about 18,000 households in Urbana overall. About 3,100 Champaign households would be able to get broadband initially, but the city has about 29,000 households overall, based on 2000 Census data, according to Smeltzer. Given housing growth over the past decade, the actual number of households that wouldn’t be served are undoubtedly even higher.
- The grant application assumes fiber-to-the-home penetration can be expanded gradually after the network is built, starting in 2012, by borrowing \$2 million to \$2.5 million annually over three years (from 2012 to 2014). Income generated from the critical institutions and 2,500 households should be able to pay off the \$7 million in bonds over their 10-year life without city subsidies, according to Smeltzer.
- Experts from other communities say that once big broadband service is offered in selected parts of the community, political pressure to expand that service to the entire community will become quite strong.
- Officials from cities that have implemented municipal broadband all warn Champaign and Urbana to expect possible legal or legislative challenges from Comcast or AT&T if the cities move forward on municipal broadband.
- The grant application estimates that extending fiber to the curb costs \$1,750 per residence. Extending fiber to the home (from the curb) costs another \$1,500 if the resident decides to subscribe, for a total cost of \$3,250 per participating residence, according to Smeltzer. But that per household cost drops dramatically with apartment buildings, particularly newer apartment buildings, according to Smeltzer.
- While no official cost estimate has been prepared, Smeltzer estimates that fully wiring Urbana and Champaign would cost in the neighborhood of \$100 million (including the \$36 million from the federal grant and state and local contributions). That sounds right, as Lafayette, La., a city of 125,000 residents, issued \$110 million in revenue bonds in 2007 to install big broadband and is now rolling out services. Of that amount, \$20 million was set aside to cover initial operating and bond debt expenses, according to Terry Huval, director of utilities for Lafayette.

Wholesale, retail and open access

The grant application appears to envision UC2B being operated largely using a “wholesale” municipal broadband business model, though also with an important “retail” data component, with Internet access being provided at a subsidized rate of \$20 per month rate through the UI.

The wholesale aspect of the business model involves the consortium owning and operating the network and leasing its use to private service providers, in this case for a negotiated fee of \$14.99 per customer, Smeltzer said.

“The UC2B Network will be an open access network and will actively seek multiple providers of IP-based services,” the local grant application states, mentioning that “we are in active discussions with four potential providers of Internet Protocol (IP) based services.”

Smeltzer points out that being open access and allowing multiple service providers to compete on a level playing field is a grant requirement.

Consolidated Communications of Mattoon, Volo Broadband of Urbana and Champaign Telephone are among the Internet service providers talking with UC2B.

While the consortium would offer “retail” Internet services to critical institutions and the low-income areas, the grant application doesn’t envision the consortium, or one or both of the cities, becoming a direct service provider in offering cable television and phone services to customers. So the local business model would best be described as a retail/wholesale mix, though leaning more heavily to wholesale given no consortium involvement with video and voice.

The distinction between wholesale and retail models is important because there appear to be very few, if any, examples of financially viable wholesale municipal broadband systems. Most of the success stories are retail models where a city is actively providing and marketing the “triple play” services of Internet, cable television and phone.

Many cities, including Wilson, N.C., and Sallisaw, Okla., restrict their network to a city service provider only and say they wouldn’t allow retail competitors to use the city’s broadband network, which the cities have built at a cost of tens of millions of dollars each.

Other cities interviewed say they would be willing to consider allowing a retail competitor on the city network at the right price, that they are open access, but add that they haven’t had any takers. In addition, many cities do allow outside companies to use the city network for a fee for business services that aren’t in direct competition with the city retail services.

Wholesale-only models are rare and, in some cases where they have been tried, they have been failures. Provo, Utah, a city of 122,000 residents, wound up selling its municipal fiber-to-the-premises network, to a private operator, Broadweave Networks, in mid-2008 for \$40 million.

Provo could not make the wholesale model work financially, but was able to cover its \$39 million in bonded debt through the sale. Utah has a state law that prohibits municipalities from retail broadband, a law that tied the city’s hands, according to Provo public information officer Helen Anderson.

Anderson said Provo wound up covering its bonded debt with the sale, but did not recover \$13.7 million in city costs associated with the project, which included wiring city buildings and an initial pilot project.

She said the city wound up not recovering \$3.3 million in transfers from the city's general fund and from the city's electric utility reserves, and also didn't recover another \$3.7 million in operating loans.

"In the two years (when the city was fully wired, from late 2005 to mid-2008), we found it generated enough revenue to cover all the operating expenses and most, but not all, of the bond payments," Anderson said.

Provo did get concessions from Broadweave Networks to be able to use the network at a discounted rate in the future that consultants said was worth between \$15 million and \$28 million, she added.

Anderson said Provo experienced problems with retail service providers, who sometimes would not meet contractual obligations. The city was hamstrung, she said, because the city's method of enforcing penalties against the providers would have meant disconnecting thousands of customers.

Utah is also home to another troubled wholesale model called Utopia, a multijurisdictional operation that is providing broadband service to smaller cities surrounding Provo.

Interviews with a number of city officials and broadband experts shows that one important reason the wholesale model is difficult to turn a profit with is because the largest service providers, such as Comcast, Verizon and AT&T, don't appear likely to use the big broadband network. That's been the case throughout the country; they prefer to keep using their own private networks, officials said.

Doug Dawson, president of CCG Consulting of Knoxville, Md., which has helped a number of cities implement broadband systems, said he's never seen a wholesale model that works. That's because a retail provider can collect an average of \$100 per month per customer offering "triple play," he said, while that number drops to \$35 to \$45 per month per customer under the wholesale model.

"Your costs don't drop as much as your income drops," he said. "I've never been able to put together a wholesale model that looks like it would work."

But Dawson also said that he's speaking about cases where there is no "free" federal or state grant money picking up 90 percent of the cost of putting in the "middle mile" or backbone network. That could change the financial dynamics and the cities need to put together a business plan, he said, to examine what the numbers say.

"The numbers always speak," Dawson said. "They always tell you whether to do it or not."

Dawson said his experience has shown him that data- or Internet-only networks, like the proposed local network, also don't work financially. He said that, in the local case, that a data-only network might work financially for the initial 11 census block and the critical institutions, due to the federal grant. But the local network would likely lose money if the consortium expands fiber to the home to other neighborhoods and then has bond debt to pay off in addition to operating expenses. The local grant proposal envisions borrowing \$7 million over three years (2012 to 2014) to expand fiber to the home, he noted.

"If you're spending \$2,000 to \$3,000 per home (for fiber to the home), you can't charge \$20 a month and get your money back," Dawson said. "A data-only network doesn't make any sense on fiber to the home. The revenue can't justify the investment."

Dawson said his proposed business plan could look at both whether the wholesale/retail model would work locally, given the possible grant subsidies, and also whether the cities might want to press forward and bring fiber-to-the-home throughout the entire city and offer retail services. He said that while the local network backbone would have to be open access throughout its lifetime, if the cities or consortium built out the system to individual homes, the cities could restrict access to those homes and offer retail services. That might be necessary, he said, to pay off revenue bonds necessary to finance fiber to the home.

Federal rules “say clearly open access rules only apply to assets built by the grant,” he said.

Jim Baller, president of the U.S. Broadband Coalition and a Washington, D.C., attorney who is an expert on broadband issues, also said that while he thinks the wholesale model is generally a recipe for failure, he would hesitate to make that prediction locally if the local consortium is getting more than \$30 million in federal and state grants to build a network.

“It’s a very different world when you start out with a sizable grant,” he said. “There’s no guarantee that will work, but it sure has a much better chance of working than a model where the only income you have is what (service providers) are paying you. That’s a big chunk of money to come into the community without charging rates to repay it.”

But other officials with hands-on experience building municipal broadband systems question the wholesale model where cities aren’t directly providing services.

Tim Nulty, who served as general manager of Burlington (Ver.) Telecomm from 2001 to 2007, believes strongly in open access but also states that municipal broadband only works financially where a city is directly providing services.

“The only way to make it work is to offer services yourself,” he said. “If you provide triple play (Internet, cable TV and phone), very few people will want to compete. Over time, you start getting, not the big players, but other local (service) providers (paying to use your network).”

Nulty also notes that the impact of big broadband on economic development is significant and that if Urbana were to move forward on providing fiber-to-the-home, Champaign would have little choice but to follow.

“The impact on business location is dramatic,” he said. “Champaign will say, ‘We can’t have that.’”

Nulty also said Urbana officials should think long and hard before accepting the federal grant funds, saying the city might be better off building its own network using revenue bonds. He roughly estimated the city could be wired and operational for \$35 million.

Neil Shaw, a principal with Uptown Services of Boulder, Colo., a broadband consultant that has advised a number of cities that have implemented big broadband, is even more adamant than Nulty in favoring the retail model. He doesn’t favor open access and advises against accepting federal grant funding.

“The key thing is you, as network owner, should offer services on your own network,” he said. “Don’t leave that function to somebody else. Don’t rely on third-party retailers.”

Shaw has served as a consultant to Wilson, N.C., a city of about 50,000 residents that has been operating its own \$28 million municipal broadband network for about a year. It now has 17 percent service market penetration and expects to reach the 30 percent level by next year, whereupon it will be operationally self sufficient and have enough extra money to pay for upgrades.

Wilson is not open access, according to Will Aycock, operations manager for Greenlight, Wilson's broadband service.

"We're the service provider," Aycock said. "I don't see how it (open access) would be (financially viable) if you're trying to recover your investment in building the infrastructure."

Wilson's Greenlight service is going head-to-head with Time-Warner, which is using its own network and has not raised its rates in Wilson for the past two years, according to Aycock. The city offers triple play services for \$99.95.

Lafayette, a city in south-central Louisiana that is comparable in size to Champaign-Urbana, began rolling out a retail municipal broadband system in February. The city issued \$110 million in tax exempt revenue bonds to pay for the system in June 2007.

Terry Huval, director of utilities for Lafayette, said he the city needs participation rates of 23 percent or greater to break even – to be able to pay its debt and operations costs – and is already achieving that in areas where service is now available. Eventually, he expects about 45 percent of all city households to use the city for some mix of Internet, cable television and phone service.

Huval said Lafayette is not open access, though it will allow some wholesale services to be offered on the city's network.

"We are not allowing other companies to use our network to sell services on the retail side," he said. "For retail, it's a closed shop. Open access doesn't work."

Huval said he'd be willing to consider opening up the city's network to a competitor if that company "puts skin in the game ... if they pay 50 percent of the note."

Some cities say they're willing to open up their network to direct retail competition. Salisbury, N.C., a city of 32,000, is building its own \$29 million broadband network that is expected to begin service next June. The city will offer not just triple play, but eight different services, including gaming, data services, security systems, video conferencing and wireless cellular, according to Mike Crowell, the city's director of broadband services.

Crowell said Salisbury is providing retail services to start, but is "willing to negotiate for access to the network." If Salisbury could generate enough revenue and outsource services altogether to outside companies, the city would consider doing so, he said.

Crowell also said the city expects to employ 14 people to operate its broadband services, and another 10 to 12 contract installers during its first two years.

Salisbury is pursuing municipal broadband for economic development reasons. Crowell said the North Carolina Biotechnology Research Center is being built in Kannapolis, N.C., 20 miles away, which is expected to generate 35,000 to 40,000 new jobs over the next decade. Salisbury wants its share of those jobs and to attract new residents, he said, and it figures a municipal broadband network is the best way to do that.

Time-Warner was approached first about supplying a broadband network for Salisbury, Crowell added, but they “weren’t interested.” Most of the cities interviewed said they approached their local cable operator about providing a broadband network, and were rebuffed, before they embarked on municipal broadband.

The UI’s Smeltzer said he hopes to go over the financials of the local broadband proposal with both the Urbana and Champaign city councils in October in study sessions, now that the crush to get the grant application in has passed.

He said the UI hired an outside consultant, Fiber Utilities of Cedar Rapids, Iowa, to put together the grant application’s financial projections, including the income statement, the balance sheet and the cash flow statement. Fiber Utilities found that the network would pay for itself through income from the 2,500 estimated residential subscribers and the 137 critical institutions, and that the consortium (UI, Champaign and Urbana) could borrow \$7 million from 2012-2014 to expand fiber to the home incrementally and pay off those 10-year bonds out of revenues alone, without city subsidies.

That assumption could prove wrong, he added, if substantially less than 54 percent of the low-income households sign up for internet services. That’s the assumed penetration or “take” rate after three years.

Smeltzer said a seven-member policy board appointed by Urbana, Champaign and the UI chancellor would define how the consortium operates, and that he believes it could accommodate, for instance, an aggressive fiber-to-the-home broadband rollout in Urbana and a less aggressive approach in Champaign.

“The consortium is designed to be as flexible or inflexible as its members want it to be,” he said. “It could accommodate an aggressive approach in Urbana.”

He said the consortium sells wholesale services to anybody who wants them, and that Urbana could purchase access and then opt to directly operate as a retail Internet service provider in Urbana.

“Urbana could issue its own bonds (to extend fiber to the home to city residents) and become a customer of the consortium,” he said.

Urbana could also “operate its own fiber-to-the-home network any way it wants to,” Smeltzer said, meaning it could choose to be open access or limit access to the city itself.

Smeltzer added that he supports open access and that the Broadband Access Committee of the Champaign-Urbana Joint Cable & Telecommunications Commission has also endorsed open access, saying that the network should be operated as a “common carrier” and should promote all uses without discrimination.

Recommendation

While the wholesale/retail business model of selling use of the broadband network to third -party service providers could work for the limited purposes of this grant, wholesale and data-only networks haven't proved to be a viable economic model for municipal broadband in other cities.

If and when the cities or consortium opt to spend tens of millions of dollars in the future to bring fiber -to- the- home to residences throughout Urbana and Champaign, serious consideration will have to be given to the retail model, with each city or the consortium directly providing Internet, television and phone service and operating broadband as a city utility.

Given the cost involved in bringing municipal broadband to all of the residents of Urbana, and some uncertainties involved in the grant proposal, the city should consider hiring a broadband consultant to prepare a business plan for the city that could look at the grant proposal and other business models , such as retail, to help determine what would be the city's best course of action.

One specific area to review is the grant application's assumption that 54 percent of residences in the 11 underserved census blocks will subscribe to big broadband. The current take rate is 39 percent, so the application is assuming 15 percent growth and that all current users will switch their service provider, or an even greater growth rate. We'd also want to look at the planned \$7 million bond issue to expand fiber to the home in years 2012 to 2014 and whether the wholesale/retail model would cover the added debt and operational expenses.

One candidate to prepare a business plan is CCG Consulting of Beltsville, Md., which has advised more than 80 cities about broadband issues, including Lafayette, Bristol, Va., , and Monticello, Minn. Company President Doug Dawson said his firm could put together a business plan in about 30 days for \$12,500, plus travel expenses. For an extra \$2,500, Dawson would include looking at a joint Urbana and Champaign utility. The city of Champaign has indicated some initial interest in participating in such a study.

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