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Municipal Wireless Snapshot™

The Economic Development Impact of Municipal Wireless

July, 2007

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All views, opinions and recommendations expressed in this report are solely those of the author and the individuals interviewed.

Introduction

Often when you hear a municipality declare its intent to build a highspeed network, a beautiful portrait is painted of new companies, more tourists and more money flowing into town. I am a huge advocate of the economic development potential of these networks. However, I feel that some of the people making these declarations

- ▶ over-emphasize the potential impact in some areas and under-emphasize areas where there may be greater benefits;
- ▶ don't fully understand the role of wireline versus wireless highspeed as it impacts economic development; and
- ▶ definitely don't understand the amount of support services, training, etc. needed for the technology to produce meaningful impact.

To give a more accurate overview of municipal broadband's impact on economic development, I am tackling the issue on two fronts. This report explores how economic development professionals view the benefits of municipal broadband. My next report looks at what business owners and managers have to say on the subject.

The survey results reveal

- ▶ Among those with networks deployed, between two and three times as many feel wired rather than wireless muni networks will have a direct impact on attracting, retaining and improving businesses.
- ▶ Around 40% of these cities and counties feel it's too early to tell if their wireless networks will impact economic development.
- ▶ A large majority of all respondents believe wireless and wired highspeed networks will increase individual entrepreneurship and close the digital divide among businesses.
- ▶ E-mail and mobile access to business application servers are viewed as the main drivers in business use of muni networks.
- ▶ The number of all respondents who feel wireline networks will directly impact attracting, retaining and improving businesses is 10% or more than those who believe the same about wireless.
- ▶ Across the board, only about 21% feel highspeed networks alone will attract more tourists, special events or recent college grads;
- ▶ Around 50% are undecided about the benefit of the popular network ownership models;
- ▶ Having the government own and operate the network is least popular (48% think it's a bad idea), and the most popular models involve local government and other entities sharing network ownership.

Qualitative interviews with representatives from five cities and counties reveal several significant success stories. Their insights hold valuable advice for readers.

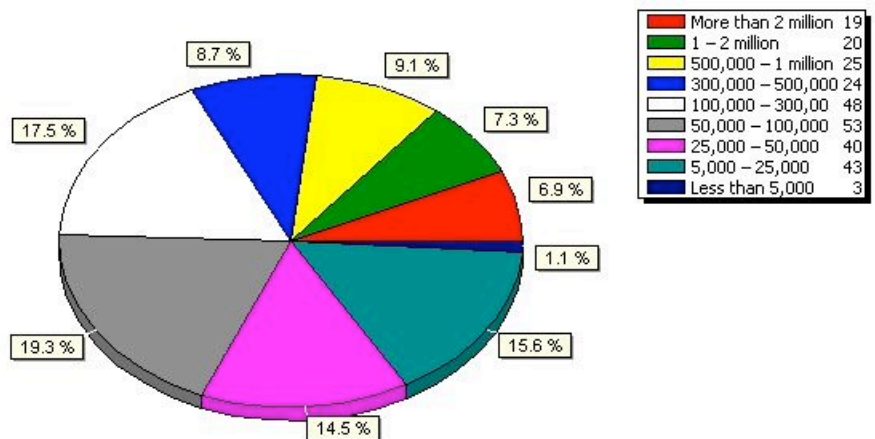
I. Going to the source – survey participants

An e-mail survey was sent to approximately 4,000 members of the International Economic Development Council (IEDC). 318 responded. Most (192) are economic development professionals from local and state governments, mostly in the United States and a handful from Canada and Mexico. 26 respondents are from redevelopment agencies and community development organizations. The remaining respondents are consultants, university administrators, chambers of commerce and others with strong interests in economic development issues.

NOTE: None of the survey questions were answered by 100% of the respondents. Most percentages shown here relate to the number of people answering the respective questions, not to the 319 people who responded.

Most of those surveyed are senior managers with a sprinkling of consultants (19), planners and other staff-level professionals. 37% and 28% come from cities and counties respectively. 44% are from cities or counties with populations of 100,000 or less, and 30% hail from cities or counties with between 100,000 and 1 million people.

Figure 1. Population of Respondents' cities/counties



The qualitative element

In order to give the numbers some depth, I interviewed five individuals from different areas who are involved with municipal broadband initiatives. Three of these were chosen because their networks are up and running. More importantly, these representatives have compelling success stories that merit attention and study by other governments.

The other two are from cities that are in the early stages of their network initiatives.

Jackie Bartlow, Sr. Administrative Analyst – Development Services, City of Glendale, CA

Glendale is in the early stages of planning its muni broadband network. Ms. Bartlow is just starting to gather feedback from clients within the business community, which for the moment has varying levels of interest in muni networks since the project hasn't been widely publicized yet. Disney, with some of its major business facilities and studios in Glendale, is part of the network task force and should have an influential role in those discussions.

Ronnie Bryant, Chairman IEDC and President, Charlotte [NC] Regional Partnership

As IEDC Chairman, Mr. Bryant has a bird's eye view of what the economic development community is saying and doing about municipal broadband. As the leader of Charlotte's redevelopment organization, he has first-hand experience facilitating economic development initiatives, including using technology to achieve the goals of these efforts.

Maurice Gallant, CIO - City of Fredericton, New Brunswick

Fredericton is my personal poster child for the power of creative thought in overcoming the challenges of municipal broadband. When the incumbents wouldn't bring in highspeed service, the city decided to take matters into its own hands several years ago. Faced with a daunting challenge to finance the project, the city brought together 14 of the biggest companies in the area and proposed a highspeed co-op in which the city and businesses (now 30 strong) would reap the benefits of massive access speeds with each member paying a fraction of the total cost. With the access capacity, both businesses, citizens and anyone visiting the city gets free WiFi access.

David Keyes, Community Technology Program Manager – IT Dept., City of Seattle, WA

While some cities acted in haste to deploy muni wireless and are now repenting at leisure, Seattle is taking a deliberate approach to its initiative and thoroughly evaluating all options. Two years of pilot testing highspeed wireless and wireline networks in economic development zones, along with extensive feedback gathering among those businesses, has produced a body of knowledge of the economic development impact of these networks that other governments would do well to possess for their own communities.

There are two resources related to Seattle's project that you should review when you have the opportunity. David's PowerPoint presentation is a good overview of the planning, execution and evaluation of their pilot projects targeted to economic development –

www.successful.com/seattle.ppt. This section of Seattle's Web site reveals the many resources and partnerships a city must bring together to attack economic development at the community level – www.seattle.gov/tech.

Chris Roberson, Asst. County Manager - Greene County, NC

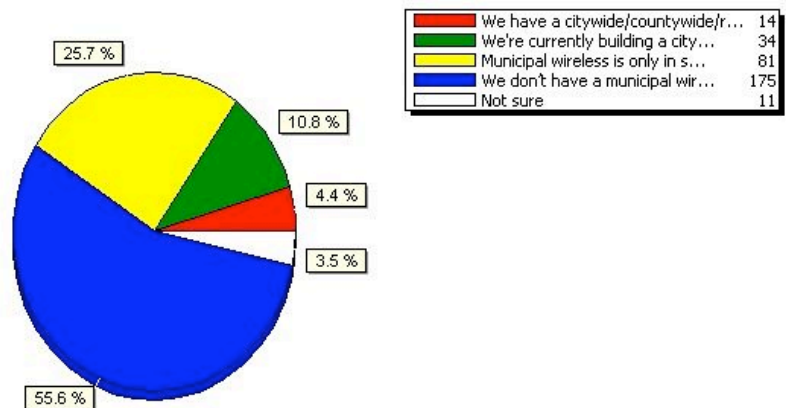
Greene County was on the ropes big time when its primary employer, the tobacco industry, folded in this area. They were below the national average for just about every economic indicator that predicts the near extinction of a community's vitality. Technology was their lifeline to pull them from the brink, so practically everyone grabbed on. They bought network infrastructure, found a provider to lease it and manage the network service, secured grants from several sources, enlisted One-Economy to deliver content and online tools and turned the county around. Now Greene County is the model community that its bigger, more prosperous neighboring cities and counties visit to learn how to do muni broadband right.

II. Survey results – the municipal haves and have nots

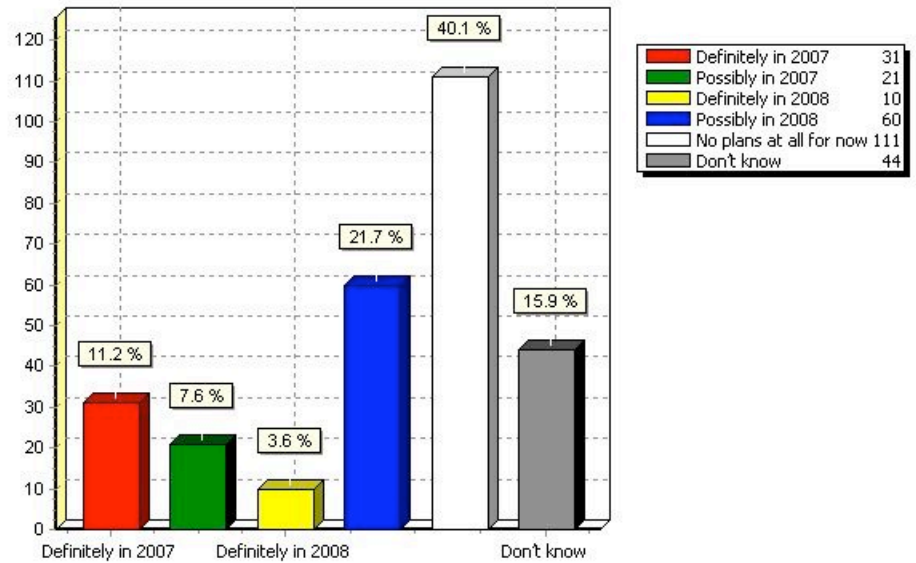
This first section of survey results looks at who does and doesn't have a muni network that is accessible by businesses and the general public. Some municipalities' networks are only accessible by government workers. I divided the questions to address wireless and wireline networks separately.

One interesting thing to note is that wireless appears to be more popular than wireline among those municipalities that do not have networks. 44% expect to definitely or possibly have a wireless network by 2008 while only 20% may have a muni wireline network. However, some of this disparity may be accounted for by the fact that 29% of respondents don't know about their government's plans for a wireline network and only 16% don't know if there are plans for a wireless network.

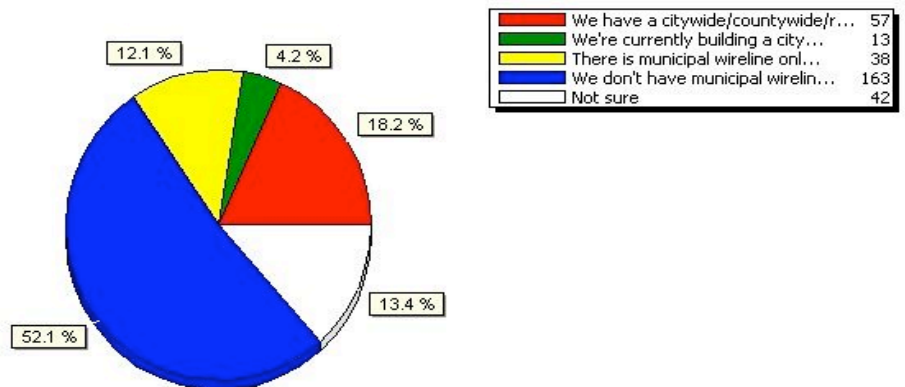
1. Does your city (county, region, state) have a municipal wireless network that businesses can use?



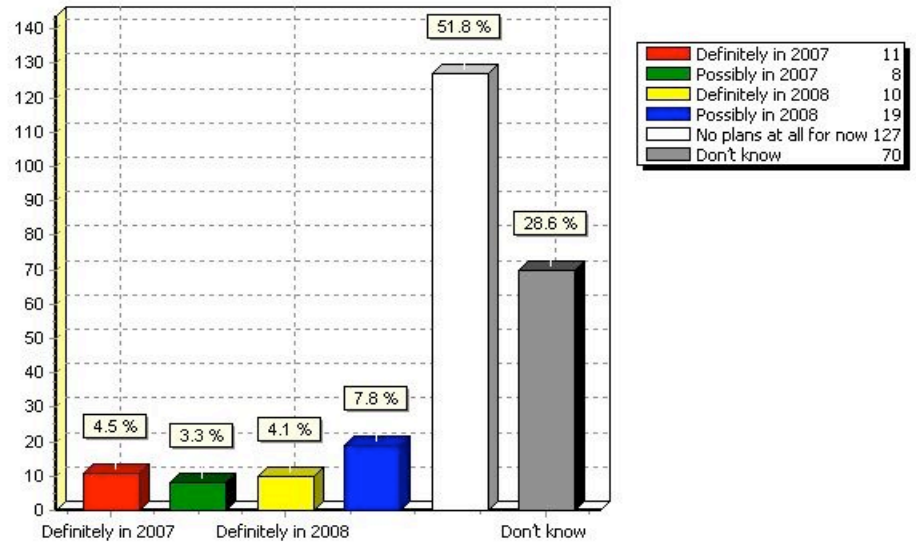
2. If you don't have an area-wide wireless network, will your city (county, region, state) likely begin a project (planning or actual implementation)?



3. Does your city (county, region, state) have a municipal highspeed wireline network that businesses can use?



4. If you don't have an area-wide wireline network, will your city (county, region, state) likely begin a project (planning or actual implementation)?



III. The promises and the reality

When elected officials describe the economic development benefits they expect from muni networks (particularly wireless), there is the standard litany: attract new businesses, keep companies from leaving, bring in legions of tourists and recently minted college grads. Rarely is brought up the goal of increasing the productivity and competitiveness of local businesses.

A sizeable number of IEDC members share several of these goals, though not with the same level of enthusiasm as the elected branch, and reject a couple of others. What may come as a surprise is that wireless is viewed to have less of an impact than highspeed wireline networks.

About 130 respondents have some form of highspeed muni network in place or being built. While only 9% of respondents with wireless networks feel these have a direct impact on attracting and retaining businesses, three times as many respondents with wireline networks (28%) feel this way. Though not as big a gap, 24% of those with wireline networks feel they have a direct impact on improving local businesses' productivity versus 15% of those with wireless.

Two common threads running through both the wireless and wireline worlds are 1) about 25% - 30% feel it is difficult to measure the impact of these technologies, and 2) few respondents feel the networks directly attract tourists, college grads or new events such as conferences. More people with wireless (around 38%-40%) than wireline (20% - 22%) networks feel it's too early to determine their impact. Further research would have to be done to determine how much of this disparity is due to wireline networks being in place longer.

5. If you have a municipal wireless network that businesses can use, how has it affected economic development?

(Activities)	Definite impact	Indirect impact	Too soon to tell	No impact	Difficult to measure
New businesses moved in	9.1%	9.1%	40.9%	15.9%	25.0%
Existing businesses stayed	6.8%	18.2%	36.4%	13.6%	25.0%

Local companies more competitive, profitable	13.3%	4.4%	48.9%	8.9%	24.4%
More tourists	2.2%	8.9%	40.0%	20.0%	28.9%
Increased events (conventions, concerts, fairs)	2.2%	8.9%	40.0%	22.2%	26.7%
Residents returning after college	0.0%	15.6%	37.8%	8.9%	37.8%

6. If you have a municipal highspeed wireline network that businesses can use, how has it influenced economic development?

Activities	Definite impact	Indirect impact	Too soon to tell	No impact	Difficult to measure
New businesses moved to the area	26.4%	20.8%	18.9%	3.8%	30.2%
Existing businesses have stayed	18.9%	28.3%	18.9%	1.9%	32.1%
Local companies are more competitive, profitable	20.8%	17.0%	28.3%	0.0%	34.0%
Attract more tourists	1.9%	5.7%	24.5%	26.4%	41.5%
Increase in major events (conventions, concerts, fairs)	1.9%	7.5%	26.4%	26.4%	37.7%
Residents returning after college	3.8%	9.6%	34.6%	11.5%	40.4%

Among those without muni networks, higher numbers of respondents expect wireline networks to have a direct impact of on attracting,

retaining and improving the productivity of businesses. Conversely, higher numbers of people expect wireless networks to have an indirect impact within these categories.

Again, for both wireless and wireline, markedly fewer respondents feel a network will directly attract tourists, special events and returning grads. A larger percentage of respondents expect an indirect impact from wireless than an indirect impact from wireline networks.

7. When it's in place, how do you expect highspeed wireless to affect economic development in your area?

(Activities)	Direct impact	Indirectly influence	No impact expected	Difficult to measure	Haven't thought about this
Attract new businesses	33.0%	48.9%	6.4%	9.6%	2.1%
Retain businesses	27.7%	45.7%	11.7%	9.6%	5.3%
Increase local companies' competitiveness	39.4%	24.5%	16.0%	17.0%	3.2%
Draw tourists	16.0%	38.3%	22.3%	19.1%	4.3%
Draw more events (conventions, fairs)	20.2%	26.6%	30.9%	18.1%	4.3%
Residents return after college	20.2%	33.0%	16.0%	23.4%	7.4%

8. How do you expect a highspeed wireline network to affect economic development?

(Activities)	Direct impact	Indirectly influence	No impact expected	Difficult to measure	Haven't thought about this
Attract new businesses	52.4%	31.0%	7.1%	4.8%	4.8%

Retain companies	41.2%	40.0%	8.2%	3.5%	7.1%
Increase local companies' competitiveness	45.9%	28.2%	11.8%	9.4%	4.7%
More tourists	18.8%	29.4%	31.8%	10.6%	9.4%
More events (conventions, fairs)	21.4%	22.6%	34.5%	13.1%	8.3%
Residents return after college	23.5%	29.4%	27.1%	10.6%	9.4%

Compared with total responses, among respondents whose city or county populations are 100,000 or less, there is a 5% - 8% greater expectation that these networks will directly impact attracting new companies and increase the competitiveness of current businesses. 35% feel wireless will directly impact business retention versus 28% of all respondents. The percentage expecting wireline networks to impact retention almost ties the percentage of total respondents.

Interview responses

I asked the five interview participants to sum up the economic development impact of wireless and wireline combined since I believe the discussion of muni broadband should include both if you want to give full consideration to the potential value of highspeed access.

Keyes (Seattle): Both wireless and wireline networks directly attract businesses. About two years ago we deployed pilot projects in several neighborhoods where the city has economic development zones. They're proving that adding the network draws people to a neighborhood and also improves companies' ability to attract customers. Not only are there more people coming in, but also they stay longer and spend more while they're there. The jury's still out on the long-term return for this investment.

One question we're asking is, does highspeed enable companies to reduce costs, or use the Internet and online tools more effectively to reach customers and bring in business. We see some indications that companies are using the network to conduct business such as collaborating with suppliers. One owner sits in her restaurant with a laptop and talks to customers while doing business tasks online.

We see a number of businesses doing a combination of online and in-person business, so connectivity is critical to their success. For a neighborhood bookstore, as they get books they need to reach out to customers online to move inventory quickly. Another retailer sells repair manuals for old model cars across the world, so if you've restored a '65

Camaro you can buy a manual. Talking to companies such as these teaches us what we can do to help them increase access to markets.

An unexpected benefit is that WiFi increases the value of the neighborhood, a point realtors use to sell houses and condos to people by explaining 'we have this hotzone right in the neighborhood. You can stay connected wherever you are.'

Bryant (IEDC): This technology is going to separate the winners from the losers. Communities with highspeed connectivity that provides business with access are communities that have positioned themselves to be competitive in this marketplace. More and more companies depend on highspeed connectivity in order to function. Therefore it's incumbent on us in economic development to create an environment to provide this infrastructure.

Roberson (Greene County): The biggest benefit is providing more opportunities for our students to become a significant workforce. We're a small, rural county, and have traditionally struggled when it comes to finding resources to educate kids. Without these, you get high dropout rates.

Along with highspeed we provide laptops to a majority of kids. The two combined provides them with a better learning environment. We're only three years into the project, but we've seen marked decreases in the dropout rate, and a majority of our kids are going to higher education. If we're having this same impact in 10 years, it will make a huge difference to the county.

We're re-building the adult workforce too. A lot of our people worked at the same place for 20 years and didn't have a high school diploma. When the factories closed, they were at a disadvantage. Wireless, through the training programs people access, is going a long way toward educating adults without computer skills and diplomas.

The network helped us recruit about six new businesses so far. Of these, a couple are commercial retail, a couple are technology companies. Basically, these businesses don't do traditional commerce, but a lot of electronic commerce. With the technology we have in place, we're closer to the rest of the country in broadband capacity than some of our more prosperous neighbors. We also have lower overhead in terms of rent and taxes.

Bartlow (Glendale): My first thought is that this would allow most individuals to have access on the go. By marketing such a program it would bring more people into the city and as a result get more customers for the businesses that I work with. We're always thinking about what is it that we have to offer companies to recruit them to Glendale. We could add this to our package.

Business-to-business relationships would no doubt be encouraged. I deal with lots of mom and pop companies. Many of them are struggling. If highspeed access was affordable this could allow them to work more

effectively with businesses they buy from or that are a customer. Right now many don't have wireless or even Internet access at all.

Gallant (Fredericton): We're not sure of specific results, but what we are convinced of is that it's an ingredient. Fredericton has enjoyed financial and immigration success, with people moving in from other parts of Canada and the world. We have lots of anecdotal evidence that points to the success of having a reputation as a vibrant, smart city. Our Fred-eZone is a pillar of our economic development strategy

A computer data hosting company, Q-1 Labs, has customers worldwide. They came to us and said they planned to move to Boston because Internet costs the telco charged here were too high. We had hundreds of those companies and didn't want Q-1 to start a trend, so we built out a network, became an ISP and forced prices down to those of Boston. The National Research Council, a government agency, put a center here for technology research and innovation because of our reputation, and their presence strengthens our ability to recruit other organizations.

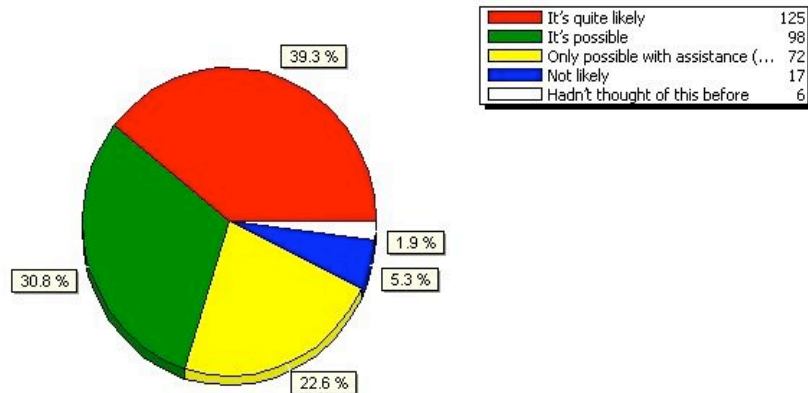
The advantage of the Co-op is better service pricing for members. But also, telcos are trying new services here that they used to provide only elsewhere. Now these services start here and go out to other cities.

For our power company we built a SCADA system, technology for their monitoring stations and a fiber backbone for a research center. No one else was doing this for them. Businesses not in the co-op don't get the Internet access price points, the opportunity to get fiber buildouts or network innovation. What you do get is the benefit of incumbents bringing their prices down and free WiFi like everyone else.

IV. The often overlooked economic development benefits

In the excitement to bring in new companies or become a technology Mecca, some elected officials may fail to look at the economic development benefits within their communities. This is particularly true when it comes to seeing diamonds in the rough underserved communities. But economic development pros can be the ones to turn the spotlight on these constituents.

9. Can a municipal highspeed network influence individual entrepreneurship among underserved constituents (low income, elderly, rural)?



Interview responses

Roberson (Greene County): There are folks who've taken advantage of the technology to get new things going. The businesses are kind of small, but that's how they all start out. We see the network creating a bigger number of self-employed people. We're not large in population, so things lend themselves to growing our own businesses and resources. The more we progress with wireless, the easier it is for entrepreneurs to figure out a business plan and how to make the plan work.

We're making everything self-contained in a technology-oriented world. This is where the world is going, so you get on this bandwagon or you fall behind. If we don't, there'll be an even bigger gap between us and the rest of the country and the world. The technology will pay dividends in the future. Our technology foundation now is just as good or better than what you might find in an urban area.

Gallant (Fredericton): We see this happening. We have a local fellow who labels himself a blogger. He's set himself up as the news reporter for the little guys. He got a notebook computer someone donated to him

and a digital camera. It's an impressive site he's created with great pictures, and he says that Fred-eZone made this possible. He's been on national TV and radio. He's one of the average people who wouldn't have been able to pay the rate and this has empowered him.

Someone in northern Canada is setting up a satellite to enable Internet access. This creates an opportunity for people to post photos of their carvings and sell northern artwork using a Web transaction engine. This gives access to people who would have had no other way to sell their products. Having the speed to make this engine work is important. Access at libraries, that's sporadic. This isn't the same as having access to highspeed any time you want or need it. You're not going to run much of a business going to the library. That's useful just for reading an e-mail or doing an occasional search.

Bryant (IEDC): I don't know if the correlation is as clear as the question. I do believe that having access, maybe even free access, can help an underserved constituency. If the prices charged by the provider are a hindrance, then making it available at no charge is a plus. With rural areas you have a much more significant expense because of the geography, but if the public sector willing to make that investment, it will help these constituents make entrepreneurial decisions.

There is some combination of economic development office and public official efforts that must happen to drive the needed infrastructure of programs, training, providing equipment and so forth. There is also a need for a partnership between local government and the economic development community for things such as running awareness campaigns targeted to underserved individuals that these opportunities exists.

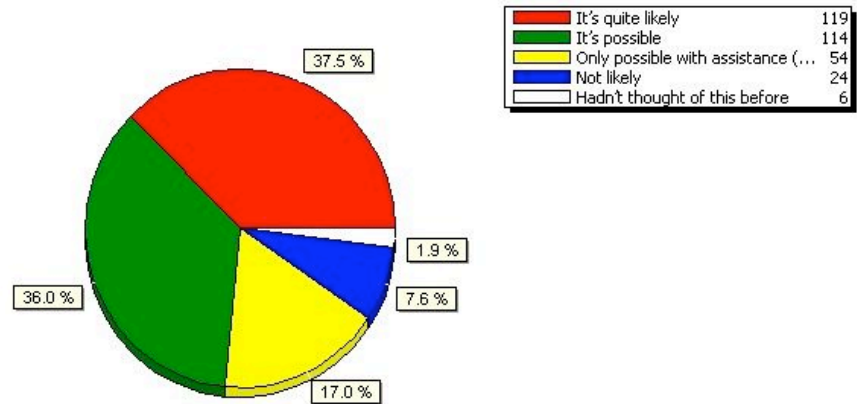
Bartlow (Glendale): In some cases, there's no doubt the network will help with this. But when you classify a group as underserved that says it all right there, they ARE underserved. Among elderly or low income groups, a lot of people don't have the equipment they need to take advantage of the network. You have to address this issue.

The other side of the coin is the need for education. I talk to a lot of elderly who have no clue about wireless or the Internet. Once you address these issues and market the network, then you can point people to where they can have access to information about starting or running a business. When it comes to highspeed networks, they can help almost everyone. The technology has endless possibilities.

Keyes (Seattle): Training is really critical. Entrepreneurship becomes affordable with highspeed access, but these entrepreneurs must have skills training for them to achieve success. There's an interesting potential for municipal networks that's not talked about, which is the capacity for underserved individuals to telecommute. For someone who's disabled or has family duties, the network enables them to still be able to work from home effectively. The value of their time is high, so if they can quickly access government, educational or other resources, this is good.

From the city's perspective, we're trying to increase the ability for people to file licenses and pay taxes from wherever they are rather than having to come downtown. Already we've seen a big increase in the number of businesses paying taxes online. At this point, these kinds of tasks are more wireline driven from people's place of business and homes. The wireless comes into play at places away from home such as at a community center or café. That said, some people are needing to move around a lot within their homes.

10. Do you feel a municipal highspeed network can bridge the digital divide between disadvantaged businesses and other companies in your area?



Interview responses

Bryant (IEDC): Yes. When the cost of access is a deterrent, then somehow finding a way to deliver the access that the constituent can afford should bridge the gap. Sometimes there's not even the option for access because the incumbent won't bring it in, so the government making access a reality opens up a whole world of possibilities.

Bartlow (Glendale): It's the same deal as with creating individual entrepreneurs. A lot of these businesses can't afford the technology. We need to look at different ways of doing things in order to change the situation around. What would city have to offer in order to get people to give up something else to have access? Maybe we offer special accounts with good payment terms and part of this payback is completing required computer training classes.

And then there's education. Some of these businesses need as much education as elderly folks. There's an investment here, there are other costs involved. You have that segment of people who are just barely

disadvantaged, so they can afford the access but may not be able to get something from it. However, those who need the technology the most can't afford the time for training. There's probably a way to create some business assistance programs, but it will take a lot of work by those offering the service.

Roberson (Greene County): I'm not sure about everywhere else in the state, but this is what's happening here. I can tell you with great certainty that the gap is closing. Other cities are coming to us to get ideas. We've become a pilot county for various locations across the state to come in and learn what we've done.

Gallant (Frederickton): Before our network you could lease connectivity, but there were areas of town not served. DSL was in cherry picked areas, so there wasn't highspeed everywhere. We had a tiered customer base. Regardless of whether you set up business on the north or the south side of the river, you need to have an equal opportunity to be successful. So the city stepped in to close that gap. It's the identical role as making sure all tourists have good signs, or that all of the industrial parks have good access to roads. Might it have happened naturally? Maybe. But we had to do everything we could to make sure that company didn't move to Boston.

Keyes (Seattle): One key question is, do we build a network of relationships as much as a network technology? Disadvantaged businesses need both the networks and the skills to do business better. There's a lot of opportunity to link business-to-business online, but you have to help groups understand how to build the relationships. Likewise, there's incredible opportunity for the growth of new business through the network, but we need to grow the mechanisms to enable capital investment in these neighborhoods.

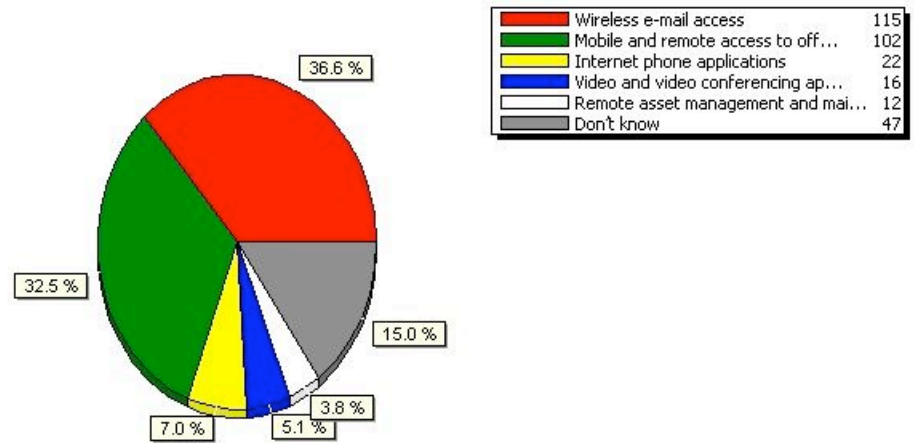
For us, we look at IT contracts and try to improve our impact on inclusion by un-bundling some of those contracts to enable small business to have an opportunity to enter the market. The highspeed network is critical for them to be able to deliver on those contracts once they get them. Then you'll see new products and services that wouldn't be possible without the network.

11. Which application running on a municipal network do you estimate will have the greatest impact on local businesses?

This question drew a clear line as to which applications economic development professionals feel translates into productivity and profitability for businesses and thus will drive their usage of the network. When my survey of business managers is completed in mid-July, this will point conclusively to which apps matter.

You have to know what applications businesses need if the network you build is adequately suited to bear the load that businesses will put on it. Whether you are targeting companies to bring to your community or improving the economic viability of current businesses, you have to

probe deep within these constituencies to learn what will motivate them to use the network. If businesses don't use the services, most economic development goals will be difficult to attain.



Interview responses

Bryant (IEDC): This is really under the domain of companies. It's not up to us to be application specific. We have to be sure we have the sufficient bandwidth to guarantee that the network can handle any application. In Charlotte we're the largest financial center outside of New York City, so you can see how important highspeed is. Being able to access massive databases is important for these companies. In this case, the network is not driven by a particular application or type of application, but by capacity and quality of service.

Gallant (Fredericton): The WiFi story is that all applications are popular. Whether it's GIS, business transactions or paying a parking ticket online, all of these are free of commitment to physical location by the user. We're observing a lot of IMing, a lot of peer-to-peer communication such as using SKYPE and sharing photos, the kind of stuff you see young people do. This is the demographic that's using personal networking tools a lot. A friend of mine was doing a video session from the coffee shop with someone. We have some IP phone users, but not a lot.

Seeing all of this blogging and sharing technology, we're trying to bring this to the city's intranet site. As result of YouTube we're using video to market the city and also to educate our staffs.

Among the co-op members, we're talking a new, higher level of speed than WiFi. For example, the power company stores huge amounts of data in two buildings across town from each other. They continually share this data between buildings because of the gigabit of speed. The common denominator among members is the speed and configuration of

the network and being able to do things they can't do without this speed.

Roberson (Greene County): The big thing we see businesses wanting are software tools that make electronic commerce, marketing and advertising over the Internet easier. Another popular type of application is research tools. A lot of our farmers jumped on the Net so they can investigate problems with their crops. Highspeed access saves a lot of time.

Keyes (Seattle): For local business, highspeed connectivity in general enables stronger connections with customers and vendors, as well as enables companies to do quick comparison shopping for their goods. They get to measure the competitive environment to determine what prices are. The higher the speed the faster you can do these searches.

One category of applications will be the ones that reduce the time spent waiting for data transmissions and the delivery of services. We were able to provide a Cambodian women's association with cable broadband service, which made a huge difference in being able to retrieve online the case records they need to file for state benefits on behalf of their clients. Subsequently they can see more clients in a day.

Another category is comprised of those that increase local companies' ability to reach markets globally. In a state-funded project in Ferry County, a group called Stoned Soup has been putting people from rural areas and their products online, and helping them set up e-commerce pages. You can see them at www.shopthefrontier.com. We've seen cases where having anywhere, anytime access lets local consultants on trips stay in touch with clients.

A third category of products consists of those that enable companies to perform interactive tasks such as video conferencing with customers. There is also the need for transmission of fat-data products such as medical imaging in order to do real-time medical conferencing or education. I can bring someone into Seattle via the Web who has a special skill but happens to live in Philly. This increases the capacity for learning for local business owners who have a harder time leaving their companies for seminars and the like.

Bartlow (Glendale): One type of application that might be popular is one that exists internally for the City and allows staff to pull up past documents online when processing permits, or dealing with contracts. They're able to see all the documents filed with the city. If we provided low cost highspeed access, small businesses could have similar online applications to manage documents created at their workplace, filed with the city or stored elsewhere. Another popular application could be one that improves their ability to reach out to vendors and suppliers without having to travel to meetings.

V. Who owns the network and why it matters to economic development

Though a point of contentious debate in some circles, the question of ownership of the network is a key consideration, primarily due to two simple rules of economics. Rule 1: Technology costs money and someone has to pay for it. Vendors aren't giving away freebies without some financial commitments. Rule 2: They who pay make the decisions, including economic development decisions.

The ownership models presented to respondents reflect the most common that are recommended and/or used in muni network initiatives. What garnered the most support (26%) as being a Good Idea was the model in which local government and vendors share the financial investment in the network. The government/local business ownership model, with the vendor operating the network and managing the service, received 15% positive response.

Government alone or an alliance of government and local businesses owning and operating the network were considered by most (47% and 31.5% respectively) to be a bad idea. However, when considering which of the six options is the best, government owning 100% of the network and letting the private sector operate the network virtually tied for most responses with the model in which government, businesses and vendors together own the network. It's interesting to note that nearly 50% were uncertain of the value of all of the ownership options.

12. In terms of network ownership, what will have the biggest impact on economic development in your area?

(Ownership models)	Good idea	Bad idea	Maybe, maybe not	Best of these options
Government owns and operates	4.6%	46.8%	44.0%	4.6%
Gov't owns 100%, pays vendor to operate	13.0%	29.6%	47.2%	10.2%
Gov't has financial stake along with vendor	26.2%	18.7%	47.7%	7.5%
Gov't, several local businesses own and operate	13.0%	31.5%	53.7%	1.9%
Gov't, businesses own, vendor operates	15.1%	22.6%	56.6%	5.7%

Gov't, businesses, vendor collectively own	6.8%	33.0%	49.5%	10.7%
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Interview responses

Gallant (Fredericton): We believe it's right that cities take an active role because the reality is, governments provide valuable services that no business will do because businesses can't make a profit doing them. People sometimes ask what happens if a private company puts the city's network out of business. We view it as a good thing. Cities do this all the time. We run swimming pools, and one day if there are enough pools run by private companies we'll get out of the business. But we started running pools in order to give enough residents access at reasonable rates. On Rich Hill you'd have a pool priced only for Rich Hill folks.

Bartlow (Glendale): In part, government needs to own it, meaning we need to invest in the infrastructure so we have some control over subscriber fees. If we can't have that, why even do it? However, it's more cost effective to have someone else run the network. The cost for us to run it would be sky high.

Keyes (Seattle): This is an investment decision we're looking at. What we know is that other communities are paying less for broadband than we do, and we have less competition than we'd like. We're looking at the public good and we care if they're not getting the infrastructure that's necessary for the future. So if we can get private companies to provide this, great. But if we can't, then we have to look at what we need to do to make things better for our citizens – and to keep visitors coming back.

Roberson (Greene County): I don't know if owning the network as we do is the best option for everyone, but having the network in place is the most important thing. Given that the county has a vested interest in the network, we can control the destiny of the project. This project probably would not have been possible without a good public-private partnership.

You need both the public and the private side. One cannot do everything that's possible without the participation of the other. We spent money, but we also got a lot of grant money. These grant sources like to see a lot of public-private partnerships. Apple and WaveLink [the network operator] are partners. Before we bought the network infrastructure and leased it to WaveLink, there was only one provider and they had scattered, poor service. Nothing compared to what we have now.

Bryant (IEDC): I'm a strong proponent of public-private partnerships. Some governments, though, are not structured through their charter or legislation so they can take an ownership position in this type of project. But even where they are allowed, in most cases there are strict controls on the operations of the government.

In any event, there has to be some sort of combined government and private sector effort. People have to be creative in how they approach this. A situation in which the local governments and several of the local businesses commit together to be anchor tenants is a good idea. An option in which the government and local businesses form a group to buy the infrastructure and lease it to a provider to operate can work as well. This is what I mean by cities and areas being creative. It depends on how much control cities want relative to what they can do legally, but a city has to be flexible in allowing a win-win situation. I lean towards the city having a little skin [financial commitment] in the game.

VI. In the final analysis

To read the recent flood of articles about the trials and tribulations of municipal wireless, you would think the end of the movement is near indeed. Realize that the genesis of some problems (perceived and real) are those people on all sides of the discussion who don't fully understand muni broadband's benefits, compounded by breathless exaggeration by network champions. Also consider that some of those governments deploying good solutions aren't getting their stories reported.

Most troubling in this trend is Philly. When Mayor Street made the decision in 2004 to pursue muni wireless, it was with the expressed purpose of fostering economic development in huge areas of urban decay within the city. This was clearly articulated on the city's Website, in written materials and in community outreach, and remains a key objective today. Yet, articles now say that unless we see hordes of young professionals and tourists roaming the streets of Philadelphia with WiFi gadgets blazing, the network will be a failure. What total and complete crap! This story highlights the value in Philly - www.philly.com/dailynews/local/20070614_Wi-fi_Phillys_laptop_leap.html.

One of the great promises of muni broadband is its ability to spur economic development to new vistas, both at a commercial level and at a personal level. The economic development professionals surveyed support this view. Read some of their comments at <http://desktop.vovici.com/wswebtop.dll/WSPubReport?esid=174797&subaccountid=62995>.

There are several important lessons everyone involved in these initiatives should take away from this report.

Better manage expectations

Poorly managing expectations is a killer. Muni wireless is taking some undeserved lumps because so many public statements in 2006 promised what the technology can't deliver and supported business models difficult to sustain. In 2007 some chickens are coming home to roost as these expectations are not met.

Survey responses indicate a similar pattern could play out in economic development. Are the people making the headlines and setting expectations seeing the same things as the economic development pros who deal with businesses and business issues daily? Are those expectations realistic and accurate?

- ▶ It's reasonable to assume highspeed access to data and digital resources significantly improves economic development, but expect that access could/should be wireline as well as wireless.
- ▶ Initially, forget about tourists, young hip grads or even a huge numbers of new businesses unless you have few companies to begin with (you'll read why shortly). Focus on using the network to get

residents doing more business locally, and improving the economic wellbeing of companies you already have. Seattle is having success doing this.

- ▶ Expect these networks to have more impact on recruiting and retaining businesses in smaller towns. The impact is more indirect in large cities.
- ▶ Regardless of how fast, access alone won't impact economic development without appropriate business recruitment campaigns, portals, content and applications, all of which local governments should expect to directly or indirectly facilitate.
- ▶ Economic development experts must be actively involved in the discussion before publicly presenting your vision for the network's impact in this area. You need the reality check.
- ▶ The economic development department, a local redevelopment agency or an entity such as that created in Philly (Wireless Philadelphia) specifically to focus on these activities should drive the economic development aspect of muni broadband.

You need fiber in your diet

It's apparent that the need for speed is pretty heavy, even for local businesses in small towns. Fiber or cable are a "need to have," either as a direct-to-the-premises network for commercial and private use or the backhaul for wireless networks. Survey results and interviews point to highspeed wireline networks having the greater impact on attracting and retaining new business. Greene County proves, however, that wireless at the end user level is also a potent agent for strong economic development. But you need heavy-duty backhaul pipes for this.

The high price of fiber tends to cause of a fair amount of heartburn for finance directors. To justify the costs, economic development teams must be thorough in assessing the need for, and the impact of, muni broadband among business constituents. To contain costs, it's important they inventory the fiber and other technology resources that businesses, medical facilities, academic institutions and even local governments can bring to the party.

Mind your own businesses

When writing some previous reports, I've asked a couple of cities how much effort they put into surveying business constituents about their needs/desires/expectations for a muni broadband network. It turned out to be precious little, which is a recipe for disaster if one of your stated goals of the network is to foster economic development.

Economic development is business – sole proprietorships, mom & pop, corporate entities. Business success is economic development. Before, during and after these muni network initiatives you have to keep a finger on the pulse throughout your business communities. You need to know their needs and also what they can bring to muni network initiatives. Potentially they are subscribers, anchor tenants, sources for resources

such as fiber networks and advertisers. Read Seattle's evaluation report to see how extensively they did this – www.seattle.gov/wifi.

The workforce must be part of any assessment since several aspects of the network can impact them. Technology skills are increasingly becoming more important in the workplace to not only perform well on the job, but to even get one. For an increasing number of companies, you can only learn about and submit an application for a job online. Even McDonald's, with the most basic of basic skilled jobs is rumored to be moving in this direction. Greene County is a perfect example of a government executing a long-term plan to re-train its adult workforce and better prepare the youth who are its future workforce.

Be realistic about "check list" benefits

Come to grips early with the fact that several of muni broadband's expected economic benefits will decrease in value as more cities get networks. If you're one of the first, such as Fredericton, then you have a strong draw for businesses contemplating a move, or conventions looking for a host city. But when hundreds of cities have a network, it becomes similar to schools, highways and other infrastructure features. You need highspeed networks to be competitive with other municipalities, but they become one more checklist item for businesses, tourists and professionals on the move.

Long-term, it's what you do with the network that matters. Companies may take note of the fact they can get wireless access anywhere, but network services in your town that enables massive data imaging or video conferencing applications for relatively low costs can put your city on the short list for a new branch office. Or first-time tourists who give no more than a passing thought to the fact that you have wireless everywhere, may become very excited with a service that allows them to create their own real-time interactive walking tours and shopping trips.

Prepare for HBO [Home based offices]

Internet technology has made the entire world both the economic opportunity and the competitor of local business. It also has given rise to the "power-of-one" – any individual with a laptop and a basic understanding of eBay, YouTube or MySpace can start and build a viable business. Storefronts, offices, warehouses and other physical resources normally tied to entrepreneurialism become sooooo last century.

Within municipalities everywhere, but particularly in large urban areas we have underused or discarded human capital: low-wage earners, youth, unemployed and the elderly. Subsequently, they are often logged on the Debit side of the economic development equation. Highspeed access, plus the creative vision of a city, can convert this underused capital to the Credit side by uniting the power of one and the self-reliance building power of entrepreneurialism. Home-based offices are the future of individual entrepreneurialism.

During Philly's pilot projects for the network, a number of stories emerged of elderly and unemployed individuals starting businesses online. Mr. Gallant cited several cases. One Economy alone is responsible for thousands of such stories around the U.S. and the world, including Greene County's success (www.one-economy.com). Even if individuals start out only making a few hundred dollars a month, they're contributing to the economy. Properly nurtured, this contribution will only grow.

Everyone's gotta show a little skin

What I found to be stunning are the number of public proclamations that so-and-so's muni network is going to bring about an economic development renaissance, but without a hint of an actual plan. Worse are the networks that intend to do this at no cost to the municipality. Horse dung!

I spent some time recently at Wireless Philadelphia headquarters talking with folks and getting a feel for the progress they're making. Some of my previous thoughts were reinforced, a couple of new ones emerged.

- ▶ If a municipality doesn't have money in the game as an owner, anchor tenant or something, you don't have much leverage if your economic development goals don't match the service provider's profit strategy.
- ▶ Local businesses also have a vested interest in putting some skin in the game, whether through partnership/anchor tenancy in the network in exchange for greater access to highspeed, donating used technology to tomorrow's workers or some other investment.
- ▶ The economic development team must work relentlessly to partner with organizations and agencies that have access to businesses, and mechanisms to sell or deliver services to these segments.
- ▶ You cannot get businesses to maximize the value of the network without education (marketing campaigns), hardware, portals, content and for smaller businesses, training. The businesses that need these things the most often can't afford them, so funds have to come from somewhere.
- ▶ The individual must have some stake in this as well, be it using their new skills and online access to help others, paying a reduced rate for network access as is the case in Philly or some creative contribution.

VII. Conclusion

Using a muni network to improve economic development is easy to promise, but a bear to deliver. The easy part, relatively speaking, is building the network. But building the right network to support the needs of your business community requires lots of challenging work on the planning end. The hardest job, though, is planning and executing the tasks required to deliver on the promise. Are you committed?

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About the author

For 20 years Craig Settles' consulting services, books and workshops have helped organizations worldwide understand how to use technology to make money, save money and run a better business operation. Since 1999 he has concentrated on developing strategies and tactics for using wireless technology. Former clients include Microsoft, Symantec, AT&T and Nextel. Mr. Settles has written several books, plus numerous articles and columns for leading publications on wireless business topics.

View Mr. Settles' PowerPoint presentation on the economic development impact of municipal wireless – www.successful.com/econdev.ppt.

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