

S U C C E S S F U L . C O M

Community Broadband Snapshot Report™

Fighting the Next Good Fight
**Assessing what our national broadband
strategy should be**

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Table of Contents

Introduction

I. Going to the source – survey participants	Page 4
II. Report participants	Page 6
III. Question responses – how broadband impacts economic development	Page 8
IV. Question responses – moving economic development projects forward	Page 15
V. In the final analysis	Page 19
VI. Recommendations	Page 23
VII. Conclusion	Page 27

Introduction

The road to the success or failure of technology to achieve business (economic) objectives, whether for government, commercial or nonprofit organizations, starts with thoroughly understanding the needs of those who will use the technology. This report affirms broadband technology can improve economic development, but only if we adhere to this rule.

National broadband strategy – or the lack thereof – is an increasingly hot topic from the corridors of Washington, D.C. to the cornfields of Iowa and beyond. Broadband has become an economic imperative, earning headlines calling for a “broadband New Deal.” But how do we get there from here?

In November 2008, I conducted a national survey of economic development professionals to assess how they believe broadband can impact local and regional economies (<http://www.successful.com/msp/snapshot-12-08.doc>). They are the people who have key roles executing plans to use broadband for this goal. They work every day with the local businesses and constituents who ultimately use the technology.

Based on the survey results and comments of those who completed the survey, I developed this second report, “Fighting the Next Good Fight.” Here, individuals who are improving their local economies describe what broadband can achieve, and explain what’s needed from national and local government and business organizations to get there.

This report shows what a national broadband strategy should accomplish on a wider scale: attract businesses into economically depressed areas, create new businesses, prepare workers for a digital economy and produce a new generation of workers skilled in next-generation technology. More importantly, it is an assessment of what’s needed by the people who deploy and use the technology solutions this strategy hopefully produces.

I have experienced firsthand, and frequently chronicled, muni wireless’ meteoric rise, fall and slower rising. With this perspective, I find much of the national broadband rhetoric shortsighted and destined to lead to expensive failures because once again, policy makers appear not to be doing enough needs assessment. There’s another good fight to be fought, and this report’s goal is to get people started on the right foot.

I. Do we have the right perspective on this broadband strategy

The good news is that the topic of broadband and its potential to impact economic development is now front and center on the national stage as well as at the local level. The bad news is that the potential exists to really botch up what is a golden opportunity to turn broadband into an impressive U.S. economic engine.

I've stated for years that how you view the business objective for using a technology, and how effectively you assess the needs of those who will use it, determine whether technology you roll out is a major success or a total flop. Two months of assessing how economic development professionals believe broadband can produce economic benefits contradict some of the views reportedly held in Washington D.C.

Do people in the Obama administration have a complete picture of how broadband can impact economic development? Are they spending enough time with the local and state organizations that know best what needs to be done?

An almost bigger question, though, is who will actually drive the broadband discussion in the White House and Congress? An economic stimulus effort on the scale of the 1930's New Deal may be laudable. But to have the broadband component of this effort lead by people whose thinking is anchored in the New Deal era would be a total disaster.

How broadband will impact economic development

Much is made of the potential of a broadband network to create economic gains. However, those interviewed in this report know from experience that just building highspeed infrastructure and declaring "mission accomplished" is as bad as building a bridge to nowhere.

A network by itself will impact the economy as much as building foundations without walls and roofs will decrease homelessness. Sure, similar to the New Deal programs, you will create jobs by building highspeed networks, but this a small portion of the potential economic impact of the effort.

Broadband is an engine that will drive business expansion, spur a surge in home-based businesses, attract new organizations to poor and rural areas and create a 21st Century workforce. Yet it cannot do these things alone. A national broadband policy is incomplete unless it addresses the various technologies, programs, training and support that must accompany network infrastructure. Those interviewed here talk about different ways the Obama administration can address this.

Think globally, act locally

When building highways and bridges, the look of the finished product may vary from community to community, but fundamentally, the infrastructure in every state uses the same "technology." What's more, the basics of how you build it hasn't changed much since the original New Deal. But broadband, no matter how often people use "highway" analogies, is a radically different beast comprised of a variety of continually evolving technologies. Because each city and county's

broadband needs are different, each often requires a different permutation of the technologies and supporting programs.

An effective broadband strategy from Washington requires not a physical construction of a digital I-95 through multiple states, but funding, support and legislative action to enable local and state organizations to build infrastructure most appropriate for local needs. If anything, the administration should establish guidelines so there's fairness in funding, and some uniformity in standards, quality of service and (most importantly) what data speeds constitute broadband.

In the interviews here, it is obvious network building and program implementation needs to take place at the local level. People talk about putting stimulus dollars into projects that are "shovel ready," meaning they're on the drawing board just waiting for funding. In spite of the unattainable hype of muni wireless, one benefit of it was that many cities and counties analyzed their economic needs that broadband can address. Broadband stimulus needs to target these communities.

Who's driving this bus

In order to align national broadband strategy with real economic development needs, who drives the effort from D.C. is critical. If the incumbent telecom and cable companies grab the wheel, broadband as a true economic development engine is dead, and a lot of taxpayer dollars will line the grave. If the people in charge of formulating strategy at either end of Pennsylvania Ave. still haven't figured out how to print their own e-mails, a similar fate is likely in store.

The economic development professionals in this report, and those who completed my recent survey, identified needs that are best addressed by people who use technology as a way of life, AND are responsive to communities more than stockholders. Their success stories were made possible by innovative thinkers, people with hands-on experience, local companies and public servants in spite of lobbyists and technophobes.

The Obama campaign owes much of its success to a cadre of tech-savvy folks who knew how to use the latest technology to turn the business of campaigning and community activism upside down. These are the kind of people needed at the wheel.

Patience is indeed a virtue

2006 saw municipal wireless hyped as the solution to all of American's broadband ills. Then came the fall for a lot of projects as too many politicians jumped on the "free muni WiFi" bandwagon without doing effective needs analysis. However, the local governments that did their homework, developed the right business plans, and then moved boldly forward are now the winners with their effective broadband solutions.

In 2009, the new administration and Congress need to do thorough due diligence before spending one dime on broadband infrastructure. Similar to how Obama's transition team stimulated numerous constituents and organizations to hold 8,200 meetings over two weeks to discuss healthcare policy and gather feedback, conduct a similar effort to solicit insights from those involved with local economic development. The interviews in this report are just the tip of the iceberg.

II. Report participants

The people selected for this report represent a cross section of the types of communities that can benefit from the effective use of broadband for economic development.

Bob Cabeza – Exec. Dir YMCA Downtown, Long Beach, CA

Mr. Cabeza manages a program that teaches youth nationwide high-end digital media skills through neighborhood tech labs, then connects those skills to academic achievement and workforce development.

Misty Chase – Dir. Beyond Tobacco, Greene County, NC

Their countywide wireless network has attracted new businesses worth millions of dollars and dozens of jobs, increased home-based businesses, and significantly raised students' academic performance.

Ron Dickerson – Economic Development Manager, MTCO Corp.

This independent local exchange carrier develops and delivers services that help communities in their region, which is near Peoria, IL, attract business and expand existing businesses.

Stephane Gallant – Dir. Of Operations, NEOnet

This regional organization partners with private sector businesses and secures grants to bring broadband networks to rural and remote areas of Ontario, Canada where there is not highspeed access.

Greg Goldman – CEO, Wireless Philadelphia

Wireless Philadelphia continues to carry out the citywide network's original mission – bringing underserved people into the digital economy through access, hardware, training and key partnerships.

Robin Krieger – Immediate Past Chair, International Economic Development Council (IEDC)

Ms. Krieger is also Executive VP of the Chamber of Commerce in Oklahoma City, which has built a citywide Tropos wireless network, giving her both a local and national perspective on the discussion.

Karl Robillard – Mgr, Employment Programs/Tech Lab, St. Anthony Foundation, San Francisco, CA

This nonprofit organization runs technology training programs that helps low-income individuals enter, re-enter and/or advance in the workplace.

Wes Rosenbalm – President & CEO, Bristol Virginia Utilities, Jerry Brown – Exec. Dir., Bristol Office of Economic Development

This public utility has built its fiber optic network out to over 65% of the homes and businesses in Bristol and surrounding area of 20,000 people.

Jeff Rossate – Business Development Division Administrator, Iowa Department of Economic Development

This agency promotes policies and practices that improve the state's economic progress.

Dan Speer – Exec. Dir., Pulaski-Giles County (TN) Economic Development Council

Mr. Speer was the driving force of this city and county project to bring fiber highspeed access to every home in the county through a municipal-owned entity.

Esme Vos – Founder, President, MuniWireless.com

Ms. Vos has been a long-time expert, champion and extensive knowledge resource regarding municipal broadband issues and activities.

III. Question responses – how broadband impacts economic development

To get a good starting roadmap to tackling economic issues with broadband, I asked roundtable participants the following questions. The first four questions solicit examples and recommendations of specific ways that broadband can impact economic development. The final four address requirements and policies that are important for moving broadband projects forward.

It's important to look closely at Question 1 that addresses what communities are achieving with broadband networks. I do not believe enough local or national policymakers fully understand or appreciate the financial impact these networks make.

1. What are some examples of your community or municipal broadband network impacting business or personal economic development?
2. To improve a local business economy which would you do first, use the network to try to bring new businesses to town, or use it to improve current local companies' competitiveness and profitability?
3. Can these networks lead to the increase, and eventual success, of home-based businesses?
4. In what ways can muni networks facilitate the re-training of jobless individuals for the new digital and global economy?
5. Besides highspeed access, what technologies and programs need to be put into place in order to impact economic development?
6. How do you fund these network projects given the current economic climate?
7. What can the in-coming Obama administration do to improve the advancement of broadband network projects that improve local economies?
8. What are the top three things a local government needs to do if they want a muni network to impact economic development?

1. What are some examples of your community or municipal broadband network impacting business or personal economic development?

Chase (Greene County): We have a development project that will eventually build 650 homes here. The property managers are using the network to drive 80% of their lot sales through the Internet. A dog supply company used to sell everything by printed catalogs, and they used the network to establish a Web-based business that now generates 90% of their sales. They have gone from three to 20 employees.

YamCo made a \$6 million investment in the county to build a food manufacturing plant that created 63 jobs. Their equipment relies on

broadband connectivity. SmartPlay invested \$250,000 into the community to open an automated plant that makes tennis balls, and creating 15 jobs. Another company brought in \$3 million and 12 new jobs. Our network plus our newly computer proficient workforce convinces these companies to move here.

Cabeza (Long Beach YMCA): In the inner city, kids might go to a 'digital high school' but what happens when that school closes at 3 p.m.? The city's free wireless network downtown solved this problem.

We piggybacked on the school district's broadband for after-school programs, and built digital media labs in 12 of the lowest performing schools. Youth access technology on the playground and in the cafeteria. They're creating digital newsletters and making movies about science. A group of 3rd graders recently made a video about a fire at their school. 1st graders teach kindergarten kids abc's with a movie they made. Without free wireless at the schools and downtown, the kids couldn't do these things because there aren't alternative connectivity resources available with the capacity to run the media software.

Rosenbalm (Bristol): One intangible benefit is that we raised the profile of Bristol. We get calls about locating here that we never got before from companies. We expanded the network through southwest Virginia, which was a key factor getting Northrop Grumman and CGI to move into the area. These companies brought 700 jobs with an average salary of \$50,000 when jobs around here had a \$20,000 average salary.

On personal level, more people are telecommuting, and people are getting Masters and other college degrees online. The people with these advanced degrees are the ones getting the jobs when large companies come to town. Also, we recently did a study on what our business and residential customers have saved using our network. It was \$10 million collectively over five years based on lower rates from us and by us forcing the incumbents to lower theirs.

Gallant (NEOnet): Before they got broadband, companies could get access with dialup, but couldn't upgrade their Web site. After a year online, a lady who designs and creates jewelry is getting business from Montreal and throughout the province. Financial services, law, consulting and other services can be delivered remotely, so these businesses are growing. There's a company in Sudbury that does animation for US companies, and they could not do the work without broadband.

We support satellite access to the Internet in areas where nothing else is practical. There's a project coming online in Spring 2009 for farm communities with between 100 and 450 people. Farmers can check pricing, do research, and submit reports on various activities such as the use of fertilizers.

Goldman (Philadelphia): We know there's a definite link between Internet access and employability. We've had great success working with funding agencies and community-based organizations that assist folks move into the workforce or up the ladder. We offer a computer, access and training together as an incentive to enter and complete employment-training programs. Evaluations proved this incentive increased the likelihood of recipients getting and retaining jobs.

The Recovery & Education Centers provides recovery-based services for individuals with psychiatric and co-occurring disorders. We gave them laptops with wireless access they use to teach individuals in the rehabilitation recovery program computer skills. They loan laptops to members on projects that help them reach educational or occupational goals, and give away some laptops as rewards for people who progress significantly in their recovery. Members enter the workforce or academic world prepared to use new technologies and Internet resources.

Rossate (Iowa): A great example is the progressive nature of communities such as Denison, Carroll and Cedar Falls to create state-of-the-art networks. These communities were ahead of the curve in the 1990's and early 2000's and the results are a clustering of high tech-based services and firms that work with clients around the globe. These communities would not be where they are today in terms of recruiting and creating tech businesses without the broadband network capacity. For example, I've observed Cedar Falls outpace its nearby neighbor Waterloo in attracting nationally known data centers, ad agencies, John Deere operations and others needing highspeed fiber communications.

Speer (Pulaski): The World Wide Wait is over in Pulaski. There's a printing operation here that has to send large graphic files all the time to their corporate headquarters in Los Angeles. One company that has their offices on the north side of community and the manufacturing plant on the south side use the network to send large data files back and forth.

Hospitals here can upload and download files such as x-rays, MRIs, and CT scans immediately between other hospitals and doctors 75 miles away in Nashville. Patients don't have to be transferred there, saving lives and money. None of this can happen without broadband

Tennessee adopted the No Child Left Behind program that adds another year of math and science to high school curriculum, but we can't find enough teachers to do this, especially in rural areas. Broadband allows us to work with the University of Tennessee to deliver these classes.

Krieger (IEDC): In Oklahoma City, broadband is covered in one of a list of 20 questions we ask businesses considering locating here. It's as important as 'can I get water and sewer.' Broadband is elevated to point to where it's always discussed, but we talk more about upgrading highways than that because we've totally integrated the broadband.

Here, when I have some business coming in that needs telecom services, I only have to make a few phone calls and there may be five vendors competing for the business. Companies that need these resources have them. There are a lot of highspeed resources available. In university districts, the tourism center and the airport WiFi is big. The city government has its Tropos wireless network they recently completed.

Dickerson (MTCO): The slogan of economic development professionals is, make business development happen sooner rather than later, and broadband does that. We needed our insurance agent to get a performance bond for a project we're doing. Without the network it would have taken three or four days to get the paperwork, engineering documents and materials back and forth by regular mail. But with broadband the agent had the bond to us in 30 min. This speeded up completion of a specific project in nearby Peoria.

Broadband allows us to facilitate bureaucratic operations and move faster. In a previous community where I worked the telco didn't keep their technology current, so businesses wouldn't locate there. This changed when the telco was bought and their equipment overhauled. Over the five years I was there, maybe four or five houses per month were built and employment opportunities decreased. Now, companies are more productive, the town is building 12 houses per month and a large state facility moved in.

Robillard (San Francisco): In neighborhoods like the Tenderloin, less than 40% have access to technology, whereas up to 90% in middle class and wealthier neighborhoods have access. In November 2009 we had 1000 people come in to use the Lab and 86% had never had an e-mail account for anything – jobs, reaching friends. Many are transitioning away from casual labor like construction or house keeping. We're able to get them to sit down, create resumes and look for jobs online.

We're seeing people master some of the basic skills that those who've been in the professional world take for granted. So this helps level the playing field a little. We were told about a 20-hour-a-week admin position that a person completing training last year could have gotten easily now has 100 applicants applying for it, some with college degrees.

2. To improve a local business economy which would you do first, use the network to try to bring new businesses to town, or use it to improve current local companies' competitiveness and profitability?

Brown (Bristol): As global competitiveness changes the job landscape for almost all communities, it is extremely important to retain as many jobs as we can, and work to increase employers' profitability by providing them the necessary tools such as broadband access. However, we must still spend time and resources to attract new jobs to our community who need the broadband network to operate successfully.

Goldman (Philadelphia): I feel the first priority is to improve the local business climate. We want to provide a comprehensive program with organizations that promote local micro businesses. Broadband helps these startups that have no access at all. Helping companies located where there are groups of unemployed or underemployed individual has the greatest immediate impact on reducing unemployment.

Rossate (Iowa): By far, our priority has been the improvement of current companies and ensuring they have the tools necessary to communicate and compete on a global basis. Existing industry is still our strongest economic base and as their needs evolve, broadband service is one of solutions to meet those needs.

Gallant (NEOnet): Once the network is done and people are using it, you can bring in new companies. One large business that was attracted to Timmons is Teletech, an inbound call center. They wouldn't have come without the infrastructure already being in place.

There's a network project coming to link three call centers so call overflow at one center is automatically directed to one of the others.

Some small communities don't have enough people to support a single center that's big enough to meet the company's needs, but with broadband infrastructure you can link three communities together.

Cabeza (Long Beach YMCA): Bringing businesses into an area would be my first priority. Small businesses, for example, can be enticed by the low cost of promoting themselves over a local network. But I look at this from an education perspective. Use broadband to create a skilled workforce, which gives you a second draw besides the network.

We need a Cisco or a Sony to go into low-income areas to hire and train folks. Think what this would do for the community. People are more inclined to stay because jobs are there. This sparks more changes from within to reinvent the community, and ultimately the population becomes an asset, not a liability. Fast broadband in low-income area equals academic opportunity for them. From this success they're able to advance in companies and move into a middleclass lifestyle.

Robillard (San Francisco): My immediate reaction is to encourage businesses to come in. We need businesses to partner with so we can place people after we train them. If the city can bring them in to create more jobs, maybe offer tax refunds to encourage partnerships with organizations such as ours, we can fill those jobs.

Businesses already here that haven't felt compelled to view low-income communities as a new hiring pool may not anytime soon. It's harder to get people to change patterns. If you bring in businesses with the specific intent of hiring the underserved, you'll likely get more people taken into those companies.

Esme Vos: Helping existing local businesses is key. That's the low hanging fruit. Local businesses have to compete with each other and with companies from other nearby areas. What kind of highspeed services you develop depends on the kind of business you want to keep. Some, such as those in services industry - law practices, accounting firms printing companies, have different needs than manufacturing companies. Also, local businesses are voters now.

Dickerson (MTCO): Greater effort should go towards improving existing businesses. There are a lot more things needed to attract new business than just broadband, and you have to have all or most of them in place. When companies are trying to decide between locations, some of their considerations are accessibility to transportation, labor force characteristics, a good stock of housing for potential recruits and educational opportunities. These can trump broadband in the economic development picture.

3. Can these networks lead to the increase, and eventual success, of home-based businesses?

Robillard (San Francisco): Absolutely. Training for something such as GIS [geographic information systems] is good because once you have a industry-recognized certification, you can work remotely connected from home as an independent contractor. Many jobs are project based.

Dickerson (MTCO): I have friend who makes as much as a schoolteacher selling over eBay. You see a lot of that these days. Be careful about zoning issues, though. Some places put you through a special-use process with city council that can be unnecessarily restrictive. I was a zoning officer once and had to shut down a business because of an ordinance. But this was stain glassmaker that had little adverse impact on the neighborhood.

Gallant (Timmons): I can see this after a network comes into place. Once you have it, entrepreneurs with business plans come back to agencies to see if broadband can make these plans feasible.

Goldman (Philadelphia): We've identified partner organizations dedicated to this objective and want to seed home businesses with capital and training. Many don't have a digital component, so we provide it. It's similar to what we do with individuals in welfare-to-work programs. The service groups have done the pre-screening, they have people in classes, they've completed the business training. We give them the package. Sometimes we identify funding for the technology, in other cases the organizations go for funding.

Esme Vos: Having broadband infrastructure is good, but it can't make everyone an entrepreneur. It's the character of the individual. However, if someone sees relatives or friends are successful in home businesses, then they may want to mimic them. Can you make others aware of these success stories so they're inspired to follow? Computer programmers are a natural, but also encourage people who have physical goods to sell. A lot of high-end almonds, wines and olive oils, for example, are traditionally sold through brick and mortar stores, but now you have more of these kinds of products moving to online sales. As you build networks in rural areas, determine how to carry this trend over here.

Speer (Pulaski): We believe the future of economic development is in what's called economic gardening, meaning you teach people entrepreneurial skills such as bookkeeping and business development. Then you show people opportunities in the knowledge industry, for example, that they can take advantage of from home. We're doing this now during the downturn, but if it's successful we may continue when things pick back up.

Chase (Greene County): We are seeing this happen here. People who are making \$15 an hour in their regular jobs are starting all kinds of Web-based businesses on the side that they run from their computers at home. Many of them make several thousand dollars a month in additional income. Few people are quitting their regular jobs, but that extra money is a big help given how the economy is now.

Brown (Bristol): Certainly the networks can lead to more home-based businesses, but that is a very difficult outcome to track. In my opinion, another potential outcome is more telecommuting. As costs increase for businesses such as utilities, energy and travel, the networks may allow people to work from home and be just as productive, if not more so, than they are from 9:00 to 5:00 in a business environment.

4. In what ways can muni networks facilitate the re-training of jobless individuals for the new digital and global economy?

Robillard (San Francisco): The biggest workforce re-training trend we see is with men over 40 whose entire working life has been in physical jobs such as construction, farm labor and the like. They know their body's going to wear out if they stay in their jobs. There are plenty of service jobs in low-income areas. For example, we have so many single-room occupancy buildings in the city we can push people with computer skills to be desk clerks and create a new economy.

Chase (Greene County): If you want to take the long-term view on re-training your workforce, you have to consider raising the level of basic skills of your youth. In Greene County our kids are the ones doing a lot of the adult training. But we had to get these kids ready. We put the network in place and we gave students Mac laptops, and since then there's been a 32% increase in their computer proficiency scores over the last three years.

Cabeza (Long Beach YMCA): Community tech centers have a large part to play. These resources contain a knowledge base and have a cultural connection to community. We're a go-between for parents and traditional schools, so people trust our resources. Our youth teach adults in their language, which gives our instructors more credibility and they are more effective. Funds should go into those centers that are proving they deliver value.

Speer (Pulaski): First, you make it available where adult education occurs, which for us is in career and technology centers. When a plant is closing, the centers make a direct pitch to these workers to take the courses. There's also a Web site run by the International Commission on Workforce Development (www.iswfd.org). They partnered with Microsoft to offer skills training so people can pass the Microsoft certification programs that people complete at home. By delivering computer-based training over the network to the schools, you can get teachers to use this technology for adults as well.

Esme Vos: For most classrooms today to do any serious re-training, they need broadband. People have to get online to find or exchange information and discover options even before they can begin training. And they need total time flexibility getting access in order to be effective because some may have temporary jobs or young kids. People who are planning these programs have to think outside the box in terms of how they deliver re-training because times are so difficult.

Krieger (IEDC): You have University of Phoenix and other institutions offering online courses. You can get a doctorate remotely, or you can take self-paced medical transcription courses. We have computer labs where kids can stay as long as they want.

You can try and help low-income, hard to train individuals, but you need a more structured environment and doing training online isn't going to work. You need a lot of one-on-one. For some of the re-training in certain skills people can do the information gathering and reading online, but you need hands-on activities. So using broadband for re-training really depends on the field.

IV. Question responses – moving economic development projects forward

5. Besides highspeed access, what technologies and programs need to be put into place in to impact economic development?

Rossate (Iowa): Communities need a broader understanding of how to use the access to leverage global resources, which is already done by larger firms that manage and leverage talent in India, China, etc. Smaller firms can do this by networking individuals across geographies to create a near 24-hour constant workflow that further accelerates their competitive edge.

Goldman (Philadelphia): We found it is most effective to create a package that includes computers, access and training, then partner with other nonprofits that deliver appropriate social services. You can't deal with this individually and say, 'we're just going to provide access, or that group will only worry about software programs.' That doesn't address the needs of the population. You need a comprehensive approach.

It can be complicated because of the expense. As ultra portables come on the market with almost as much power as a two- or three-year old laptop for the same price, this looks to be better option. We continue to use refurbished equipment, but people want these products to be a better solution than it really is. The capacity, costs and logistics of deploying of refurbished computers are challenges.

Gallant (Timmons): The economic development-related organizations focus on helping people learn about business, show them where the growth areas are and point them to what can be done. We focus on awareness building by putting on monthly luncheons and bringing someone in to talk about how they've used the technology. We've done workshops on e-business, telling people what to look for in Web design and created newsletters that reference online resources.

Cabeza (Long Beach YMCA): When training folks, look at the corporate standard at the time. Low-income people often get obsolete technology, so you're teaching people with technology that doesn't fit with finding a job. So we look at what is going on in corporations where the skills are needed. Presentation based software that helps you make a point, and all the Microsoft Office software. Yes, this is for management and professionals, but these are the jobs you want young people to get.

There's career-specific technology, such as graphic design, 3-D animation, special effects, movie editing and modeling software. Some teachers think it's too difficult, but the reality is students learn because this is fun for them.

Rosenbalm (Bristol): Technology such as teleconferencing will have a big impact. Partners in the effort can go beyond telecom to include the computer industry. For example, computer servers can bring private branch phone and video capabilities to businesses. We have a vendor that does VoIP, and we're offering caller ID on your TV screen.

Dickerson (MTCO): Broadband is just one portion of the total picture, of course, so you need comprehensive community planning and a commitment to implement the plans. Plans should include encouraging

entrepreneurship because companies with small workforces are the biggest supplier of jobs. The community also has to objectively look at its strengths and weakness to understand how technology helps them market their strengths to industries, and overcome the weaknesses.

Robillard (San Francisco): UPS is progressive for having an open channel of growth within the company for employees. We do projects with them because if they recruit and train those coming from our agency, our people are likely to move up the ranks. This isn't charity or welfare, it's a mutually beneficial business partnership. When you look at nonprofits today versus 10 years ago, you see this trend taking hold. Nonprofits are encouraging social entrepreneurialism by being part of the business machine.

Krieger (IEDC): We hear of people working on these ills as they try to lift people up and make sure they have access to computers. In Portland they created computer labs in community settings where there are housing projects. We opened a new library here in Oklahoma City with an impressive computer lab. You see this in many communities.

From a public policy perspective, though, these are different from economic development strategies. It's a public business driven by the model of helping their citizens. That's different from a strategy to help businesses grow. In some places the lines between these strategies got blurred. With emerging technologies, the lines become even fuzzier. Is this something communities need to have or something that would be nice to have?

6. How do communities fund these network projects given the current economic climate?

Dickerson (MTCO): We finance our wireless access business through our other services and the revenues they generate. We do this because we live here. Our customers are people we eat lunch with, who we see at football games. The financial bottom line is out-of-towners' only goal. We have financial and other goals. If you went out and found other independent telcos such as ours, they'd be doing the same as us.

Esme Vos: I think cities are going to have to wait for federal infrastructure money directly or indirectly so they can build networks and have private firms operate them, at least for 2009. The nice thing about utility companies is that they own a lot of fiber, which can be used as backhaul for wireless last-mile connectivity. What's more, they are required to manage their energy grid more intelligently. To do this utilities must be able to monitor buildings and houses, which often requires upgrading their meters and building highspeed networks. A utility can open its network to community or government use.

Goldman (Philadelphia): We're looking at having the user pay something rather than just the sweat equity model in which people get the computer free if they pass the computer skills training course. The team is running fewer key pilot projects. They're using this downturn to work with a smaller number of people to see various ways we can close the digital divide so when the economy turns around, we'll have new methods to achieve better outcomes.

Cabeza (Long Beach YMCA): Foundations will fund if you have a good outcome case, which usually follows a thorough needs assessment. We need to look at corporate donations. They could do much better, especially for projects that prove they are teaching skills that will open new markets for these corporations.

Speer (Pulaski): We funded our network with bonds when they were inexpensive. Now the revenue from the network is paying for the bond. If you're just getting in, the cost of technology has gone down, but the bond market not doing well and money is going to be harder to get. Also, municipalities trying to get money are constantly in conflict with cable industry legislatively because they perceive that we're competing with them. But my position is, this isn't about TV. They're trying to sell cable programming while we're trying to build communities.

7. What can the in-coming Obama administration do to improve the advancement of broadband network projects that improve local economies?

Rosenbalm (Bristol): A national broadband strategy will require a cross-departmental approach from Washington. The President sets the tone, the timelines and the rules for his various departments, and then you should see all the Cabinet leaders come together to make it happen. Former Gov. Mark Warner and current Gov. Kaine made broadband a priority for Virginia and have supported us, so things have progressed here very well across the state.

Krieger (IEDC): With so many people losing jobs, where is this conversation going to fit overall in terms of priority? Some of the tech ideas the administration is floating are trial balloons. They say they want to do some things, but the more pragmatic tasks will come first. What's going to benefit the voters? I don't know where the technology projects will fall. They may not rank as high as some of the other issues.

Goldman (Philadelphia): The federal policy should encourage or require incumbent telcos to provide entry-level broadband for lower prices. They don't have a culture to address the needs of lower income people as a way to build future markets. They seem to focus only on providing more services to higher paying customers. This does nothing for the lower class. Hardware vendors need similar kinds of incentives to get them reaching out to low-income communities.

Speer (Pulaski): Allow municipalities to get into the business with none of the restrictions we have. We wanted to wholesale our network services to Lawrenceberg, for example. They have no broadband and the telcos flat out refuse to build it there. We can expand our network to them and they'd save \$3 million. But by state law, we can't serve them because they're out of our area. Make telcos part of the equation, give them an incentive, but also give communities incentives.

Esme Vos: First you have to break monopoly control over copper networks so you enable other service providers to use that network, as required by the Telecom Act of 96 that hasn't been enforced.

The Federal government should fund fiber network projects in more dense areas, and have cities or states own them, which then opens up the networks for re-sale to incumbents. Incumbents would not own these local networks, but they can use and re-sell that network access.

Rossate (Iowa): Provide infrastructure funding to support demand in the areas where demand currently cannot be met. Don't spread it across all, as some areas will see little or no payback on the investment, while others have a huge demand. That infrastructure should be based on the latest technology.

Chase (Greene County): Funding should be awarded on the merits of the plan counties develop and the benefits they deliver. Don't micro manage, don't tell us that we can only service this department or that department of government. I wrote a broad-strokes plan when we applied for our grant so I could adjust to the needs of the community as they come up.

Dickerson (MTCO): The Universal Service Fund did a lot to help telephone adoption for low-income and rural citizens. Something similar for broadband could help fund community networks. We used to have multi-year grants to undertake certain activities if they benefited low-income people. Incentives through tax credits might help companies provide what's necessary for the community.

Robillard (San Francisco): We need a huge awareness campaign around the benefits of hiring more people from nonprofit technology programs because this contributes directly to the economy. I've never seen something like this come out of the federal government. It speaks to the President using the office as a bully pulpit. His ability to influence an outcome is tremendous.

8. What are the top three things a local government needs to do if they want a muni network to impact economic development?

Speer (Pulaski): First is business retention and expansion of existing businesses. There's going to come a time when the manufacturing industry, for example, will require higher broadband speed than what's available for downloading maps, blueprints and so forth. If you don't have it you're not going to keep the plants you have or get new ones. Second is workforce development and training.

Third is tourism development, which even small cities can do. I'm not talking about building a Wally World or Disneyland. This is about making your city a destination community. If you can do things with the technology that brings people from 50 or 100 miles away, this would be great. Finally there's small business and entrepreneur development from among people in the community, home-based businesses in particular.

Krieger (IEDC): Cities should think about what type of businesses they want to attract, and develop technology accordingly. One small town in the Dakotas aggressively went after call centers and business that needed highspeed telecom infrastructure. Other places looked to attract businesses that can be run from anywhere. We have companies such as those here in Oklahoma City. Some are doing Federal government work, others are in financial services.

Chase (Greene County): If you can, own the network infrastructure and have a contractor or service provider operate and maintain the network. We bought the network and lease it to the company that runs it. You might want to form another type of arrangement or a partnership with a local business. It's not a good idea if the federal government owns the network because they may try to put too many restrictions on it. This can be a detrimental to your efforts to use the network to improve your economy.

Goldman (Philadelphia): Organizations such as ours need to focus less on elected officials and more on local government agencies. Take elective politics from the equation, and you move to an economic development/human capital discussion led by groups that do long-range planning. However, without high-level political support, it is harder to get the policy and funding changes needed to take these programs wide-scale. It's a tough balancing act.

Gallant (Timmons): Don't wait for a funding program to come out. Identify your communication and related needs, and determine how many people are to be served. Then identify sources of revenue or investment within the community. If you can hit the ground running with resources of your own, you increase your chances of getting a grant.

Be sure you have business stimulation tools in place, such as workshops, as well as someone to identify where the growth areas are and will inform people how to capitalize on these. For example, mining is doing well for the foreseeable future, so any business you can build around mining will likely do well.

Rossate (Iowa): Ensure access to the network reaches those most in need, have a point of contact within the municipality to discuss with the community what can be done and create a timeline with stakeholders for implementation or use of the network.

Robillard (San Francisco): It is essential for local government to actively engage businesses in the effort, using either tax breaks or grants. Through Project Homeless Connect, the city served as the bridge via a Web site between nonprofits and the business sector. Volunteer executives, managers and workers would go to the nonprofits and we made them useful supporting our programs. Volunteers were using their respective skills to help people, not just giving away a bag of groceries.

You have to get politicians out of the four-year-election mindset to look at developing long-term relationships that help these projects. They need to realize they have the connections, visibility and capability to meet and greet with the business leaders who can play a role.

Cabeza (Long Beach YMCA): There is a generational technology knowledge gap that must be overcome. Many public officials are 50 or more years old and don't even know what their own kids are doing on computers, so they can't fully understand technology's academic or job value. These officials have to make the extra effort to learn how do you provide programs that educate people about the value of broadband to their individual lives, what resources are currently available to do this, and what has to be created. What investments need to be made?

V. In the final analysis

Viewing this report as a high-level needs assessment, it is a good preview of how broadband can drive economic development IF a national strategy is tailored to local, regional and state needs. To create the best strategy, some adjustments need to be made in how the national discussion on broadband continues, and soon.

The real deal on the broadband New Deal

It's become trendy to use New Deal imagery when talking about investing in broadband, but do not take this too far. Let's not get locked into our heads that the economic value of broadband is the jobs created building networks. For that matter, let's also avoid this push for some single monolithic, nationwide physical network that's free to the masses.

The first rule of successful technology deployment is to determine the needs of the end user, then build the best solution to address these and future needs. Feedback from participants in this report and other economic development professionals clearly reveals that communities have markedly different needs that require different types of solutions. There is no one answer, no digital I-95 or Route 66 or national Internet pipeline to meet these diverse local and regional needs.

As defined by this report's participants, the necessary technology is multi-faceted and perpetually changing, and many communities geographically challenge technology options. The Feds are too encumbered by bureaucracy and process to move fast enough and with the accuracy to meet these needs the same way President Roosevelt rolled out his New Deal.

It's how you view the challenge

Another reason a New Deal approach to national broadband strategy holds peril is the nature of the business objective, which is to use highspeed technology to create a wide range of economic outcomes.

One pillar of New Deal thinking was, create projects building highways and dams that quickly put unemployed people to work, and hope that by the time these projects were finished other jobs would be available. Focused on quick-fix infrastructure jobs as the economic outcome, the government in the 30's probably had little or no idea that the highways could generate other economic development outcomes.

With broadband, any jobs created building the physical infrastructure pale in comparison to the real economic value of these networks. Re-training unemployed workers, changing education systems to produce digital-age workers, drawing businesses into economically blighted and rural areas, and making local companies globally competitive are the outcomes you really want. The challenge is wrestling all of the elements to achieve these goals into a cohesive effective strategy.

And how you view the solution (the myth of access)

In 2006, politicians far and wide perpetuated the myth that "once we have highspeed access, we'll get [laundry list of economic benefits]." Right on their heels would be disgruntled citizens commenting along the

lines of “why take my tax dollars, let poor people use the library to get online.” Both groups were equally clueless and detrimental to advancing the broadband discussion.

Philadelphia Wireless CEO Greg Goldman and anyone who really understands the challenge knows that, for broadband to reach its full potential to impact economic development, you need a package. It’s not access alone. The package is access, supporting technologies, training and some combination of public and private sector programs or services.

If the centerpiece of a national broadband strategy is a quick fix of handing money to a bunch of corporate entities to build a network of data pipes, then improving economic development long term will mostly be a pipedream. Conversely, a winning strategy is one in which the White House and Congress enact policies and tactics that help those entities best able to deliver economic outcomes.

Address the failure of free markets

Every time I hear one of the national corporations give their pedantic mantra about letting the free markets handle broadband, I want to retch. Doubly so when they go with their hands out for government subsidies. This is because of dozens of stories such as this one from Mark Meirer, IT Director for Oklahoma City, who started that city’s broadband project in 2002.

“When we first realized we needed a highspeed network to improve city government workers’ productivity, we went to the incumbent telco and told them what we needed. They said their cellular speeds [less than 100kbs] were fast enough and they wanted nothing to do with the project. Our network technology supplier [a global company] said mesh wouldn’t work, and wanted to sell us devices that would have cost \$11,000 per police car to get the mobile access we wanted.” So Oklahoma City built and run their own 500+ square-mile Tropos wireless mesh network, which government workers effectively use to run 217 applications.

Time and again, local governments have gone to the princes of the free market for services they needed, and were ignored. When the governments went to alternative sources for technology and created their own services, those same princes fought these projects tooth and nail. In free markets, when customers want and need services that cannot be provided by one vendor, they go to another supplier or in some cases they create suppliers. Governments are customers too.

Some of the participants in this report have indeed used the market to create their broadband solutions. But they used market players that are not national incumbents. Many other municipalities need a national strategy that addresses the failure of free markets brought about by giants who don’t lead, can’t follow and won’t get out of the way.

And the failure of free market thinking

A comment during my interview with Bob Cabeza (YMCA Long Beach) struck a chord since it amplified a point I have made frequently. In the U.S. there are millions of low-income individuals (over 65 million in 2001). As sneaker, liquor, auto and cigarette marketers will tell you, low-income folks collectively spend billions a year. So why is it that the

incumbents' and technology vendors' clever marketers haven't fully tapped into this market? Philly's muni wireless project started because incumbents weren't serving poor neighborhoods.

Here's a novel idea. Instead of writing off people with small paychecks, what if several vendors and telcos combine their smarts to drive a five-year project to raise the income levels of 10% (or more) of this population through creative broadband strategies, investments in communities and assistance from local and national government? Create a new market worth millions by raising the old market's economic status and building their brand loyalty to the companies involved.

With all of the marketing brains behind the companies that beat down government efforts to turn their economies around, it is disheartening these same companies can't think of low-income communities as potential customers. With a new way of approaching underserved communities, how many private sector companies can do well financially by doing good with true public/private partnerships?

VI. Recommendations

President-elect Obama says frequently that we're all in this economic mess together, and we'll have to work together to fix it. He's right. It's critical that we have smart policies from Washington, and smart execution at the state and municipal levels.

The recommendations that follow are for both national and local governments. They do not address specific technology because in reality, all technologies must be on the table for analysis and discussion given the diverse needs across the country. From a national perspective, Washington needs to ensure that their policies encourage all technologies get a equal shot, and that local governments have final say as to what technologies are part of the actual solutions they deploy.

All eyes on DC

1. It can't be emphasized enough how important it is that people who have a deep functional understanding of technology drive the new administration's broadband efforts. Equally as important, the voices and experience of economic development professionals need to be a key part of the team that crafts a national broadband strategy.

To move this strategy forward with tactics that address communities' need a multifaceted solutions package, those in the trenches such as Rosenbalm and IEDC's Krieger suggest the administration create a cross-Cabinet task force since successful broadband strategy must involve healthcare, education, transportation and other elements of public and private sector services.

2. We need Congressional legislation that removes barriers to local communities' ability to make decisions and implement solutions they feel are in their respective best interests. Otherwise, the progress of broadband-influenced economic development will be seriously disrupted.

3. Dramatically raise the dataspeeds that constitute broadband. As Dan Speer of Pulaski observes, "the government needs a clear policy that has working definition of broadband that's fits the reality of the 21st century. If they raised the speed that defines broadband, it would change the math of how the telcos show how much coverage they're providing." Any definition that does not require infrastructure that can be upgraded to meet ever-increasing speed requirements isn't sufficient for long-term economic impact. Furthermore, there must be requires that these speeds be symmetrical, meaning upload speeds equal download speeds.

4. While re-defining broadband minimum speeds, it will be very helpful to establish national standards for quality of service, interoperability, ease of upgrading and security (minus filtering) so there are assurances of reliability and usability across states. Both for public safety and commercial use, it is good when people can touch down in different areas and be able to access at least some local broadband capabilities.

5. Someone needs to shine a super bright light onto this reality – the giant telcos are similar to the railroads at the time airplanes and Eisenhower's new highway system were transforming transportation and personal travel. There is a better, faster, cheaper communication

technologies than the best cellular services. The promised of “better” (e.g. 4G) technology is megabucks and maybe years away, and still won’t be as good as other technologies. Broadband strategy has to reflect this. No matter how fast a train moves in 2020, it can never fly.

6. Economic stimulus dollars for broadband technology need to go primarily through state and local governments. If there are going to be tax incentives to telecom companies, these need to be tied directly to 1) telcos proving their willingness to work with local, regional and state governments, 2) a plan presented by the telcos and 3) telcos meeting plan performance criteria. How many states have given telcos billions in tax breaks, but have yet to see any meaningful broadband delivered?

7. There should be a good balance between requirements that demand communities have a solid broadband plan when applying for funds, and those that give them flexibility to choose technologies, services and implementation processes most appropriate for the locality.

Local government’s role

A lot of hope is placed on vital support coming from the new administration. But as former Philadelphia Mayor John Street said of local government in my book (*Fighting the Good Fight for Municipal Wireless*), “we’re on the ground level of dealing with the problems and challenges of local communities. Everybody knows where you live. People will come up to your door and knock on it and expect to talk to you!”

The heavy lifting to increase economic development through the use of broadband will happen in the cities, counties and states. Participants in this report offered some specific advice to local officials. I have some additional thoughts.

After the “free” municipal wireless bust, many cities dropped below the radar to develop more practical network plans. As my survey indicates, some built limited-area wireless and wired networks to increase economic development in targeted areas, while others like Oklahoma City built citywide networks exclusively for city government use.

As interest in broadband intensifies, it is time to take another look at local network efforts. Meier feels that cities should assess a business model in which they offer service providers access to muni networks at wholesale rates so they and cities can move projects forward to facilitate economic development. “While the revenue by itself may not sustain the network, it does offset some of the expense of running programs across the network. If the private sector won’t participate, this opens the door for others to drive these programs.”

It is important that local government officials and economic development agencies get on the same page in terms of what are realistic economic outcomes. One thing my 2007 and 2008 survey revealed is a difference between the expectations of outcomes between the two groups.

There’s no place like home – and the eBay economy

Both national and local officials planning broadband initiatives need to take a close look at how they can capitalize on the natural propensity for home-based businesses to spring up among underserved constituents in the wake of new broadband networks. The Internet has always given

individuals the power to increase their personal wellbeing. With the current economic challenges, this ability to give constituents a personal economic engine is too good to pass up.

Whether through incentives to financial institutions that increase micro lending, business-training programs for solo entrepreneurs or public awareness campaigns to encourage them, create an environment that fosters a "home" economy. This includes telecommuting. Though they are employees, broadband access for telecommuting can have an economic impact by its ability to attract organizations to an area.

Moving from low-income to 21st century workforce

Critics who marginalize the value of Internet access for individuals, and facetiously say "there's always the library," clearly misunderstand the process of using access to transform low-income workers into a digital age workforce. A good example of this dynamic works is the St. Anthony Foundation in San Francisco's Tenderloin District.

That city enabled low-income housing units to get free Meraki wireless networks, but doesn't have the resources to provide technology training. Access does not help people very much who have little or no prior access to Internet resources. St. Anthony's provides technology training and services to help people find and advance in jobs. However, these resources don't help unless you can get to the Internet and e-mail at other times, and libraries are of marginal value given their limited computer resources, hours and locations within poor neighborhoods. The combination of 24/7 access at home plus competent training and employment services nearby is changing this neighborhood's workforce.

Ponder replicating this positive cycle out to many neighborhoods in San Francisco, and on to numerous cities and rural areas nationwide, and you see how to create a new workforce. You also see there must be cross-departmental efforts within local and national government, as well as close public/private sector partnerships to produce this outcome. It seems government officials everywhere are in panic mode, but many answers are close at hand if they take steps this report's participants have taken.

Winning the fight one area at a time

There is no doubt funding is the fly in the digital ointment being proscribed for economic development. People are keeping their fingers crossed anticipating help from Washington for broadband projects. While events unfold there, local officials should consider doing what they can with targeted limited-reach networks.

49% of those I surveyed report they have, or plan to have, limited-reach wireless networks to address specific business or low-income communities. 40% have or plan to have limited-reach wired networks. Communities are reporting successes with these networks. San Francisco is seeing progress. Several others in this report are pursuing smaller projects they intend to expand when the economy improves. In my 2007 survey report (<http://www.successful.com/msp/snapshot-7-07.pdf>) Seattle describes their success with two limited-reach networks. Houston has 25 mini WiFi projects. The list grows.

Local and state officials need to get their voices heard in D.C., and they should have plans in place for citywide and regional initiatives. But act now in your neighborhoods. Be clear about what economic development outcomes you want to achieve. As Esme Vos states, "If there is a part of city where they want to attract new businesses, build fiber to that area. Wireless can extend from that. You want to generate real estate sales, bring in shops, target high-end firms such as medical, research and high tech? This will do it. It's hard to say definitely whether an area will succeed, but it has a much better chance with the fiber than without it."

VII. Conclusion

There you have it. Not the definitive final word on needs assessments and formulating strategies, of course. But a good take on the needs that national and local politicians should be considering if they are serious about using broadband as an economic development tool.

At the national level, it is still uncertain exactly what specific policies to expect from the new administration. Yet we have to believe that some degree of change for the better is coming. The best thing we can do in this moment is push aggressively for meaningful needs assessments that reach down into the states, cities and rural communities.

Locally, proponents of broadband are advised to keep working on initiatives if they are already moving forward. Or consider getting plans back on the drawing board for re-assessment if your community has put the brakes on these projects. Be ready to adapt and perform as developments unfold.

Whatever you do, don't give up on the vision. Bistol, VA's Rosenbalm concludes "in most communities that are successful, it's usually because there are one or two people driving the project who have a passion for the technology and a vision of what the future will look like if the community really puts the technology to work. Once you get the businesses to buy into the vision, with the general public behind the vision as well, the rest should fall into place."

For more information

About the author

For over 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. He currently focuses on developing strategies and tactics to maximize the use mobile and broadband technologies.

Since 2005, Mr. Settles has specialized in improving government organizations' efficiency and boosting economic development through the use of broadband networks. He has authored two books, special reports, national surveys and articles on the subject.

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