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The Killer App: Economic Development and Job Creation
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Introduction

According to Wikipedia, a “killer application,” in computer terminology, is “any computer program that is so necessary or desirable that it proves the core value of some larger technology, such as computer hardware, gaming console, software, programming language, software platform, or an operating system. In other words, consumers would buy the (expensive) hardware just to run that application. A killer app can substantially increase sales of the platform on which it runs.”1 By that definition, economic development has been the “killer app” of community broadband, particularly fiber-to-the-home projects, during the last fifteen years. What’s more, economic development is likely to become an even more powerful driver of community broadband in the years ahead, as our knowledge of the relationship between high-capacity broadband connectivity and economic development continues to grow and mature, and as the lessons learned from the federal broadband stimulus program, Google Fiber, Gig.U, and other gigabit initiatives work their way across the nation.

This paper examines what we know about the relationship between broadband and economic development today, what we are likely to learn in the months and years ahead, and what this means for our communities and our nation.

What We Know Today About Broadband, Economic Development, and Job Creation

For the last fifteen years, economic development has been at or near the top of virtually community’s list of reasons for launching a community broadband initiative. That is not surprising. Community broadband projects, especially community-wide FTTH projects, are expensive and challenging. Few communities are willing to undertake them without compelling reasons and without broad public support. Communities have rarely viewed the mere prospect of obtaining better or cheaper triple-play services as sufficient to overcome strong opposition by the incumbent service providers. What has succeeded, time and again, is the emergence of a broad consensus within the community that a community broadband project is essential to modernize and revitalize the local economy and to enhance the economic well-being of the community’s residents, businesses, and institutions.

Despite the central position of economic development in any discussion of community broadband, we still have much to learn about its many permutations, how to measure its successes and failures, and how to make the most of it. Let’s begin with a definition: “The purpose of local economic development (LED) is to build up the economic capacity of a local area to improve its economic future and the quality of life for all. It is a process by which public, business and nongovernmental sector partners work collectively to create better conditions for economic growth and employment generation.”2 This

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The Killer App: Economic Development and Job Creation – Jim Baller, Baller Herbst Law Group, PC
definition is useful only as a starting point, as there are a bewildering range of economic development options available to communities.

To cite a few examples, communities can focus on increasing the profitability of local businesses, increasing the number of local jobs, increasing the quality of local jobs, or striking a balance of some kind among these goals. They can seek to attract or retain a relatively small number of large companies, or a larger number of small to medium sized businesses, or a combination of both. Communities can concentrate on their own local economies, or cooperate with neighboring communities, or involve themselves in larger regional initiatives. They can attempt to support the growth of all local industries, or they can try to target particular industries – e.g., high-tech, health care, data centers, etc. -- with the best prospects for the future. These, of course, are only a few of the many choices available to communities, and each poses its own strategic and operational opportunities and challenges.

Furthermore, once communities have decided what they want to do, they will typically have a wide range of tools available to them. They can often offer tax incentives or loans and other financial enticements. They can improve roads, sewers, water facilities, communications, and other infrastructure. They can offer favorable terms and accelerate approval of franchises, permits and other necessary authorizations. They support workforce development and training programs. They can use the local government’s purchasing power to increase a targeted company’s sales, thereby reducing its risks. They can help aggregate demand within the community. They can also seek grants, loans, and other support from federal and state agencies, foundations, and other organizations. And so forth.

Given the endless variety of conditions surrounding economic development initiatives, it is difficult to articulate metrics and define analytical tools that will yield meaningful ways to quantify the relationship between broadband and economic development. This is all the more true because availability of advanced broadband networks is often only one of several factors that an employer takes into account in deciding whether to move to or remain in a particular community.

In short, many studies have been done on the relationship between broadband and economic development. These studies suggest that there is at least an association,

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3 These goals are not always consistent with each other. For example, a community may support a local business’s efforts to become more competitive in the global economy by automating its manufacturing capabilities and outsourcing or offshoring its routine work. This may help make the company more profitable and save some local jobs, but it may still result in a net loss of local jobs.


5 Many of these studies and a great deal of other useful information about the relationship between broadband, economic development, and job creation are
probably even a causal relationship, among broadband, economic development, and job creation. We know that “the Internet plays an integral role in helping small businesses achieve their strategic goals, improve competitiveness and efficiency, and interact with customers and vendors.” We know that broadband expansion can dramatically increase state GDP and tax receipts. We know that fiber networks have enabled hundreds of thousands of individuals to work from home, adding tens of billions of dollars to the US economy. We know that FTTH increases property values. We also know that “[l]ocations are routinely eliminated due to issues pertaining to inadequate — or lack of — electric, gas, water, wastewater, or telecommunications infrastructure.”

What we do not know, and perhaps will never know, is how much a given investment in advanced broadband infrastructure will have on economic development and job creation in a variety of conditions. We simply lack the data and the analytical tools to do this in the foreseeable future. As Graham Richard, former mayor of Fort Wayne, Indiana, has observed, “From the point of view of retaining and gaining jobs, I can give you example after example [of the impact of broadband].…. What I don’t have is a long term, double-blind study that says it was just broadband.” But, “as a leader, sometimes you go with your gut.”

Data collected at http://www.baller.com/econdev.html. We discuss SNG’s interesting new research in this area in the next section.


Strickling Testimony, citing SNG Economic Impact Estimate, “Professional & Technical Services Sector” (visited August 8, 2012), http://1.usa.gov/N7hVBA.

Michael Render, of Render Vanderslice & Associates, has estimated that 700,000 subscribers operating home-based businesses on fiber-to-the-home networks added $41.6 Billion to the U.S. economy in the 12 months ending in August 2010, reported in “FTTH Generates Jobs,” Broadband Communities Magazine at 20 (Summer 2012),


In the meanwhile, a huge and rapidly growing body of anecdotal evidence has emerged confirming that advanced broadband networks do indeed spur economic development and create jobs. Typically, the evidence of this kind has focused on attraction or retention of large employers, compared to the size of the community. In this section, we start with a detailed discussion of a representative example of such a report, involving Bristol Virginia Utilities. We then provide ten shorter examples and a chart providing links to additional examples.¹³

The experience of the City of Bristol, Virginia, furnishes a good example of the impact that a local communications initiative can have on the economic well-being of a community and its surrounding region.¹⁴ The Bristol example is a particularly good one because the City and the Southwest Region of Virginia as a whole encountered conditions a decade ago that are similar to the conditions that many areas of the United States are experiencing today, or are likely to experience in the years ahead. Moreover, the many positive results that Bristol has achieved could benefit many other communities and the United States as a whole, if applied more broadly.

As the twenty-first century began, Bristol, Virginia, a town of 18,000 on the border of Virginia and Tennessee in southwest Virginia, was facing the simultaneous decline of its bedrock industries — tobacco, textiles, coal mining, and agriculture. Many of its stores and businesses were boarded up, and the future looked grim for Bristol and the entire region. The City leaders, with the encouragement and assistance of U.S. Representative Rick Boucher, decided to take matters into their own hands and rebuild the local economy through advanced telecommunications infrastructure and services.

In 2001, Bristol won a crucial challenge to Virginia’s then-existing barrier to public entry, and it began to build a state-of-the-art FTTH system. Three years of industry-backed legislative challenges and litigation disrupted Bristol’s progress and substantially added to its burdens and costs. Nevertheless, Bristol stayed the course.

Now, the system, operated by an independent authority, Bristol Virginia Utilities (BVU), serves more than 65 percent of Bristol’s residents and businesses, and it has begun to attract hundreds of high-paying jobs to the town and region. For example, two new employers, Grumman and CGI, alone are bringing between 700-1500 jobs paying twice the local average wages. BVU’s service was also a key factor in keeping Alpha Natural Resources, a coal giant, from relocating its corporate headquarters out of Bristol.¹⁵


It is difficult to overstate the importance of these new jobs to the local economy. Each new job creates new revenues that will purchase goods and services in the local economy. The recipients of these new revenues will, in turn, have additional income to spend in the local economy, and so it goes. This is what economists call the “multiplier effect.” In the end, boosting community spending power will increase local income, sales, and property tax revenues; boost property values; and inject new spirit and energy into the community and the region in multiple ways.

Moreover, Bristol’s public fiber network is not the only beneficiary of the enhanced economic vitality that the City has fostered. Rather than face a dying community, the incumbent carriers are also benefitting from Bristol’s economic revival.

As a result of its enlightened activities, BVU has won numerous prestigious awards. This includes recognition as one of the seven most intelligent communities in the world in 2009.\(^{16}\) It was also singled out in the Federal Communications Commission’s National Broadband Plan as a model of a successful community broadband project.\(^{17}\)

Following are ten additional examples of the impact of advanced communications systems on economic development and job creation or retention:

- **Auburn, Indiana:** When Cooper-Standard Automotive was going to move 75 high-tech jobs out of this small Indiana town because no private company was willing to provide broadband in the town, the mayor and municipal electric utility offered to furnish Cooper “industrial strength connectivity” through fiber optics. Cooper accepted and stayed. Now, Auburn has extended its fiber network throughout the town.\(^ {18}\)

- **Cedar Falls, Iowa:** The business case of Cedar Falls Utilities combines fiber to businesses with hybrid fiber-coaxial cable to residences. “In the 1990s, Cedar Falls Utilities built a citywide municipal hybrid fiber/coaxial network and provided specialized broadband telecommunications services including fiber connections to commercial and industrial customers in both the city and the industrial park. In contrast, the neighboring town of Waterloo, served by incumbent cable and telecommunications operators, generally did not have any fiber connectivity. Cedar Falls projected that, by the end of 2003, it would have companies employing over 5,000 people and occupying 4,000,000 square feet of building space. In contrast, Waterloo had a total of 10 businesses in its three industrial parks and has witnessed companies

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relocating from Waterloo to Cedar Falls, in part because of their need for bigger bandwidth. As Doris Kelly showed in an analysis comparing Cedar Falls and Waterloo on a broad range of criteria, the only significant difference between them was that Cedar Falls had a public broadband utility.

In a more recent Cedar Falls coup, Peregrine Financial Group, a large commodities trader based in Chicago, decided to relocate its headquarters to Cedar Falls, including executives averaging $200,000 a year, providing Cedar Falls a windfall valued at $124 million.

- **Chattanooga, TN:** With its fiber-to-the-home network offering gigabit speeds throughout the City, Chattanooga has attracted at least 2400 hundred jobs, including Volkswagen, Homeserve USA, and Amazon.

- **The Dalles, Oregon, vs. Danville, Virginia:** The Dalles, Oregon, a city of 11,873 in the picturesque Columbia River Gorge, operates a 17-mile municipal fiber optic network. In 2005, as a direct result of The Dalles’s municipal networking capabilities, Google decided to purchase an industrial site there for $1.87 million, to house high-tech equipment that would be connected to the rest of the company’s network. The project will create “between 50 and 100 jobs over a matter of time, earning an estimated average of $60,000 annually in wages and benefits.” In contrast, Danville, Virginia, did not have a fiber network when AOL came looking for a site. As a result, AOL struck Danville off its list of potential sites for a new data center and located the center in Prince William County, Virginia.

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• **Danville, VA:** After its setback with AOL, Danville developed a fiber network of its own. Now known as the “Comeback City,” Danville has used its fiber network to revitalize its formerly depressed economy, which had fallen to a state-wide high of 19% unemployment, and has made the City a site of robust economic development, attracting Microsoft and IKEA, among many other new high-tech businesses.  


• **Lafayette, Louisiana:** “When NuComm International needed to locate a new call center – one that would add 1,000 jobs ... to the local economy – it chose Lafayette, Louisiana, because the city is building a massive fiber network to connect everyone.” Lafayette has also become a media hub, attracting the developers of films such as “Secretariat.”  


• **Martinsville, Virginia:** Martinsville’s fiber network has enabled it to attract major businesses such as defense contractor SPARTA Inc.’s research center, Mehler Texnologies, American Distribution and Warehousing, and ICF International (500+ jobs).  


• **Powell, Wyoming:** In anticipation of the construction of a fiber-to-the-home system in rural Powell, Wyoming, a South Korean venture capital firm agreed to pay up to $5.5 million to engage 150 certified teachers in rural Wyoming to teach English to students in South Korea using high speed video teleconferencing. The Powell fiber system will enable the teachers to work from home. The company that developed this project is now planning similar projects for China, Japan, and Taiwan.  


• **Reedsburg, Wisconsin:** Reedsburg fiber to the home system “has allowed Lands End to develop a kind of virtual call center, with many of its customer
service representatives working out of their homes.”30

- **Tacoma, Washington:** Tacoma’s Click! Network has played a significant role in revitalizing Tacoma and has attracted more than 100 high-tech businesses to the community. Business leaders readily acknowledge that Tacoma’s municipal communications utility’s ability to serve their needs is the key factor that made them comfortable with moving to Tacoma rather than to Seattle or other large cities.31

There are many, many other examples, and the list is growing every day. The following table lists a small fraction of them:

<table>
<thead>
<tr>
<th>Location</th>
<th>Company</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bristol, TN</td>
<td>Media General</td>
<td>FTTH Council (RVA)</td>
</tr>
<tr>
<td>Chelan County, WA</td>
<td>Yahoo</td>
<td>FTTH Council (RVA)</td>
</tr>
<tr>
<td>Douglas County, WA</td>
<td>Sabey Corporation</td>
<td>FTTH Council (RVA)</td>
</tr>
<tr>
<td>Grant County, WA</td>
<td>Microsoft, Ask Jeeves, Intuit</td>
<td>FTTH Council (RVA)</td>
</tr>
<tr>
<td>Independence, OR</td>
<td>Various metal fabrication companies</td>
<td>FTTH Council (RVA)</td>
</tr>
<tr>
<td>Jackson, TN</td>
<td>Portfolio Recovery Associates, Jarvis Caster</td>
<td>MuniNetworks</td>
</tr>
<tr>
<td>Kutztown, PA</td>
<td>Various film production</td>
<td>FTTH Council (RVA)</td>
</tr>
<tr>
<td>Lake County, FL</td>
<td>Munn’s Air Cond. and Heating</td>
<td>Applied Economic Studies</td>
</tr>
<tr>
<td>Mason County, WA</td>
<td>Louisville Slugger, Sims, various high tech</td>
<td>FTTH Council (RVA)</td>
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<tr>
<td></td>
<td>and online engineering firms</td>
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<tr>
<td>Morristown, TN</td>
<td>Colgate Palmolive</td>
<td>FTTH Council (RVA)</td>
</tr>
<tr>
<td>Windom, MN</td>
<td>Various trucking companies</td>
<td>FTTH Council (RVA)</td>
</tr>
</tbody>
</table>

Source: [Community Broadband Networks](#)

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What We Will Learn In the Future

In the months and years ahead, we will learn much of value about the relationship between advanced broadband connectivity, economic development, and job creation. For one thing, as the federal broadband stimulus program evolves and matures, hundreds of projects across America will produce information about what worked well and what did not. Not only are NTIA and RUS currently studying the results of selected projects, but so are many state agencies, either on their own or working with research organizations such as SNG Group.

In addition, thousands of stakeholders across the nation will be interacting with one another, taking advantage of each other’s experiences. Professionals in multiple disciplines will increasingly work together toward common ends.

At the same time, the Google Fiber project in Kansas City, Gig.U, US-Ignite, and the gigabit projects in Chattanooga, TN; Lafayette, LA; Wilson, NC; Sebastopol, CA; Cleveland, OH; Philadelphia, PA; the District of Columbia; and elsewhere will not only generate invaluable information about the impact of ultra-high capacity broadband networks on economic development and job creation, but they will also stimulate the development of applications that will deepen the relationship.

Also, Broadband Communities has hosted two extensive multi-disciplinary national conferences on broadband and economic development, and it is launching a series of regional events to advance local and regional education and collaboration on these issues.32

In the end, we may still be years away from having sufficiently large data bases and sufficiently sophisticated analytical tools to be able to predict how much and what kinds of broadband investments will produce optimal economic results under various conditions. But, as Graham Richards suggests, we should have ample information to let our instincts lead us to sound decisions.

32 Links to these programs can be found at http://www.bbc.mag and http://www.baller.com/econdev.html.