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How rural communities and economic development organizations can accelerate their broadband "bridge building" efforts to overcome the digital divide.

In his recent paper, "Signal Failure: Education, Broadband, and Our Children's Future," Christopher Mitchell from the Institute for Local Self Reliance explores the link between economic development in rural communities and broadband availability. Many voices reinforce this connection, including the federal government, who launched the FCC's Rural Digital Opportunity Fund, which will channel $20 billion into rural broadband availability and fiber optic network expansion projects over the next decade. Mitchell goes to great lengths to stress the urgency of the moment, asserting that high-speed broadband availability *is the digital divide* that dictates who will succeed in the modern technology- and information-focused economy. Those on the right side of the divide will prosper, and those on the wrong side will be left behind.

A 2018 NRECA study showed that the 6.3 million households in existing rural electric co-op service areas would receive an annual average of nearly $2,000 each in economic benefits if they had broadband access. That same year, Purdue University revealed a similar study that found every dollar invested in rural broadband resulted in nearly 400% ROI to the state of Indiana's economy. The report concluded the state could unlock $12 billion in net economic benefits over 20 years if broadband was deployed statewide. Clearly, broadband brings tremendous opportunity for growth; it enables a virtual workforce, powers critical services like distance learning and telemedicine programs, and connects local communities to the global economy. Yet, more than 21 million Americans still lack high-speed internet access.

States, Cooperatives, and Municipalities Fill the Gaps in Federal Broadband Policy Execution

Prior federal policy stressed large subsidies for Tier 1 telecom corporations to accelerate broadband fiberoptic network development, as Mitchell's paper points out with the example of a $283 million Federal subsidy to AT&T to expedite Mississippi's network expansion efforts over six years. However AT&T's Mississippi project (and several others) demonstrated that the top-down approach inadequately addressed the needs of the state's residents.

This likely led to Mississippi Governor Phil Bryant signing the Mississippi Broadband Enabling Act of 2019 with broad bipartisan support, which struck down barriers that had prevented electric cooperatives from deploying fiber cabling alongside electrical assets in state right-of-ways. As a result, the state's electric cooperatives have entered the broadband market, leveling the playing field for rural and underserved communities.

Like Mississippi, many states and municipalities are taking matters into their own hands with a direct role in network design, construction, and service management. The state of North Dakota is currently working to enable local cooperatives to explore the feasibility of accelerating fiber network rollouts. The state of Minnesota has an entire office dedicated to broadband availability (the "Office of Broadband Development") that partners with regional municipalities and co-ops to address broadband access needs. Elsewhere, more than 75% of voters in Illinois, Colorado, and Maine supported broadband-related initiatives in the recent 2020 elections.

While the coordinated state and local efforts have put communities in the best position to secure broadband expansion funding, the prospect of funding brings a host of issues that economic development organizations, municipalities, and cooperatives are often not prepared to face.

The Challenges with Community Broadband Acceleration Efforts

Once organizations have decided to pursue building -- or expanding -- their broadband networks, they are faced with numerous challenges. The first is typically a feasibility assessment, whereby organizations and communities must determine if network construction is possible... and if it is worth it. Once this assessment is completed, project financing must be secured: federal grants, state grants, or a combination playing a major role in this process. At this stage, organizations have to ensure that they have a system and process for required FCC 477 reporting and other regulatory reporting requirements attached to funding programs; many groups that have secured network construction funding do not have adequate tools for reporting and are often put into a reactive mode that sees them racing against the clock.

Once construction has started, organizations need to be able to track this activity on a map. This is critical to tracking assets in-the-ground, and understanding the relationship between customers, below and above ground network assets, and the virtual circuits that ride on top of these network assets. If organizations do not have a plan and approach for tracking this collective activity, network build-out projects can quickly spin out of control, escalating costs and delaying project delivery dates.

With a 20-year history focused on enabling rural telecommunications providers with GIS solutions, Mapcom Systems has been integral in accelerating rural broadband coverage throughout the United States. A 2019 New Yorker article entitled "The One-Traffic-Light Town with Some of the Fastest Internet in the U.S." focused on Mapcom customer Peoples Rural (Kentucky), that transformed its local economy through rural broadband. They used Mapcom's software and services to manage their buildout, operations, and compliance efforts. Just as they have done in Kentucky, Mapcom plays the same role for customers in 48 states by providing solutions to regional cooperatives, municipalities, and FCC and USDA fund-recipients that accelerated transformational broadband network deployment and management. With customers spanning 12% of the US rural telecommunications market, Mapcom was already in a good position to enable economic development through broadband expansion. Then in June of 2020, Mapcom bolstered its influential position by joining forces with one of the pre-eminent global names in location technology, VertiGIS. Mapcom's communications network management software, combined with VertiGIS spatial solutions for modern web and mobile applications, give users the competitive edge they need.

Strategies for Economic Development to Accelerate Broadband Enablement

Electric cooperatives and municipalities will continue to enter the broadband telecommunications market at an accelerating rate to address gaps in federal policy and funding. Public demand for broadband will pressure state governments to curtail the regulations that have historically prevented competitive activity with regulatorily-protected Tier1 telecommunications companies. As a result, electric co-ops will become more closely associated with the business of broadband over the early part of this decade. As this linkage happens, the needs of utilities and telecommunications providers will start to coalesce.

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Taking this comprehensive view is not just important... it's vital. Broadband and utility demand are closely correlated. As a community receives high speed broadband access, it becomes more attractive to growth-oriented businesses. When this economic development occurs, it leads to demand for more electric power, water, natural gas, and sewer services to serve the residential and commercial populations.

Economic developers must explore tools that unify the view of broadband and utilities in their area. By having these tools available, they can equip their communities with what it takes to assess the viability of broadband network expansion and utility expansion projects, appeal to providers, assemble joint grant bid coalitions, and expand the number of federal and state funding avenues available.

VertiGIS and Mapcom Arm Economic Developers with a Powerful New Toolset

VertiGIS' solutions have done just that in areas as diverse as Fairfax County, Virginia, to Sandy Springs, Georgia, to Bear Creek, South Dakota, and Greenville, South Carolina. With solutions that blend the GIS needs of local governments, economic development agencies, and utilities providers, VertiGIS' Geocortex software has been critical to enabling economic development. In Fairfax County, for example, Geocortex is the backbone that provides geographic intelligence capabilities to one of the most recognized economic development agencies in the nation. In the City of Greenville, Geocortex enabled the water utility to expand to meet the burgeoning residential needs sparked by recent advancement of their broadband capabilities.

VertiGIS' partnership with Schneider Electric, coupled with their influential partnership with Esri - the leading name in geographic information system (GIS) software - provides a wealth of expertise to economic development organizations tasked with fiber network deployment and management on behalf of the counties and municipalities they represent.

The depth of Mapcom's expertise in providing broadband network solutions to rural telecommunications providers, coupled with VertiGIS and the geospatial infrastructure provided by Esri, gives economic developers, electric cooperatives, and municipalities exactly what they need to attain broadband acceleration funding. In fact, 20% of Mapcom's customer base recently won federal funding under the FCC's Rural Digital Opportunities Fund (RDOF) and USDA's ReConnect Program – initiatives aimed at accelerating rural broadband network expansion. With VertiGIS and Mapcom now under one roof, you get a powerful platform for broadband and utility network design, planning, and management, and the depth of expertise that has been integral in broadband and utility advancement for nearly two decades.

VertiGIS and Mapcom Enable "Groundbreaking" Broadband Projects

Organizations working with VertiGIS and Mapcom are engaged in some historic telecommunications projects.

((·)) Matanuska Telephone Association is currently building out a 1,400 mile below-mile network expansion from Alaska, through Canada, into Seattle. This buildout will represent the first overland connection between Alaska and the contiguous United States.

((·)) A leading regional telecom provider in the western US is currently engaged in an innovative public-private partnership program spanning four states. The cooperative partners with municipalities on network consultation, design, construction, and post-deployment management.

((·)) Organizations like Sacred Wind Communications in New Mexico are working to address broadband needs in tribal lands, where internet access consistently lags behind non-tribal areas due in part to remote location, rugged terrain, and an underrepresentation of homes in federal data sets.

Summary

The business of broadband is becoming more closely associated with cooperatives, municipalities, and economic development organizations. Economic developers can get an edge by taking a comprehensive look at broadband enablement alongside utilities already operating in their region. To do so, they need to ensure that telecom providers, utilities, and public sector players in their region have a comprehensive toolset that can help accelerate broadband funding, design, deployment, and management efforts.

The partnership between Mapcom and VertiGIS is a powerful combination that benefits economic development organizations seeking ways to equip their jurisdictions with the abilities to explore, operate, and manage fiber optic networks. The tools that the partnership bring to the table can serve as the foundation and the "glue" for collaborative grant proposals involving broadband private sector stakeholders, the public sector, and quasi-governmental organizations in the utility sector. This cohesion can be a deciding factor in demonstrating a region's maturity and capacity, which is a major decision-making criterion in grant awards.

Mapcom's partnership with VertiGIS offers economic development stakeholders the modern solutions they need to accelerate rural broadband network deployment. VertiGIS' deep integrations with Esri's ArcGIS® technology, combined with Mapcom's telco industry expertise provides tools and interactions built, not just for GIS professionals or network engineers, but for all economic development and public executive stakeholders.

VertiGIS™

About Mapcom Systems:

Mapcom Systems is the developer of the M4® Solutions Suite and Pinpoint811™, applications empowering communication service providers to combine data, automation, and fiber management tools to create a complete view of their network that fosters efficiency and growth. Mapcom Systems partners with communication providers around the world, but primarily those in rural America. Learn more at www.mapcom.com

About VertiGIS:

VertiGIS is a leading geographic information systems (GIS) solution provider and software developer. Its focus is the development of software solutions and services that help utilities, land management, public sector, energy, telecommunications, and industry customers build bridges between their business processes and location technology. The VertiGIS product portfolio is used by thousands of customers and millions of end-users around the world and is designed to enhance the capabilities of leading mapping software, most notably Esri's ArcGIS®. Major product brands include UT for ArcGIS®, the 3A product line, Geocortex®, GEONIS, ConnectMaster™, M4® Solutions, GeoOffice, WebOffice and ProOffice. Further information can be found at www.vertigis.com