

The Magazine  
of Rural Telco  
Management

# RURAL Telecom

FOCUS ON

AGRIBUSINESS  
OPPORTUNITIES



**22**  
Putting Rural  
Schools to  
the Test

**28**  
Strategic  
Collaborations

**34**  
How Resilient  
Is Your Telco?

Protecting national security  
missions since 1974

Securing broadband  
networks for NTCA  
members since 2005

# Is your cyber risk profile improving?

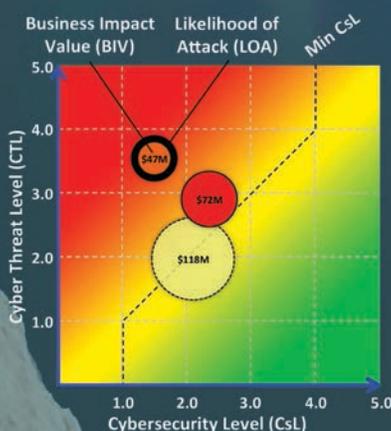
When it comes to cyber risk, either lack of visibility or overwhelming technical data leaves you struggling to understand business impacts and whether you're effectively managing cyber risks.

Cyber RiskScope<sup>®</sup>, from Dynetics, is a portfolio of cyber risk management solutions designed to **bridge the gap between techs and execs** by

providing business leaders the insights needed to answer critical questions:

- What's our exposure from an incident?
- What cyber threats are relevant to us?
- Do we have "enough" cybersecurity?
- Is our cyber risk strategy effective?
- Are investments lowering our cyber risk?

Discover more at [www.cyberriskscope.com](http://www.cyberriskscope.com) and look for us at upcoming regional events.



An intuitive cyber risk profile is a key business decision aid provided by Cyber RiskScope.



**Cyber RiskScope<sup>®</sup>**  
from **Dynetics**

# BENNET & BENNET PLLC

---

## Keeping You Current

The latest in regulatory and legislative news affecting rural and independent communications service providers.



[ruralspectrumscanner.com](http://ruralspectrumscanner.com)

---

### ATTORNEYS

Caressa D. Bennet  
Michael R. Bennet  
Erin P. Fitzgerald  
Howard S. Shapiro  
Robert A. Silverman  
Marjorie Spivak  
Tony K. Veach  
Daryl A. Zakov



[bennetlaw.com](http://bennetlaw.com)

# CONTENTS

In Every Issue

- 6 FROM THE TOP**
- 8 SHORT TAKES**
- 10 #RURALISSOCIAL**
- 12 CONNECTIONS**  
All Eyes on Video  
*By Shirley Bloomfield*
- 14 PERSPECTIVE**  
Whether Commercial or Co-op,  
Rural Telcos Have a Bright Future  
*By Doug Boone*
- 27 ADVERTISERS INDEX**

## Departments

- 40 RISK MANAGER**  
Best Practices for Concealed Carry  
Options in the Workplace  
*By Marilyn A. Blake*
- 44 WINNERS CIRCLE**  
Excellence in Telecom PR & Marketing  
*By Jonah Arellano*
- 48 HILL HAPPENINGS**  
NTCA Members Converge on Capitol Hill  
*By Tennille Shields*
- 52 COMINGS AND GOINGS**  
A Periodic Update on Executive  
Transitions in the Rural-Telco Industry



16

## Bringing the Cloud to Rural Farms and Businesses

*By Emil Sayegh*

Tech-savvy businesses in rural areas, just like in the major cities, are becoming increasingly reliant on cloud services. Take agribusiness: Agriculture and food sectors contributed \$835 billion to the U.S. gross domestic product. What's driving the need for computing "at the edge?"

## How Smart Farm Technology Is Transforming Agriculture

*By Kristy McDermott*

Find out how one solutions provider is keeping rural farms connected and allowing users to access data and images from all of the different sensors and devices in use throughout the enterprise.

COVER IMAGE COURTESY CLEAR2THERE

## RURAL telecom

Rural Telecom (ISSN: 0744-2548)  
July • August 2016  
Bimonthly, Vol. 35, No. 4

Subscriptions to Rural Telecom are \$35 for NTCA—The Rural Broadband Association members; \$135 for nonmembers. To order or for questions about a current subscription, email [publications@ntca.org](mailto:publications@ntca.org).

Change of address should include recent mailing label and new address with ZIP code.

4121 Wilson Boulevard, Tenth Floor,  
Arlington, VA 22203  
Phone: 703-351-2000, Fax: 703-351-2001  
Email address: [publications@ntca.org](mailto:publications@ntca.org)  
Website address: [www.ntca.org](http://www.ntca.org)

### Publisher:

NTCA—The Rural Broadband Association

### Chief Executive Officer:

Shirley Bloomfield, [sbloomfield@ntca.org](mailto:sbloomfield@ntca.org)

### Director of Communications:

Laura Withers, [lwithers@ntca.org](mailto:lwithers@ntca.org)

### Editor:

Christian Hamaker, [chamaker@ntca.org](mailto:chamaker@ntca.org)

### Senior Content Specialist:

Tennille Shields, [tshields@ntca.org](mailto:tshields@ntca.org)

### Advertising:

[sales@ntca.org](mailto:sales@ntca.org)

**Graphic Design by** Ferro+ Ferro Graphic  
Communication, Arlington, Va.

**Printed by** Colorcraft, Sterling, Va.

**Rural Telecom**, established in 1981, is the bimonthly magazine published by NTCA—The Rural Broadband Association, a nonprofit, cooperative corporation formed in 1954 under the laws of the District of Columbia.

**NTCA's Mission:** NTCA—The Rural Broadband Association, an association of small, rural, community-based communications providers, is dedicated to improving the quality of life in rural communities through the advocacy of broadband and other advanced communications infrastructure and services.

**NTCA represents** nearly 900 small, rural, locally owned and operated telephone cooperatives and commercial companies in the United States and abroad, as well as state and regional telephone associations and companies that are the suppliers of products and services to the small and rural telephone industry. Our readers are the managers, directors, attorneys and key employees of these telephone companies as well as consultants, government officials and telecommunications experts.

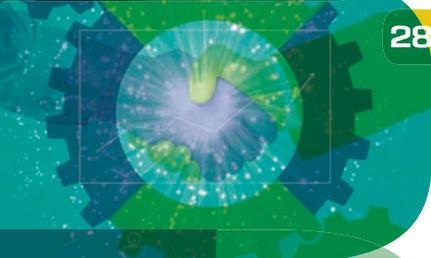


22

**Putting Rural Schools to the Test**

*By Alison Gillespie*

Education is changing dramatically as school boards, policymakers and state superintendents debate the best ways to improve learning. These changes—including mandatory online testing that may require increased bandwidth—could present challenges for rural telecom companies. How can your telco help students succeed?

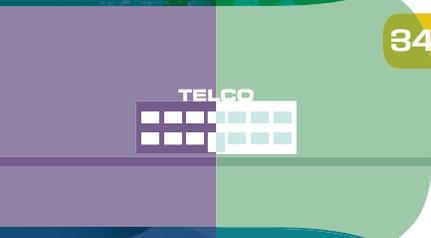


28

**The Power and Possibility of Strategic Collaborations**

*By Tara Young*

Fortune Magazine often gets quoted about business collaborations: “Alliances have become an integral part of contemporary strategic thinking.” Despite paperwork, planning and other complexities, collaborations can solve a number of strategic and organizational challenges for rural telecom providers, as several alliances show.



34

**How Resilient Is Your Telco?**

*Stephen Cauffman*

Hazards that do not rise to the level of extreme events often inflict significant economic losses due to damaged buildings and infrastructure systems. The recently published “Community Resilience Planning Guide for Buildings and Infrastructure Systems” recognizes that no one entity can address resilience by itself.



50

**Fall Conference Preview**

*By Lia Moore*

Join NTCA–The Rural Broadband Association for its 2016 Fall Conference in Indianapolis, Ind. Plot your revenue road map while taking advantage of director roundtables, great industry speakers, and EduTours on smart agriculture and collaboration.

**NTCA Board of Directors, General Counsel and Chief Executive Officer**

President: Doug Boone  
 Vice President: William P. Hegmann  
 Secretary/Treasurer: John Klatt  
*Central Region*  
 Commercial: Doug Boone  
 Cooperative: Ron Hinds  
*North Central Region*  
 Commercial: John Klatt  
 Cooperative: Kevin Beyer  
*Northeast Region*  
 Commercial: Mark Bahnson  
 Cooperative: James M. Dauby  
*Northwest Region*  
 Commercial: Allen R. Hoopes  
 Cooperative: Mitchell A. Moore  
*Southeast Region*  
 Commercial: H. Keith Oliver  
 Cooperative: J. Frederick Johnson  
*Southwest Region*  
 Commercial: Janet Britton  
 Cooperative: William P. Hegmann

**General Counsel Don Richards  
 Chief Executive Officer Shirley Bloomfield**

**The Editorial Purpose** of Rural Telecom is threefold: to inform readers of public policy issues affecting the industry; to provide insight on developing businesses and technology; and to share expertise and experience on management, marketing and customer service.

**Invitation to Contributors**—Please email ([publications@ntca.org](mailto:publications@ntca.org)) or fax (703-351-2088) an outline of a proposed article to the managing editor. All articles should be prepared according to our writer’s guidelines, available on NTCA’s website.

**Statements of Opinion and Fact** are the individual views of the authors and not necessarily the positions of NTCA, its officers, directors, members or staff.

© 2016 NTCA–The Rural Broadband Association



Editorial, advertising and subscription offices: Periodicals postage is paid at Arlington, Va., and at additional mailing offices. Postmaster, send address changes to “Rural Telecom,” 4121 Wilson Boulevard, Suite 1000, Arlington, VA 22203-1801.

*It is illegal under federal law to send facsimile advertisements without first obtaining the express written consent of all recipients. The inclusion of fax numbers any place in this publication does not mean that consent has been given to receive facsimile advertisements.*



## Something Special Takes Hold

Do you ever get the feeling that you're a part of something special? It doesn't happen every day, but when it does, you can feel it. Members of championship-winning teams know how it feels. So do professional teams that work together to accomplish a goal and exceed their own expectations.



I have had that feeling as I've observed the extraordinary marketing power our industry has cultivated over the past few years. Much of it was on display during the 2016 PR & Marketing Conference in Charleston, S.C., this spring, which set a new attendance record thanks to a promising crop of newcomers. A strong sense of optimism permeated the conference, with more talk of revenue opportunities on the horizon than of operational challenges from regulatory changes and

competitive pressures. One newcomer to the conference even noted that attendees' enthusiasm and hope for our industry was infectious.

Another display of our industry's remarkable marketing power is this year's top-notch TeleChoice Award winners (see "Winners Circle," p. 44). Many of our 2016 winners reported returns-on-investment shattering those of previous years and even well exceeding their own expectations, showing their efforts are paying off in big ways for their companies and leading them into the future.

Something special is certainly taking hold. I hope you are feeling it too.

Laura Withers  
Director of Communications  
lwithers@ntca.org

## The One Challenge Telcos Can't Overcome in School Testing

As I sit down to write this column, the school year is wrapping up, and my four kids are looking forward to a couple of months of swimming at the neighborhood pool, writing fan fiction and going on family outings.



What they won't be doing is taking tests. While summer-reading lists from their schools are something they'll incorporate into their time off, their mom and dad have no plans to quiz them on the content of their books. Our philosophy is that tests are for school—and in our district, the schools are more than happy to oblige!

The kids have just run the gauntlet of year-end exams, several of which, but not all, are taken online by the entire class, simultaneously. That kind of online testing is common now in school districts across the country, as this issue's article, "Putting Rural Schools to the Test," shows.

The stakes are high. Mandated online testing means broadband connections need to be "100% resilient," in the words of one of the article's sources. Otherwise work is

lost, tests have to be retaken, and the broadband provider could come in for some very negative feedback.

But even with a strong broadband connection, there's one testing obstacle that telcos and schools can't overcome: sickness. Three of my children took ill during the end-of-year testing stretch, leading to additional stress, uncertainty and challenges in rescheduling their exams. They eventually completed their assessments, but for a time, robust online connectivity was the least of their concerns.

Now we just have to track how much of their summer vacation they spend on the home computer. They love using our family's reliable broadband connection to watch archived TV shows on YouTube and to stream music, but we want those kids to get off their screens and go outside!

Christian Hamaker  
Editor, Rural Telecom  
chamaker@ntca.org

# Time to Talk to Toly...

**...about  
Cost Savings  
& Revenue**



Flexible, customized solutions with managed quality switching, unmatched fraud prevention & unified communications.

**Long Distance & UC services that deliver profitability & peace-of-mind.**

**Time to Talk to Toly at  
NTCA Fall Conference  
September 25-28, 2016**

**J.W. Marriott  
Indianapolis, Indiana**



TOLYDIGITAL.NET



## A PREFERENCE FOR LANDLINES? SOUNDS GOOD

quietly into that good night. Stories that mix nostalgia with acknowledgement of the superiority of landline phone quality keep popping up. The latest: Murr Brewster said she's had the same landline for almost 40 years, and "it's hard to give it up."

Why? Although "there's hardly ever anybody on the other end of it anymore that I want to talk to," landlines have always "sounded wonderful" in terms of the quality of the connection. Voices on the line "got to travel inside honest-to-goodness enclosed wires the whole way, completely out of the weather, and they'd come out all creamy on the receiving end." With today's wireless calls, Brewster wrote, "your voice has to find its way through the air and bump into mosquitoes and hurricanes and such, and by the time it gets to your friends' phone it sounds as though it's coming from the bottom of a box of crackers. But it's considered an improvement because we don't have to be tethered to a wall."

►Source: csmonitor.com

Wireless may get the bulk of attention among telecom-trend stories, but wireline isn't going

## The Amazon Retail Example

Online-retailing behemoth Amazon is moving into the bricks-and-mortar business, and its strategy for getting customers into its new stores may hold lessons for telcos with a retail operation.



Amazon's Seattle retail store. COURTESY AMAZON BOOKS

If your telco has potential customers who might be intimidated by telco jargon and sales pitches, what similarly creative way—including additional product lines not traditionally associated with telecom—can you display that might get them to feel comfortable entering your store?

►Source: usatoday.com

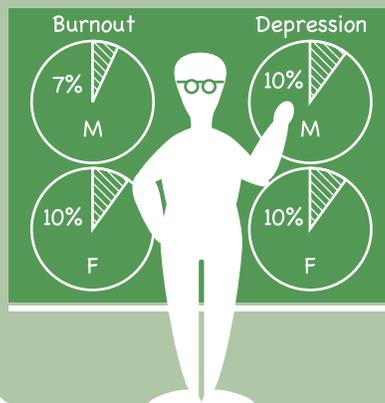
## Better to Burn Out?

Burning out at work is bad enough, but what if there's something more to the experience of feeling tired and unmotivated at work?

Researchers are discovering that what we sometimes think of as burnout is actually a form of depression. A survey of 1,386 teachers in 18 states on the subjects of burnout and depression revealed, through a questionnaire, that 10% of women and 7% of men suffered from burnout, while 10% of men and 10% of women likely suffered from depression. But those diagnosed with burnout also frequently showed severe or moderately severe depressive symptoms.

"Given the dominance of work in our lives and the associated anxiety that comes with it, there might be reason to be wary of an extended period of burnout and check in to see if it's also depression," concluded writer Tanya Basu.

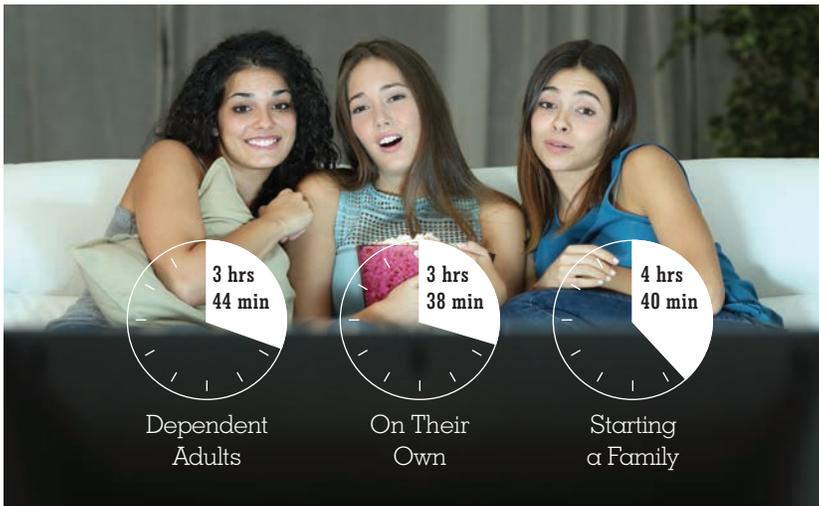
►Source: wsj.com



## How Much TV Do Younger People Watch?

Nielsen looked at the TV-watching habits of 18–34-year-olds, breaking them into three successive groups: “Dependent Adults,” “On Their Own” and “Starting a Family.” The overall average among all three groups shows 4 hours and 8 minutes per day of TV viewing—2 hours and 45 minutes of live viewing and 1 hour and 23 minutes using a TV-connected device. By group, the breakdown is shown at left.

►Source: adweek.com



## The Newest Cable Company: Twitter

“Twitter is basically becoming a cable company.” So concluded Brian Fung after the social-media site announced it would start streaming NFL games. On top of that major announcement, Twitter added that it was exploring coverage of political news and other video content.

“If that happens, Twitter will have built a bundle that isn’t much different in style from what you get from Comcast, Verizon or many of the heavyweight TV distributors that currently dominate America’s entertainment ecosystem,” Fung wrote. “It might be a skinnier one, but it’s a bundle nonetheless.”

Fung added that Twitter’s moves “put more pressure on traditional cable firms that are struggling to meet consumers where they are—on mobile devices and the Internet.”

►Source: washingtonpost.com



## HOLLYWOOD’S HISTORY OF THE PHONE

In a lengthy article that includes numerous stills from classic Hollywood films, the blogger who goes simply by Cameron wrote about the history of the telephone as represented throughout the history of cinema.

She said the three phone designs most often seen in old movies are the candlestick, the wall-mounted and handset models. The candlestick model “required a ringer box nearby to alert you to incoming calls,” and when starting a call, “you lifted the receiver from the switchhook.” She added that “characters ... in a hurry often press the switchhook repeatedly, making a particularly glorious click.”

Wall-mounted phones “combined the elements of the candlestick phone with the ringer box” and in the late 1920s, “the receiver and transmitter were combined to create the glamorous handset phones.”

By the 1940s, she added, handset models had largely replaced candlestick models on the screen.

Cameron concluded, “I don’t want to go back to a pre-smartphone world, but there is something glamorous and fantastic about these phones that an iPhone slab just can’t match.”

►Source: theblondeatthefilm.com

BACKGROUND PHOTO COURTESY UNIVERSITY OF KENTUCKY ARCHIVES, COLLECTION ON LAFAYETTE STUDIOS.

# #RuralsSocial



@SenatorHeitkamp

Discussed imp. of reliable high-speed internet in rural schools/libraries & E-Rate w/local leaders & @JRosenworcel

Follow along at [www.ntca.org/socialmedia](http://www.ntca.org/socialmedia)



**Nemont**  
We WON Best Local Video!! Yea!! We worked so hard. Thank you to all our Nemont employee #ntcaprmarketing TeleChoice Award!



**Toni Edwards**  
Thank you NTCA—The Rural Broadband Association for this great [TeleChoice Award] honor!



**@amykps**  
Don't underestimate the power of #broadband in small towns. It can change LIVES



@Rainbow\_Com

FRS Youth Tour visited the FCC! This photo represents the Kansas students and chaperones on the trip.  
#ruraliscool



@RepKevinCramer

I & 60 colleagues sent a letter to @TomWheelerFCC objecting to set-top box rules stifling innovation & competition.



VTX1

VTX1 along with other telecommunications providers met with Federal Communications Commission and congressional leaders in Washington D.C. last week to discuss video service issues  
#WeAreYourLocalProvider



@NYSBroadband  
Rural #broadband supported over \$100 billion in e-commerce in 2015

# Broadband**Unbound**

Deliver an unmatched Wi-Fi experience for  
People Packed in Places

Apartments Planned Communities Dorms Public Hotspots



Experience it at [calix.com](http://calix.com)



## All Eyes on Video



For the past several months, the discussion in the rural telecommunications industry has largely been centered on the Universal Service Fund reform debate. While we know that has been top of mind for members of NTCA–The Rural Broadband Association, we have also been focusing on pressing video issues that are high on the policy priority list for you.

The Department of Justice and the FCC announced this spring that they reached an agreement that permits Charter to complete a \$78 billion proposed acquisition of Time Warner Cable and a related \$10.4 billion acquisition of Bright House Networks. NTCA pressed for merger conditions to address the harm the merger might pose to small providers, but the conditions ultimately adopted ignore the concerning effects of the transaction on consumers and competition in the broader video distribution marketplace. The commission's action may actually make the potential harm of this transaction worse for consumers in the form of decreased competition. Therefore, we will continue to monitor this transaction and urge the commission to keep an eye on the newly merged company.

Similarly, NTCA has been adamantly opposed to the commission's set-top box proposal that was put forth to ensure that consumers may access their video content on different devices without the need to rent the set-top boxes from their providers. However, the market was already moving in that direction and didn't need the strong regulatory arm of the commission intervening. The ill-defined proposal would be sure to cost the industry untold amounts of money and would certainly stifle competition. During our Legislative & Policy Conference this spring, association members asked members of Congress to co-sign a letter urging the commission to rethink its proposal. Thanks to those advocacy efforts and follow-up by our government affairs team, 60 members of the House of Representatives sent that letter in May. We are hopeful it sent a strong message to the commission.

While the commission has taken action on these video matters, we have not seen much activity with regard to its retransmission consent proposals to address the rules that providers must adhere to during these negotiations. NTCA hosted a fly-in focused on this outstanding concern in May. Members met with commission staff and lawmakers to encourage them to act in the near future on the proposals to address this issue. We are hopeful that your efforts will lead to action in the near future.

It is long past time that rural video consumers are given the same opportunities for affordable video access as those living in urban America. These are tough topics, and we are committed to working on your behalf to ensure that policymakers and regulators fully understand how these issues affect your ability to effectively respond to the video needs of your consumers. ■

---

*Shirley Bloomfield is chief executive officer of NTCA–The Rural Broadband Association. She can be reached at [sbloomfield@ntca.org](mailto:sbloomfield@ntca.org). You can also follow her blog at [ntca.org/ceoblog](http://ntca.org/ceoblog).*



**FOCUS**

**FUNCTIONAL  
EXPERTISE**

**REGULATORY  
ENVIRONMENT**

## **SUCCESS IN A COMPLEX & CHALLENGING ENVIRONMENT REQUIRES AN INTEGRATED & COORDINATED RESPONSE**

Our regulatory compliance and cost study professionals work as an integrated team and bring deep, functional expertise to ensure your regulated business is in compliance with all Federal and State requirements.

- » *Continually monitor all regulatory compliance and reporting activities*
- » *Prepare and submit all reports, audits, filings, requests, disputes, contract issues and settlements*
- » *Identify, calculate and allocate jurisdictional revenue requirements and costs*

**FOR OVER 40 YEARS, WE'VE BEEN PASSIONATE ABOUT ACHIEVING BETTER RESULTS FOR OUR CLIENTS.  
BRING US YOUR CHALLENGES. WE WILL FIND SOLUTIONS.**

### **Midwest Division**

Springfield, IL  
217.698.2700

Colorado Springs, CO  
719.594.5800

### **Southwest Division**

Kerrville, TX  
830.896.5200

### **Western Division**

Tualatin, OR  
503.612.4400

## **REGULATORY COMPLIANCE & COST STUDY**

Your goals, our guidance, building success.  
Visit [www.GVNW.com](http://www.GVNW.com)



CONSULTING

## Whether Commercial or Co-op, Rural Telcos Have a Bright Future

**Congratulations on becoming the first commercial-company president of the NTCA Board of Directors. What should your fellow commercial-company members and cooperative members know about your plans as NTCA president?**

Prior to the unification between NTCA–The Rural Broadband Association and OPASTCO in 2013, I served on the OPASTCO board. I believe my presidency is another significant step in the unification process. Each year we take steps to solidify unification—steps that were put in place together as part of unification and steps that are making NTCA a greater association each year. NTCA directors have found that even though we are each very different and our companies are quite diverse, key issues affect commercial companies just as they do cooperative companies. At the same time, as chief executive officer of a commercial company, I believe I also have a unique perspective about the future of the industry, as well as new ideas for potential revenue streams that may spur conversation as we move forward together as an association.



NTCA President Doug Boone is chief executive officer of Premier Communications (Sioux Center, Iowa). Contact him at [dboone@mypremiereonline.com](mailto:dboone@mypremiereonline.com).

**Rural telcos will be adjusting to the recent Universal Service Fund (USF) order during your tenure. What advice, or words of encouragement, do you have to offer them as they do so?**

Throughout the process of working with Congress and the FCC to reform USF to spur the continued deployment of broadband services across rural America, it felt at times like the commission was pitting rural providers against one another. As an association, we have a diverse membership with diverse perspectives. Seldom, if ever, is there a one-size-fits-all approach to reforms. One thing I can assure the NTCA membership is that the association is working on behalf of all members to maximize the benefits and reduce the threats to our industry that this reform order may bring about.

**In what other ways is the future bright for rural telcos?**

I believe that the future is bright for rural communications providers in that the opportunities are endless. Every day I hear stories about projects our members are undertaking and partnerships that are being forged with other

industry stakeholders. The commission continues to work on reforms to the video policy rules. I hope these changes pave the way for rural providers to dig deeper into the video marketplace.

Additionally, the spectrum incentive auction is currently underway, and Congress put in place a rural bidding credit for spectrum to make sure that small businesses have the same opportunities that large ones do. And rural providers can take some voluntary measures to secure company data and ensure that their customers' information is secure.

**Finish this sentence: "By the time my role as NTCA president ends, I hope that ..."**

By the time my role as NTCA president ends, I hope that the sense of regulatory uncertainty that began with the 2011 transformation order and the recent reforms adopted by the commission has continued to subside.

I hope that the commission has made progress to ensure that the high-cost USF program is sufficiently funded so that rural consumers can actually afford to adopt the broadband services that are now being supported by putting all four USF programs on more equal regulatory footing.



## Our Position in Your Company: CWO (CHIEF WORRY OFFICER)

**We worry about insurance and risk management matters.  
So, you don't have to worry about:**

- Sending your employees home safely to their families every day
- Finding the right coverages for your evolving liabilities. So, you aren't left unprotected
- Getting the best coverage at the most affordable price
- Having peace of mind that at the time of a claim, you KNOW you'll be protected



[www.ntca.org](http://www.ntca.org)



[www.telcominsgrp.com](http://www.telcominsgrp.com)

*"Because it's always been a matter of trust"*

# Bringing the Cloud to Rural Farms and Businesses

BY EMIL SAYEGH

**PUBLIC HEALTH, EDUCATION, HIGH-TECH FARMING AND AGRICULTURE, seismic data collection, oil exploration and production, clean energy generation and management, transportation and disaster management are examples of the many industries that require intense computing resources, often in rural America.**

Tech-savvy businesses in rural areas, just like in the major cities, are becoming increasingly reliant on cloud services as part of their core operations. Collecting, distributing and updating information is maximized when widespread coverage, reliable connectivity and proximal computing power are available.

Take agribusiness for example: agriculture and food sectors contributed \$835 billion to the U.S. gross domestic product, placing this rural business opportunity among the most attractive growth markets in the world. Land and water resourcing, logistics, food security and precision agriculture are some of the other related applications driving the need for computing at “the edge.”

The future of high-tech, agriculture-related industries can be realized only by aggregation of tons of real-time intelligence: from information about soil conditions, location, topology, temperature, water, mineral content and insect populations to supply chain, consumer demand and commodity pricing.

All of this data needs to be processed in real time, and designed to maximize yields, optimize operations, and manufacture products that go to market at premium prices.

With data centers in several states, Codero brings mission critical applications to rural local exchange carriers (RLECs).

▶ 18

FOCUS

AGRIBUSINESS  
OPPORTUNITIES



# How Smart Farm Technology Is Transforming Agriculture

BY KRISTY MCDERMOTT

**M**ODERN FARMING IS A COMPLEX AND DIFFICULT BUSINESS that requires a great deal of technology for efficiency and success. According to Joe Hossle, a farm operator in Southwest Iowa, the enduring concept of farming as a way of life is off-base.

"This is a business that is every bit as complicated as any other manufacturing concern," Hossle said. "Any farmer that wants to be successful needs to pay attention to every detail of the operation, from the costs of fuel, seed, feed and fertilizer, to the efficient use of each of these important means of production. And, of course, managing the operation to get the best yields possible is fruitless if the harvested crop is ruined by poor management of drying and storage operations."

To illustrate his points, Hossle described how he uses advanced technology, including GPS-linked controls for planting and harvesting, along with very detailed yield measurement and mapping that help maximize production in future years. Looking to build on this foundation—and extend the efficiency and security of the operation that incorporates properties that are up to 25 miles away from the home base—Hossle turned to his telephone and broadband service provider, Southwest Telephone and Interstate Communications (Truro, Iowa), to discover how innovative Smart Farm technology could streamline operations and reduce costs even further.

▶ 19

Top to bottom: Smart farming helps to monitor, secure and control cameras and devices. Technology through broadband connectivity and smartphones keeps today's farmer in touch. From fuel tanks to grain bins and livestock barns, today's farmer stays connected to level changes in tanks and bins, environmental changes and security.



## Bringing the Cloud to Rural America and Its Farms

from p.16

### A Lesson From John Deere

While city dwellers speculate about driverless cars, rural America was truly the pioneer in self-driving vehicles. Let's look at how John Deere, the agricultural equipment

manufacturer, has embraced highly flexible and scalable computing at the edge.

As a pioneer in the industry of self-driving vehicles, John Deere's latest tractor and combine systems utilize advanced technologies that include the use of unmanned aerial vehicles to collect real-time topology data. This data is then fed to the agricultural combine via wireless connectivity, helping to guide driverless combines as they work in the field to harvest crops. The result is an interactive system of communications, real-time data and improvements driven by advanced tools and technologies, including the cloud for processing. This is a very powerful example of an Internet of Things on steroids.

However, there is another element at play here—the crunching of data has to be done in real time, and with very little latency. A multimillion dollar John Deere combine cannot drift away

into a neighbor's land, nor can it run into a pond, or go too fast or too slow at the risk of damaging the crops.

This is just one example of a technology that requires advanced devices within the equipment, and perhaps more importantly, a way to store the data in a high-performance cloud computing environment at "the edge" so that it's available with little latency, even in the most remote locations. While there are many other cloud computing use cases for businesses in rural areas, most do not share the same extreme need for low latency as John Deere's combine systems. Hosting websites, Software as a

Service (SaaS) applications, customer databases and other related technology are perfectly functional in data centers that may be further away. However, rural local exchange carriers (RLECs) are in a unique position to address the hosting requirements of their rural customers.

Despite the growing need for high-performance computing at the edge, hosting options are limited for businesses in rural markets. Large cloud providers are unable to deliver the low latency computing solutions needed to process data for today's demanding applications (e.g. video, VoIP), offering much less futuristic solutions than what was described in the John Deere combine example. More importantly, large cloud providers don't offer true managed service to support rural customers due to the shortage of technical resources in rural America.

For RLECs, it will be imperative to offer differentiated cloud products. RLECs are in an advantageous position to provide transit and hosting to businesses in their markets.

Rural customers are not different than those in urban markets. They want powerful computing, reliability, speed, expertise and options. It's important to note that it is not as simple as throwing some cloud foundation into a local data center or repurposed central office. If a cloud business were to arrive on the scene with the simple notion that it is "enterprise ready," it would be entirely disconnected with the market's understanding and acceptance of the service offering. A local cloud solution needs

With a clearly-defined product, a direct explanation of how it can improve business, as well as right-sized pricing, RLECs can demystify cloud computing for customers who wouldn't have considered it otherwise.



**Codero services customers globally from data centers in Texas, Arizona and Virginia. In June 2015, Codero was acquired by a consortium of 32 regional telecom and broadband providers, extending its infrastructure to rural and regional markets across the country. Over the past year, all 32 of Codero's RLEC and ILEC investors have been enabled to offer Codero products in their markets to directly reach nearly one-fifth of the U.S. population. In addition to delivering Codero services to their customer base, these RLEC investors have embraced the technology for themselves, migrating mission critical applications to Codero.**

IMAGE COURTESY CODERO

to be part of the national footprint, and cannot be an island. With a clearly defined product, a direct explanation of how it can improve business and right-sized pricing, RLECs can demystify cloud computing for customers who wouldn't have considered it otherwise.

Packaging cloud along with hosted voice, video, remote desktop environments, application distribution points, tertiary and DR services, and other applications can improve value for customers who might otherwise purchase these services from over-the-top providers. This keeps the RLECs in the revenue chain.

### Answers Before Action

To determine the level of service rural telecom providers will offer their customers, it's important for them to thoughtfully address critical questions:

- > What kind of businesses are in your service area?
- > Do you have a major share of your business customers' IT spend?
- > Does it make sense to offer multiple hosting services to your customers?
- > Are you going to host and manage the infrastructure or rely on a partner?
- > Can your sales team effectively sell these services? Or would they require education and training?

> Being in the unique position of having loyal customers, how will you introduce the product to them without disrupting existing business relationships?

Cloud computing is as ideal a solution for the rural marketplace as it is for major cities. RLEC customers have a strong need for these services as business owners in these areas realize that they must compete globally, but at a price point that meets their operational realities. By presenting these cloud computing options, RLECs are well positioned to package, price and sell these services. RLECs require a partner that is willing and able to deliver "the cloud" with an exceptional service experience, highly technical support teams, 100% uptime guarantees and state-of-the-art data center infrastructure with top-branded servers. ■

*Emil Sayegh is chairman and chief executive officer of Codero. Contact him at [emils@codero.com](mailto:emils@codero.com).*

## Smart Farm Technology Transforms Agriculture

from p.17

### What Is a Smart Farm?

The Smart Farm concept leverages broadband services, mobility, and a broad range of measurement, monitoring, and management technologies to enable remotely managed security and control over a variety of systems throughout the farming operation. A major element of the Smart Farm solution is the seamless ability to monitor and control systems and situations from any mobile device connected to the Internet.

"Being able to see what is happening at the main farmstead when I am in the tractor or combine 15 miles away not only gives me tremendous peace of mind, but it also helps me ensure that things are running smoothly, and allows me to take action if they are not," Hossle noted.

Every farm has different needs based on the size and type of operation, but the Smart Farm concepts of monitoring and management are fundamental to keeping every one of these enterprises running smoothly.



Farmers in rural America can make the most of the latest telecom technology.

### The Smart Farm Solution

Using wide area services from Aureon (West Des Moines, Iowa), Southwest Telephone was able to offer Hossle a comprehensive selection of Smart Farm offerings through the Clear2there Viewbiquity Cloud Application Suite (VCAS). The VCAS platform provided Southwest Telephone with the tools and capability to create a customized combination of surveillance, access control and monitoring that satisfied all of Hossle's requirements. The comprehensive service delivered through the VCAS solution enables users to access data and images from all of the different sensors and devices in use throughout the enterprise from any Internet-connected device—including smartphones, tablets and computers.

Monitoring plays a critical role in maintaining efficiency and safety across Hossle's operation. The deployment at his farm includes a series of video surveillance cameras, window sensors and electronic locks in the farmhouse, shop, out-buildings, grain-bin monitors, fuel-tank sensors, and thermostats and humidity sensors. Each of the smart devices employed throughout the farm are connected to a central gateway using a variety of wired and wireless technologies, including Z-Wave, Wi-Fi, point-to-point wireless and serial bus connections. Clear2there's Viewbiquity gateway installed at the site provides a secure encrypted connection to the VCAS platform to enable remote access and control.

"The ability to check the levels in my fuel tanks from anywhere is a great tool during harvest and planting seasons when I may be in the fields all day and night," explained Hossle. "And, using a simple rule that I was able to program on my app, when any of the fuel tanks reaches 15% of capacity, the system notifies me—and my fuel supplier—to monitor the level and to schedule a delivery."

Motion sensors on the surveillance cameras are also programmed to send alerts when there is activity in different areas of the farm that occurs outside of normal time frames. These alerts often include snapshot images of critical areas of the property and provide a good measure of security.

Electronic locks allow buildings that can house hundreds of thousands of dollars' worth of equipment to be secured, while giving the operator the ability to permit access from anywhere. When used in conjunction with the video surveillance, this feature alone can save many trips to and from the fields to accept a delivery or provide access. Hossle simply looks at the live video stream on his smartphone to see who needs access, and opens the lock from the Viewbiquity app.

Grain-bin monitoring that includes capacity, temperature and humidity sensors also streamlines operations. Monitoring temperature and moisture content during the drying process helps Hossle closely control energy consumption by delivering notifications when target levels are achieved. This can also prevent over-drying that can reduce the value of the grain at market.

"As a grain producer, the product stored in my bins is very much like a checking account," continued Hossle. "The ability to check the conditions and levels of my bins from my phone, and receive notifications when certain levels are reached during loading or unloading, keeps things running smoothly and reduces the risk of injury."

Automated grain-bin monitors measure the height of grain in the bin and calculate the remaining capacity. Without this type of measurement capability, the farmer must often climb the ladder to the top of the bin and visually check on the levels of grain. Injuries sustained from falls—both from grain-bin ladders or into the bins themselves—are virtually eliminated using this technology. The level of each bin is displayed graphically in the Viewbiquity app. In addition, using the rules feature, Hossle is immediately notified if levels change unexpectedly, such as when a theft is underway. With bins often located in unattended areas, this capability has critical value.

Traditional smart-home technology, including a digital thermostat, water detection in the basement and lighting controls, is also in use in the farmhouse, and helps keep things secure and efficient.

### Beyond a Grain Operation

Just as grain-bin monitoring is important to farm operators like Hossle, there are multiple Smart Farm applications that meet the critical needs of many different types of agricultural functions.

The VCAS platform supports feed and water supply sensors, monitors and controllers for livestock feeding operations, pivot irrigation monitoring and management systems; temperature and airflow sensors for poultry and hog confinements; and industrial controllers that can operate ventilation fans, louvers and curtains. In addition, the system can monitor and provide alerts regarding power utilization, water flow and use, and emergency backup generator testing and status.

Southwest Telephone delivered the Smart Farm solution to Hossle over fiber that it had installed throughout its serving area. The addition of video surveillance did require a small increase in upstream bandwidth usage—something that is typically underused in most broadband deployments. Using the Aureon VCAS platform as a cloud-based service, Southwest was able to deliver these services without any significant capital investment or impact to network operations.

Smart Farm technology will continue to grow in popularity as farmers like Hossle discover new and better ways to put it to use, and innovators such as Clear2there, Southwest Telephone and Aureon continue to bring smart technology solutions to market.

---

*Kristy McDermott is vice president, products and services at Aureon. Contact her at [Kristy.McDermott@aureon.com](mailto:Kristy.McDermott@aureon.com).*

# THE SYNERGY OF DIGITAL + TV

## Integrated Local Ad Insertion Solutions

- » Turn-key, Revenue-sharing Solution
- » Proven Multi-screen Approach:
  - » Pre-Roll Internet Video
  - » Website Display Ads
  - » Cable TV

### Pre-Roll Video Ads



### Digital Display Ads



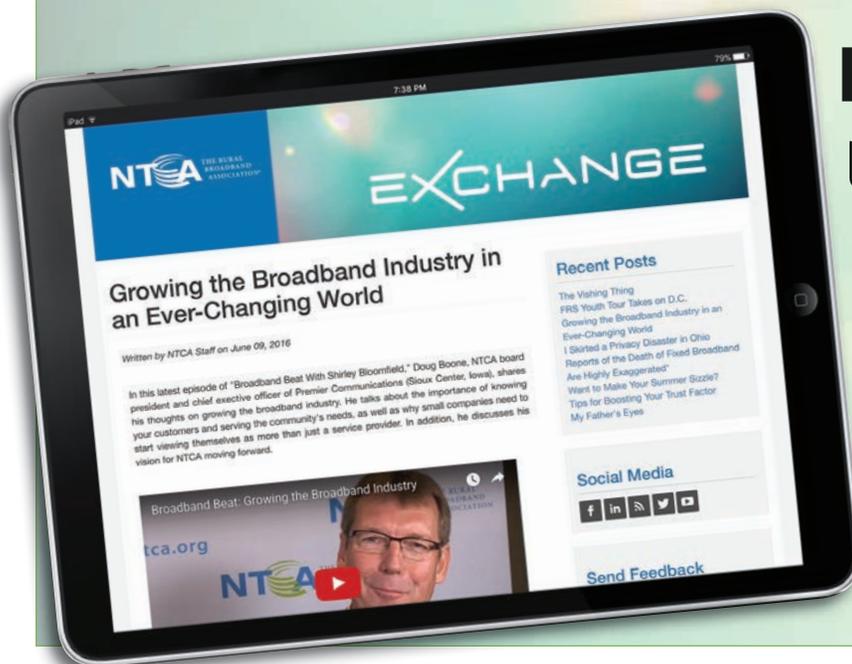
*Prime Media Digital + Cable TV = The Perfect Mix*

**Prime Media**  
A VISUAL COMMUNICATIONS COMPANY

CALL TODAY — 888.442.0057  
[www.primemediaproductions.com](http://www.primemediaproductions.com)

**NTCA** THE RURAL BROADBAND ASSOCIATION

EXCHANGE



## Have You Seen the Latest?

- > FRS Youth Tour
- > My Father's Eyes
- > "Broadband Beat" With Doug Boone

[ntca.org/exchange](http://ntca.org/exchange)

Students at Defeated Elementary School enhance their education through NCTC's fast, reliable Internet connection.

# Putting Rural

BY ALISON GILLESPIE

Bandwidth demands in the current test-heavy climate are challenging rural-school administrators. How can your telco help students succeed?



Schools to the

# Test

Education is changing dramatically as school boards, policymakers and state superintendents debate the best ways to improve learning. These changes—including mandatory online testing that may require increased bandwidth—could present challenges for rural telecom companies.

## Making the Grade

President Barack Obama has asked schools to spend no more than 2% of student time on test taking. A study released in 2015 found that students in the United States spend, on average, about 20–25 total hours each year taking the Partnership for Assessment of Readiness for College and Careers (PARCC) and the Smarter Balanced standardized tests, due in part to federal funding requirements.

However, these required tests are not administered in the exact same way. Some districts opt for pencil and paper when taking the exams, while other districts require students to use an online computer interface.

When a test is given at a particular school, either all of the students enrolled or all in a particular grade may be required to take the tests at the exact same time online. Consequently, hundreds of students may need to be logged in and online simultaneously, sparking a dramatic increase in the need for bandwidth. 



### An Expert Expresses Concern

Testing days “are the longest, hardest days I ever spent as an administrator,” said former school principal Marilyn Osborn. Although she now works as the chairperson of the board for Teach for America in the Rio Grande Valley of Texas, Osborn spent many years working as both a curriculum specialist and a principal in private and public schools in rural and urban districts in her state.

The magnitude of the tests and the anxiety of the students can sometimes be heightened by bad connections, and having hundreds of students get online smoothly and stay online without incident is challenging—even for the largest schools, which have massive computer labs and numerous staff members to run them.

The hurdles can be greater in smaller districts, where many schools lack a dedicated IT specialist. Often, Osborn pointed out, the person assigned to take care of IT is also assigned to other demanding duties, such as teaching or coaching. That person may already be overwhelmed, and

not able to figure out how to meet the new challenge.

Even schools that have previously celebrated their strong connectivity within the library or at the computer lab may find that what used to be fast enough simply won't make the grade anymore.

“Based on the speeds that these schools are inquiring about or needing for testing, the only option is fiber,” said Clint Carter, the director of technology at North Central Telephone Cooperative (NCTC; Lafayette, Tenn.). His telco has partnered with the Education Network of America

(ENA) to provide fiber service to four of his region's schools, all of which needed a massive upgrade to prepare for administration of the PARCC test, an intense, weeklong, corporate-designed exam.

“Here, all the testing is going online,” Carter said. “The only way to do that is with capacity and bandwidth.” Every student in his state, he added, is being given a laptop, Chromebook, iPad or desktop to use wirelessly on exam day.

“You've got hundreds of kids trying to take a test online, and if that test goes down, a lot of these tests are not set up for you to log back on and recover and start all over. If your circuit goes down during that test, it is lost, everything is gone, they've lost everything that they've just been working on for the last hour. So those connections and that circuit have to be 100% resilient.”

Many of the schools are not really told what the technical needs or demands of testing will be. They are told that they simply must be ready to administer the tests.

Some schools may need redundant online connections in

Keith Gabbard (right) and Owsley County Superintendent Tim Bobrowski (left) receive the Cornerstone Award from Hilda Legg.



case their original provider or link goes down

due to overload. Others may need help sorting out details regarding bandwidth and speed—things that can seem like intimidating technical jargon to those outside of the telecommunications field. Funding also may seem like an insurmountable obstacle to school staffs that are already feeling the pinch of small budgets.

Telcos can “be an adviser to the schools to help them understand how they can get reimbursed for E-Rate funding to deliver that service,” Carter said.

### Here to Stay

Online testing has its share of criticism, raising the prospect that such tests may go out of fashion in the near future. Some experts have expressed concerns that students in impoverished districts suffer an unfair disadvantage when it comes to the use of online exams because they don't use computers on a daily basis at home. Others have cited problems with evaluating students with learning disabilities or physical handicaps using computer interfaces. And in some states, there has been tremendous political push-back against any type of federal mandate, including those in the education sector such as curricula and their associated tests.

“The testing piece around the Common Core is going to shift dramatically, and we don't know where it's going to go yet,” said Rob Mahaffey, executive director of the Rural School and Community Trust, referring to the curriculum that has been associated with much of the standardized testing regimes. At one point it looked as if every student in the country was going to be made to do online testing simultaneously, but that has not happened and may not ever happen.

“We're in a new environment around education,” Mahaffey said.

Part of the uncertainty can be tied to a new education law known as the Every Student Succeeds Act (ESSA), which was signed into law last December by President Barack Obama to replace policies and testing regimes mandated under the earlier No Child Left Behind Act. Much of ESSA is likely to shift accountability measures within education back to the states, Mahaffey said, but nothing concrete has been announced yet.

Further adding to the uncertainty is the upcoming presidential election in November. Mandates regarding test administration could change completely as a new leader moves into the White House and brings in new cabinet members, including a new leader for the Department of Education.

“It's going to take time to make that shift,” Mahaffey said.

But no matter what happens with the testing demands

“If your circuit goes down during that test, it is lost, everything is gone, they've lost everything that they've just been working on for the last hour. So those connections and that circuit have to be 100% resilient.”

—Clint Carter, NCTC



# Open ROADS to a Better Connected World

## Supporting Rural America

Broadband connectivity enables what is often regarded as unimaginable today, to become an integral part of life tomorrow. Nowhere is this more apparent than in rural America.

As a leading global ICT provider, our pioneering technologies help rural operators develop robust networks that allow you to share your dreams and let your inspirations travel.

Huawei. Committed to driving innovation in technologies and products to build a Better Connected World.

Find out more by visiting [www.huawei.com/us](http://www.huawei.com/us).



For more information, please contact:

**Bill Gerski**

Phone: 702-493-6142

Email: [bill.gerski@huawei.com](mailto:bill.gerski@huawei.com)

[www.huawei.com/us](http://www.huawei.com/us)

Huawei Technologies USA



**An aerial shot of McKee, Ky., where inclement weather presents school-year challenges.**

and schedules, educators say it is highly unlikely that the desire for better access to technology in rural public schools will diminish.

The Lasara Independent School District provides an excellent case in point. Located in the southern-most tip of Texas, the tiny school system is currently only required by the state to use online testing for special education students, said Superintendent Sara Alvarado. Right now that means only four or five students a year are online while everyone else is tested with pencil and paper. But she assumes more online tests are coming.

"I would imagine that if it is something optional, sometime in the near future it will be something we have to do," Alvarado said. "It doesn't matter," she added. "Whether it is 10, 20 or three students, it is still the same amount of work to get ready to handle online testing." The system cannot go down, the connections must be strong and the computers must be ready.

Interestingly, the same is also true for some of the strictly online-only course offerings given to high school students in her district. In the past, problems with those classes were constant, prompting the Lasara district leaders to upgrade to faster gigabit broadband from Valley Telephone Cooperative (Raymondville, Texas).

"I told everyone it took us from the Flintstones to the Jetsons," Alvarado said.

When the district conducted the first online testing for the special education students this past spring, the benefits were obvious.

"It was like night and day," Alvarado said of the gig connection. "We had no issues whatsoever, whereas a lot of the rest of the state of Texas did."

### Benefits Beyond Testing

Similarly, Peoples Rural Telephone Cooperative (PRTC; McKee, Ky.) found that even though its state has not yet made online testing mandatory, the benefits of getting gigabit service to their small slice of Kentucky, tucked deep into the mountains, have been innumerable.

Keith Gabbard, PRTC's chief executive officer, said he pushed to get fiber to all of his service area's schools 15 years ago because he simply didn't want kids to miss out, and he thought better communications infrastructure might bring economic benefits to the region, which includes some of the poorest communities in Kentucky.

"I've lived here all my life. We have barriers that keep us from doing things that other places can. We have poor roads, we don't have railroads, we don't have hospitals. Our biggest town is 900 people," Gabbard said. "Even our smartest kids almost always go away to college and don't come back because of some of these things."

So Gabbard was doubly pleased to be able to partner with one local school superintendent and use the service area's fiber connections to solve a problem many students experience every year: too many snow days off. Last year, the district received permission to have 10 nontraditional snow days, where students could communicate with their teachers online to get assignments completed, even during the worst of storms, after about five years of experimenting with the idea. The innovation was especially welcome in an area where inclement winter weather and curvy roads across rough terrain caused numerous cancellations, extending the school year well into the summer.

The pioneering move made the tiny Owsley School District the envy of superintendents and parents in much larger and more affluent districts across the country. Even large city districts have contacted the school leadership for advice and information.

A key component of the Owsley snow day program was the large number of homes that had strong connections to the Internet; PRTC had run fiber to its entire service area many years ago, meaning that almost all of its teachers and students can easily get online as needed.

Teach for America's Osborn said that fiber and better connectivity for residential neighborhoods can also indirectly help a struggling school system, even in states without online testing mandates, because young tech teachers are needed desperately in rural schools. Many of those who have a passion for STEM (science, technology, engineering and math) subjects and are tech-savvy by nature like getting online at home, and will probably find the idea of living in a well-connected community attractive.

Some school systems may be entirely unaware of the expertise available through their local telco, Osborn said. They may not immediately think that a rural cooperative will be the source for help when it comes to problems like online testing. Telcos should offer to assist, she said.

"Start at the top, and visit the superintendent," she added. "They are usually very accessible in a smaller community."

Testing and government mandates may make the timeline for upgrading a school's online connections shorter and more pressing. But as many telcos already know, the return on investment timeline is getting shorter too, as technology becomes more and more enmeshed in a strong and vibrant local economy and more of an essential component to a well-rounded education.

*Alison Gillespie is a freelance writer. Contact her at [alison@alisongillespie.com](mailto:alison@alisongillespie.com).*

## ADVERTISERS INDEX

	Advertiser	Telephone	Web Site or email
3	Bennet & Bennet	202-371-1500	www.bennetlaw.com
11	Calix	707-766-3000	www.calix.com
32	CoBank	800-542-8072	www.cobank.com
43	CommSoft	888-COMMSOFT	www.commssoft.net
2	Dynetics	800-922-9261 x5020	www.CyberRiskScope.com
13	GVNW Consulting	503-612-4400	www.gvnw.com
25	Huawei Technologies USA	702-493-6142	www.huawei.com/us
56	Innovative Systems, LLC	605-995-6120	www.innovsys.com
43	Mid America Computer Corp. (MACC)	402-426-6222	www.maccnet.com
33	National Information Solutions Cooperative (NISC)	866-999-6472	www.nisc.coop
39	National Rural Telecommunications Cooperative (NRTC)	703-787-0874	www.nrtc.coop
30	Power & Telephone Supply Co.	901-324-6500	www.ptsupply.com
21	Prime Media	888-442-0057	www.primemediaproductions.com
31	QBE Farmers Union Insurance	800-669-0622	www.farmersunioninsurance.com
53	Saskel International	877-242-9950	www.sasktelinternational.com
15	Telcom Insurance Group (TIG)	800-222-4664	www.TelcomInsGrp.com
7	Toly Digital	561-694-8655	www.tolydigital.com
38	ZyXEL Communications	714-632-0882	www.zyxel.com

## In the **NTCA** issue

- **FLSA Law: What the Changes Mean for Your Company**
- **Incentive Programs for Workers**
- **Survey Employees to Learn What They Think of You**

To submit article ideas, send proposals to the editor at [publications@ntca.org](mailto:publications@ntca.org).

Check out the Rural Telecom Solution Providers Directory at [www.ntca.org](http://www.ntca.org).

Visit our website at [ruraltelecom.org](http://ruraltelecom.org)

The Rural Telecom website includes the digital edition of the magazine, exclusively for subscribers, and articles that can be enjoyed by all visitors.

**FOR ADVERTISING INFORMATION, CONTACT  
703-351-2089 OR SALES@NTCA.ORG.**



# COME TOGETHER

# The Power and Possibility of Strategic Collaborations

BY TARA YOUNG

There's a quote from Fortune Magazine that gets mentioned quite often when business collaborations are discussed: "Alliances have become an integral part of contemporary strategic thinking." And despite their paperwork, planning and other complexities, collaborations can solve a number of strategic and organizational challenges for today's rural telecommunications providers.

Dan Caldwell, president of Consortia Consulting, views the current increase in collaborative activities as the result of a "perfect storm" of factors in the rural telecommunications industry.

"[The industry] is facing a growing need for investment in broadband, regulatory squeezes on cost recovery, population declines in rural areas, matriculation of existing Baby Boomer-aged leadership and the rapid evolution of IT-based networks. This leads to restrictions on cash and a decreased availability of experienced personnel, and both of these things can be addressed, for the long and short term, with collaborative agreements," Caldwell said.

But just as the current industry climate leads to creative collaborative thinking, the community-minded, long-range vision of many telco boards—especially cooperatives—leads them away from buyouts or mergers. "There's an understandable reluctance to give up the community-based and customer-focused ethos of independent companies," Caldwell explained, "and that's part of what makes strategic collaborations attractive: their flexibility means they can provide a stop-gap measure on an immediate problem, or provide a risk-mitigating partner for the life cycle of an investment without ceding too much control."

## Efficiency for All

A crunch on human resources and the need for a stop-gap measure marked the first foray by Beaver Creek Cooperative Telephone (Oregon City, Ore.) into the strategic collaboration sphere.

"It really started with Beaver Creek Telephone sharing a headend tech with Clear Creek Telephone," said Beaver Creek Telephone President Paul Hauer. "Neither company felt they needed a full-time person for that work, but we both needed the technical skills. It worked really well."

The success of that sharing was in the back of Hauer's mind when he heard neighboring telco Canby Telephone Association (Canby, Ore.) had lost its chief financial officer, leaving the telco in a lurch just as it was going through its budgeting and strategic planning processes. What followed would lead to the formation of Consolidated Business Services (CBS), a quasi-partnership LLC formed in 2012 by Beaver Creek, Canby and Stayton Telephone Cooperative Co. (Stayton, Ore.).





### SOMETIMES A COLLABORATIVE AGREEMENT ISN'T AN OPTION

Skill sets or partners can't be found, investments are too capital intensive, business plans don't prove out. But opportunities for growth and expansion still present themselves. So what can a telco do when it finds itself caught between reality and possibility?

Particularly in the realm of technical support, network expansion and back-office support functions, partnering with outsourced service providers can provide a flexible, scalable and cost-effective method for telco clients to reach their growth goals. Recently rebranded as Aureon, the INS Family of Companies, including Iowa Network Services, Alliance Connect, Alliance Technologies, Merit Resources, Caleris and Portico Staffing, offer business support services that give independent telcos options when considering methods for growth and business development.

And efficiency is just as important in an outsourced capacity as it is in an ownership or partnership capacity.

"The business operation challenges facing organizations grow more complex by the day," said Aureon Chief Executive Officer Ron Keller. "By combining our resources and capabilities, we can use our talent, technology and tools to help clients stay focused on what they do best and turn those challenges into opportunities."

"I had been an accountant prior to assuming my management position with Beaver Creek, so I offered to lend assistance to get Canby through their budgeting season," says Hauer. "It led to more discussions about finding operational efficiencies and better utilizing resources, and CBS was born."

CBS offers management, administrative and human resources services to telcos in the Willamette Valley region of Oregon, and brings its member companies a full complement of staff and services while offering the opportunity to better control and anticipate costs.

Controlling costs without sacrificing ownership is the driving force behind the CBS model. Overseen by a mem-

bership committee comprising two directors from each member company, CBS originally offered accounting and general management services to each of those companies on a pro rata basis, benchmarked from the companies' previous accounting expenditures. The model has evolved, and now employees bill their time on a per hour basis to each company, operating similarly to outsourced consultants. Human resource management services were added to the slate of services CBS provides in 2015, and now CBS HR staff use a rotating schedule that moves personnel between the member company offices on a regular basis.

CBS has made impressive strides for its member companies in terms of streamlining and efficiencies. It has

## The Power & Tel Perspective

Power & Tel helps you get the most out of your supply chain by combining our dedicated, customer-first approach with years of experience and innovative technologies. We fulfill your ever-changing inventory needs, allowing you to concentrate on what's really important — **your customers.**

Power & Tel, your premiere supply chain partner in the global communications marketplace.

Scan here to learn more about our full range of products and services.

Learn more about our full range of products and services: Visit [hub.ptsupply.com](http://hub.ptsupply.com), or email [marketing@ptsupply.com](mailto:marketing@ptsupply.com)

standardized numerous processes and procedures, and moved all member companies to an aligned chart of accounts that has allowed for faster processing of accounting entries.

Hauer is quick to note the positive changes weren't gained without considerable work. "There was an old operational mindset, and the hurdles that went with it that were challenging at first. Because we're more distributed, people had to get used to working more independently—no more micromanagement! But I think the stress we're seeing from the regulatory changes in the industry would have made these things happen anyway."

With regulatory changes as the catalyst for collaborative considerations, Hauer said that a confluence of other factors should drive the timing of collaboration. "You have to seize the opportunities when they present themselves, and when it makes sense for your company, board and employees," he said.

### Building It Together

Seizing an opportunity for construction and expansion is exactly how an investment partnership between two Iowa telcos began. Jack Jones Jr., general manager of IAMO Telephone Co. (Coin), and Tim Hill, manager of Farmers Telephone Co. (Essex), completed a construction project neither company would have been able to make independently.

Both companies' home exchanges are in a rural portion of southwestern Iowa, with the regional shopping and commercial hub of Shenandoah, Iowa, lying roughly halfway between. When members of the Shenandoah Chamber of Commerce approached the companies about expanding into their town to offer fiber services, neither was comfortable assuming the project, and its inherent risks, on their own. However, the geography of Shenandoah's location and the familiarity of the two companies with each other's operations made collaboration an option, and SWIFT Services was born.

SWIFT (an acronym for Southwest Iowa Fiber Technology) is poised to enter Shenandoah in 2016 as a competitive ISP and television provider, offering fiber-

## Your company's future is riding on your insurer's financial strength!

In a world of volatility, our expertise with managing risk gives telecommunications businesses the reassurance they need to invest and grow without gambling on their security.

Backed by one of the world's 20 largest insurance and reinsurance companies, we're rated A+ by Standard & Poor's and A (Excellent) by A.M. Best.

With worldwide gross written premium of \$16.3 billion and shareholder funds of \$11 billion, our capital will be there when you need it.

We're QBE Farmers Union Insurance.  
Why trust your network to anything less?

For more information contact:  
800.669.0622, Ext. 842123  
[farmersunioninsurance.com](http://farmersunioninsurance.com)



**QBE FARMERS UNION INSURANCE**

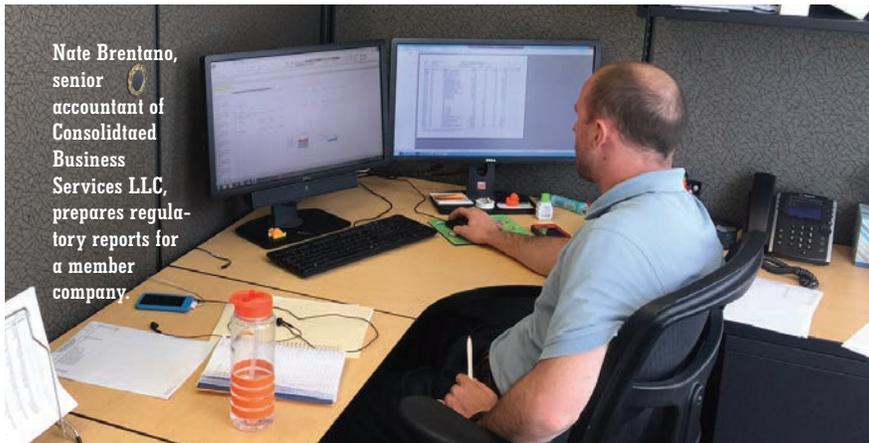


**UNITEL**

QBE and the links logo are registered service marks of QBE Insurance Group Limited. Coverages underwritten by National Farmers Union Property and Casualty Company. California Company ID #3078-3. © 2013 QBE Holdings, Inc.



Nate Brentano, senior accountant of Consolidated Business Services LLC, prepares regulatory reports for a member company.



fed connections to business and enterprise customers. The collaborative entity is governed by a master service agreement (MSA) that outlines important understandings between the companies, including management principles, billing rules and labor rates. The MSA was a key part of the careful planning Jones and Hill's companies and boards of directors went through before agreeing to the venture.

SWIFT General Manager Jack Jones Jr. explained, "The first step was getting the boards of both companies on board. They knew of the need [in Shenandoah], and they were aware of the opportunity, but they needed to understand how the companies would work together. Once the MSA was constructed, it gave us both a framework for the investment and helped us minimize the overall risks to each company."

Building the agreement and the SWIFT business entity has been an interesting experience for Jones. "IAMO, like a lot of small telcos, has been around a while, and was very well-established as a business when I took over. Getting involved with building a business in startup mode has been educational, because there's definitely been a legal and regulatory learning curve."

**Communicate to Collaborate**

But building SWIFT hasn't all been new; some things, Jones finds, never change. "You still have to know your customer base. You still have to meet with the Rotary Club and the chamber of commerce and the residents of the community you're moving into. Talking with people and doing the research still matters."

Consortia's Caldwell echoed these sentiments when he outlined best practices for companies thinking of forming a collaborative agreement. "Proximity and familiarity help, but communication is key to making a collaboration happen. The CEO or GM needs to communicate with the board of directors and the employees. [He or she] needs to say, 'This is the specific problem, and this is how this collaborative solution will help.' It really comes down to relationships, discussing the details and not making assumptions."

*Tara Young is a freelance writer. Contact her at tara.jacqueline.young@gmail.com.*



**AMERICA IS GROWING**

Our commitment to serving rural America has never been stronger. Every day CoBank supports rural communities with reliable, consistent credit and financial services. We can be your trusted advisor to offer solutions and lending strategies if you are considering expanding through acquisition or construction/upgrade of your network.

**We stand ready to partner with you on forward-looking projects that help rural America stay competitive.**

**Contact CoBank today.**



800-542-8072  
www.cobank.com





# Competition

## ***Your list of competitors is growing.***

*Beat them to the punch with NISC apps. Allow customers to pay bills, manage usage and add new services on the fly. Empower staff to perform operational and sales tasks in the field.*

*Harness the power of NISC apps and increase efficiency and customer satisfaction while putting the competition on the ropes.*

*Who powers you?*

follow us



866.999.6472

[www.NISC.coop](http://www.NISC.coop)

powered by



# How Resilient

BY STEPHEN GAUFFMAN

**E**very community in the United States faces the risk of natural, human-caused or technological hazards. While most hazards do not rise to the level of extreme events, they often inflict significant economic losses and disruption to lives and commerce due to damage to buildings and infrastructure systems.

To address this problem, the National Institute of Standards and Technology (NIST) established the Community Resilience Program. The first product of this program, the “Community Resilience Planning Guide for Buildings and Infrastructure Systems,” was released on October 29, 2015—the third anniversary of Hurricane Sandy. The guide benefited from input by a broad range of stakeholders and experts, including participants in a series of national workshops and the NIST Disaster Resilience Fellows.

The guide is intended for implementation by communities with local governance structures, with active participation and collaboration from stakeholders, including:

- > Town, city, and county administrators and managers
- > Community members and organizations
- > Building owners, utility owners and operators
- > Businesses and industries in the area
- > State and federal government agencies

It recognizes that no one entity can address resilience by itself. The guide lays out a practical approach based on establishing a shared set of goals aiming to maintain or quickly restore important social and economic functions following a disruptive event. Using this shared set of goals, communities can prioritize, plan and undertake improvements in the ways buildings and infrastructure systems are built, maintained and operated. It also helps communities identify dependencies among buildings and infrastructure systems and cascading effects of system failures. Implementation of the resulting plan can help communities improve their resilience over time.

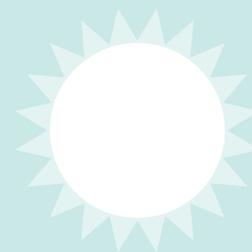


# Is Your Telco?

Buildings and infrastructure systems are vital to community prosperity and health. If these systems fail, or are damaged, businesses and essential services can be interrupted over a wide geographic area. Resilient communities are more likely to experience minimal or local disruptions to business and services and avoid long-term detrimental effects for the hazards they face. If an extreme event should occur, the extent of disruption and recovery time can be reduced. Communities with well-developed resilience plans can use the recovery process following a hazard event, when funding is often available, as an opportunity to improve community resilience—in other words, to build back better.

Telecommunications systems play a critical role in the everyday lives of residents, businesses and industries in rural communities. Residents are connected to each other, friends and family in other places, and to the services they depend on in their daily lives. Businesses and industries located in rural communities rely on telecommunications to connect with their suppliers and customers. In times of emergency, telecommunications systems are essential to ensuring the safety of residents and directing emergency responders. Telecommunications systems are also dependent on roads and other infrastructure (e.g., power grid) for operation, maintenance and repair. The guide offers an opportunity for service providers, such as telecommunications companies, to enter into a conversation with the community and other infrastructure owner/operators regarding priorities and to become an integral part of the planning process. This allows the community and the service providers to mutually agree on performance objectives for prevailing hazards, and to collaboratively identify solutions to meet those goals.

Community resilience improves and integrates the community planning process. Long-term community goals, such as providing an attractive, vibrant place to live and a reliable environment for businesses to locate, are achieved through comprehensive planning and prioritized measures. A resilient community also provides day-to-day



**This antenna tower in coastal Louisiana failed due to wind loads from Hurricane Katrina.**

community benefits by reducing daily disruptions through improved planning, design and construction practices. As long-term plans are collaboratively developed, service providers can adapt those plans to support community goals in a mutually beneficial manner.

The guide is organized into two volumes. Volume 1 contains the methodology for developing a community resilience plan and includes a fictional example for resilience planning. Volume 2 serves as a resource document and provides guidance on the social environment, dependencies and cascading effects, and buildings and individual infrastructure systems.

**THE GUIDE METHODOLOGY HAS SIX STEPS:**



**1 Form a collaborative planning team.** Resilience leadership is needed to promote and integrate coordination and outreach activities. The local government is the logical convener of the relevant stakeholders. The planning team may include representatives from local departments, such as community development, public works, human services and building departments; county, state or federal government agencies with buildings or infrastructure in the region; public and private owners and operators of buildings and infrastructure systems; local business and industry; individual community members and community organizations; and any other significant community groups. Rural telcos should be a part of the stakeholder group working with the collaborative planning team.



**2 Understand the situation.** Resilience planning begins with an understanding of the community's individuals and social systems and the extent of disruption that can be tolerated before there are detrimental effects, such as business closure or out-migration. An understanding of the social dimensions addresses the needs of individuals and the social institutions that meet those needs, including government, business, industry, financial institutions, health, education, community service organizations, religious and cultural belief groups, and the media. It is equally important to characterize the existing built environment and dependencies between these systems, as well as how they support and are linked to social institutions. Considering these linkages aids communities in grouping or clustering buildings and infrastructure systems into subsets that support common functions. Rural telcos can provide information on the performance of their systems, particularly the last mile, and understand the importance of these systems to community functions. This provides an opportunity for alignment of community goals with the long-term plans of the rural telco.



**3 Determine goals and objectives.** Long-term community goals guide resilience plans, including prioritization of resilience measures and the desired performance of the built environment during and after hazard events. Performance goals for the built environment are based on when a function is required following disruption. The desired performance goals should consider the social needs of the community and the functions that buildings and infrastructure systems need to provide, as well as dependencies between systems or cascading effects caused by failures. Desired performance goals are set independently of prevailing hazards because they are driven by social needs, not by a hazard event. Once performance goals are set, the anticipated (likely) performance for existing built systems under the prevailing hazards are determined. The anticipated performance may include the effects of changing conditions, such as sea-level rise or drought. The anticipated (likely) performance of each group, or cluster, of buildings and infrastructure systems is evaluated in terms of expected time to recover function.

The guide recommends that the performance of the built environment be evaluated at three levels for each hazard (i.e., routine, design, and extreme levels) to help communities understand performance across a range of hazard levels. Understanding how the built environment and supported social and economic systems will perform and recover over a range of hazard levels informs decisions on community priorities and implementation strategies.

Rural telcos can benefit by understanding community goals and working with the community to align community goals with the telco's long-term plans.



# NTCA—The Rural Broadband Association



NTCA benefit plans help your employees

**Live Well, Save Well, Be Well.**

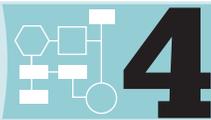
Our experienced member relations managers provide consulting and education so your company can customize a workplace benefits package to meet your employees' physical and fiscal health needs. Ask our team for a free consultation to learn more about the NTCA health and retirement plans.

**Contact Janet Cloyde, NTCA vice president of member relations, at 828-296-8157 or [jcloyde@ntca.org](mailto:jcloyde@ntca.org) for more information.**



Scan this code for a complete list of NTCA member relations managers.

**NTCA BENEFITS**  
THE RURAL BROADBAND ASSOCIATION  
*Your Trusted Employee Benefits Partner*



**4 Plan development.** Initially, a comparison is made of the desired and anticipated performance of the built environment to identify gaps in performance. Then, these performance gaps are prioritized according to community goals, and possible solutions are identified. These solutions may include administrative (e.g., land-use planning), operational (e.g., mutual aid agreements) and construction options to mitigate damage and improve recovery of functions across the community. There may be multiple solutions or stages to achieve the desired performance, including temporary or short-term solutions to meet immediate needs, as well as long-term, permanent solutions. Rural telcos play an important role in identifying appropriate solutions to meet resilience goals.



**5 Plan preparation, review and approval.** A resilience plan that documents the long-term community goals and proposed resilience plan are prepared and shared for review and comment with stakeholders and their organizations, as well as with community members. The plan should include the desired performance goals, anticipated (likely) performance, prevailing hazards, and short- and long-term implementation strategies and solutions. The review process will differ from community to community, but should include extensive outreach activities to ensure community understanding and support. After review and approval, the plan is finalized and adopted by the community.



**6 Plan implementation and maintenance.** The community executes the administrative, operational and construction solutions in the approved plan. It will be important for the community to evaluate and update the plan on a periodic basis. Updates may include modification of the short- or long-term implementation strategies. By working together, the telco and the community can undertake measures to enhance the resilience of the community.

The guide does not specify measures that can or should be implemented but allows for selection of solutions that fit the goals and available resources of the community. It is intended to be flexible so that it may be applied to communities of varying sizes and complexity, and be tailored to available resources.

The guide is just one element of a larger NIST program to provide guidance and tools to improve the resilience of local

communities. NIST convened the Community Resilience Standards Panel in November 2015 to continue broad stakeholder engagement in identifying and developing resilience guidance and tools. A second component of NIST's work involves development of tools to measure resilience at the community-scale and to support evaluation of alternative resilience measures and decision-making. These efforts are supported by a multi-institution Center of Excellence, led by Colorado State University, established in March 2015. The NIST-funded center is developing modeling approaches and conducting analyses to support the development and validation of tools for community resilience.

Information about the NIST program, as well as a link to the guide, is available at <http://www.nist.gov/el/resilience/>.

*Stephen Cauffman is a research engineer in the Materials and Structural Systems Division, Engineering Laboratory of the National Institute of Standards and Technology. Contact him at [stephen.cauffman@nist.gov](mailto:stephen.cauffman@nist.gov). This article reflects the work of the Community Resilience Group in the Engineering Laboratory of the National Institute of Standards and Technology.*

PROVIDERS
CUSTOMERS

802.11ac

TR-069, TR-181, TR-143

VDSL2 Bonded

Active Fiber

DSL & Ethernet CPEs

Wi-Fi Analytics

**Different languages, same goal:  
Fast and truly reliable 11ac Wi-Fi.**

**AC2050 Bonded VDSL2 Combo Gateway**  
VMG4825  
VMG9823 (VoIP)

**AC2200 Wi-Fi Router with Gigabit Ethernet, TR-069 and Optimized for IPTV**  
EMG3425

**AC1600 VDSL2 Combo Gateway**  
VMG3925

**CSSA**  
celebrating 40 years

Contact your CSSA representative today for more details

**ZyXEL**

Progress Toward Wi-Fi Excellence  
Learn more at [zyxel.com/us](http://zyxel.com/us)



# Technology's leading edge

Telecom providers are connecting rural America

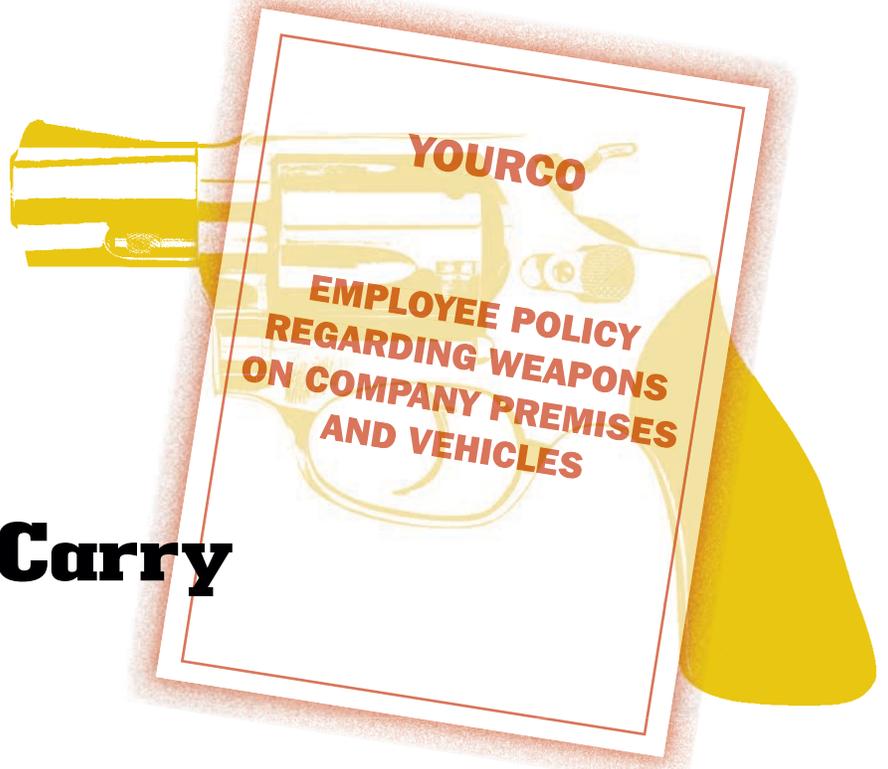
You meet your community's need for broadband, wireless and video.  
We provide technology and support to strengthen those businesses.

To learn more visit [nrtc.coop](http://nrtc.coop) or call 1-800-214-6782

**nrtc**

Member driven. Technology focused.

## Best Practices for Concealed Carry Options in the Workplace



**G**un laws vary greatly from state to state. All 50 states have passed laws allowing qualified individuals to carry certain concealed firearms in public, either without a permit or after obtaining a permit from a designated government authority at the state or local level. If you are considering allowing concealed weapons into your workplace, contact your legal representatives, familiar with your state-specific rules, and address the following areas in developing your company's policy:

- > What are the legal risks for employers in regard to the General Duty Clause of OSHA, worker's compensation and potential negligence claims?
- > What are the laws permitting employers to allow or not allow weapons in the workplace (including office, parking lots, and in company vehicles)?

Your state's guns-at-work laws can be viewed at <http://safetysummit.blr.com/weapons-in-the-workplace/>.

The first step is to develop a holistic and comprehensive policy that addresses not only guns, but violence in the workplace. A team composed of HR, legal, finance, IT and security that reports to the chief executive officer/general manager and the board should be developed if you are considering allowing guns in the workplace. This team also can enlist the assistance of local experts/consultants to help in the development of policies and then the training of the employees.

In general, a firearms policy that allows employees to carry concealed guns in the workplace is no different than any other policy that the company has. It should meet the legal statutes of the city, county and state in which the company has facilities/offices. It should address the fact that it is part of the workplace violence prevention policy and set out rules for the practice of the policy, protocol for employees to confidentially address concerns and report

threats/acts of violence in the workplace, and reprimand/discipline for breaking the policy.

The policy should clearly state where guns are allowed and where they are prohibited. For example, some city or state laws allow employees to keep guns in their vehicles. It should designate who may have a gun in the workplace, meaning a security officer or any rank-and-file employee. Many states have additional parking lot rules that should be addressed. The policy should also address whether guns are allowed in company vehicles, stored on company property, or carried in the course of conducting company business. ➤

### Sample: Request to Carry Concealed Firearm at Work

- > Description (model and type) of both the firearm and ammunition
- > Copy of current, unexpired License to Carry issued by the State of Texas
- > Copy of current, unexpired Advanced Training Certification(s)—Mandatory advanced training will consist of at least 2–3 one-day courses per year to be provided by the cooperative; some courses may be conducted on Saturdays (without pay)
- > Copy of current, unexpired membership with a legal defense program (i.e., Texas Law Shield; Patriot Legal Protection)
- > Copy of proof of liability insurance (in the event of a civil lawsuit)
- > Copy of completion of Weapons Proficiency (target shooting of at least \_\_\_\_\_ rounds of ammunition on an annual basis; ammo and range costs not provided; without pay)
- > Mandatory drug testing (prior to carrying a concealed handgun onto cooperative property; quarterly random basis thereafter)

All roads lead to *Indy*

## NTCA 2016 Fall Conference

September 25–28

JW Marriott • Indianapolis, Ind.

Tune up your competitive strategies.

Flag down new sources of revenue.

Learn more about universal  
service policy changes.

**Register today at**

**[www.ntca.org/fallconference](http://www.ntca.org/fallconference)**



Photo courtesy of the Indianapolis Motor Speedway



#ntcafc

**NTCA** THE RURAL  
BROADBAND  
ASSOCIATION®

Every gun policy should include the following components: background checks to identify any previously violent episodes; a mechanism for employees to report threats or harassment in the workplace and state that threats will not be tolerated; training for all employees/management to recognize threats; and what to do if there is a threat of violence.

**Background checks:** Companies that fail to do the due diligence of identifying employees with violent pasts and identifying employees with various risk factors, such as drug/alcohol abuse, belligerence on the job, sensitivity to criticism or a history of threatening other employees open themselves up to potential liability.

**Reporting:** Once an incident has been reported, management must investigate fully and provide feedback to the person who reported the incident. Following confidentiality rules, they should include how the incident was investigated, by whom, and what actions were taken.

**All new employees (and annually for all other employees) should go through a workplace violence training to identify what response management desires from them during an incident of violence.**

**Training:** All employees must undergo the basics of workplace violence prevention to include: understanding risk factors, recognizing inappropriate/problematic behavior, and reporting threats. All new employees (and annually for all other employees) should go through a workplace violence training to identify what response management desires from them during an incident of violence. Active shooter training is another possible training exercise. The Department of Homeland Security has some active shooter training options to help. Remember, the laws and ordinances prohibiting the discharge of a firearm or illegal use of a gun are still valid.

Additionally the policy should address:

- > What controls are in place if you have to terminate an employee with a concealed weapon at work? For example: consider involving security personnel or the local law enforcement.
- > Weapons should not be allowed to be carried into a telco customer's home or business. They should be locked in a case (glove box or biometric safe) if allowed in company vehicles inside the locked vehicle and hidden from regular view.
- > Examples of control for storing guns while inside the workplace, if the weapon isn't being worn and you have open carry laws, are the biometric safe or locked cabinet.
- > The company has the right to inspect the workplace and be sure that employees are adhering to the policy. If you have a union, please discuss with the union representative.

If you decide to allow guns in the workplace, a request form should be completed by all employees who desire to carry a concealed weapon (see sample

# NTCA Cybersecurity Summit

October 16–18, 2016  
Hyatt Regency Crystal City  
at Reagan National Airport  
Arlington, Va.  
[www.ntca.org/cybersummit](http://www.ntca.org/cybersummit)

**Attacks Are Real—Not Just Threats.**  
How do you manage cyber-threats  
with available resources?

The NTCA 2016 Cybersecurity Summit brings together federal and industry cybersecurity experts to help you assess your risks and plan.  
Don't be the next victim of a cyber-attack.

**For more information or to register,  
visit [www.ntca.org/cybersummit](http://www.ntca.org/cybersummit).**



**RULES, RISKS AND STRATEGIES**



policy, p.40). It should include: description (model and type) of both the firearm and the ammunition and a copy of their current gun license. The employee who is carrying the gun must have an active/current Concealed Handgun license and a copy should be on file with HR. Every state has different rules about how often this license has to be renewed. Texas, for example, is four years initially and then five years after the first renewal. The employee should sign a consent for a background check and drug/alcohol testing.

If your company's management and board are considering allowing concealed carry weapons in the workplace, these are the best practices that we, Telcom Insurance Group and Great American Insurance Group, have developed as a starting-point. Again, it is essential that you abide by/adhere to the laws specific to where you have operations. ■

*Marilyn A. Blake is chief operating officer of Telcom Insurance Group. Contact her at [mab@telcominsgrp.com](mailto:mab@telcominsgrp.com).*

**COMMSOFT**

**DOMINATE**  
PARTNER WITH COMMSOFT, A TEAM OF BSS/OSS EXPERTS

CUSTOMER CARE | BUSINESS INTELLIGENCE | WORKFORCE MANAGEMENT  
CRM | FINANCIALS | BILLING | SERVICE ACTIVATION | WEB SELF-CARE

**COMMSOFT.NET** • **1.888.COMMSOFT**  
96 THOMPSON HILL ROAD, RENSSELAER NY 12144



## Billing Solutions for Today's Telecom Industry



## Flexibility in Focus

Get the flexibility your company needs with a BSS/OSS solution from MACC. Our products are developed with open architecture, giving them the ability to integrate with software and equipment already in use at your company.

**Proven solutions** for the challenges of today's telecom industry.

**Reduce cost** when you integrate, not eliminate, your company's existing equipment and software.

**You control** the level integration needed in your operation.

BSS/OSS • Accounting Software • CABS Processing • Integrated Solutions

[www.maccnet.com](http://www.maccnet.com)

BY JONAH ARELLANO

## Excellence in Telecom PR and Marketing



NTCA–The Rural Broadband Association recognized 33 member companies with the annual TeleChoice Awards during the 2016 PR & Marketing Conference in Charleston, S.C.

The TeleChoice Awards program highlights the marketing efforts of NTCA telecom members. Their efforts keep customers informed about products, services and technology trends, and raise awareness of initiatives and issues impacting communications services in their community.

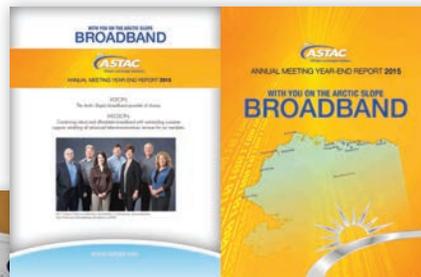
The annual awards program honors excellence in telecom public relations and marketing. Entries in seven main categories—annual report, complete branding campaign, complete marketing campaign, customer newsletter, local video content, single-target print publication and website—were judged on strategies, design, writing, creativity and other elements. In each category, a winner was selected from three divisions based on the number of access lines served by the entrant and two production divisions: “in-house” and “outsourced.”

■ 1–5,000 ACCESS LINES

■ 5,001–10,000 ACCESS LINES

■ 10,001+ ACCESS LINES

### ANNUAL REPORT



■ *Outsourced*

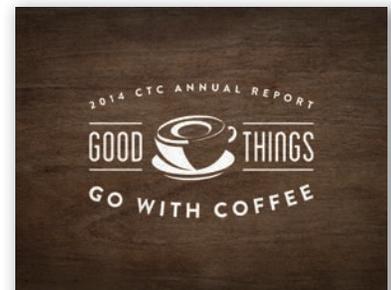
Arctic Slope Telephone Association  
(Anchorage, Alaska)



■ *In-house*

Gardonville Cooperative  
Telephone Association  
(Brandon, Minn.)

■ *In-house*  
Consolidated Telephone Co.  
(Brainerd, Minn.)



■ *Outsourced*

SkyLine Membership Corp.  
(West Jefferson, N.C.)



■ *In-house*

Golden West  
Telecommunications Cooperative  
(Wall, S.D.)



**COMPLETE BRANDING CAMPAIGN**

In-house ■

Webster-Calhoun Cooperative Telephone Association (Gowrie, Iowa)



■ Outsourced  
Optic Communications (Columbus, Kan.)



■ Outsourced

Clear Lake Independent Telephone Co. (Clear Lake, Iowa)



■ Outsourced

Pioneer Telephone Cooperative, Inc. (Kingfisher, Okla.)



**COMPLETE MARKETING CAMPAIGN**

In-house ■

Mount Angel Telephone Co. (Mount Angel, Ore.)



■ Outsourced

Rainbow Communications (Everest, Kan.)



■ In-house

Premier Communications (Sioux Center, Iowa)



In-house ■

Nex-Tech (Lenora, Kan.)



■ Outsourced

Silver Star Communications (Freedom, Wyo.)



■ Outsourced

Nsight Telservices (De Pere, Wis.)

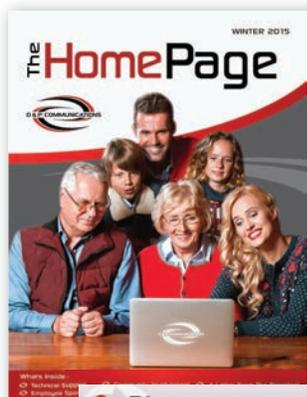


1-5,000 ACCESS LINES

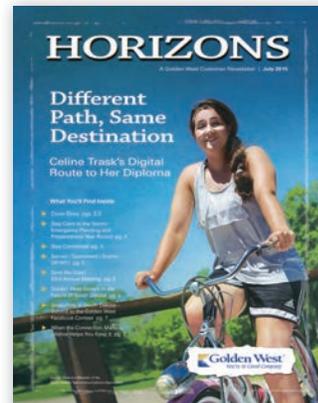
5,001-10,000 ACCESS LINES

10,001+ ACCESS LINES

**CUSTOMER NEWSLETTER**

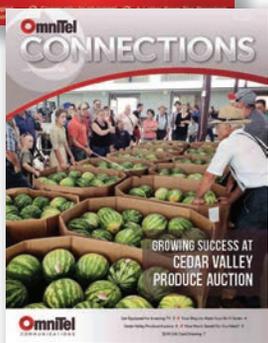


**In-house**  
D&P Communications  
(Petersburg, Mich.)



**In-house**  
Golden West Telecommunications  
Cooperative  
(Wall, S.D.)

**Outsourced**  
OmniTel Communications  
(Nora Springs, Iowa)

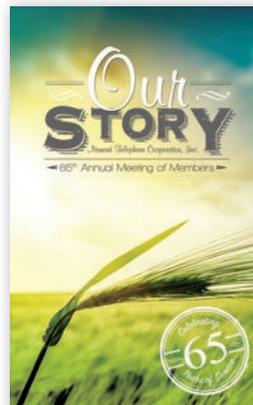


**In-house**  
Pioneer Communications  
(Ulysses, Kan.)



**LOCAL VIDEO CONTENT**

**In-house**  
Huxley Communications  
Cooperative  
(Huxley, Iowa)



**In-house**  
Nemont  
(Scobey, Mont.)

**In-house**  
Peoples Rural  
Telephone Cooperative  
(McKee, Ky.)



For more information about the **NTCA TeleChoice Awards** and how you can participate, visit [www.ntca.org/telechoiceawards](http://www.ntca.org/telechoiceawards).

## SINGLE-TARGET PRINT PUBLICATION

**In-house** ■

Gardonville Cooperative Telephone Association (Brandon, Minn.)



**Outsourced** ■  
OmniTel Communications (Nora Springs, Iowa)



**In-house** ■  
Panhandle Telephone Cooperative, Inc. (Guymon, Okla.)

**In-house** ■  
Premier Communications (Sioux Center, Iowa)



**Outsourced** ■  
Pioneer Telephone Cooperative, Inc. (Kingfisher, Okla.)



**Outsourced** ■  
All West Communications (Kamas, Utah)

## WEBSITE

**In-house** ■

Consolidated Telephone Co. (Brainerd, Minn.)



**Outsourced** ■

Webster-Calhoun Cooperative Telephone Association (Gowrie, Iowa)



**Outsourced** ■  
Ardmore Telephone Co. (Ardmore, Ala.)



**In-house** ■  
Nex-Tech (Lenora, Kan.)



**Outsourced** ■  
Panhandle Telephone Cooperative, Inc. (Guymon, Okla.)



## NTCA Members Converge on Capitol Hill



**M**ore than 450 members of NTCA—The Rural Broadband Association converged on Capitol Hill, April 17–19, for the 2016 NTCA Legislative & Policy Conference in Washington, D.C.

Day one of the event included remarks and panel discussions featuring representatives from the FCC, the National Telecommunications and Information Administration, the U.S. Department of Agriculture, FirstNet and members of Congress.

With the timely release of the commission's Universal Service Fund (USF) reform order being top of mind, NTCA staff provided an overview of the order and emphasized the importance of "right-sizing" USF budgets to address the challenges of each program and the need for each program to include an inflationary factor. In addition, the policy team outlined other key pressing issues, including video obstacles, the set-top box proposal, interconnection and USF, rural call completion and the excise tax.



During a special presentation, Randy Houdek, general manager of Venture Communications Cooperative (Highmore, S.D.), received the Grassroots Advocate of the Year Award in recognition of his longstanding support of NTCA's advocacy efforts.



Following Tuesday morning's opening remarks by Rep. Robert B. Aderholt (R-Ala.) and Sen. John N. Boozman (R-Ark.), NTCA members took to the Hill and federal agencies to tell their stories during more than 150 scheduled appointments. In addition to discussing USF and other issues most relevant to their states, NTCA members also asked policymakers to support a letter led by Reps. Kevin J. Cramer (R-N.D.), Kurt Schrader (D-Ore.), Bob E. Latta (R-Ohio) and Collin C. Peterson (D-Minn.)

urging FCC Chairman Tom Wheeler to reconsider the set-top box proceeding and the proposed rules, including the effects they would have on rural telecom providers and consumers.

Following a busy and productive day on the Hill, NTCA members enjoyed an entertaining evening at a PAC/RTAF fundraising event, "Jersey Boys" at the National Theater, benefiting the political action committee's administrative fund, the Rural Telecommunications Administrative Fund (RTAF) and NTCA advocacy efforts.



*Tennille Shields is NTCA's senior content specialist. Contact her at [tshields@ntca.org](mailto:tshields@ntca.org).*

# 2016 Regional Conferences

Peer Engagement.



Expert Learning.

## Southeast Conference

July 10–12, 2016  
Williamsburg Lodge  
Williamsburg, Va.

## Southwest Conference

July 24–26, 2016  
Grand Summit Hotel  
Park City, Utah

## Central/Northeast Conference

August 7–9, 2016  
Marriott Lincolnshire  
Lincolnshire, Ill.

## North Central Conference

August 14–16, 2016  
Grand Geneva Resort & Spa  
Lake Geneva, Wis.

## Northwest Conference

August 21–23, 2016  
Hilton Hotel Anchorage  
Anchorage, Alaska

Register today at [www.ntca.org/regionals](http://www.ntca.org/regionals)



# Start Your Engines for the NTCA 2016 Fall Conference

September 25–28  
JW Marriott Indianapolis  
Indianapolis, Ind.

BY LIA MOORE

This fall, the heartland will play host to the premier fall event for the rural telecom industry.

Rural telco executives, directors and employees will find a wealth of learning opportunities at the 2016 NTCA Fall Conference, September 25–28, in Indianapolis, Ind. In addition to industry leading concurrent sessions, Fall Conference attendees also will be invited to experience education in action during new EduTours (educational tours). One focuses on smart agriculture, while the other dives into how collaborative efforts lead to telco growth. The two EduTours provide a way to see Indianapolis and earn certificate credit.



FCC Commissioner Michael O'Rielly has been invited to provide an update on regulatory issues that affect rural telco finances, staffing and operations. A panel discussion during the Opening General Session will focus on the impact of recent reforms to the Universal Service Fund, as well as the FCC's 10-year vision adopted earlier in 2016.

The Opening General Session also will bring an association update from NTCA Chief Executive Officer Shirley Bloomfield and a talk by futurist Jack Uldrich examining the impact of technology trends.





On Monday, the new director roundtables will give board directors more opportunities to engage with peers, share best practices and discuss board challenges.

Additional educational sessions will delve into how to implement regulatory changes, add new products to increase revenues and make changes to the board's role. Attendees also will gain insight into rural telemedicine and competitive strategies.

A Rural Is Cool reception will provide time for networking and a chance to visit with solution providers.

A youth panel and a look at telemedicine initiatives are scheduled to close out the conference

Indianapolis, known as the Crossroads of America, is within a day's drive for more than half of the U.S. population and is within four hours of Illinois, Kentucky, Michigan, Missouri and Tennessee.

The JW Marriott Indianapolis, central to the city's top attractions, provides a perfect pit stop to tune up your business and learn more about recent policy changes. ■

Visit [www.ntca.org/fallconference](http://www.ntca.org/fallconference) to register and for more information about speakers, sessions and special events.



## A periodic update on executive transitions in the rural-telco industry



**Mark Harvey** is now manager of Clarence Telephone (Clarence, Iowa) in addition to Farmers Co-operative Telephone Co. (Dysart, Iowa) and Palo Cooperative Telephone Association (Palo, Iowa). At Clarence, he replaces Curt Eldred, who is now manager of USA Communications (Shellsburg, Iowa).

**Chris Townson** is the new GM/chief executive officer (CEO) at DTC Communications (Alexandria, Tenn.). He comes to DTC from Farmers Telecommunications Cooperative (Rainsville, Ala.).



**David Adams** is the new GM at Green Hills Telephone Corp. (Breckenridge, Mo.) following Steve Gann's retirement.

**Lee Wuebker** is the new general manager (GM) at Corn Belt Telephone Co. (Wall Lake, Iowa), replacing Larry Neppl, who retired.

**Doug Nelson** retired from managing both Terril Telephone Cooperative (Terril, Iowa) and Royal Telephone Co. (Royal, Iowa).

**Rick Rostorfer** is the new manager at Sherwood Mutual Telephone Association (Sherwood, Ohio), replacing interim manager Lynn Bergman.

**Jan Muhl** is the new GM at LNE Communications (Lost Nation, Iowa), replacing Crystal Burmeister.

**John Noah** is the new GM of both companies.

**Troy Schilling** is CEO/GM at West River Telecommunications Cooperative (Hazen, N.D.). Bonnie Krause retired in February.



**Dana Pierce** is named the new GM for KanOkla (Caldwell, Kan.) following Greg Aldridge's retirement.

**Jeff Simmons** is the new GM at Valley Telecommunications Cooperative Association, Inc. (Herreid, S.D.).



**Kirby Underberg** is the new GM at Chariton Valley Telephone Corp. (Macon, Mo.) following Jim Simon's retirement.

# Take control of your network...

# Take control of your business.



Our goal is to help you take full control of your business and ignite profitability & growth.

As a rural telco, you have your own unique challenges. Your customers are asking for the newest services, and there are pressures from the government to help close the digital divide. You recognize the need to invest in your network, but providing service to low density areas is incredibly costly. On top of that, your legacy infrastructure limits the capabilities of your business, and is quickly becoming a large risk.

As a subsidiary of a quad-play service provider (SaskTel) with over a century of experience expanding rural networks, SaskTel International is well-positioned to understand the challenges of your business, and how to move your company towards your strategic goals.

**Visit our website today to schedule an Introductory Call!**

[www.sasktelinternational.com](http://www.sasktelinternational.com) | [info@sasktelinternational.com](mailto:info@sasktelinternational.com)

## Software Solutions

Customer Relationship Management  
Billing  
Order Management  
Inventory Management  
Activation  
Assurance

## Professional Services

Communications Consulting  
Operational Effectiveness  
Design & Deployment  
Managed Services

 OPTIMIZE YOUR NETWORK

 TRANSFORM CUSTOMER EXPERIENCE

 INCREASE REVENUE

**SaskTel**   
*International*  
connecting the world

# Accelerating Nonregulated Revenue Opportunities

**The environment for independent communications service providers is constantly changing. New technologies are emerging, new regulations are rolling out and new demographics are impacting the traditional revenue sources of communications service providers. Competition becomes more prevalent and comes from different arenas. However, it is also a time for new revenue opportunities.**

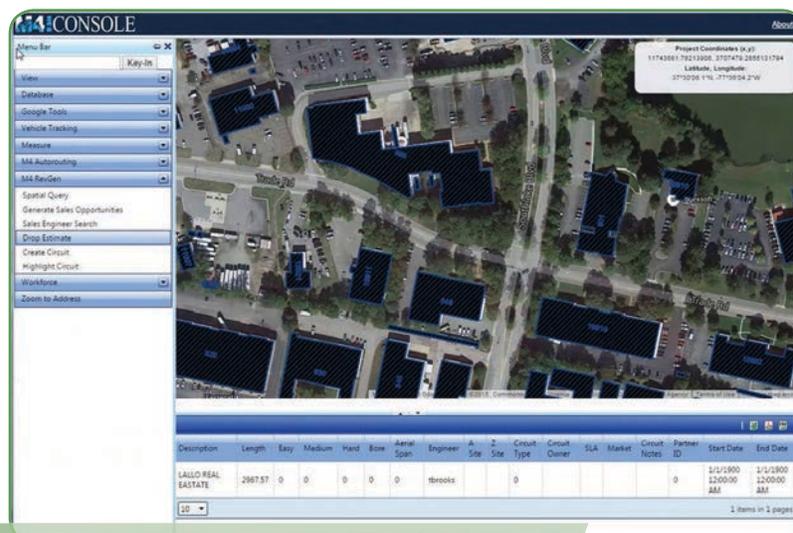
More and more fiber is being laid across the country, and the demand for residential broadband and commercial high-speed internet is growing at an incredible pace. Sales and marketing teams are under increasing pressure to capitalize on these opportunities. The sales process for these opportunities can be long and complex, and the communications service providers that can accelerate and streamline these processes will have an advantage over their competitors.

For providers, one step of the process is determining whether the prospect qualifies for service. This step has many unique challenges in the communications industry. In contrast, when an Ice Cream Truck is qualifying a prospect, they only need to determine if the customer is present (at the truck) and if they have a method of payment (usually cash in hand). Communications service providers also need to determine if their customers have a method of payment but determining if the customer is present is a much more elaborate process. The ice cream truck driver can see his customers outside his window and pull up right to them, serve them and then go on to the next customer. Communications service providers need to have their communications networks built out to each customer, and many times they will have to build out to each prospect before they become customers.

Qualifying a prospect for communications service providers means determining whether these prospects are on-net or off-net. When a prospect is on-net, it will take a very minimal build to provide service to the customer (a drop from the road to a customer's house). If the prospects are off-net, then the communications service provider needs to determine what the cost is to build out the network to the prospect. Each prospect estimate requires knowing where existing plant is and identifying points for extension. Sometimes there are multiple prospects located near each other that would together lower the cost of building out and thus allow a more competitive price for the service. The estimates also involve determining the costs for building in those locations, whether there are rights of way, aerial versus buried, what are the labor rates in that area, etc. Much of

this information is held in different systems and is under the domain of different departments. So determining whether an off-net prospect is still a potentially valuable customer can be a lengthy and challenging process involving communications between marketing, sales, engineering and operations.

Arvig Enterprises is one of the largest independent telecommunications and broadband providers in the United States, operating a network that covers over 9,000 square miles in Minnesota and beyond. Arvig was inundated with prospects that were interested in the high-quality services they offer, and the business services that they provide. The qualification step was becoming a serious bottleneck, and some high-priority prospects were getting lost in the deluge. Even though they had developed a separate pre-estimate process to return an answer to sales, engineering did



M4 RevGen Suite allows leads to be accelerated through the sales process from creating opportunities, to calculating estimates, to creating circuits.

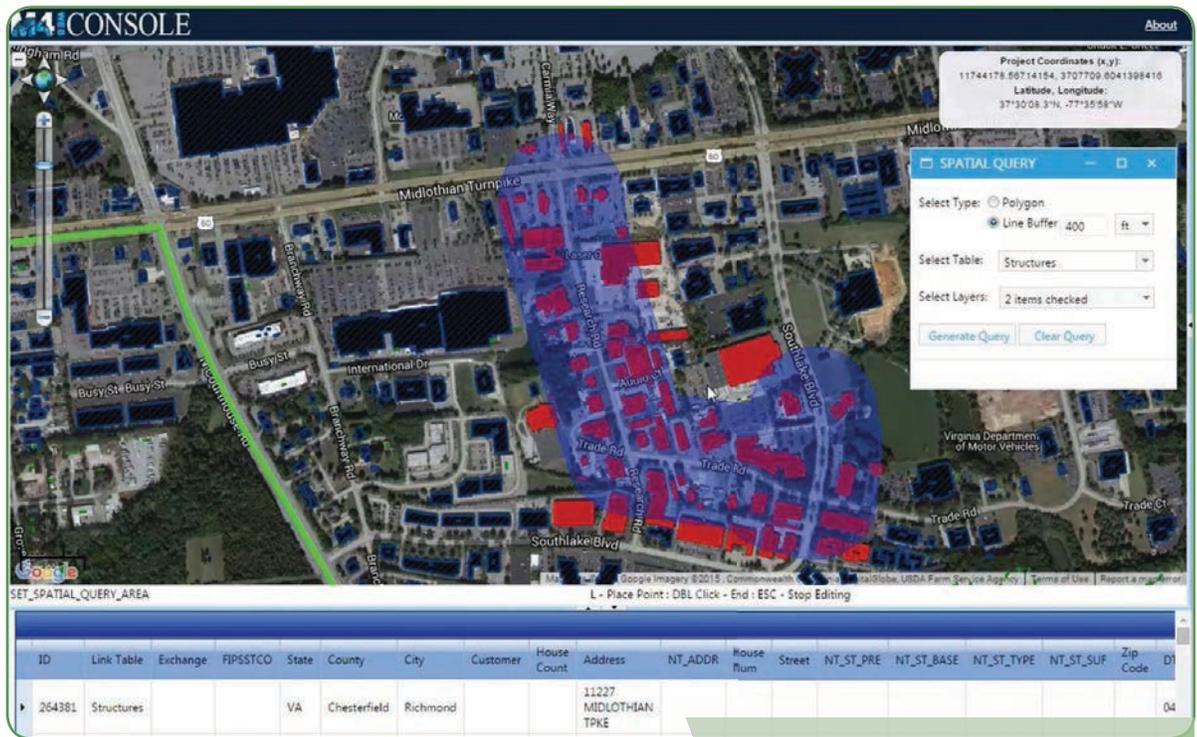
not know which estimates to prioritize. Engineering was engaging very early in the prospect process, which extended the time to close an opportunity.

Arvig is working with Mapcom to implement a solution focused around the M4 RevGen Suite. Before M4 RevGen Suite, the vital information needed to determine prospect qualification was distributed

across three different systems. None of the three systems were talking to each other, resulting in a swivel chair scenario. Two of these systems are being retired while the third is able to integrate with M4 RevGen Suite to eliminate the need to sift through multiple systems. The previously manual process of integrating data from the three separate systems by an engineer becomes an automated process that provides quicker access to information needed for estimates. Shifting the integration process into M4 RevGen Suite also allows better consistency between estimates and other factors to impact opportunity values. For example, with information integrated into the system about existing customers and services it then becomes possible to use that information when evaluating an opportunity. An engineer would have to manually search through systems to find ways to offset the costs of an economically infeasible prospect. It might take an engineer going from the billing system to the plant asset system to a demographic GIS to create incremental revenue projections to offset the costs of a new build. With M4 RevGen Suite the information from those disparate silos is brought together and can be automated to allow sales and marketing teams to do some of those calculations.

M4 RevGen Suite allows Arvig's sales and marketing teams to layer demographic information next to their existing and planned network assets. They can visualize the prospects on that same map which allows for more strategic planning as the teams decide how to prioritize opportunities. The Arvig engineering team can layer in parameters for estimating costs, like typical costs, or aerial costs which allow feasibility estimates to be done without their direct interaction. When the engineering team does become involved, they have some initial starting points to work from and they can use the geo-located prospects to factor into their planning.

M4 RevGen Suite doesn't just integrate with existing billing systems providing visual context of current customers and services with demographics and plant assets. Arvig also integrates this solution with their CRM system allowing leads to flow into one visual repository, and allowing estimates from M4 RevGen Suite to flow back to the CRM system. Sales and marketing has the information they need in the systems that they use. By integrating with the systems that sales and marketing use, Arvig transforms their qualification process to a more focused and sales-driven mentality. Given the size of the opportunity in their market, expected to be multiple millions in potential commercial business across their 9,000 square mile footprint, creating a sales-driven mindset is critical to succeeding against their larger competitors.



Use M4 RevGen Suite to perform spatial queries that highlight potential prospects located near existing plant.

Another benefit that Arvig receives from this solution is the ability to see market trends visually within the context of new opportunities as they emerge. They are also able to prioritize opportunities in the estimation process and filter higher priority opportunities that do require greater focus from engineering. With M4 RevGen Suite, Arvig sees where their prospects are and determines the best way to build out their network to provide services. They can also do it without tying down engineering with estimate jobs, and they can act strategically about clusters of opportunities. Arvig is transforming part of their revenue generation process by automating and consolidating systems. As a result, their sales department will handle more prospects and generate more revenue at an accelerated pace.

Communications service providers are facing many pressures in the industry today, but there are also many opportunities. When communications service providers can simplify processes and empower their teams with the information they need to make decisions quickly then they can accelerate new revenue opportunities. ▀



# 20 YEARS Solving BIG Problems for Communication Companies



## Industry Problems

### **Calling Name Database**

Expensive for Tier 3 carriers to query  
Local Names from other vendors'  
Calling Name Databases

### **AIN Advanced Intelligent Network**

No low cost AIN platforms or services  
available for the Tier 3 carriers

### **Operational and Billing Support Systems**

Back office and billing solutions with old  
technology, silos with too many vendors  
required

### **IPTV Middleware**

Financially unstable vendors, poor support  
requiring expensive, difficult upgrades with  
few enhanced features

### **Managed Home Network**

Frequent truck rolls and customer calls  
to support modems, routers and Wi-Fi  
access points in the home

### **Cost of Mapping and Staking**

Expensive mapping software and labor required  
to create maps and staking sheets. Mapping  
systems are often silos with limited access

### **Video Errors from Access and Home Networks**

Video errors caused by access or home net-  
works (MOCA, Wi-Fi, HSPA...) are un-  
acceptable to video end users

## Innovative Solutions

### **Local Calling Name Database**

Only low cost local Calling Name  
Database that could be deployed by  
Tier 3 carriers

### **Application Peripheral AIN and SS7**

The only AIN Service Control Processor  
with many AIN services for Tier 3 carriers

### **eLation™ OSS / BSS**

Integrated software suite of Billing,  
Financials, Automated Provisioning and  
Mapping/Staking

### **APMAX™ IPTV Middleware**

Integrated, redundant, easy to  
upgrade solution with many features  
designed for Tier 3 carriers

### **ACS TR-69 router/Wi-Fi management**

Multivendor solution based on TR-69  
helps service providers reduce truck rolls  
and actively manages home networks

### **MapKit**

Easy-to-use GIS based mapping and  
staking solution supporting shape files.  
Reduces the cost of mapping/staking

### **Forward Error Correction**

Auto-detection and correction of the  
errors in the video stream by the Set  
Top Box with no additional hardware