

# RURAL

NOVEMBER - DECEMBER 2013

The Magazine  
of Rural Telco  
Management

# Telecom

## TABLETS Make Inroads at Rural Telcos



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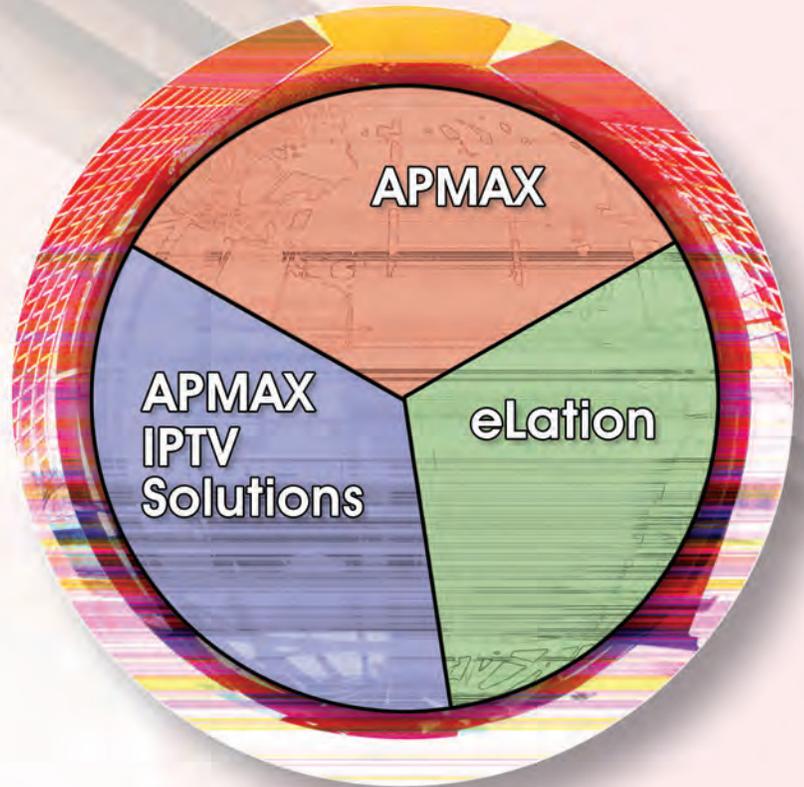
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## Tablets Make Inroads at Rural Telcos

*By Masha Zager*

According to analysts, both company-issued and bring-your-own tablets will become pervasive in workplaces in the next few years. At some companies, workers are willing to foot part of the cost of a tablet in exchange for getting the specific device of their choice. Whatever model is used, rural telcos are undergoing a change as tablets become more common in the workplace.

PHOTOGRAPHY BY SKIP BROWN

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# RURAL Telecom

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**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.



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## Security Systems: More Than Just a Flavor of the Month

By Rachel Brown

Small telecom providers are adding security systems. At first glance, this may seem akin to Baskin-Robbins deciding to sell doughnuts. But industry experts noted that the skill sets involved in security installations and monitoring are not that far removed from those already being offered by modern-day telecom companies.

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## The Software Telco

By Steve Gleave

For a while now, telcos have looked at “the cloud” as a possible source of adjunct service revenue that can include storage, backup and enterprise application hosting. But the real opportunity lies in seeing this new high performance cloud not just as a place for data storage and retrieval, or for asynchronous applications, but as the home for the control and programming of real-time communication services.

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## Cost Cutting and Other Realities

By Kent Larsen

Rural telcos must evolve into more competitive businesses, less dependent on heavily regulated services. These businesses exist only when revenues exceed costs. While past revenues grew with costs, and some revenue growth remains based upon costs, such growth is marginal. If rural telcos are forced to respond to market pricing and further network investment is required, what are some cost-reduction strategies?

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## Saddle Up for Rural Telecom Industry Meeting & EXPO

By Christian Hamaker

Rural telcos are ready to ride. NTCA—The Rural Broadband Association brings its annual meeting to San Antonio, Texas, February 2–5, 2014. Put on your boots and saddle up to make real-time connections that help you solve your greatest challenges. Develop innovative ideas that open your mind to new opportunities, and discover dynamic insights that you can bring home and share with your entire team.



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**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.

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## Congratulations. Now What?

It's a phrase I assume is commonly heard by successful internal job candidates: "Congratulations! Now what about that website/blog/magazine feature/video shoot/marketing campaign/email strategy? You've got that all covered, right?" Insert your own laundry list of projects and priorities, and it may sound pretty familiar to anyone who has ever received a promotion. The good news: You got the job. The bad news: The job starts now.



Joking aside, I couldn't be happier to step in as NTCA's new director of communications, which among other things gives me the opportunity to share a bit of association news with you periodically in this column, with a special focus on the many ways we are working to share your stories with the world. As a former boss and tough-as-nails newspaper editor used to tell me, every story has at least a few "golden nuggets" well worth the strife of discovering them. It's our job to find those nuggets of

inspiration, innovation and prosperity and to tell other people about them.

To that end, I'm thrilled to announce that Christian Hamaker has been promoted to editor of Rural Telecom after serving for many years as its managing editor (where he no doubt discovered his share of prize nuggets). Going forward, you will see messages from both of us here, providing updates on the association, the industry and, of course, our valued members. Your stories fuel everything we do—in this magazine, in our online resources and on Capitol Hill. So I hope you will continue to reach out to us with ideas and feedback, and to share your good news. We know you have important stories to tell. Help us tell them.

Laura Withers  
Director, Communications  
lwithers@ntca.org

## Banjos, Bluegrass and Life in Burke, Va.

In 2012, former FCC Commissioner Robert M. McDowell told attendees at the NTCA Legislative and Policy Conference about his rural bona fides. He grew up, he said, in Fairfax County, Va., now home to more than 1 million people. That wasn't always the case. As McDowell said, "When I was a little tyke, Fairfax County was still a predominately rural county. ... I cleaned out my share of barns."



That line got a hearty laugh from conference attendees, but it also had me nodding along with McDowell's recollection. His point about Fairfax County matches my memories of Burke, Va.—situated in Fairfax—in the early 1970s: Plenty of new split-level family homes, not too far from farmhouses and other signs of rural life.

Strip malls and 7-Elevens eventually wedged into town, but we managed to keep a little country flavor in our home. My dad would pluck his banjo in the evenings and regale the family with yet another rendition of "Foggy Mountain Breakdown," sometimes with a banjo player who lived on a farm across from our subdivision.

Those traces of rural life disappeared as the Northern Virginia area changed. By the mid-1990s the local public radio station, which for many years had aired Bluegrass music during the afternoon drive, dropped the format, citing the need to better meet the tastes of the increasingly wealthy Washington, D.C., area.

The pace of change in your communities might not have been as dramatic during the past four decades, but change—through regulation, new policies and shifting consumer preferences—has been unavoidable.

Here at Rural Telecom, we've had our own change. I'm now editor of the magazine. I look forward to guiding the magazine as it, like the services you provide, changes. To that end, I'd love to hear from you. What do you like about Rural Telecom? What would you like to see change? Let's make Rural Telecom an even more valuable resource for you and your company.

Christian Hamaker  
Editor, Rural Telecom  
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# SHORT Takes

BY SAGAN TROMBLEY



Facebook is for PEOPLE.



Google+ is for PASSIONS.



Pinterest is for PINNING.



Twitter is for PERCEPTIONS.

## THE 4 P'S OF SOCIAL MEDIA

►Source: linkedin.com

## Books Far From Extinction

Are you still using print materials in your marketing?

Through the creation of new technologies such as the iPhone, iPad, Kindle and Android, the way we live our lives and obtain information has changed. As technology evolves, we are able to gather information quickly. However, according to a new Pew Research Center report, "digital natives"—those born after the creation of the Internet—are embracing the endangered species of books.

Kathryn Zickuhr, a co-author of the report, stated, "Younger reading habits and library use are still anchored by the printed page." Surprisingly, three-quarters of Americans under the age of 30 had read a printed book within this past year, with only 64% of older adults doing the same. Internet access was deemed less important than librarians by the digital natives. Many of the young adults preferred to retreat to libraries to study and read, and "four out of five said it was very important for libraries to have librarians."

►Source: socialtimes.com

## Be Happier: Act Like an Extrovert

Research by Dr. William Fleeson, a psychology professor at Wake Forest University in Winston-Salem, N.C., revealed that if introverts acted more like extroverts, they would have higher levels of happiness. The study, reported in the 2012 *Journal of Personality*, supported the claim that extroverts have a higher sensitivity to the neurotransmitter dopamine. As Fleeson stated, "It doesn't matter who you are, it's all about what you do." Common characteristics of extroverts and introverts are:

### EXTROVERTS

- > Talkative, enthusiastic
- > Can be dominant or assertive in group settings
- > Happier and motivated more often

### INTROVERTS

- > Reserved
- > Self-reflective, meditates
- > Can be outgoing, but dread large social settings

►Source: The Wall Street Journal



over 30 yrs old

under 30 yrs old

Have read a printed book in past year

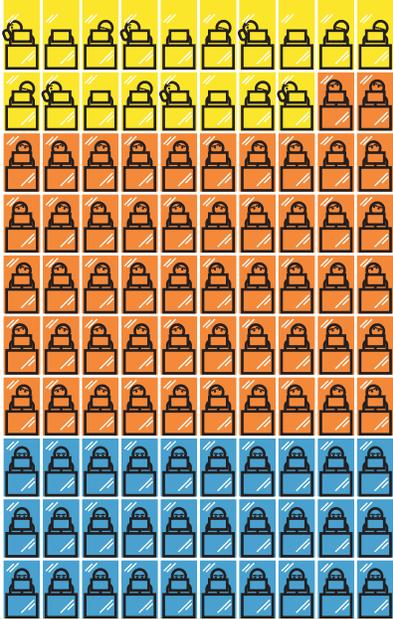
## Graduates 'Walk Away' From Small Companies

"\$1 trillion in educational loans is dampening the entrepreneurial drive of U.S. college graduates," concluded Meera Louis at Bloomberg Businessweek, based on the following reports:

- > Young Invisibles recently surveyed 9,500 graduates with college debt. Of those, 23% revealed that monthly student debt payments prevented them from starting a business.
- > The Small Business Administration showed that between 2005 and 2010, self-employment rates for individuals 25 and under fell 19%. During that same time period, self-employment rose 24% for individuals 65 and older.
- > Federal Reserve Bank of New York reported from 2003 to 2012 that the share of 25-year-olds with student loan debt increased from 23% to 43%, with the average education loan balance increasing 91%, from \$10,649 to \$20,326.

The Consumer Financial Protection Bureau stated, "The debt burden is suppressing risk-taking and hindering the formation of new businesses." In response, the Main Street Alliance, comprised of 1,200 small-business owners, stated, "Rising levels of debt are also causing graduates to walk away from jobs at small companies."

►Source: businessweek.com



## How Engaged Are Your Employees?

The 2013 State of the American Workforce poll by Gallup revealed that only one-third of full-time employees are “actively engaged” at work, while 52% are not engaged and 18% are “actively disengaged.” The survey said that 70%, or 70 million people, are emotionally disconnected at work.

Gallup found that 33% of women are engaged with their work tasks, whereas only 28% of men are. The survey also showed that 39% of people sometimes worked off-site and that 32% of those workers felt more engaged, compared with 28% of their on-site, full-time counterparts. “The Gallup poll found that flex-time produces the greatest effect on employees’ overall well being,” the report stated.

►Source: [theatlantic.com](http://theatlantic.com)

## Younger Generation Not Driving

The National Household Travel Survey reported that the annual number of miles driven by people ages 16–34 dropped 23% from 2001 to 2009. “By 2011, the average American was driving six-percent fewer miles per year than in 2004.” This drop in miles driven in America, its first decrease since World War II, indicates a shift in the younger generation’s living habits. The National Association of Realtors survey reports that the younger generation prefers to live in areas that provide shopping, schools and restaurants in close proximity. Rather than drive to such places that are spread out, they would prefer to walk, bike or take public transportation.

►Source: [frontiergroup.com](http://frontiergroup.com)



## Teachers Believe Digital Tools Boost Creativity Among Students

The impact of technology on student writing skills has always been debated. According to a recent Pew Research Center study of 2,462 middle school and high school teachers, 78% of teachers believe that digital tools increase student collaboration and creativity.

Through the use of the Internet, students can reach a wider audience, according to 96% of the teachers surveyed; and 56% of teachers believe that strategies such as whiteboards, shared work on wikis or blogs allow students to become better writers.

The downside: 68% of teachers said these tools allow students to put in less effort, use more informal writing styles and not take note of copyright laws.

►Source: [techcrunch.com](http://techcrunch.com) and [pewinternet.com](http://pewinternet.com)

## MARKETING IN THE MILLENNIAL AGE

Ever wonder why certain ads appear on the side of your websites or why you are bombarded by retail emails?

A recent report from the marketing company Custora revealed that over the past four years the rate of customers acquired through email by online retailers has grown to about 7% percent. Facebook and Twitter lagged behind.

Custora tracked 72 million customers through 86 different retailers and tracked where customers clicked (i.e., email or Google), and what and how much they bought within two years. The most valuable customers were those who used search. Those who used email were 11% more valuable than average, with Facebook about average and Twitter users 23% less valuable than average following the first click.

Unlike Facebook or Twitter, Google ads also raise awareness but lead in conversion rates, or clicks to purchases.

►Source: [wired.com](http://wired.com)

## Americans Still Love Their ‘Ancient’ Technology

The following 12 technologies may be “ancient” by current standards, but they are still being bought and used in the United States.

- 1 Dial-up Internet
- 2 Pagers
- 3 Dot matrix printers
- 4 PDAs
- 5 Pay phones
- 6 VHS and cassette tapes
- 7 Landline phones
- 8 CRT TVs
- 9 Film cameras
- 10 Windows 98 and 2000
- 11 Fax machines
- 12 Vinyl records

►Source: [nbcnews.com](http://nbcnews.com)



## Serious Times Call for a Serious Association



Whether you followed along from afar or lived through it day-to-day inside the boundaries of Washington, D.C., it's safe to say we were each affected by the shutdown of the federal government in some way. The repercussions of it were felt at NTCA—The Rural Broadband Association in the form of cancelled meetings with FCC commissioners, postponed policy proposals and economic studies, and scuttled fly-ins. Our policy staff was taken aback by the discovery that the FCC's website and thousands of pages of filed materials available within it had been replaced by a standalone page explaining the shutdown. And I was befuddled by the sight of near-empty government parking lots and vacant streets around the capitol—both eerie reminders of the furloughed federal workers hunkered down at home.

Now that the government is back in business, we're hitting the ground running on rescheduling meetings and clearing the calendar for a new wave of congressional hearings. Six months ago, none of us could have predicted we would be in this position, but times like these prove an important point: When the going gets tough, it's essential to have a partner that is ready and able to roll up its sleeves and do the hard work—sometimes at a moment's notice. In other words, serious times call for a serious association, and NTCA is the only organization working on your behalf that fits the bill.

Our most immediate serious need is to show that rural providers not only are a part of the ongoing industry evolution toward IP-based technologies, but that they actually are leading the way forward for their customers by deploying cutting-edge services and filling in pieces of the broadband puzzle in areas long ago left behind by larger carriers. Indeed, rural providers have made great progress over the last decade, but even with this progress, your companies and customers face ongoing challenges. Improving broadband speeds continues to be a real challenge in rural areas where long loops are the norm. Telcos were making headway up until the FCC's Universal Service Fund (USF) reform order of 2011, which introduced unprecedented uncertainty and brought upgrade efforts to a near standstill.

But we can get this IP evolution back on track. From the beginning, our goals have always been to 1) create regulatory certainty and 2) build a broadband future for rural America. For more than two years, we've been saying the FCC dropped the ball by failing to reform small carriers' USF mechanism

to support broadband. We've proposed common-sense solutions and had productive discussions at the highest levels of the FCC, USDA and the White House. Finally, we've encouraged our members and their state-wide middle-mile networks to explore even better, more creative ways to achieve scope and scale in an effort to monetize your very valuable network assets.

As the government shutdown reinforced, changing things is never easy in Washington. That's why it takes a true team effort. In addition to the well-rounded staff we have on the ground in D.C., I am so proud of and thankful for our members, particularly those who have stepped up to help guide our industry. I'm grateful too for those many members who participate in our fly-ins or otherwise make the effort to meet with policymakers back home in their states, showing time and again that NTCA members take these issues seriously and are proactively seeking solutions.

We will continue this fight. Even in a post-shutdown environment, with our deep bench of policy experts, committed members and the amplified political strength that has resulted from the unification of our industry, we are up to the task. Serious times call for a serious association, and NTCA is it. ■

*Shirley Bloomfield is chief executive officer of NTCA. She can be reached at [sbloomfield@ntca.org](mailto:sbloomfield@ntca.org).*

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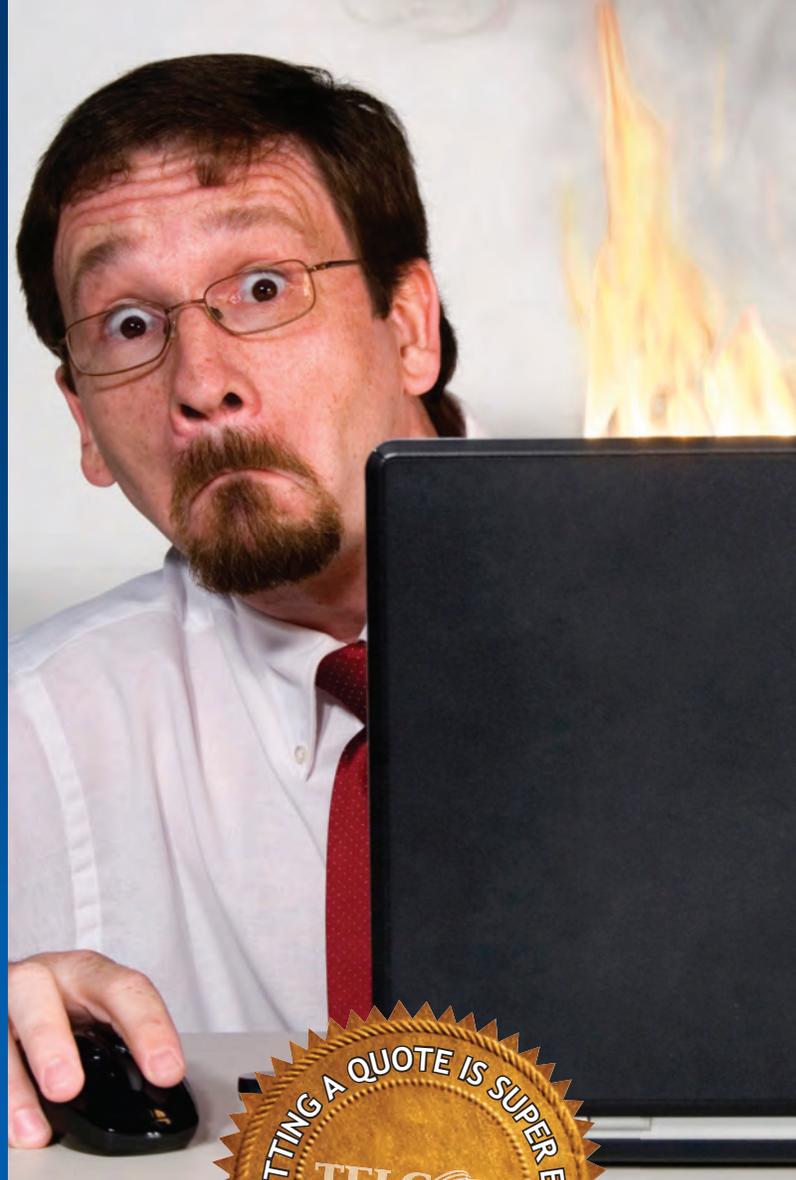
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## Old Rules Don't Support New Realities

The Colorado Telecommunications Association (CTA) just celebrated its 50th year of service. Many of our members are family owned or cooperatives that have been in existence for more than a half-century. A few have actually been serving their communities for 100 years.

Along with the FCC reforms that we all are dealing with, Colorado rural companies continue to be regulated under outdated telecom laws and monopoly-style regulations. The need for a state high cost fund is under constant review by regulators, legislators and big industry players, while at the same time a \$100 million federal stimulus grant to connect unserved schools and libraries was awarded to a quasi-governmental entity. This has resulted in overbuilding several of our members.

There are significant disparities in the regulation of rural providers, especially in distribution of the state high cost fund. While Colorado has one of the largest high cost funds (\$52.9 million), 92% goes to CenturyLink. It receives funding using a 15-year-old proxy cost model. Viaero, a wireless rural carrier that is completely deregulated, receives \$2.8 million in high cost support (using the identical support rule) that is based on CTA members' landline network costs—not the cost of building and operating its wireless network.

However, only about half of CTA members receive any high cost funds, totaling \$1.5 million. Unlike the companies noted above, they must go through a rate case-style proceeding—spending significant money (and time) on consultants and lawyers that sometimes can exceed the amount requested. We continue to be subjected to decades-old cost allocation rules that limit recovery and impede network deployments.

CTA members initially supported the grant to the quasi-governmental entity, believing the entity's rhetoric that it would provide service only for unserved/underserved customers and build new middle-mile facilities. We envisioned partnerships where the entity would fill in the gaps and we could work together to provide service to rural customers.

Somewhere along the line, its mission morphed into a statewide network (urban and rural) to provide service to schools, libraries, anchor institutions, medical facilities, and city and county government offices. Our members will be left with serving the high cost, low revenue small businesses and consumers. With no state oversight and a federal agency that is more interested in saving face than doing the right thing, taxpayer dollars are being hopelessly wasted, and rural Colorado will not be any better off for it.

The overbuilding of existing networks is so concerning that a congressional hearing was held and the New York Times, Wall Street Journal and Colorado's leading media reported on the waste and lack of accountability. Yet, the entity and the federal government continue this project virtually unchecked.

This all means that Colorado's rural companies are facing their greatest challenge yet. Our members understand that with taxpayer support there is an absolute responsibility to account for every dollar we spend to ensure that it is appropriately used for its intended purpose. However, accountability should not mean following outdated laws and regulations that do not account for new technologies and more providers.

Of course, we are not perfect, and sometimes we resist change. The fact of the matter is we provide great service at reasonable prices to our customers—and have for decades. We believe that rural Colorado communities require modern, reliable telecommunications to grow their economies, provide modern health care and education, and ensure the public's safety. CTA and its members are committed to our communities and remain resolved to make that happen. ■



Pete Kirchhof is executive vice president of the Colorado Telecommunications Association. He can be reached at [petek@colotelecom.com](mailto:petek@colotelecom.com)

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**Amber Osborne, consumer products developer at SkyLine Membership Corp., shows off one of the tablets now being used by the telco's board members.**



# TABLETS

## Make Inroads at Rural Telcos

BY MASHA ZAGER



When Apple introduced the first successful tablet computer, the iPad, in January 2010, it planned to target the consumer market. Consumers responded with unprecedented eagerness, and by July 2013, according to the Consumer Electronics Association, about four in 10 online consumers in the United States owned a tablet—either an iPad or one of the many devices in the same category that began appearing soon afterward.

Surprisingly, however, business users proved just as enthusiastic. Nathan Clevenger, author of “iPad in the Enterprise,” estimates that within 90 days of the iPad’s release, it had managed to penetrate 50% of Fortune 100 companies. According to research firm IDC, the commercial segment now accounts for 13% of the tablet market worldwide and will account for 20% by 2017—and small businesses are expanding their tablet use faster than any others.

Tablets became ubiquitous in the business world overnight, Clevenger said, because users simply brought their personal (inexpensive, lightweight, always-on) devices to the office. IT directors looked askance at first, but banning tablets seemed about as feasible as banning, say, watches. Since that time, IT divisions have generally tried to support their users’ demands for these productivity-enhancing devices while maintaining corporate security and technology standards. In many cases, this means the company purchases tablets and issues them to users.

According to Forrester Analyst J.P. Gownder, both company-issued and bring-your-own tablets will become pervasive in workplaces in the next few years, and a third model may also emerge: In some companies, he said, workers are willing to foot part of the cost of a tablet in exchange for getting the specific device of their choice.





Board members at Skyline Membership Corp. have been given company-provided tablets.

### Promoting Collaboration

Like other small and midsized businesses, rural telcos are finding many uses for tablets. Jimmy Blevins, chief executive officer of SkyLine Membership Corp. (West Jefferson, N.C.), said the company's board members are given company-provided tablets. This makes it easy to share documents using cloud-based services. "The tablets, and especially the cloud services, have enabled us to make faster decisions and have enhanced efficiency," Blevins said. "We are able to collaborate on joint files that are commonly shared in the cloud." Board members easily access files on Dropbox prior to meetings, with the result that "we're able to spend more time [discussing] strategy."

Blevins pointed out, however, that tablets are better designed for reading than for writing. "If I'm working on spreadsheets or typing up documents," he said, "I still prefer the PC."

### An 'Aha' Moment

United Telephone Association (UTA; Dodge City, Kan.) went even further, issuing a tablet computer to every employee who wanted one, as well as Mi-Fi cellular routers (routers that act as mobile Wi-Fi hot spots) for those who needed mobile connectivity. (In the office or at home, employees connect tablets to the Internet via Wi-Fi.) Employees were given the choice of an iPad or a Samsung Galaxy Note, and nearly all employees availed themselves of one.

UTA was inspired to buy the tablets after an "aha" moment at a meeting with a neighboring company. Operations Manager Mike Salmans recalled, "They walked into our boardroom ... and they all pulled out their iPads to make notes and pulled up slides on the projector. ... We've always prided ourselves on being early adopters, and we realized that we'd better catch up or get left behind."

Though the tablets are still new, Salmans anticipates that employees will much prefer traveling with them than "lugging along a laptop." He has already seen them used for presentations, meetings, VPN connectivity, email and a host of other uses. He said, "I foresee the laptop going away eventually, once everyone gets used to using a notepad [tablet]."

When the tablets arrived, the IT department held a

three-hour class to introduce the employees to the new devices, going "all the way through from turning it on to 'here are the things you can do with it,'" Salmans said. The IT staff configured the devices so employees could log into their desktops from them and access any email or documents they could see on their office computers.

### Tablets for Marketing and Field Technicians

Smithville Communications, a family-owned telco based in Ellettsville, Ind., distributes tablets only to certain groups of employees. The sales and marketing staff is one such group. Chief Technical Officer David Grodin said, "They're nice to use if you want to show something to a customer. We've also created a few applications to take to events such as fairs. Customers can use the tablets to fill out surveys and enter comments about our services, or they can play trivia games to win prizes."

Smithville also finds tablets useful for technicians in the field. Techs interact with the workforce management system through their tablets and access service orders. "Originally, everyone would have to come back to the central office to pick up their work orders; later, they could access the workforce management system with their laptops," Grodin said. "They have Internet connections in their trucks, and the system tells them the next stop to go to. Supervisors can move schedules around dynamically throughout the day. If someone is running late, they can adjust the schedule on the fly. Tablets make it a lot easier [than laptops] because they're always on. The techs didn't need the full functionality of a laptop."

Unlike SkyLine and UTA, both of which provide their own wireless service, Smithville relies on other cellular providers in its service area. This occasionally makes life difficult for technicians trying to access the company's workforce management system from the field. "There are pretty good cell connections in most places, but in others ... they sometimes have to drive around for a while to pick up a signal," Grodin said.

### Managing the Tablet Revolution

Grodin agreed with Blevins about tablets' limitations. He said of his iPad, "It's a really good tool to stay connected to email if I'm sitting in a conference room, but if I actually have to do work—if I need to use Visio [flowchart software] or work on a presentation, or if I have to get into some of our systems—it fails." Interacting with the network support staff also requires capabilities beyond those of a tablet computer, Grodin said. Nevertheless, he pointed out that plenty of managers could travel with a tablet and find it meets all their needs on the road. It just depends on what an individual's role calls for.

The proliferation of device types poses strategic questions that haven't been entirely answered yet. Does a new

device replace or complement older types? How many devices does one employee need? And who is responsible for each device type?

“We ran into this issue—are you going to give people both a laptop and a desktop computer?” Grodin said, back when laptop computers first became available. For the most part, he said, laptops ended up replacing desktops, and each employee was supplied with a laptop with a docking station to use in the office. In certain roles, however, an employee might need both a laptop and a desktop.

For Smithville, it’s far from clear whether every employee will need a tablet or whether tablets will ultimately replace laptops for most employees. If employees want tablet computers at work but can’t justify the expense, the company is considering allowing them to bring their own devices to work (as it already does with smartphones). A bring-your-own-device (BYOD) policy is appealing in many ways, Grodin said. For example, it eliminates pressure from employees for the company to keep buying the newest, shiniest model of tablet or computer each year. Buying the latest and greatest device may make sense for personal use but is not always justifiable in business terms.

However, BYOD raises operational issues of its own. The largest issue? “We have to reserve the ability to wipe out [all the data] if you leave,” Grodin said. “We don’t know what information you have on there. If it’s our device, we’ll take it from you, but if it’s yours ... well, look at the worst-case scenario: If an employee is terminated, we’d have to wipe out the [device] remotely.” Some employees, he said, are willing to live with these restrictions in exchange for a company contribution toward the cost of the device.

Another issue is what to do if an employee loses a tablet. Managing this risk involves either forcing employees to password-protect their devices, which is difficult to do on an employee-owned device, or limiting the applications on the devices, which makes them less useful than they could be.

Applications are available on the market to help companies manage devices that are used for both personal and business purposes, but as Grodin said, “Typically they’re not priced for smaller companies.”

Yet another issue with a BYOD policy is that it makes employees responsible for any expenses (for example, cellular data plans) needed to keep the devices working. “What if they don’t pay the bill?” Grodin asked. “You have to have a policy that it’s your [the employee’s] obligation to keep the device working.”



Employees at United Telephone Association were given a choice of two tablets.

Grodin said that this may cease to be an issue when smartphones and tablets become as ubiquitous as cars. Employees understand and accept the responsibility to keep their cars operational so they can get to work. But for these newer devices, he said, “the mentality is not quite there yet.”

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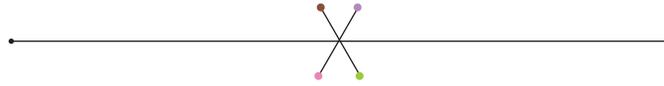
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# SECURITY SYSTEMS MORE THAN JUST A FLAVOR OF THE MONTH



CHECK OUT THE WEBSITE OF A TYPICAL SMALL TELEPHONE COMPANY or cooperative and the service offerings read like Baskin-Robbins 31 flavors, with everything from landline to wireless to Internet to cable television—and the list goes on. Increasingly, small telecom providers are adding security systems to this list. At first glance, this may seem akin to Baskin-Robbins deciding to sell doughnuts (which it essentially did when it teamed up with Dunkin' Donuts in 1994). But industry experts and analysts aren't surprised by this trend, noting that the technology and skill sets involved in security installations and monitoring are not that far removed from those already being offered by modern-day telecom companies.



BY RACHEL BROWN



SECURITY

MOBILE

CABLE

LANDLINE

DATA



## DEMOGRAPHICS DETAILS

The typical business customers that want a security systems are those that are at high risk for burglary, such as jewelry stores and pharmacies, explained Marshall Marinace—vice president/president-elect of the Electronic Security Association and owner of Marshall Alarm Systems.

Jay Henke, business development and operations manager for Clear Creek Communications (Oregon City, Ore.), pointed out that business owners are typically an easier sell than homeowners. “Most businesses already have alarms. They know they need to protect their assets,” he said, adding that video monitoring via smartphone is by far the biggest appeal to bar and restaurant owners. “For business owners to be able to look in and see what’s going on—not just in terms of security, but to know what their workers are doing—means that the owner can be tied to the business 24/7 in a good way. If we can get in front of business owners and explain this, we’ve sold it. That’s a \$1,000 system installed and \$40 a month in revenues.”

On the residential side, Marinace noted that typical customers interested in home alarm systems are wealthy people who have expensive belongings and valuables to protect; new homeowners who are interested in an insurance discount; and single mothers.

C. Lee Chambers, general manager of Sandhill Telephone Cooperative (Jefferson, S.C.), said older people who live alone are another prime demographic in his area. “ADT has a TV commercial that shows parents checking in to see that their children are home from school; but around here, the reverse is happening,” he said. “The adult kids who have moved to the city are logging on to see if mom or grandma is OK. It’s possible to see if they got up and opened the fridge or opened the medicine cabinet.”

Despite these demographic segments, Marinace said the biggest wave of new security customers are often people who were recent victims of a crime or personally knew a victim. “Unfortunately, that’s the type of thing that triggers a sale,” he said.

Chambers agreed. “Once people know you have security, no one is really jumping on this until there’s a neighborhood break-in, and then everyone wants a security system installed at the same time,” he said. “Be prepared that this is a feast or famine type of operation. It really depends on what’s going on in the neighborhood.”

Henke said he’s observed this same phenomenon in his part of Oregon. “There’s a scary event and customers sign up; and at first, they’re diligent about using it every time they leave the house,” he said. “That’s for the first few months, and then they start only setting it up when they’re going away, and then they forget to ever use it. After a year, they’re asking themselves, ‘Why are we paying for this?’”

To avoid customer churn, Henke said it’s important to sell more than just security. “You want to build sticky features into the system,” he said, explaining that this can easily be done through smart home monitoring. “You can turn lights on and off to make it look like the house is occupied. You can monitor energy consumption to better regulate the heating and cooling systems. This smart home trend is what the security industry sees as real growth. This is really going to take off.”

Clear Creek Communications sells and installs security systems but outsources daily monitoring.

## The Market

The Electronic Security Association (ESA), a trade group representing security dealers, cites estimates from Bobit Business Media that the entire North America security industry generates \$33 billion annually. Roughly one-third of the business stems from residential, or homeowners, with the remainder coming from commercial and industrial customers.

In the past three years, the number of new installations has declined; but Marshall Marinace—vice president/president-elect of ESA and owner of Marshall Alarm Systems—said this is merely a reflection of the economy. “It’s hard to get true numbers, but the percentage of households with security systems is somewhere between 17% and 24%,” he said. “Within five years, the industry is projected to hit its saturation point, which is 40%. That’s a huge potential for growth.”

One of the driving forces behind this optimistic projection for growth is new entrants in the security industry. “With the utility and cable companies getting into the business and generating interest through TV ads, telemarketing, mailings—this will create more interest and grow awareness,” Marinace said.

Jay Henke, business development and operations manager for Clear Creek Communications (Oregon City, Ore.), agreed, pointing out that the big players—AT&T, Verizon, Time Warner and Comcast—are smart about going where the money is. “They wouldn’t be getting into this if they didn’t see the market potential,” he said.

## Some History

ESA’s Marinace pointed out that the Bell operating companies tried to enter the security arena 20 years ago but failed. “But things have changed so much and the landscape has changed, so now they’re coming back,” he said, pointing out that the delivery method for security systems has changed and evolved over the years, starting with landlines and then moving into broadband. “But landlines are going away and broadband was too unreliable because when the power went out, the service went down.”

The advent of wireless technology is one of the biggest game changers, Marinace said. “Cellular security is where it’s at,” he said. “It’s the best delivery method and the one that’s growing at the fastest pace.”

Clear Creek briefly tried its hand in the security business many years ago, Henke said. “The first time was a nightmare,” he said. “It was so labor intensive—our techs were spending two or three days at a house. It sapped any profits. There was no recovery of that time or expense.”

About eight years ago, the security industry went wireless, Henke said. “Since then, they’ve fine-tuned it and



gotten the bugs out,” he said. “Now it’s much easier to have it wireless rather than running wire all through a house or office.”

Now, Clear Creek sells and installs security systems to homes and businesses, and it outsources the daily monitoring. “We couldn’t afford to hire four to 20 people to work 24/7 in shifts to handle the calls,” Henke explained. “Call centers are better equipped for that and can be inexpensive.”

Bernie Arnason—managing partner and founder of Pivot Media, a telecommunications consulting firm—pointed out that most small telcos outsource some part of their security offering. “They have to decide: Will this strictly be a resale effort or a monitoring business over an existing platform, or a hybrid of the two?” he said, adding that the commitment to sell, install and monitor comes with a hefty price tag. “Most small companies lack the resources to do everything themselves to make a full-blown A to Z offering.”

## Monitoring Only

For ComSouth Telecommunications Inc., an integrated independent telecommunications company serving central Georgia (Hawkinsville), it made sense to outsource sales and installations and to act as a third-party monitoring service. “We contract with security dealers who sell and install the systems, and then we handle the monitoring for them,” explained Cathy Fincher, manager of central station monitoring for ComSouth Monitoring Inc., part of ComSouth Teleservices, a sister company of ComSouth.

When ComSouth first entered the security business 17 years ago, it conducted a business case and decided the revenues were not there to do the sales and installations, said Mike Penn, vice president of marketing and sales. “It’s not uncommon for the large national brands like ADT to give away \$300 security systems,” he said. “That would be hard to compete against.”

ComSouth offers monitoring—both residential and commercial—for 47 different security dealers, representing nearly 19,000 individual customers. “If we were a security dealer ourselves, the other dealers would likely view using us as a monitoring service as a conflict of interest,” Penn said.

Fincher said ComSouth has 18 full-time employees to handle the monitoring, which encompasses burglary, fire, panic and environmental (for agricultural uses). “We have a lot of chicken houses in the South,” she said. “Our environmental monitoring checks for heat and water flow.”

Monitoring is a nonstop, continual operation, Fincher said. “The staff must work around the clock,” she said, adding that they dispatch to police, fire and medical first



Nexicom Group uses security systems to monitor for burglary, intrusion, smoke/fire, carbon monoxide and flooding.

responders, as well as to local guard services in gated communities.

### Sales and Installation

C. Lee Chambers— general manager of Sandhill Telephone Cooperative (Jefferson, S.C.), which has been offering security systems for the past six years—said he didn't want to hire additional off-hours staff or take on the additional risk involved in monitoring. "You have to take out a lot more liability insurance when you do the monitoring yourself," he said. "We sell the systems and install them, but a neighboring independent telco, Comporium Communications, does the day-to-day monitoring services."

Comporium (Rock Hill, S.C.) had already been in the business for four years, Chambers said. "Since they'd already been there and done that, we figured this was a good avenue for us to get into this business," he said, adding that his company recently signed its 1,000th customer. "When we get to 2,000 or 3,000 customers, we'll re-evaluate at that time if we want to start doing the monitoring ourselves."

### Offering It All

Head far north to Canada and find Nexicom Group (Millbrook, Ontario), a telco that has been in existence for the past 115 years and in the security business since 2006. It doesn't outsource anything. It provides sales, installation and monitoring for 133 residential customers and 91 business customers, explained Julie Howe, sales and marketing manager. Specifically, it monitors for burglary, intrusion, smoke/fire, carbon monoxide and flooding. In addition, its camera option allows users to look in on homes or businesses. The telco also has a medic alert system for seniors or people with medical conditions, as well as a smart home solution to regulate things like thermostats and lighting.

For telcos just getting into the security business, Howe advised that it makes sense for newcomers to initially outsource a monitoring station company, especially if they don't already have 24/7 customer service employees. But once a telco reaches 500 security customers, that's the time to consider taking it back in-house, she said.

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Another tip for newcomers is to pick one equipment provider and stick with that vendor for consistency, Howe said.

For Sandhill Telephone, its equipment hassles come during the summer months. "Most telephone equipment is inside; but with security, it's mostly outside," Chambers said. "So come lightning season, cameras get knocked down and equipment gets fried. If you offer a maintenance plan, definitely realize that you'll be making a repeat visit."

In addition, many states have laws on the books (and national regulations may be on the horizon) to ensure that security personnel have the proper licensing and background checks.

Rather than put all the technicians on that job, Sandhill Telephone designates just a few people for its security work. "That's their job. That's all they do," Chambers explained, adding that this saves time and money on the background checks.

#### Sales Advice

Henke noted that security installation work is a relatively simple matter for most technicians. "It's not that far removed from installing cable," he said, pointing out that the biggest hurdle for most small telcos and co-ops is on the sales and marketing side. "We're good at customer service and retaining customers, but we're not so good at selling ourselves because we're used to people coming to us."

Nexicom's Howe agreed it's important to do extensive marketing to play up security as part of the telecommunications bundle. "Incent your sales staff with good commissions for selling this service," she added.

Both Sandhill Telephone and Clear Creek have had success finding customers outside their service territories. "Just within the past year, we decided to branch out beyond our co-op service territory and market to folks in the surrounding area," Chambers said. "That's really helped beef up our numbers, and it's easy enough for us to do this. It's just 30 minutes further down the road."

While Chambers is pleased with his company's decision to get into the security business, he noted that it's not a get-rich-quick operation. "Don't expect to make money on this for the first few years," he said.

For those just looking into the security business, perhaps the hardest decision is what to offer because there's such a wide

array of services, explained Pivot Media's Arnason. Some could say it's as hard as settling on an ice cream flavor out of 31 choices.

*Rachel Brown is a freelance writer. She can be reached at rachelsb@aol.com.*

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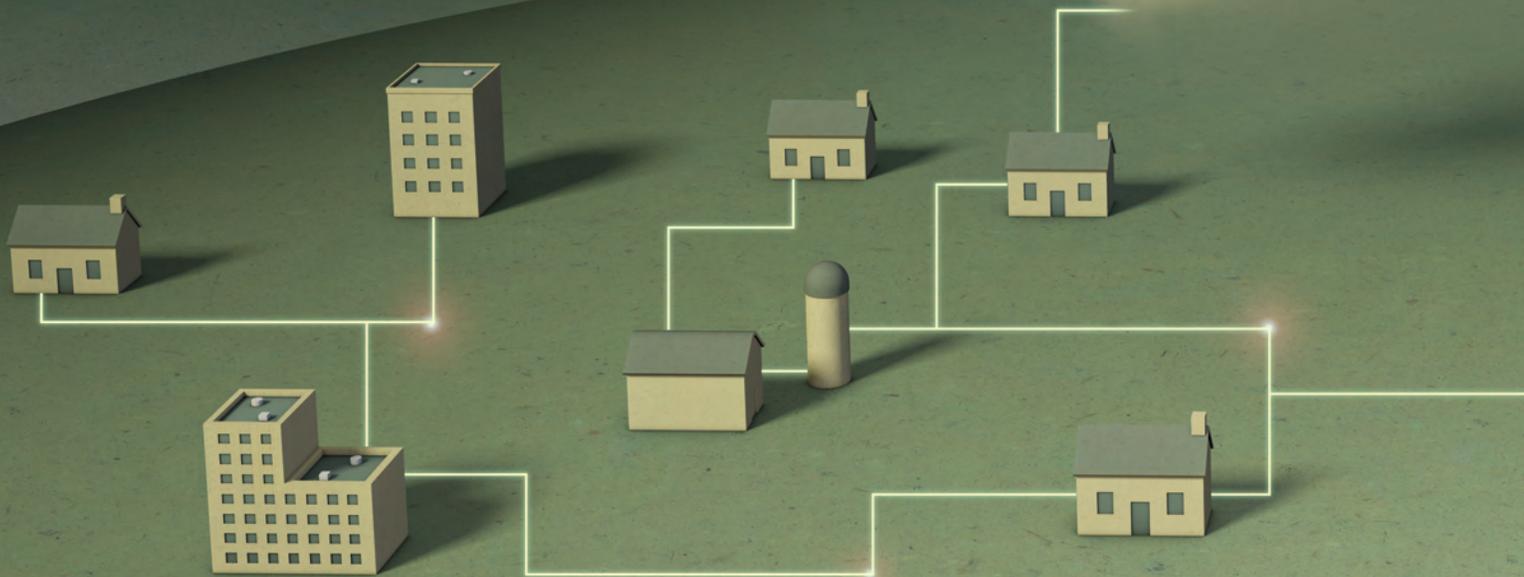
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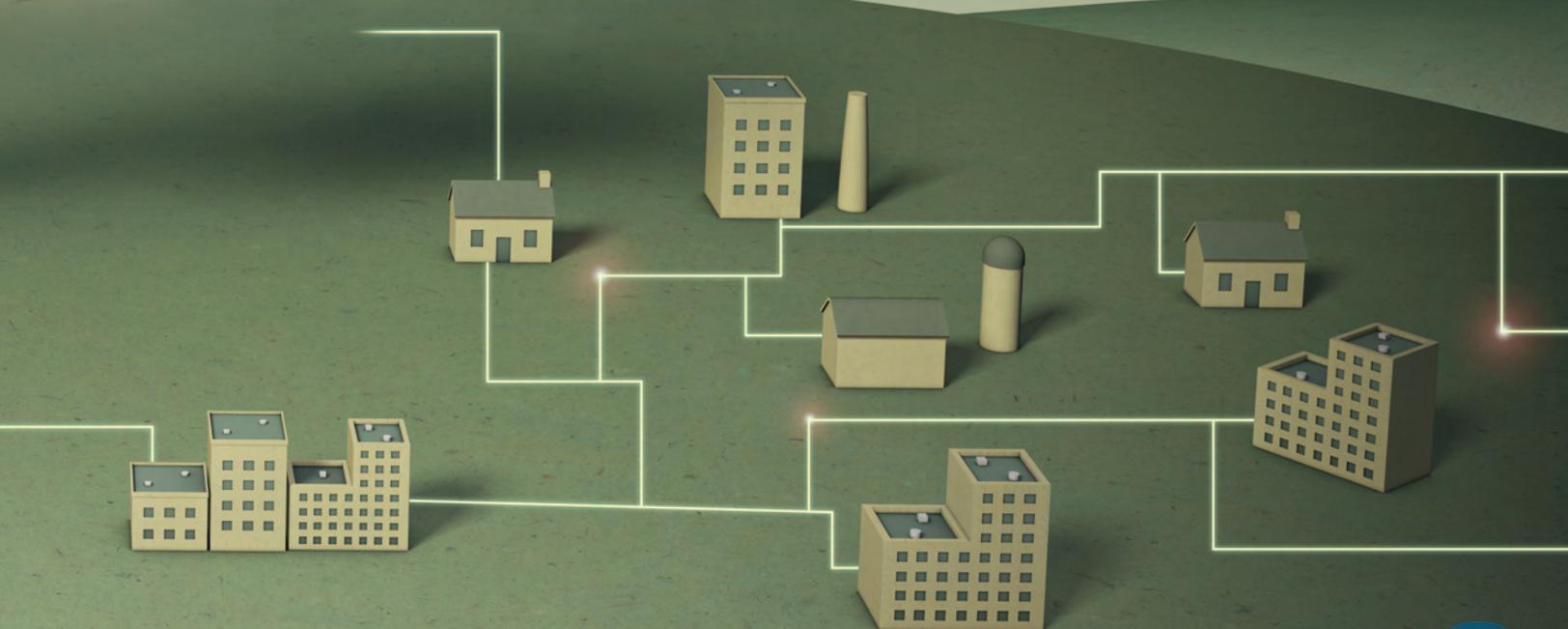
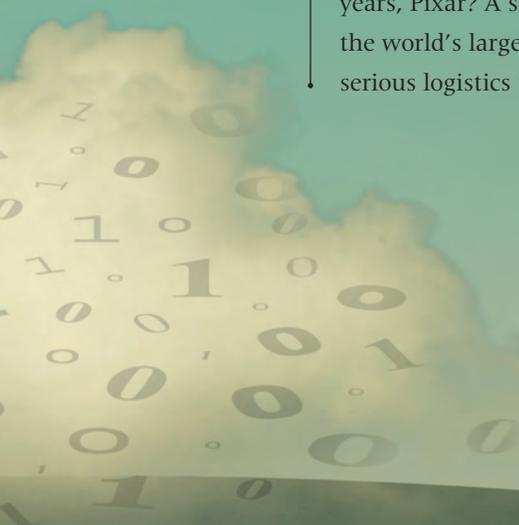
# The Software Telco

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**In August 2011,** Marc Andreessen (co-founder of Netscape) contributed an article to the Wall Street Journal titled, “Why Software Is Eating the World.” In the article, the prominent Silicon Valley investor and visionary argued that software programming tools and Internet-based services had advanced to the point where global companies could be established virtually overnight without the usual geographical, resource or capital limitations. The inflection point that made this so was the availability of on-demand, massively scalable storage and computing resources—or as it now is known, the low-cost cloud.

Andreessen’s article rang true. Many of the world’s fastest growing brands are indeed software companies. Google, the world’s largest direct marketer, is a software company. The world’s largest video company by subscriber count, Netflix, is a software company. Skype is a software company. LinkedIn, Evernote, Dropbox, Spotify—all software companies. Perhaps the most innovative movie company of the last 10 years, Pixar? A software company. Software ate photography long ago. And of course, the world’s largest online retailer, Amazon, is a software company (with some pretty serious logistics thrown in).



## The real opportunity lies in seeing this new high performance cloud not just as a place for data storage and retrieval, or asynchronous applications, but as the home for the control and programming of real-time communication services.

But Amazon is more than just a retailer of consumer products. In fact, many point to Amazon as the pioneer in wholesaling the storage and computing platforms that have become the de facto rented fabric of a new breed of fast-growing software companies. While trying to optimize infrastructure for its own use, Amazon discovered that when designing for 85% of expected peak capacity, its computer systems could sit idle for as much as 75% of the time. To address this problem, Amazon set about designing an elastic resource that could be scaled up and down as needed, and effectively rented to others at other times (statistically, of course, at all times) to maximize usage. This led to the creation of a wholesale division, Amazon Web Services (AWS), that now generates annual revenue of somewhere between \$2 billion and \$6 billion (exact numbers are hard to find, and Amazon is deliberately vague) from its Simple Storage Service (S3) and Elastic Compute Cloud (EC2).

The offering is compelling: bulk data storage for absurdly low rates and reserved or on-demand machine instances for computer power that are dialed up through Web APIs (application programming interfaces). Prices for both products have been reduced more than 20 times since launch. S3 now stores more than 2 trillion third-party objects, accessed at well more than 1 million times per second.

The attraction for third parties is to run their applications in virtual machines on AWS's underlying commercial off-the-shelf (COTS) hardware. AWS layers its own software (and a bunch of load balancers) on top to make this monster collection of COTS hardware act as a hugely scalable and fault tolerant compute resource. Keen to offer similar solutions, Google jumped into the market to rent out its own cloud capabilities under the brand of Google Compute Engine, while Microsoft's Windows Azure and VMware's VCloud also ensure that prices will continue to drop.

So what? What could this have to do with the future of rural telcos?

For a while now, telcos have looked at the cloud as a possible source of adjunct service revenue that can include storage, backup and enterprise application hosting. But the real opportunity lies in seeing this new high performance cloud not just as a place for data storage and retrieval, or asynchronous applications, but as the home for the control and programming of real-time communication services. The advent of multicore central processing units (CPUs), with significant amounts of on-board memory and high performance media handling capabilities, means that data center COTS silicon and servers can now handle the needs of real time, synchronous communications services. This can even be achieved in virtual machines, where applications share underlying common CPU resources through a layer known as a hypervisor. Naturally, there can be tradeoffs in such an environment, but a number of techniques are already

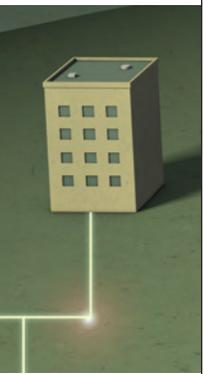
established for tying virtual machines directly to the underlying CPUs and network interface controllers when serious media handling is required.

Inspired by these advances, 13 of the world's leading operators united in October 2012 to create a working group that would look to accelerate the development of virtualized network functions. Keen to put the core of their own network operations on dedicated, or rented, cloud infrastructures, this group looked to the vendor community to decouple the software in their network elements from underlying, proprietary hardware. The advantages would be many, but the mission was driven primarily by two things: 1) the opportunity to dramatically reduce operating costs by running the network on off-the-shelf IT platforms and 2) to encourage both innovation from, and a broadening of, vendors that could now simply supply software, without the financial obligation of supporting many units of expensive, proprietary hardware. Naturally, along the way, the network would become more software-centric.

Quickly embraced by operators worldwide, the concept of NFV (network functions virtualization) has gathered considerable momentum throughout the vendor community. It is often mentioned in the same breath as SDN (software defined networking) because the two projects can lead to communication networks that are built on cloud infrastructures, with network intelligence separated from media handling and a range of Web APIs that allow application developers and end-users to leverage the full power of a truly programmable network. The ultimate goal is to put the brains of this new network in the cloud and dramatically reduce the cost of network elements that shift the packetized media.

The vendor community has moved quickly to virtualize many network elements, including softswitches, session border controllers and deep packet inspection platforms for application-aware networking and policy enforcement. Independent initiatives like CloudNFV have been formed to accelerate vendor interaction and to prototype cross-vendor solutions for the more complex task of service provisioning and orchestration. In another example of the seismic changes that this approach can bring, one vendor even delivered an entire IP-Multimedia Subsystem core on AWS EC2—and promptly open-sourced the lot. Calculations at current AWS pricing suggest that a telco could use such a solution to deliver IMS call control at a cost of 2 cents/subscriber/year.

Can an incumbent rural telco, steeped in a history of TDM switching and, more recently, NGN, truly become more software-centric? Certainly technology won't be the long-term obstacle. There is already a critical mass of vendor activity committed to solving these challenges. For the more progressive telcos, issues are more likely to surround the choice of private, public or hybrid cloud





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## Leveraging open-source solutions, a broad development community and a selection of APIs, the more forward-looking telco will be able to quickly deliver a range of “beta” services to test business and consumer appetites.

and the willingness to experiment with some radical new concepts. A natural reaction is to “own everything.” After all, that’s what central offices were for. But the price/performance/fault tolerance of the commercial alternatives (i.e., AWS, Google Compute Engine) are so compelling that a more forward-thinking telco might be willing to give “renting” a try. Indeed, it can easily be argued that a certification in AWS might soon be a more logical service-tech qualification than the Cisco-certified “stamps” that have traditionally been sought. Likewise, services that are initially built in the cloud might be complementary to the more regulated products currently offered. Leveraging open-source solutions, a broad development community and a selection of APIs, the more forward-looking telco will be able to quickly deliver a range of “beta” services to test business and consumer appetites. Beyond these augmented services, embracing concepts of carrier SDN will allow operators to provide programmable access to their network resources, permitting end-users to dial up bandwidth on demand for everything from data center backups to large file transfer to streaming Blu-ray movies. Along the way, the progressive

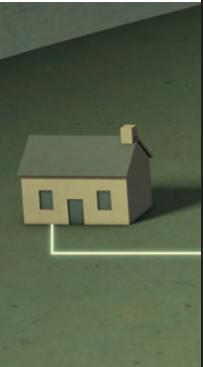
operator moves from offering fixed bandwidth products to delivering the “network as a service.”

While many of America’s smaller, more rural operators might still need convincing, it is worth remembering that the “landlords” of cloud infrastructure and resources treat all “tenants” pretty much equally. Rates for cloud-based storage and compute instances are readily published—there are no secrets on discounts for volume. There is really nothing to stop any service provider from virtualizing network functions and shifting the brains of its network into a dedicated or third-party data center.

Perhaps the smaller operators should go first. For sure, there will be a learning curve. But it will doubtless be easier to introduce these concepts as adjuncts to, or part of, a smaller service offering. The upside is remarkably compelling: dramatically lower costs, increased network flexibility and a flood of innovation that only truly decoupled software can bring.

Software might be eating the world, but it’s time to set your table. Those who look to become software telcos will most certainly not go hungry.

*Steve Gleave is vice president of marketing for Metaswitch. He can be reached at [steve.gleave@metaswitch.com](mailto:steve.gleave@metaswitch.com).*



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Cash Summary						
Cash on Hand (beginning of month)	55,000	167,593	168,175	163,251	164,846	159,490
Cash Available (on hand + receipts, before cash out)	167,593	276,065	277,211	275,544	275,544	270,072
Cash Position (end of month)	167,593	168,175	163,251	164,846	159,490	163,188
Cash Receipts						
Cash Sales	105,000	102,000	104,000	103,000	102,000	101,000
Collections from						
Accounts receivable						

# CUTTING COSTS

Advertising	2,253	3,428	1,165	1,345
Utilities	2,370	163	0	0
Other (specify)	1,103	3,500	3	2,560
Other (specify)	3,532	1,985	1,618	1,151
Other (specify)	1,985	123	234	123
Other (specify)	123	4,000	4,000	4,000
Other (specify)	4,000	679	1,255	679
Other (specify)	679	403	354	426
Other (specify)	403	349	300	300
Other (specify)	349	107,800	13,960	103,698
Cash Paid Out	107,800	13,960	103,698	106,884

## and Other New Realities

BY KENT LARSEN

### HEY'RE COMING AFTER YOU.

"They" are your customers. "They" are your competitors. "They" are coming after your wallet.

The reality is your landline business is shrinking. Traditional voice services are increasingly seeing competition. NTCA now bills itself the "Rural Broadband Association."

So, let's assume we all agree broadband is your future. Will customers value reliable bandwidth and customer service that rural incumbent local exchange carriers (ILECs) take justifiable pride in providing? Or will robust, 4G wireless offerings be the norm? The data suggest that, where such robust 4G wireless service exists, customers will pay for it.

Let's also plan that regulatory support for broadband is not yet a committed policy. Assume support revenues may not be sufficient and predictable.

Conclusion? Rural telcos must evolve into more competitive businesses, less dependant on heavily regulated services. These businesses exist only when revenues exceed costs. While past revenues grew with costs, and some revenue growth remains based upon costs, such growth is marginal. Further, in competitive markets, market forces rather than tariff rates determine pricing.

If rural telcos are forced to respond to market pricing, and if further investment in networks is required, then operating costs must be reduced. What follows are some thoughts on cost-reduction strategies.

#### Fixed Costs

First, the economic reality of telecommunications is that it is a fixed-cost business. Expensive networks must be provided at or near customers, whether wired or wireless. Further, telcos can't outsource or escape the high, fixed cost of loops.

Economies of scale are cost advantages that enterprises obtain due to size, with cost per unit of output generally decreasing with increasing scale as fixed costs are spread out over more units of output. Often operational efficiency is also greater with increasing scale, leading to lower variable costs as well. Since telephone networks have extraordinary fixed costs, controllable activities that support networks must become more efficient. ▶

Typically, operating expenses comprise 60% of total cost. Reduced operating expense goes to this year's bottom line.

The best example, already implemented by rural carriers nationwide, is shared fiber transport networks. Another example, implemented by many larger carriers, is establishing a single point of switching for multiple rate centers. Realistically, rural carriers do not work their switches hard. Using existing fiber transport, and with changes to access costs and rates, exploiting bandwidth already available to share these costs should become more attractive to many rural ILECs.

### Operating Costs

That's pretty much all a telco can address in terms of fixed capital costs. Let's turn our attention to operating costs. When asked why he robbed banks, Willie Sutton, a depression-era bank robber, stated, "Because that's where the money is." Operating expenses are where the money is. Typically, operating expenses comprise 60% of total cost. Reduced operating expense goes to this year's bottom line. Committed capital costs do not. Where should telcos concentrate their efforts?

Consider the provision of television, with its emphasis on first-day installation costs. Large companies hire contract installers who report to a dispatch center at 7 a.m. and pick up 8–12 install tickets. The contractor is paid about \$75 per ticket, or \$600–\$900 per day. Assume two men, a truck, tools and supplies, and that they work until 9 p.m. That's 14 hours. Assume also that one man owns the business while another is paid wages. The owner pays the worker \$20 per hour, or \$280 per day. Add another \$100 for supplies, that's \$380, round up to \$400. The owner earns between \$200 and \$500 per day—not bad.

In discussing the efficiency of fiber-based networks, engineers assume operating costs can be reduced because of the nature of fiber compared with copper. For current plant staffing, head-count reductions are implied. Unfortunately, for a lot of small telcos, those savings cannot be realized (e.g., if there are only two maintenance employees and both are required for any reason). However, where fiber efficiency can be leveraged, the cost savings can contribute to paying for the investment. Sharing maintenance resources could accomplish this.

But it's not just about reducing costs. Increasing difficulty in attracting and retaining skilled workers to manage tomorrow's IP networks, combined with an aging cohort of employees skilled in maintaining a traditional TDM network, leads companies to contemplate sharing these critical resources, too.

Finally, commercial office functions must be examined. The days of numerous walk-up retail locations may be, and maybe should be, drawing to a close. Assuming a monthly operating cost of \$3,500 and 20 personal (not telephone) interactions per day, in a 22-day work month,

the cost per transaction is about \$7.95, about half the typical monthly local rate. Half the transactions doubles the cost. Finally, in almost every sale of rural telco properties, these costs are the first to be addressed.

### Perfect Is the Enemy of Good

Rural telcos have been blessed by an environment where perfection could be sought and maybe even accomplished. Since the fundamental drivers of the market have changed, perfection becomes elusive and expensive. With that thought in mind, what should rural telcos be thinking about over the next two to three years?

First, determine what your customers really expect you to do for them. What kind of customer service is adequate? What presence is required for their transactional requirements? What is an acceptable service interval for installation and repair? What level of quality do they expect of you versus what they will accept from your competitor? If customers want superior service, perhaps now is the time to charge a premium for presence and responsiveness.

As support revenues remain unstable and as cord cutting continues, the answers to these questions will yield the biggest and quickest efficiencies. We predict the re-engineering of customer service to be a major initiative in the near term.

Next, as retirements continue, expertise maintaining the old TDM network retires alongside the men and women currently performing the role. Resource sharing begins with adjacency—your neighboring telco. The first step is to perform a gap analysis between the skills you need and those you have. Then, if you haven't already, start talking to your neighbors to determine what help they both need and can offer. We see this trend already developing, and the pressure on telcos will increase as old skills leave and new skills are required.

Finally, determine which functions define your telco's core competency. Building and maintaining the subscriber network and having the right level of presence in front of customers are essential. After that, abundant resources are available to assist with the other, typically back office functions described above: accounting, billing, IT support, etc. Again, we see a trend developing, especially among investor-owned and leveraged telcos, to cut costs and increase efficiencies in these noncore areas.

The reality is that your customer base is shrinking, your fixed costs are fixed, the need to free up cash to deliver services customers need and want is ever present, and the source of that cash will increasingly have to come from company profits.

The cost cutting trends we see are real. The pressure will get worse. The money is in operations. ■

*Kent Larsen is senior vice president at CHR Solutions, Inc. He can be reached at [kent.larsen@chrsolutions.com](mailto:kent.larsen@chrsolutions.com).*

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## OSHA's Hazcom Revisited Introducing the Globally Harmonized System (GHS)



In a world economy, many countries both import and export to the United States a wide variety of goods, including chemicals. The global chemical business is more than \$1.7 trillion each year, according to the Occupational Safety and Health Administration (OSHA). Chemicals affect all of our lives, both personally and professionally. Employees are entitled to know what chemicals are in the workplace and any potential hazards they may have. As employers, we are required to keep this information easily accessible and updated. OSHA's Hazard Communication Standard (HCS) addresses this requirement.

As employers, you must be up-to-date on your responsibilities involving the GHS.

OSHA is changing the hazardous communication classification and communication provisions of hazard communications. As employers, you must be up-to-date on your responsibilities involving the Globally Harmonized System (GHS). According to OSHA, the GHS is an international approach to hazard communication, providing agreed criteria for classification of chemical hazards, and a standardized approach to label elements and safety data sheets. The GHS was negotiated in a multiyear process by hazard communication experts from many different countries, international organizations and stakeholder groups. It is based on major existing systems around the world, including OSHA's HCS and the chemical classification and labeling systems of other U.S. agencies. These recommendations can be used by regulatory authorities such as OSHA to establish mandatory requirements for hazard communication, but they do not constitute a model regulation.

"Exposure to hazardous chemicals is one of the most serious threats facing American workers today," said former U.S. Secretary of Labor Hilda Solis. "Revising OSHA's Hazard Communication Standard will improve the quality and consistency of hazard information, making it safer for workers to do their jobs and easier for employers to stay competitive."

The HCS is now aligned with the GHS of Classification and Labeling of Chemicals. This update to the HCS will provide a common and coherent approach to classifying chemicals and communicating hazard information on labels and safety data sheets. Once implemented, the revised

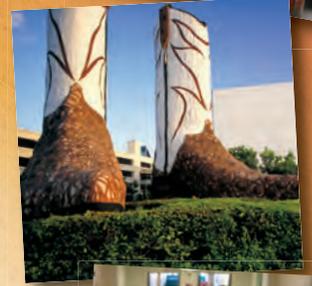
standard will improve the quality and consistency of hazard information in the workplace, making it safer for workers by providing easily understandable information on appropriate handling and safe use of hazardous chemicals.

Many of you have probably never paid attention to the data sheets in the bright yellow material safety data sheet manual that you are required to have. Take a glance at them. Some are one paragraph and some are five pages long. If you accidentally get some chemical in your eye, you do not want to have to read through a data sheet that has no kind of required order and that might be several pages long before you know if you're supposed to flush the chemical or not. That is the primary reason that this GHS system is being implemented.

To ensure chemical safety in the workplace, information about the identities and hazards of the chemicals must be available and understandable to workers. OSHA's HCS requires the development and dissemination of such information:

> Chemical manufacturers and importers are required to evaluate the hazards of the chemicals they produce or import, and prepare labels and safety data sheets to convey the hazard information to their downstream customers. ➤

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Registration and housing open October 15.

## HCS Pictograms and Hazards



### FLAME OVER CIRCLE

- ◆ Oxidizers



### FLAME

- ◆ Flammables
- ◆ Pyrophorics
- ◆ Self-Heating
- ◆ Emits Flammable Gas
- ◆ Self-Reactives
- ◆ Organic Peroxides



### HEALTH HAZARD

- ◆ Carcinogen
- ◆ Mutagenicity
- ◆ Reproductive Toxicity
- ◆ Respiratory Sensitizer
- ◆ Target Organ Toxicity
- ◆ Aspiration Toxicity



### EXCLAMATION MARK

- ◆ Irritant (skin and eye)
- ◆ Skin Sensitizer
- ◆ Acute Toxicity
- ◆ Narcotic Effects
- ◆ Respiratory Tract Irritant
- ◆ Hazardous to Ozone Layer (Non-Mandatory)



### EXPLODING BOMB

- ◆ Explosives
- ◆ Self-Reactives
- ◆ Organic Peroxides



### CORROSION

- ◆ Skin Corrosion/Burns
- ◆ Eye Damage
- ◆ Corrosive to Metals



### ENVIRONMENT (NONMANDATORY)

- ◆ Aquatic Toxicity



### SKULL & CROSSBONES

- ◆ Acute Toxicity (fatal or toxic)



### GAS CYLINDER

- ◆ Gases Under Pressure

> All employers with hazardous chemicals in their workplaces must have labels and safety data sheets for their exposed workers, and train them to handle the chemicals appropriately.

In the new version, each chemical data sheet will have 16 unified sections—meaning all manufacturers will use the exact same format/pictograms/codes to make it simple to read and understand quickly. Sections 1 through 8 contain general information about the chemical, identification, hazards, composition, safe handling practices and emergency control measures (e.g., fire fighting). This should be helpful to those who need to get the information quickly.

As of June 1, 2015, the HCS will require pictograms on labels to alert users of the chemical hazards to which they may be exposed. Each pictogram consists of a symbol on a white background framed

within a red border and represents a distinct hazard. The pictogram on the label is determined by the chemical hazard classification. You have to train your employees on these pictograms by December 1, 2013.

### Major Changes to the Hazard Communication Standard

> Hazard classification: Provides specific criteria for classification of health and physical hazards, as well as classification of mixtures.

> Labels: Chemical manufacturers and importers will be required to provide a label that includes a harmonized signal word, pictogram and hazard statement for each hazard class and category. Precautionary statements must also be provided.

> Safety data sheets: Will now have a specified 16-section format.

> Information and training: Employers are required to train workers by December 1, 2013, on the new labels' elements and safety data sheets' format to facilitate recognition and understanding.

> December 1, 2015: Distributor shall not ship containers labeled by the chemical manufacturer or importer unless it has a GHS label. Prior to this time, manufacturers will start to use the GHS system. This is why you have to train your employees before they start to see the new versions of the data sheets.

Telcom Insurance Group has put together a train-the-trainer PowerPoint presentation that you can use to meet this training deadline of December 1, 2013. If you'd like a copy, please contact us. ■

*Marilyn A. Blake is chief operating officer of Telcom Insurance Group. She can be reached at MAB@telcominsgrp.com.*

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# in the **NEXT** issue

- **NTCA's Legislative and Regulatory Overview for 2014**

- **Congressional Retirements Loom Large**

- **The Business Process 5-Step**

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# RURAL TELECOM INDUSTRY MEETING & EXPO

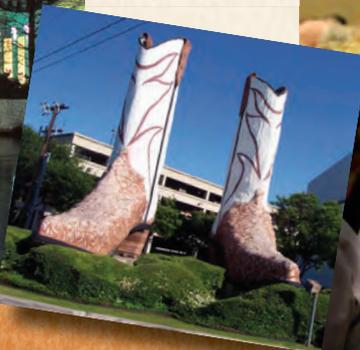
## Pursue Your Passion at **RTIME**

BY CHRISTIAN HAMAKER

**S**addle up with NTCA—The Rural Broadband Association and head to San Antonio for the Rural Telecom Industry Meeting & EXPO (RTIME).

The event, to be held February 2–5, 2014, at the Grand Hyatt San Antonio & Marriott Rivercenter, will serve up business strategies, educational sessions, roundtable discussions and an exhibition of the latest products and services for the rural telecom industry.

The fun doesn't stop there. Whether you explore San Antonio's River Walk, visit the historic districts and nearby Hill Country, or take advantage of the meeting's special events, you are bound to come away refreshed, recharged and ready to take your telco to the next level.



### General Sessions

**I**s your telco a high-engagement, high-performance workplace? Listen to Ryan Estis, a business performance expert, as he speaks on "Passion on Purpose: Turning Corporate Culture Into a Competitive Advantage" during the Opening General Session. Learn how to transform your workplace, workforce and work culture through practical advice and insights into untapped potential.



Doug O'Brien, acting under secretary for the U.S. Department of Agriculture Rural Development, has been invited to speak during the Opening General Session on rural carriers' role in federal policymaking, and a panel of rural electric and telecom providers will highlight ways in which they have collaborated on broadband and energy management.

Collaboration will be the focus of a panel of rural electric and telecom providers working together on smart grid projects. Find out how existing networks are powering rural partnerships and allowing providers to offer services they couldn't have imagined offering on their own.



Those interested in the intersection of economics, politics, culture and the media should be sure to listen to Marci Rossell, former CNBC chief economist and co-host of "Squawk Box," during the Closing General Session.



### Education Highlights

Education sessions at RTIME are divided into a Telco Track for telco executives and employees, and a Director Track for telco directors.

- Telco employees can choose from among these topics:
  - > The Business Case for Security vs. Home Monitoring
  - > Creating a Culture of Innovation
  - > Marketing Strategies: Rolling Out New Services and Driving Results
  - > Leveraging Larger Networks
  - > Tax Considerations and Succession Strategies for Family Business
  - > The Realities of the Transformation Order
  - > Transitioning to an All IP Network: What Does It Mean to Your Company?
  - > Working With Anchor Institutions in Your Community

Directors can delve into the following subjects, among others:

- > Economic Development Success Stories
- > Selling More Stuff: It's a Company-wide Culture Initiative
- > Does Anyone Watch TV Anymore?
- > Telco Revenues Tomorrow
- > Education for Broadband Promotion and Adoption
- > Leading the Way: The Smart Rural Community
- > Your Community's Broadband Ambassador

**ALSO,** top telco execs should be sure not to miss the "CEO Peer to Peer Workshop," a new concurrent session featuring a roundtable C-level discussion. The workshop is divided into separately led discussions for small, medium, large and very large firms. Associate members also have a new opportunity at the RTIME meeting—the special sales-oriented "Organic Growth for Leaders" session. These two new sessions are both held from 1:30 to 3:15 p.m. on Monday, February 3.

### Special Events

Football fans, fear not! A Super Bowl Party will take place during the big game on Sunday, February 2, from 5 to 9 p.m. Attendees receive two adult drink tickets per person when they register for the meeting.

The Telecommunications Education Committee Organization (TECO) and the Foundation for Rural Service (FRS) have multiple events on tap for RTIME. The annual TECO awards breakfast, featuring board and employee participation awards, will be held February 3 at 7 a.m. FRS's 20th anniversary event, a "Texas Hoedown at Cowboys Dancehall," gets underway at 6:30 p.m. Enjoy a open bar, BBQ, armadillo races and a special tribute to 20 years of FRS programs.



On Tuesday, February 4, TECO/RTAF present "Hot & Haunted San Antonio" at 6:30 p.m., featuring a candlelit three-course dinner at the most haunted hotel in Texas—the Menger Hotel. The next day is the FRS Fund-raising Golf Outing at La Cantera Golf Club at 11:30 a.m.

The meeting closes with a banquet and performance by country music star Phil Vassar at 6:30 p.m.



# RTIME

## EXPO

The hottest products and services for rural telcos will be on display at EXPO '14. Check out an updated list of exhibitors in the schedule-at-a-glance at [www.ntca.org/expo](http://www.ntca.org/expo). Enjoy the Hot Technologies exhibit, and spend Tuesday morning from 7 to 7:30 a.m. watching presentations from select EXPO companies.

An open house for all attendees will take place Monday, February 3, from 4 to 6 p.m. Managers, telco executives, owners and their guests can peruse the exhibits during a luncheon on Tuesday from 11:30 a.m. to 3 p.m. All RTIME attendees can visit the EXPO during an open house from 3 to 4 p.m. that same day.

Need more information? Download the RTIME app or contact [meetings@ntca.org](mailto:meetings@ntca.org). We look forward to seeing you February 2-5 in San Antonio.



## STATEMENT OF OWNERSHIP, MANAGEMENT AND CIRCULATION

(as required by 39 U.S. Code 3685)

Rural Telecom (Publication #0744-2548) is published bimonthly by the National Telecommunications Cooperative Association (NTCA). The publisher's mailing address and known office of publication is 4121 Wilson Blvd., Suite 1000, Arlington, VA 22203-1801. The annual subscription price of Rural Telecom is \$35 for NTCA members and \$135 for nonmembers. The director of communications is Laura Withers. Her business address is 4121 Wilson Blvd., Suite 1000, Arlington, VA 22203. NTCA is a nonprofit, cooperative association; there are no stockholders. The purpose, function and nonprofit status of this organization and the exempt status for federal income tax purposes has not changed during the preceding 12 months. The actual date for circulation data is September/October 2013. The extent and nature of circulations is as follows:

	Average number of copies of each issue during preceding 12 months:	Actual number of copies of single issue published nearest to filing date:
Total number of copies	4,133	4,500
Paid and/or requested sales through dealers and carriers, street vendors and counter sales:	0	0
Paid and/or requested mail subscriptions:	3,114	3,213
Total paid and/or requested circulation:	3,114	3,213
Free distribution by mail:	0	0
Free distribution outside the mail:	633	1,100
Total free distribution:	633	1,100
Total distribution:	3,747	4,313
Copies not distributed for office use, leftovers, spoiled:	386	187
Copies not distributed for returns from news agents:	0	0
Total:	4,133	4,500
Percent paid and/or requested circulation:	83%	74%

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# EXCHANGE

NOVEMBER–DECEMBER 2013



## FRS Hosts Congressional Broadband Tour of Montana

*By Elizabeth Crocker, Foundation for Rural Service Executive Director*

This summer, the Foundation for Rural Service (FRS) hosted a Congressional Broadband Tour to Montana, August 13–16, allowing seven congressional staffers to visit telecom providers and see firsthand the challenges of deploying broadband to rural communities. The foundation sought to educate Hill staff—on both sides of the aisle—about the geographic and financial challenges of providing robust broadband service to remote rural areas, as well as to highlight the role rural telecom companies play in providing essential broadband services that support education, health care and public safety. This was the first time in eight years that FRS was able to conduct an educational site visit due to changes in the House and Senate ethics rules.

### And Away We Go

The first stop on our journey was Blackfoot Telephone Cooperative (Missoula), where we were greeted warmly by Chief Executive Officer (CEO) Bill Squires and his staff, who gave us a tour of their facility and service area.

The trip was designed to include both large and small companies in a variety of terrains, so the next stop was the smaller headquarters of Lincoln Telephone Co. (Lincoln). During our visit, Lincoln Telephone staff and directors gave firsthand accounts of their daily routines and showed us fiber to demonstrate the small size but huge reach of fiber technology. Representatives from the U.S. Department of Agriculture's Rural Utilities Service spoke to the group about the crucial need to invest in rural infrastructure.

While en route to the next stop, Geoff Feiss, general manager of Montana Telecommunications Association (Helena), underscored the unique geographic challenges Montana providers face. The group then had the opportunity to experience a little bit of authentic Montana life by fly-fishing and enjoying lunch on the banks of the Blackfoot River.

## Sowing the Seeds of Smart-Farm Technology

*By Tennille Shields, NTCA Senior Writer/Editor*

A day in the life of a typical farmer begins early and ends late. Daily tasks include checking weather reports, caring for and feeding animals, plowing the fields, testing tools, checking on and loading up crops and reaching out to customers. It's a demanding job, but one that must be done to feed the masses.



Just as technology has transformed the business world, the introduction of smart-farm technology solutions is changing the way farmers go about approaching their daily routines. Smart-farm technology, which relies on everyday desktops, laptops, smartphones and tablets, offers farmers affordable time-critical security, safety or operational information—whether they are on or off the farm. It's enabling them to work faster, smarter, safer and more efficiently.

It's all happening in southwest Iowa through a unique partnership between Iowa Network Services (INS; West Des Moines) and Clear2there.

Joe "The Farmer" Hossle, INS and Clear2there provided a smart-farm technology showcase during an August 21 interactive videoconference sponsored by Iowa LinkedUp. The presentation featured remote-monitoring technology for daily farm operations. Representatives of the U.S. Department of Agriculture's Rural Utilities

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**It was incredibly enlightening for all of the attendees to hear more about the very unique and daunting challenges of providing telecommunications service to reservations.**

The Foundation for Rural Service is a 501(c)(3) non-profit dedicated to enhancing quality of life in rural America by promoting a better understanding of rural telecommunications issues and helping rural communities to grow and thrive.

Throughout the trip, NTCA Senior Vice President of Policy Mike Romano spoke extensively about the history of the Universal Service Fund, the massive regulatory uncertainty that providers are experiencing, funding caps and quantile regression analysis. Not surprisingly, these topics prompted a host of questions from the Hill staffers.

Changing gears, the next stop was at a 3 Rivers Telephone Cooperative (Fairfield) construction site, located 30 miles from the nearest paved road, where workers were digging into the ground to deploy fiber technology to remote farms and homes. This stop really helped to illustrate the “last mile” concept to Hill staff, who got to see the work it takes to make rural broadband a reality. It also highlighted the many distinctly rural challenges such as rocky terrain, snake-infested fields and expensive equipment that come with serving areas hundreds of miles from the nearest offices.

### Along the Way

Day two of our trip was capped off beautifully by a visit to the innovative VisionNet (Great Falls), a technology solutions provider owned by several NTCA member companies. The company is a model for efficiency and collaboration, showcasing the many broadband opportunities in rural areas, such as long-distance learning and telemedicine.

On Thursday, the group visited with Dave Gibson, CEO/general manager of 3 Rivers Telephone, and his folks at the 3 Rivers central office, before heading to Browning with Gibson to see the cooperative’s Radio Shack operation on the Blackfeet Indian Reservation.

It was incredibly enlightening for all of the attendees to hear more about the very unique and daunting challenges of providing telecommunications service to reservations.

After a brief stop at Glacier National Park, the group was back on the road for the U.S./Canadian border to see the fiber-enabled facility maintained by the Department of Homeland Security. However, it was the next unplanned stop on the route that

really created the most extraordinary experience of the trip.

Mike Sheard, vice president of Northern Telephone Cooperative (Sunburst), secured a last-minute visit to a Hutterite colony and working farm that recently received fiber technology. Upon arrival, the colonists invited the group in for a home-grown feast and provided a rare and very special tour of their facility. Interestingly, the Hutterites were using broadband primarily for their online standardized school tests and to provide Vonage and Skype services to members who wanted to talk to family and friends in Canada. Even more interesting, the colonists were experiencing major issues with long-distance call termination.

Before wrapping up for the day, the group did a quick tour of the Northern Telephone offices, where the company has an unbelievably cool area map that runs the length of the conference room. Small pins serve as indicators for every single customer in the service territory.

The evening concluded with some great Western music and steaks, in true Montana style, thanks to the help of General Manager Bonnie Lorang and the folks at Montana Independent Telecommunications Systems (Helena).

### The Final Leg

The final day featured a presentation by Rick Stevens, general manager of Triangle Telephone Cooperative Association (Havre), who talked about the wireless side of the business. He took everyone to visit a Triangle Telephone cell tower on the way back to Great Falls.

After logging 1,000 miles on the bus, the group was exhausted but also incredibly energized and engaged. Before leaving to fly home, the Hill staffers shared with Romano and me what an amazing experience it was for them and asked us what they could do to help rural telcos. The fact that they even asked the question made this trip invaluable. The understanding that they took back home to their congressional offices about what it takes to deliver rural broadband service is priceless. ☐



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Service, as well as staffers from the offices of Iowa Sens. Charles E. Grassley (R) and Tom Harkin (D) and Rep. Tom Latham (R), were on hand to learn more about how this game-changing technology could improve farming efficiencies and enable rural telcos to diversify their service offerings.

### A Smart Farmer

Hossle, who grows corn and soybeans and keeps a few cattle on Rocking Age Farm, explained how he uses smart-farm technology with the help of high-speed broadband services to improve operations at his various farm sites.

From a desktop, laptop, tablet or smartphone, he can monitor water and feed levels for livestock, control thermostats and door locks, manage grain bin capacity, check fuel tanks, and view live and recorded video surveillance to make sure his buildings, equipment, crops and livestock are safe.

Six years ago, Hossle shared that he was sure he would be able to retire without having to incorporate much technology into his daily operations, but smart-farm technology has been a game changer. The smart-farm technology has enabled him to not only forgo climbing up ladders and stairs to check his grain bins, but it also has given him his life back.

He joked that he now is comfortable going away for a few days, knowing he can still remotely monitor things on his farm to make sure everything is going smoothly.

### Making It Work

Clear2there Chief Executive Officer Craig Steen shared how his company delivers tailor-made

solutions—video surveillance, smart-farm, smart-home and smart-business applications—to address each client's unique needs.

Systems and devices must be within 100 feet of each other, and they use very little broadband connectivity since they are mostly in sleep mode, Steen said. The connections rely on broadband connectivity provided in one of three ways: 1) a point-to-point connection; 2) a cable connection to the phone company; or 3) a cellular broadband connection.

While the smart-farm technology is not available in 100% of the state yet, plans are in place for INS to roll it out by the first quarter of 2014. INS will be the centralized clearinghouse that provides the smart-farm app that can be customized by Chat Mobility, a 4G wireless service provider in 12 counties in southwest Iowa, via the cloud.

The work of INS member companies has not gone unnoticed. Kristi Petersen, INS manager of marketing and communications, shared that new industrial parks and agriculture centers have reached out to find out how they can be served by an INS partner. Given industry changes, she noted, smart-farm technology presents a great opportunity. "As independent companies lose landlines, they are looking for ways to offer expanded service offerings," she said. "This is just a natural transition." E

**Joe "The Farmer" Hossle maximizes his use of smart-farm technology to work faster, smarter and better. Using a smartphone, he can check the weather reports, gauge commodity prices and monitor his equipment.**

ASSOCIATE  
MEMBER  
SPOTLIGHT

## Vantage Point Solutions



*Responses submitted by Darren Dierbeck, Vantage Point Solutions Vice President and Co-Founder*

In this new department, NTCA—The Rural Broadband Association will periodically spotlight an associate member, defined as a supplier of goods and services to the communications industry. For a comprehensive listing of associate members, check out the NTCA membership directory, or click on “Rural Telecom Solutions Providers” at [www.ntca.org](http://www.ntca.org).

#### How long has your company been in existence?

Vantage Point Solutions Inc. (VPS; Mitchell, S.D.), formed July 30, 2002, is a telecommunications, engineering and consulting company focused on the unique business challenges rural broadband carriers face.

#### What are your core areas of business?

VPS delivers state-of-the-art technical solutions that balance emerging technology with regulatory considerations. VPS has been on the forefront of data network challenges, including the IPv6 transition, cloud computing and wireline-wireless convergence.

VPS was the first engineering firm to embrace the new operator service provider architecture for fiber-to-the-premise (FTTP) using ribbon fiber as opposed to loose-tube fiber. Ribbon fiber is now considered state-of-the-art in OSP design.

#### How has your company adjusted to recent changes in the industry?

VPS has adjusted our engineering services toward new and emerging technology, and our regulatory consulting team stays on top of every industry change impacting our clients.

VPS has worked with NTCA to address issues before the FCC and other entities through *ex parte* conversations and publications that support is-

ues that are critically important to rural broadband providers.

#### In what ways will your company (and staff) evolve to address your customers' changing needs?

VPS views changes in the industry as opportunities to better serve our clients. The key to successfully embracing industry change is to be familiar with the current state of the industry and to constantly evolve with the changes affecting the industry.

#### Complete this sentence: In five years, I see Vantage Point Solutions ...

While this is a simple question, it does not have a simple answer. With the changes experienced in the past five years, there are likely things that will come to fruition in the next five years that have yet to be thought of (or invented).

However, there are a few trends that will likely grow in importance over the next five years. Traditional landline voice revenues will continue to decline. Broadband requirements will continue to grow. Many companies will be looking at ways to become more efficient. The pressure to become more efficient can lead companies to examine sharing of facilities, architecture, and staffing resources to trim capital and operational expenses or outsourcing to larger carriers. Merger and acquisition activity is expected to increase to enhance economies of scale.

VPS will continue to augment our existing suite of products and services to provide industry-leading solutions. We will be on the forefront of emerging fiber, IP and wireless technology. Our consulting team will continue to offer insightful and timely regulatory advice that addresses the ever-changing regulatory landscape. And finally, VPS will continue to be a vocal advocate for the interests of our clients at local, state and national levels. ☐

SHARE  
YOUR  
STORY

NTCA—The Rural Broadband Association seeks to spotlight the efforts of member companies across the country. Exchange is a great place to share your company's success stories on economic development, community outreach, technology rollouts, and state and regional collaborative projects. To share your story, contact Tennille Shields, NTCA senior writer/editor, at 703-351-2097 or [tshields@ntca.org](mailto:tshields@ntca.org).

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**Contact Rick Overman to explore how you can quickly create new revenue.** [Rick.Overman@CHRSolutions.com](mailto:Rick.Overman@CHRSolutions.com)