

The cover of ISE magazine features a man in a blue suit, Charlie Cano, standing with his arms crossed in front of a large, ornate government building with a dome. The background is a clear blue sky with green trees. The magazine title 'ISE' is prominently displayed in white on a dark blue background in the top left corner.

ISE

ICT SOLUTIONS
& EDUCATION

OCTOBER 2022

Executive
Insights With
**CHARLIE
CANO**

General Manager &
CEO, Etex Telephone
Cooperative

ALSO INSIDE

ICT Visionaries Dive Deeper in Part 3

Pole Attachment Efficacy Requires...?

It's Not Just an Inconvenience

Sounding Off About Productivity and
Noise

When disaster strikes...

KGPCo's Disaster Preparedness & Restoration Programs help quickly repair and rebuild networks following severe weather events and other natural disasters.

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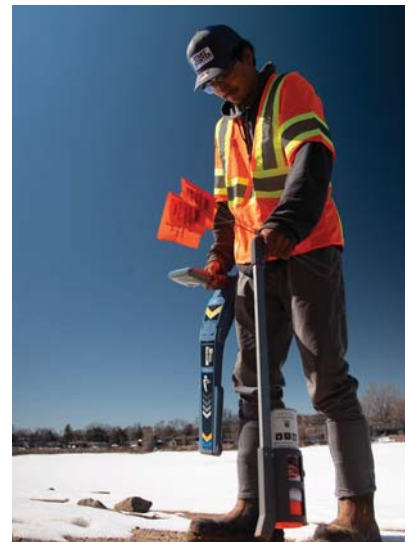
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By Jolanta Stanke

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Publisher

Janice Oliva
joliva@isemag.com

Editorial Director

Sharon Vollman
svollman@isemag.com

Managing Editor

Lisa Weimer
lweimer@isemag.com

Art Director

Julie Whitty

Multimedia Account Executives

Robin Queenan
rqueenan@isemag.com

Mark Horn
mhorn@isemag.com

Production Manager

Brenda Wiley
bwiley@endeavorb2b.com

Ad Services Manager

Melissa Meng
mmeng@endeavorb2b.com

Director of Custom Events & Education

Amy Mullally
amullally@isemag.com

Circulation Manager

Laura Moulton
circulation@isemag.com



Endeavor Business Media, LLC

CEO

Chris Ferrell

President

June Griffin

CFO

Mark Zadell

COO

Patrick Rains

Chief Administrative and Legal Officer

Tracy Kane

EVP - Advanced Technology Group

Lester Craft

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EDITOR'S NOTE

by Sharon Vollman

 @svollman

 @SharonVollman

svollman@isemag.com

Follow Sharon on Twitter and LinkedIn for further conversation and insights.

Visit www.isemag.com/contribute for more information on submitting an article to ISE magazine in print, digital, and online.

Authenticity

Most executives we feature are recommended by people we trust. I do my best to learn about them in an objective manner and share their guidance about what might help solve your network pain points and grow your career.

That's not the case with Charlie Cano. Knowing him for many years has helped me see him as a leader, a husband, a dad, and a community advocate. He's got the "it" factor when it comes to knowledge, tenacity, and emotional intelligence. Quite subjectively, Charlie is one of the best people I know in my professional world.

Why? Because he leads with brains and empathy. And it works.

Data proves why Charlie's ways are powerful. We finally have evidence that "empathy is increasingly important to be successful as a leader. In fact, at the executive level, emotional intelligence accounts for 80% to 90% of the abilities that distinguish high performers." (Source: Catalyst)

Here are some quotes that illustrate Charlie's superpowers in action:

- **Risk Taking:** "I've had to take a stand for what I believe is right. In some situations, I didn't follow what industry leaders, consultants or advisors recommended as a "safe" strategy. Playing it safe is never a guarantee of the best outcome. In my mind, if you risk nothing, then you risk everything."
- **Network Building:** "We must double down on engineering best practices—because in broadband engineering, there's no such thing as being technology neutral. Think about it in terms of best practices for building highways and structures. There is no such thing as being material neutral when building them to last. So, while there is a niche for fixed wireless or satellite solutions for some extremely rural areas, fiber optic facilities must be the priority to build a resilient network for the long-haul."
- **Work Ethic:** "I believe 'luck favors hard work'. Grit and perseverance are shared traits with all successful leaders. I feel blessed to be in a leadership role. I work hard to demonstrate to my company and peers that I do not take it for granted. My work ethic is a product of lessons learned in life with positive mentors and also negative individuals who attempted to hinder my growth."

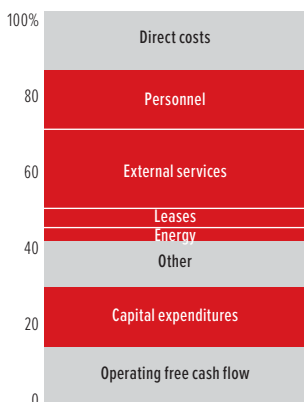
Charlie is a professional contact who has become a friend. I invite you to enjoy learning a bit about him and see why.

Sharon

Sharon Vollman, Editorial Director

FACTOIDS

Approximate share of telco operators' typical spending (as a percentage of revenue)



Note: Other includes sales, marketing, network, and general and administrative expenses

Telco Inflation Realities

Bain & Company projects inflation will chop at least three to five percentage points off most telcos' EBITDA margins over the next two years, unless they take effective countermeasures.

The report recommends three moves to increase the effectiveness of inflation initiatives: getting a complete view of spending, elevating the CFO to C-suite quarterback, and running a private equity-style diligence to spot opportunities to create value.

Source: <https://www.bain.com/insights/telcos-and-inflation/>

WI-FI 6 RAMP

The Wi-Fi 6 market was valued at \$12.5 billion in 2021 and is projected to reach \$32.6 billion by 2030, growing at a CAGR of 13.06% from 2022 to 2030.

Source: <https://www.verifiedmarketresearch.com/download-sample/?rid=250820>

DIGITAL COCKPITS CALL US

Digital automobile cockpits are driving our connection with cars. In fact, 65% of respondents in the US and 58% in Europe say they rely on software-driven solutions for most of their drives. What exactly IS a digital cockpit? It's a car that includes multi-screen, software-based, voice-enabled, upgradeable, in-vehicle infotainment (IVI), and control systems.

Source: <https://canalys.com/newsroom/smartphone-automotive-mirroring>

Just Send Me the \$5B Bill

A new study from Kaleido Intelligence forecasts that network operators can generate over \$5 billion in additional revenues cumulatively over the next 5 years, by implementing BCE (Billing Charging Evolution) and targeting low bandwidth permanently roaming M2M/IoT connections. This represents three times more than wholesale revenues otherwise billed by operators, based on the traffic generated by these permanently roaming devices.

Source: <https://roaming.kaleidointelligence.com/pdf/the-future-of-clearing-settlement-2022/>

Would You Take an \$86B Investment?

USTelecom data shares that broadband providers forked over \$86 billion in capital expenditures (CAPEX) in 2021. That's an 8.3% increase from 2020.

Source: <https://www.ustelecom.org/2021-infrastructure-investment/>

Dog Days of DSL

Point Topic predicts that by the end of 2030 some variant of fiber (FTTH/P/B) will be used by 75% of fixed broadband subscribers globally, compared to 62% in Q4 2021. During the same period, DSL (ADSL) based subscriptions will drop from 10% to 3%.

Source: <https://www.point-topic.com/post/global-fixed-broadband-2030>

Advocate for
What Matters:
Rural Customers,
Team Talent, and
Innovation

By Sharon Vollman

Executive Insights With

CHARLIE CANO

General Manager & CEO,
Etex Telephone Cooperative

Topic: Senate Business and Commerce Committee Work

ISE: This summer you spoke as a telecom expert to the Senate Business and Commerce Committee about broadband. **Share two of the key themes and action items you brought to their attention that they may not have heard considered?**

Cano: The theme I spoke about is rural providers have been a consistent force advocating for our customers' broadband needs for several years. While politicians are *now* focused on unserved or underserved areas, the small providers have always focused on their rural customers and have delivered better broadband speeds compared to similar areas with low density customer counts. That speaks to how local companies are deeply invested to close the digital divide in their markets.

The second point is that as an industry, we must double down on engineering best practices—because in broadband engineering, there's no such thing as being technology neutral. Think about it in terms of best practices for building highways and structures. There is no such thing as being material neutral when building them to last. So, while there is a niche for fixed wireless or satellite solutions for some extremely rural areas, fiber optic facilities must be the priority to build a resilient network for the long-haul.

Topic: Advocating for Rural Providers

ISE: You've done significant work advocating for the needs of rural CSPs. **Share some of the strategies you have implemented to provide education to legislators and regulators.**

Cano: The most effective strategy has been joining a small coalition of rural broadband executives and operators. Coming together has enabled us to connect with legislative staff and provide detailed answers to all their questions about building and operating networks.

This small but mighty group has also provided technology 101 training to PUC staff. Most recently, we presented to a conference room packed with state legislative members at the Texas State Capitol by creating a broadband network lunch and learn series. It was well received, and we were able to highlight the commitment of many great rural providers in our industry. I appreciate getting

to collaborate with some of the areas' top CEOs like Jennifer Prather, Joey Anderson, and Patrick Sherrill.

Topic: Risk

ISE: What's the biggest professional risk you've taken?

Cano: There are times in my professional career I had to take a stand for what I believe is right—for the company I serve and for the future of our industry. In some situations, I didn't follow what industry leaders, consultants or advisors recommended as a "safe" strategy. Playing it safe is never a guarantee of the best outcome. In my mind, if you risk nothing, then you risk everything.

My risks are not always the most popular moves but taking risks for what I believe in is exactly what has and what will continue to advance my team and this industry forward.

Topic: Fiber Deployment

ISE: Aggressively deploying fiber is not an easy task in rural communities. **What's your secret to doing it effectively and cost-efficiently?**

Cano: Six years of experience with a national engineering consulting firm prior to working for Etex gave me the real-life understanding that OSP engineering changes requested by field crews may cause delays. That gave me the perspective and drive to develop the talent within the technical groups.

Etex now performs all OSP engineering, permit acquisition, splicing, equipment installation and turn up with internal teams. These teams are involved in the vision and planning from the beginning. Of course, our long-lasting supplier and contractor partnerships are an integral part of our plan. However, the main ingredient that makes this successful is our employees. Having staff who live in the communities we serve establishes the accountability and intimate knowledge of our territory and customers. Our employees take great pride in serving our friends and neighbors.

Topic: Honesty

ISE: How much of your success comes from luck or coincidence versus grit and perseverance?

Cano: I believe in the statement "luck favors hard work". Grit and perseverance are shared traits with all successful leaders. I feel blessed to be in a leadership role. I work hard to demonstrate to my company and

“ The motivation and determination to upskill also starts with the selection process and hiring the right individuals. Where there is a will, there is a way to accomplish your daily responsibilities while learning new skills for the future. I can accommodate driven individuals with additional tools and resources that may help them develop faster than they would without my help, but they must possess the key ingredients (desire, motivation, drive, and determination) to stay relevant for the future. My investment in these employees is completely up to them. ”

peers that I do not take it for granted. My work ethic is a product of lessons learned in life with positive mentors and also negative individuals who attempted to hinder my growth. I appreciate those lessons and apply the golden rule to “treat others as you want to be treated”. I feel these principles have put me in position for some luck along the way.

Topic: Priorities

ISE: What are two of Etex’s network-related priorities for the rest of 2022 and early 2023?

Cano: Etex is in the process of adding new 400GB fiber rings to increase capacity and keep pace with customer growing demands. This will reduce network vulnerabilities and increase reliability by segregating network elements. We are also adding a new upstream Internet link to existing dual connections. This will increase stability and enable new peering service offerings.

Topic: Proactive Network Management

ISE: ICT industry analysts and observers often focus on service providers’ CAPEX budgets. But the reality is that OPEX can make or break a provider’s bottom line. The key to controlling OPEX is to improve network life cycle management for complex fiber and legacy networks in a cost-efficient manner. **What are some proactive approaches you recommend to control OPEX?**

Cano: It’s important to select a vendor that is sincere about working within your budget. Etex had to find the next-generation fiber and routing solution to address our massive growth. That’s easy if you’re flush with cash. The trick is finding a solution that has to fit within a flat budget.

We partner with Cisco to leverage a Flexible Consumption Model that provides software portability across devices and allows Etex to buy “future-proofed” hardware with a minimal fill rate day one. This allows us to easily add capacity over time as the network grows. As a result, investments from one project can be reused. By leveraging software portability, Etex can move existing software capacity to future next-gen hardware, taking advantage of higher port densities and lower power requirements per Gbps, all in a smaller footprint.

Topic: Etex’s Disaster Response

ISE: East Texas experienced a tornado this spring that damaged 40 miles of the community. **Share your team’s network preparation and engineering practices that contributed to a quick and successful response. If possible, share a specific example of how your crews helped your customers.**

Cano: When I started working for Etex, I was pleased to learn that East Texas has sandy soil, making underground construction affordable and quicker to deploy compared to the complexity of aerial make-ready processes. Pine trees can grow over 80’ tall, which is beautiful. But, strong winds, can also damage aerial cables by uprooting these trees and dropping limbs. That’s why Etex adopted to install all facilities underground as one of our engineering best practices in the mid 1990s.

On Monday, March 21st, of this year, an EF-2 tornado touched down a ½-mile south of my house in Upshur County. It proceeded on a northeast path for 40 miles with a 700-yard-wide path of damage to structures, aerial facilities, farm equipment, and households. Thankfully, there were no losses of life.

Etex suffered zero storm-related damage or outages to our network. The following day, our

crews were able to assist residents and cleanup instead of having to worry about network repairs. Underground construction proved to be a resilient choice and was a direct result of our commitment to quality and best engineering practices for our rural broadband network.

Topic: Talent Retention

ISE: In the era of the “Great Resignation”, what are some out-of-the-box concepts that you have, or plan to implement, for your company’s talent retention strategy?

Cano: In the past, our turnover was consistently below 1%. The only contributor was voluntary attrition due to retirement. Times have changed. We now work diligently to ensure to cultivate a culture that authentically shows employees we truly care about them. We empower team members to do their jobs and encourage an environment of continuous improvement. We provide learning and development opportunities through in-house training programs and stretch assignments, paired with external industry events. All of these things feed employee satisfaction and empowers them to produce their best work.

Etex is well-known for offering a rich benefits program for employees and their families with very little cost share. We are transparent about those costs and we take the time to educate employees on the total value of these benefit offerings. Our benefits are evaluated on an annual basis and we are not afraid to try something out of the norm. For example, we partnered with a nearby medical facility that functions as a 24/7 on-demand care that is just a call, text or virtual visit away. Our employees and their dependents are able to utilize this service at zero cost to them.

For the last few years during the summer months, employees have enjoyed a relaxed dress code to help combat the Texas heat. This year, we surprised our employees with a “Christmas in July” initiative. We rewarded employees with a generous appreciation bonus to thank them and show that we are aware that these are trying times.

In addition, employees have been able to enjoy half days on Fridays. They are compensated for a full day without having to use their own paid time off. This helps to demonstrate our support and value of a work/life balance.



Pictured left to right: Jeremy Seahorn, Patti Farr, Tiffany Ashley, Charlie Cano, Susan Graves, Larry Montgomery, and Matt Faggione



Charlie joined other rural operators for the educational presentation to the Texas capitol legislative staff. Pictured left to right: Jennifer Prather, Joey Anderson, Patrick Sherrill, and Charlie.



Topic: Your Passion

ISE: Share one problem/challenge you are passionate about solving for the ICT Industry.

Cano: At the risk of sounding cliché, it is truly finding ways to build telecommunications networks in rural areas that produce our energy, food, and agriculture. My childhood years of farming and ranching gave me a great appreciation for the hard work it takes to survive in those industries. This hard work life is passed down through generations.

It takes a similar business mindset to establish long-term commitments to those rural communities in the form of extended return of investment and creative partnerships to make it work. I have also spent time in Mexico where my parents lived in very rural colonias. I understand the true meaning of “digital divide” when communities do not have access to utilities, resources, and communications services needed to grow. The lack of broadband is a disadvantage for these communities that needs to be solved. My company is committed to investing in these rural communities and understands the hard work it requires to be accountable to our customers.

Topic: Advice

ISE: What would you tell emerging leaders as they try to make a difference in the industry AND propel their careers to the next level?

Cano: When you identify team members with grit and determination to learn and grow, you should pour as much energy and support into making them better. They will return the favor based on the trust

and bond that is created and could be your biggest ally as your career evolves.

I am very fortunate to have a great executive team that I have watched grow and helped along the way. We enjoy our work life together and can tackle the most stressful challenges with confidence that is fueled with the respect and support we have for each other. Each of my team members have a different life journey and we share in the drive to work united to make a difference across our industry. ■

ABOUT CHARLIE CANO

Charlie is a fearless leader. And, when Etex say fearless, they mean it. He has led them through dramatic change over the years, even before he was named CEO. And since, he's moved Etex to the industry forefront, with the company now recognized as an industry innovator. From enhancing our network, introducing new products and services, and building a customer-based work culture, Charlie leads by example.

He's a 25-year veteran of the telecom industry with diverse work experience as an Outside Plant Design Engineer, a Project Manager, and Sales Director for a national consulting firm. He's been with Etex for the last 19 years.

Utilizing his business and engineering knowledge, Charlie was responsible for guiding Etex through the FTTH network remodel, deploying wireless technology, and much more. His leadership, innovative approach, boundless energy, and vision earned him the title of CEO / General Manager of Etex in 2013. His focus since then has been the transformation of the Etex customer care culture, obtaining regulatory balance for the communications industry and developing a sales channel to deliver the best in communication, information, and entertainment services to residents of East Texas.

A native Texan, Charlie graduated from Texas Tech with a degree in Electrical Engineering and a minor in Mathematics. He and his wife make their home in the area where they raise their three children. Follow Charlie on Twitter @charliec314.

Learn more about Etex by visiting www.etex.net. Follow them on Twitter @EtexTelephone, LinkedIn: [company/etex-telephone-cooperative/about](https://www.linkedin.com/company/etex-telephone-cooperative/about), and Facebook: [etextelephone](https://www.facebook.com/etextelephone).

READ MORE



But wait, there's more!

Go to www.isemag.com/14281289 for additional topics discussed with Charlie.



Fujitsu makes RAN deployments easy

Multivendor RAN deployments are a journey, which require the right resources and management across numerous disciplines. Successfully navigating the deployment journey requires skillsets, tools, and experience across multiple disciplines. Fujitsu's RAN deployment service provides everything you need to make the journey successful.

The offer includes:

- Lab testing for interoperability and certification
- Design and engineering services
- Site acquisition services
- Zoning and permitting
- Supply chain services
- Construction and installation
- Provisioning and testing
- Quality assurance services

But the journey doesn't end with the initial deployment and neither does Fujitsu's role: we offer ongoing maintenance, which includes technical assistance and solution lifecycle management to ensure that your RAN will function at peak performance.

If you're just starting your RAN deployment journey or you want help to meet your deployment deadlines, let Fujitsu be your guide. For more information, visit our [network deployment solutions site](https://www.fujitsu.com/telecom).

[us.fujitsu.com/telecom](https://www.fujitsu.com/telecom)



ICT Visionaries Dive

By Sharon Vollman

Why should you spend a bit of time with the closing ICT Visionaries Thought Leadership content? Because these folks walk in your shoes. They are trusted sources who move and inspire people with innovative ideas. Better yet, they turn ideas into reality—yet oftentimes, they're so humble they have NO idea on their impact on others.

These folks aren't afraid to answer the difficult questions. This month, we ask what their passionate about solving for the ICT Industry, how to break down departmental silos, and what they REALLY need from vendor partners. Their answers are worth checking out.



Deeper in Part 3

Topic: Supply Chain Problems – Still?

Ken Paker, SVP and CTO of TDS Telecom is ISE EXPO's 2022 keynote presenter. In an exclusive interview with us, he said, "Supply chain is the bane of our existence in 2021 and 2022. Who would have thought that this would become a household word for every business and consumer!" **Are supply chain issues still impacting your team? If so, how? If not, what has your team done to avert them?**

Topic: My Take

Share one problem/challenge you are passionate about solving for the ICT Industry.

Topic: Scaling Fiber

Deploying fiber is not easy when you must scale it on a tight timeline. **What's your secret to doing it effectively and cost-efficiently?**

Topic: Network Automation

The network automation market is forecasted to reach a value of US\$ 48.19 Billion by 2027 exhibiting a CAGR of 21.50% during 2022-2027.

Source: <https://www.businesswire.com/news/home/20220610005255/en/Global-Network-Automation-Market-2022-to-2027—Industry-Trends-Share-Size-Growth-Opportunity-and-Forecasts—ResearchAndMarkets.com>

(Definition for readers) Network automation refers to the process of using software to automate the managing, testing, and operating of physical and virtual devices. It utilizes various solutions and services, such as virtualization, network automation tools, Internet-based networking, and managed services. Network automation also uses programmable logic to manage network resources and services, which, in turn, aids in maximizing the functionality and efficiency of the network.

What are two of the best tools your company is using to automate the network? What are the milestones

your company has set to deliver x% network automation by x-date?

Topic: Silos

"Silos will continue to be inevitable as long as the rewards for collaboration are outweighed by the rewards for competition." — Pearl Zhu (Source: wisequotes.com) **How has your team removed silos and barriers?**

Topic: Vendor Collaboration

What three things do you need from your vendor partners?

Topic: Balance

Is there such a thing as work/life balance? How do you create it? And what is some important advice you can give others looking to climb the career ladder?

Topic: Retaining and Retraining Top Talent

How does your team hold onto professionals with the most talent and the greatest work ethic when those same employees must upskill to remain relevant? (Oftentimes, "upskilling" translates into working their day job and simultaneously learning new skills for the future.) **Share your thoughts about the "rub" of this reality to employers AND employees.**

Topic: Honesty

How much of your success comes from luck or coincidence versus grit and perseverance?

Topic: Your Forecast for 2023

Though it's only mid-2022, the analysts are already offering their forecasts for network evolution and transformation trends in 2023. **What's your crystal ball saying will be most important to the success of Communications Service Providers (CSPs) in 2023?**



**Johan
Ottosson**
Vice President
Strategy
Arelion

“An objective for the next year is to improve problem and incident management quality. This is a team effort, including a new network operations center, refining customer support processes and a centralized IT project innovating new inventory and service impact analysis systems to empower teams with a shared understanding of the same data. Collapsing silos is a journey, but we are definitely progressing.”

Topic: Supply Chain Problems - Still?

Arelion strives to define what a world-class experience in global connectivity looks like. Our research shows that transparency is critical—especially as the industry (including Arelion) suffers from supply chain disruptions. We are working hard to deliver with the short lead times that our customers expect. On the IP side, we're less affected, thanks to our logistics and inventory setup. But we still see lead times of 12 months for certain gear. We must be proactive about our stock, placing upfront CPE orders to ensure availability for customers. Transmission is more challenging, with two-year lead times delaying ongoing projects to light new US routes. But we do have some advantageous tools. As early investors in open optics, we offer optimized connectivity through open line systems using transponders from multiple vendors, building on gear with the shortest lead times. We must be creative, sometimes redesigning solutions while keeping a tight loop with our customers to help them execute critical projects.

Topic: Network Automation

We automate network planning, capacity, forecasting, and risk management using tools like Cisco's WAE, open-source traffic forecasting and custom-built BI tools. This ensures we meet capacity demands without technical planning and financial overhead hindrances. We also automate network security. We were one of the first to offer Resource Public Key Infrastructure (RPKI) that protects the Internet's routing infrastructure through automated validation. We strive to help customers use DDoS auto-mitigation by further automating service activation,

mitigation requests and real-time blackholing functionality that drops malicious traffic securely.

Topic: Silos

As part of our rebranding, we engaged stakeholders to define our core values. We set company-wide objectives to align on goals, reward collaboration and ensure internal transparency. A year back, we implemented Objective and Key Results (OKR) cycles, pioneered by companies like Google and Intel. These collapse operational silos across internal focus areas and enhance collaboration between our teams. By focusing on tangible results, OKR creates a common focus and “drumbeat” for execution, providing our teams with the same transparency we offer our customers. An objective for the next year is to improve problem and incident management quality. This is a team effort, including a new network operations center, refining customer support processes and a centralized IT project innovating new inventory and service impact analysis systems to empower teams with a shared understanding of the same data. This requires sales input on customer pain points. Collapsing silos is a journey, but we are definitely progressing.

BIOGRAPHY

Johan's career is founded on two things: curiosity and exploration. As an experienced strategist and manager, he led the development of growth strategies, M&A, and long-term corporate strategic planning across various industries, before zeroing in on communications and technology. He believes that a firm commitment to innovation is the key to staying competitive. Experience has taught him that innovation is not defined by organizational charts and that many of the best ideas come from those working with customers or engineering the network. <https://www.linkedin.com/in/jottosson/>



Connecting a brighter future

We've helped the Internet grow for more than 30 years and our global IP backbone, AS1299, is ranked number one. Our network spans Europe, North America and Asia with 70,000 km of optical fiber, and we're proud that the world's largest operators, content providers and enterprises trust us to keep them connected.

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**Brooks
Fitzsimmons**
Consumer
Ecosystem Health
AT&T

“This often requires employing “soft power” to help balance the cost pressures of the technology shops and the revenue, cost, and growth pressures of the business units. The key to yielding that power is empathy: spending more time in “RX” mode (listening) than “TX” mode (telling). This will let your business partners be more involved and engaged in the outcomes you’re developing **with** them.”

Topic: Silos

Much of my career has been spent at the intersection of technology and business. This often requires employing “soft power” to help balance the cost pressures of the technology shops and the revenue, cost, and growth pressures of the business units. The key to yielding that power is empathy: spending more time in “RX” mode (listening) than “TX” mode (telling). This will let your business partners be more involved and engaged in the outcomes you’re developing **with** them. Get out in the field and into the centers; join their business planning meetings; and talk with **their** customers. More times than not, you’ll jointly craft a solution of elegant simplicity or targeted impact.

Topic: Retaining and Retraining Top Talent

Macroeconomic conditions continue to keep this top of mind. Having a deliberate labor strategy that contemplates the dynamic ecosystem, (contractors, MSPs, interns, mid-career transitions, and deep technical/business expert practitioners) is critical to a firm’s success. External partners can “lean in” to impart new/novel competencies on employees, while still being rewarded for new or “transitional” engagements. For new or mid-career transition employees, I’ve found that being forthcoming with context and your time through “office hours” has borne fruit in terms of resource productivity, talent retention, and creative solutioning. Finally, our company has evolved their compensation approaches to remain market competitive with

salaries, employ long-term compensation to incentivize multi-year strategic thinking, AND monthly/quarterly bonuses for in-year results.

Topic: Honesty

I’ve been listening to Deepak Chopra’s book, *Abundance*, and the question posed reminds me of the abundance mindset. Dr. Chopra said, “Good luck is opportunity meeting preparedness.” Put simply, you and your teams could be plowing forward with grit, gumption, perseverance, and diligence, but if you can’t lift your collective heads up to be mindful and receptive to the opportunities around you, you’ll miss them. I’ve encountered this a lot in my transformation roles. Oftentimes there is abundant “fuel” for change, including technologies, engineering talent, and customer needs, but lacking the “spark” of mindful receptiveness, those coincident opportunities could remain dormant. Net, net, be ready for those “luck” or “coincidence” moments, so you may manifest them into “good luck” and “fortuitous coincidence” successes.

BIOGRAPHY

Brooks leads the Ecosystem Governance Team accountable for examining and optimizing the end-to-end health of their sales and service support ecosystems, working across organizations to develop a comprehensive understanding of vulnerabilities and opportunities. He will lead the coordination and prioritization efforts to ensure end-users—both internal and external—are receiving an optimal experience. His team is driving site reliability engineering (SRE) for the consumer ecosystem. Follow Brooks on LinkedIn: <https://www.linkedin.com/in/tbfitzsimmons>.

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Kevin Tusing
Application Engineer
Clearfield

“Throughout my career, some of the best engineers, managers, directors, officers, and executives have been those with the drive to be the best, who sought to absorb knowledge from others, and who retained it. Some who have also stood out as exceptional had little or no formal higher education yet were the best I ever had the privilege to work under.”

Topic: My Take

To retain our highly skilled workforce, we need to expand their promotional opportunities. As a result of taking for granted those outstanding workers with experience who know how to erect towers, place hardened facilities, engineer, troubleshoot, splice, install, and repair all the different type of builds, we are seeing a mass exit of knowledge, as they feel as though there is no occupational growth. Instead, people who have a degree, yet no industry experience, are getting hired above them.

Throughout my career, some of the best engineers, managers, directors, officers, and executives have been those with the drive to be the best, who sought to absorb knowledge from others, and who retained it. Some who have also stood out as exceptional had little or no formal higher education yet were the best I ever had the privilege to work under. Generally, those who came from the field got the respect of the employees under them, they knew how to speak the language and relate to what the technicians were saying. In the military, it was about being a team and relying on the person next to you. We need to focus on building true teams from within our companies. By retaining a highly skilled workforce with all their on-the-job certifications, this will help make and keep our companies successful.

Topic: Scaling Fiber

With a deficiency in highly skilled industry labor and consumers demanding more bandwidth along with record-breaking requests for service, scaling timelines are getting

shorter. Our secret for assisting customers in accelerating their builds with minimal skill levels is presenting a true plug-and-play solution. Furthermore, our solution allows for a speedier restoration time, reducing their operational cost in the future. This approach reduces the need for highly skilled laborers along with decreasing the scaling time drastically. Our goal is to get customers out of the business-as-usual mentality to make these builds become a reality...faster.

Topic: Honesty

I believe my career success grew due to a mixture of perseverance, grit, and a bit of luck. Sticking to your gut feeling and taking chances while not knowing the outcome played a big part in getting me where I am today. As well as having a passion for the job, I am always focused on the long-term goal despite the minor setbacks that I am faced with. Lastly, in this small industry where everyone knows everyone, success works best when you stick to the facts and avoid the temptation to embellish your accomplishments.

BIOGRAPHY

As a Clearfield application engineer, Kevin Tusing leverages his extensive experience in network design, OSP engineering, communication technology, fiber optic systems and field operations. Prior to joining Clearfield, he spent over 2 decades in the US Air Force and ANG as a Senior Non-Commissioned Officer leading teams in various telecommunication engineering and installations around the world. Kevin also spent 15 years at Cincinnati Bell telephone working as a cable splicer and then manager.

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Ryan Korte
*Senior Director,
 Product Management*
 Lumen

“...we decided we needed to coordinate time across our team of a few hundred people for upskilling. The end result is that we blocked, via a calendar invite from the leadership team, the same 2-hour time slot each week across the entire team for upskilling. The feedback so far is that most employees have more consistently been able to plan for and use this time to learn new technologies and skills due to the coordinated time.”

Topic: Network Automation

I transitioned from 20+ years of being a part of the Technology Architecture team to lead our Cloud Connect product at the start of 2022 because I believe the use of automation is extremely important in this industry. For Lumen’s Cloud Connect product, the key differentiator is our automation to deliver Network as a Service on demand. We have initially enabled this for our Ethernet and VPN connectivity to Cloud service providers and the goal is to fully automate our standard Ethernet and VPN services for any location to an on-demand capability within the next 18 months.

Topic: Retaining and Retraining Top Talent

We got feedback from within our team that individuals were blocking time that worked for them on their calendars to upskill, but that time would frequently be booked over by others, including the leadership team, and as a result, the time they planned was constantly disrupted. As a result of the feedback, we decided we needed to coordinate time across our team of a few hundred people for upskilling. The end result is that we blocked, via a calendar invite from the leadership team, the same 2-hour time slot each week across the entire team for upskilling. The feedback so far is that most employees have more consistently been able to plan for and use this time to learn new technologies and skills due to the coordinated time.

Topic: Honesty

I think my success, and most others success, comes from perseverance toward a goal. At the start of my career, perseverance meant learning a skill and working through the method to achieve the goal. However, perseverance as I have grown in my career has evolved to using my contacts, within and external to the company, to connect others to meet the final goal. I’m guessing that luck, whether that is being in the right place or at the right time, is involved in success as well, but luck alone is not enough.

BIOGRAPHY

Ryan Korte has more than 26 years of experience in developing and managing advanced fiber-optic network and systems architecture for both Fortune 500 enterprise companies and nationwide telecommunications carriers. In Ryan’s current position, he and his team are responsible for the Lumen Cloud Connect product with connections to all major cloud service providers, 2,200+ public and private data centers, and over 160,000 fiber-enabled on-net buildings.



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Wade Soczka
 Director of Network
 Construction
 TDS Telecom

“One problem/challenge I’m passionate about solving for the ICT Industry is digitizing outside plant construction management. The immediate goal is near automation for capture of production, in-field construction changes, hard surface disturbances/restoration, and quality control.”

Topic: Supply Chain Problems - Still?

Industry leaders fully expect supply chain concerns will continue and the companies that know how to deal with them will be the most successful. What we have learned at TDS Telecom is that alignment between our internal teams and external supply chain partners is critical. Providing and managing to an accurate long-term forecast has helped to ensure availability to our construction partners.

Topic: My Take

In order to move forward in the ICT Industry, we have to find ways to speed up construction while not impacting quality and effectiveness. TDS Telecom is passionate about digitizing outside plant construction management. The immediate goal is near automation for capture of production, in-field construction changes, hard surface disturbances/restoration, and quality control. Of course, it is easier said than done but this type of management will be instrumental to successful fiber builds, which not only is better for the company and our future success but also the communities we serve will be happier with the efficient build and our responsiveness to any problems that may arise.

Topic: Silos

In order to reach business milestones, it’s essential to identify issues that may be impeding success—and

removing silos may be one of them. What we have found at TDS Telecom is that it’s critical to leverage competitive energy by creating shared goals. Having common end state objectives and key results tend to drive collaboration and naturally tear down silos. It’s important to have frequent communications about progress on achieving these goals and an analysis on whether there are issues that can be addressed across the business and not just one problem at a time.

BIOGRAPHY

Wade has been with TDS Telecom for nearly 30 years, beginning as a network technician. He currently oversees the successful deployment of fiber-to-the-home in out-of-territory markets. He provides leadership to internal outside plant construction, route acquisition, and colocation teams, as well as 4,000+ external contracted resources supporting builds in 40+ municipalities across 5 states. He earned a Bachelor of Business Management and an MBA from Herzing College and his associate degree from the Wisconsin School of Electronics.

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Noah Drake
President, Americas
 Telstra

“...any effective, long-term collaboration is built on a foundation of trust that they will conduct business ethically, but also be empowered to work directly and accountably with our customers as a direct extension of our team. We want partners aligned with our values and principles, especially in the areas of corporate responsibility and ESG practices.”

Topic: My Take

I would challenge our industry to maintain the entrepreneurial spirit needed to stay innovative in a world of emerging technology applications. The broadcast industry is a perfect example. Traditionally, major broadcasts have been delivered through dedicated connectivity—proven, but also expensive and complicated.

The Internet has emerged as a reliable, high-quality, and cost-effective option—for last-mile delivery or end-to-end broadcast workflows. Our Internet Delivery Network (IDN) matches a network technology to a market need. The cloud-based platform transports high-quality video content and live broadcast streams to registered endpoints across shared networks like the public Internet. Broadcasters can produce and deliver content from anywhere, while avoiding the costs and logistics associated with fixed connectivity and on-site production.

Customized network options—deployed as a standalone model or combined with other distribution methods—are the future, for broadcasters or any organization with diverse audience and delivery requirements.

Topic: Vendor Collaboration

I encourage open collaboration and third-party partnerships, however achieving those successfully requires a mix of organizational dynamics.

Partners need to have the right expertise, resources, and skills. But more important, any effective, long-term collaboration is built on a foundation of trust that they will conduct business ethically, but also be empowered to work directly and accountably with our customers as a direct extension of our team. We want partners aligned with our values and principles, especially in the areas of

corporate responsibility and environmental, social and governance (ESG) practices. Yes, efficient operations are important but so are service to our communities and a commitment to the planet.

We also look for diversity, equity, and inclusion. It is important to us that we have an internal team and partner network that are representative and as diverse as the customers we serve all over the world.

Topic: Your Forecast for 2023

We’re seeing the growing importance of network flexibility and stability.

Many remote regions, typically served by low- to middle-grade networks, will soon need higher-capacity infrastructures—whether it’s through LEO satellites, subsidized rural broadband, capital-intensive projects (like Telstra’s inter-city project in Australia*) or any combination.

Seamlessly extending network connectivity options to underserved areas requires both strategic investments and collaboration among telcos, satellite operators and carriers. The recent announcement between Starlink and T-Mobile for remote connectivity is one example of the “shared service” partnerships we’ll see more of into 2023 and beyond.

Single-technology solutions are quickly giving way to an amalgamation of satellite, broadband, 5G or fixed line. It’s no longer “either/or,” it’s “both” or “many”.

*<https://exchange.telstra.com.au/how-were-building-the-fibre-network-of-the-future/>

BIOGRAPHY

Noah is responsible for sales, business operations, further expanding Telstra’s portfolio of technology solutions, continuing to accelerate strategic partnerships, and leading the company’s future direction within the region. He has a successful background in telecommunications leadership with diverse experience in the international communications space, building best-in-class performing teams, and aggressively scaling in high growth environments.



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Mary Nolan
Executive Director -
Network Assurance
Verizon

“When you structure your organization around a common mission, you naturally break through silos to accomplish your objective. Each team member should understand the organization’s North Star and how they contribute to it. It’s also important to instill a culture of collaboration within the organization. Each member should feel empowered to work outside of their group to help accomplish the organization’s goals.”

Topic: Silos

When you structure your organization around a common mission, you naturally break through silos to accomplish your objective. Each team member should understand the organization’s North Star and how they contribute to it.

It’s also important to instill a culture of collaboration within the organization. Each member should feel empowered to work outside of their group to help accomplish the organization’s goals.

Topic: Vendor Collaboration

Vendors are an extension of our business and are essential to our success. We are always excited to work with vendors that have the knowledge and ability to develop world-class solutions and are invested in our mutual success.

Beyond fulfilling your promise and delivering the services agreed on, we also expect a high level of integrity and ethics of all our vendors.

Verizon maintains high standards for our vendors and requires them to adhere to a strict set of guidelines.

Topic: Balance

Your physical and mental health are everything. Understanding what a healthy work/life balance is for you is essential. It’s up to each employee to establish boundaries for themselves and that differs based on the person.

Climbing the corporate ladder by sacrificing yourself, your family and friends is not sustainable. The first thing you need to do is recognize what provides you that balance. For some it’s long weekends, some need a week, and others need two weeks.

I know a lot of people that it literally takes them days to unplug and start enjoying their time off. I know others that find the stress of returning to a mound of work makes the idea of taking 2 weeks unthinkable. There is no magic solution for everyone. We are all unique with different needs and tolerances. Once you know what you need to reenergize, to come back to the office without feeling you compromised other parts of your life, you have found your balance.

BIOGRAPHY

The Network Assurance team is accountable for the reliability, performance, and security of Verizon’s Wireless network. Mary’s team of experts monitor and manage the various networks and applications that are the foundation for Verizon Wireless’s consumer and business services. More specifically, the team is responsible for managing the Verizon Wireless radio access, transport / IP networks and customer experience. Contact Mary at Mary.Nolan@VerizonWireless.com and follow her on LinkedIn: <https://www.linkedin.com/in/maryfiocco>.

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*Arelion

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Verizon Communications, Inc. was formed on June 30, 2000, and is one of the world's leading providers of technology and communications services. Headquartered in New York City, and with a presence around the world, Verizon generated revenues of \$128.3 billion in 2020. The company offers data, video and voice services and solutions on its award-winning networks and platforms, delivering on customers' demand for mobility, reliable network connectivity, security, and control. www.verizon.com



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Mega TITAN (above)
NEO Indoor UPS (right)

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Pole Attachment Efficacy Requires...?

Leveraging Tools and Techniques to Minimize the Impact of Attachment Requests and Increase Trust

By Ron Bilodeau



An audit of existing facilities provides a baseline to optimize routing and enable fast processing of pole attachment applications.



“Twelve above, forty

below, and don’t be slow” was our motto. What it meant was to drill a hole in a pole twelve inches above the highest telephone cable and a minimum of forty inches below the lowest electric line unless you were in California where it was “forty-eight and don’t be late” and do it as fast as you can because we were getting paid by the foot.

As a cable TV construction crew, we constructed across the country through the 1980s and into the early 1990s. In 1996, a major revision of the telecommunications act spurred massive growth in competitive telecommunications services. The last part of the 90s was spent crisscrossing the country with fiber optic cables for the burgeoning competitive local exchange industry.

As linemen, we did not interact much with the electric utility or incumbent telecom company. An inspector would show up occasionally—sometimes we would be awestruck by an electric crew changing out a pole but, generally speaking, the electric company, pole-owner world seemed like the impenetrable kingdom of OZ. We did not know much about their culture, and they did not know much about ours.

There was, however, a team at the cable company responsible for submitting applications to attach to utility poles who interacted with the utility frequently. In early 2000, I suddenly found myself sitting on the other side of the fence as the Joint Pole Administrator for an investor-owned electric utility. It was in that role I realized that cultural differences and trust issues existed between the telecommunications industry and the electric utility that made the application processes challenging. That is precisely what needed to be changed if I was going to be successful in my new role.

The Challenges

At that time, mandates placed on some utility pole owners by the Federal Communications Commission (FCC) required utilities to provide non-discriminatory access by telecommunications providers. Unfortunately, these mandates created an atmosphere of distrust.

The first challenge for me was to persuade my electric company colleagues that facilitating fast, efficient access to poles was important to the community and could improve the company’s bottom line.

The second challenge was to show the electric linemen that most telecommunications linemen had the skill sets, pride in workmanship, and safety culture that the electric lineman held in high regard. Fresh out of the telecom construction industry and proud of our accomplishments, I believed this to be true.

The pole owner (licensor) and the attacher (licensee) relationship can be broken down into two general categories:

- Contractual obligations which include the legal terms, application process, fee structure, and general oversight.
- Operational engagement of construction practices including planned and emergency maintenance.

I noticed three processes were causing friction:

1. Effective coordination for emergency pole replacement or transfer work.
2. Several code violations.
3. Construction practice issues that delayed attachment licensing.

The Solution

The keys to any successful business relationship are all about respect. The other principal to a mutually beneficial relationship is the old saying,



All parties working on a utility pole should understand the work rules for working in proximity to wireless antennas.

“Knowledge is power.” The baseball player, Sadaharu Oh, considered by many as the greatest player in Japanese baseball, was once asked

about his philosophy on competing against opposing players. “The opponents and I are really one, my strength and skills are only half of the equation. The other half is theirs. An opponent is someone whose strength joined to yours creates a certain result.”

In my situation, face-to-face events increased trust-building between reps from both the electric and telecommunications industry. Some of these included:

- Monthly joint pole committee meetings with representatives from both.
- Quarterly lineman safety breakfast attended by both electric and telecommunications linemen.
- Annual National Electrical Safety Code (NESC) training session facilitated by a third party.

These engagements helped each organization better understand the ground rules and, most importantly, have a better understanding of the culture of the other industry. These meetings helped reduce the friction and distrust.

That was just the first step. Ongoing operational improvements were necessary because as soon as we all got comfortable, along came another fiber provider to the market.

Soon after, we were discussing wireless attachments and requests to attach in the supply space which made requirements even more complex. These different types of attachments required both parties to be cognizant of pole loading analysis, make-ready engineering and worker

safety—especially when working around radiating antennas and in the energized supply space.

In addition to developing a good working relationship, it became apparent that more operational effort was needed. The answer appeared to be in technology, and a joint effort was launched to ensure both parties could meet their objectives.

- Telecom objectives included speed to market, reliability, and low capital expenditure costs. These would create a sustainable business and be competitive.
- Utility companies needed to recover all incremental costs related to that effort. The electric utility also needed to make the process as seamless as possible using minimal internal resources so they could continue to focus on delivering reliable electric power.

To meet these objectives, we broke the process into several phases:

- Phase one included performing a joint audit of the existing pole attachments and distribution equipment. The audit collected GPS information for each pole and identified ownership of existing attachments, the heights of those attachments, and any issues of non-compliance with existing standards and the NESC. The information collected was converted into a digital format which became the basis for each company’s electronic mapping programs. The costs for the audit were shared between the electric company, the incumbent telecom provider, and the cable TV company. Each company received the data that was collected by the company that was contracted to perform the audit.
- The second phase was remediating the non-compliance issues noted during the audit. Much of the remediation was accomplished jointly and the results were tracked in the monthly joint pole meeting. An unintended benefit of remediating the non-compliance issues was increased interaction between industry field personnel which improved communication and allowed for better collaboration during other joint pole field work.
- Another healthy step in the process was standardizing pole loading software. This was

Equally important is understanding that the pole owner and licensee relationship is a partnership based on trust. Without that fundamental tool, all the technologies on the planet won’t help us join strengths to create the best result for the customers we all serve.

necessary so everyone would be following the same playbook.

- Automating the attachment application process was also critical. And while the early stages of that automation was rather rudimentary, it opened doors for today's innovative technologies that make pole line engineering more accurate and efficient.

Trust Remains Paramount

These tools and technologies facilitate shared knowledge that helps build trust between telecom providers and utility providers. This is critical as our industry embarks on an unparalleled quest to bring broadband to every American.

The current ongoing effort to eliminate the digital divide is fueled by governmental funding and rapid technology change. As broadband providers, you will interact with utility pole owners who themselves will be faced with new challenges. Understanding pole owner requirements, best practices and culture, and knowing the tools and services available to you will help facilitate fast,

efficient, economical broadband deployments.

Today's LiDAR technologies and GIS portals can help you and your utility counterparts be efficient, improve customer satisfaction, and stay in compliance with regulations, codes, and contractual obligations. This is important because regulations require that certain utilities respond expeditiously to pole attachment requests and because the billions of dollars in funding from the federal government are tied to certain obligations and commitments to build-out in a specified time frame.

Equally important is understanding that the pole owner and licensee relationship is a partnership based on trust. Without that fundamental tool, all the technologies on the planet won't help us join strengths to create the best result for the customers we all serve. ■



ABOUT THE AUTHOR

Ron Bilodeau is Director, Strategic Solutions, Osmose. He has more than 40 years of experience in telecommunications construction and electric operations management. For more information, please email rbilodeau@osmose.com or visit www.osmose.com. Follow Osmose on LinkedIn: [company/osmose](https://www.linkedin.com/company/osmose) and Facebook: [osmoseutilitieservices](https://www.facebook.com/osmoseutilitieservices).

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It's Not Just an Inconvenience

Visibly Protecting the Unseen Underground Network Is Key

By Ashley Zolot

The days of underground communication lines being less critical are over. It was on its way, but the pandemic turned this statement into a standard. A decade ago, communication service interruption was not much more than an inconvenience. A damaged coax cable or phone line certainly wasn't on most people's radar as a critical issue (unless of course, it was a damaged CATV line on Football Saturday). Today is a different and



more connected world, though. For many households, if the communication line is damaged it means there's no working from home, no learning from home, and no entertainment at home. In an even more connected household, a damaged communication line could impact home security, the thermostat, and even the refrigerator. The days of losing just entertainment and experiencing a relatively minor inconvenience are over.

The underground communications infrastructure is the unseen framework of connectivity. That means this critical network is at risk of being damaged anytime a homeowner, professional excavator, or even the utilities themselves are digging or "moving the earth". The message of 811, "Call Before You Dig", is spread far and wide because calling or clicking before you dig is the first step to protecting that connectivity. Each state has an 811 system which processes millions of tickets each year that essentially warns facility owners, "we are going to dig, and your facilities will be at risk."

The importance of calling 811 before digging is primarily to protect public safety and our vital subsurface infrastructure by sending notices of proposed excavation to a utility locate company. The utility locate technicians review the work order, assess the risk, identify the at-risk facilities, and mark the ground where a conflict may exist. In the case of communications, a locate technician paints orange marks on the ground signifying to any excavator that communication lines exist there and to help them avoid hitting the line. Though these are state guidelines all should follow, there's still much work to be done. In fact, there were a reported 193K damages to communication facilities according to Common Ground Alliance's (CGA) 2020 DIRT report¹, which is a staggering number.

The process is relatively straightforward. Excavators have the job to

excavate safely and not hit a utility line. The Department of Labor's Occupational Safety & Health Administration (OSHA) lays the groundwork for this in their "Trenching and Excavation Safety" guide² by outlining excavation standards before even starting excavation. Their piece of the process is to call 811 to get a ticket for the area, and have the utility located all before the excavation. The next step is to follow state guidelines when performing the excavation, respect the marks, and excavate safely around those marked facilities.

Unfortunately, the process doesn't always work.

There is a shared responsibility when it comes to underground damage prevention. This is the reason for the existence of CGA's "Best Practices" manual³, which is an agreed upon document by 16 industry stakeholder groups including excavators, contract utility locators, local government officials, developers and more. All have the intention to improve worker safety and protect the underground infrastructure. Previously, the most at-risk facilities would have been the gas or electric lines because they could cause immediate injuries. While there is still an immediate danger associated with electric and gas lines, homeowners are becoming more acutely aware of what they lose when a communication line is damaged.

Reliability in service is not just critical for homeowners, but also for businesses and emergency services. Imagine trying to call 911 in an emergency, but not being able to reach them because a fiber optic cable was damaged during excavation. Sure, most damages are restored in a reasonable amount of time, however, it still disrupts the service. Recently, a communications company was interrogated by their state's corporation commission regarding a service outage investigation. The investigation⁴ could connect at least one death to the outage, which affected

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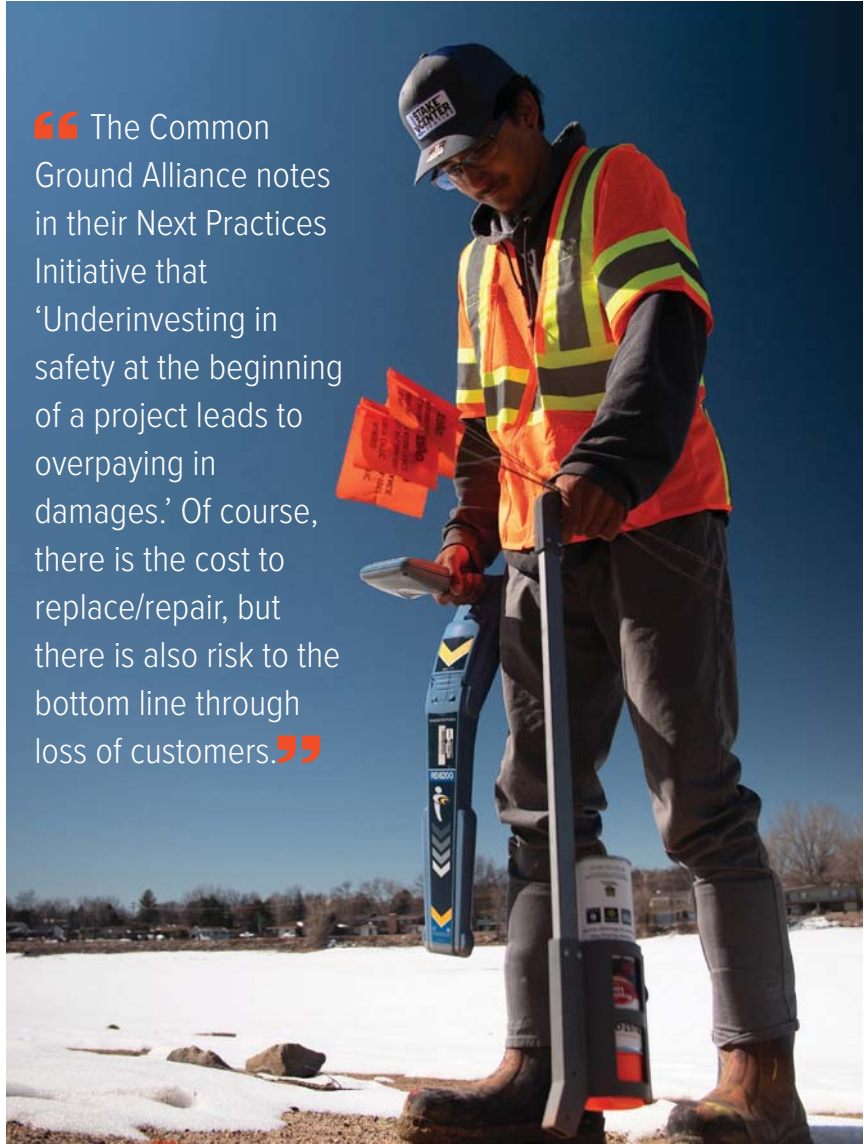


911 services and hospitals in the area. The investigation could result in a court order for the company to justify its damage prevention practices.

Damage Prevention = ESG Commitment

Connectivity is not going away. In fact, reliance on technology is only going to increase. The Biden-Harris Administration just started the “Internet for All” initiative. The focus of this program is bringing high-speed Internet to rural areas that previously didn’t have the money or infrastructure before. This program is putting \$65 billion into expanding Internet access. The “Internet for All” website⁵ says “High-speed Internet doesn’t just help individuals. It helps our country.” From this standpoint alone, communication companies can consider damage prevention as part of their environmental, social, and governance program.

Stake Center Locating’s Chief Operating Officer and Chief Financial Officer, Heath Martin, said it best, “The stakes are getting higher as the importance of connectivity has grown exponentially. Decades ago, an interruption in service was an inconvenience. With the amount of data being processed today,



“ The Common Ground Alliance notes in their Next Practices Initiative that ‘Underinvesting in safety at the beginning of a project leads to overpaying in damages.’ Of course, there is the cost to replace/repair, but there is also risk to the bottom line through loss of customers.”

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an interruption in service can be critical to homes and businesses.” All of this means communication is more important now than ever, so now more than ever there is a need to protect our critical communications infrastructure.

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Damage prevention is not a one-size-fits-all, but one industry segment who has made continual investments in damage prevention and seen successful results is the gas and oil industry. The gas and oil industry approaches damage prevention in many ways—everything from investing in Dedicated Locating Services (where a locating firm locates for one utility locating company only), enhancing communication with operators and excavators to partnering in public education. There are continual efforts to collect data and improve programs. They also contract utility locating companies who focus on superior quality to be sure highly trained technicians focus their attention on locating their critical infrastructure for excavators.

The time is now for communication companies to make an investment in damage prevention. Not only is there the public aspect, but there is also the cost. The CGA notes in their Next Practices Initiative⁶ that “Underinvesting in safety at the beginning of a project leads to overpaying in damages.” Of course, there is the cost to replace/repair, but there is also risk to the bottom line through loss of customers. As homeowners are getting privier to the process, they’re also noticing communication competitors. They know their need for connectivity is important, so they need to select the company that gives them the reliable service.

It’s undeniable that there’s a growth of connectivity, of communication. What is belowground directly effects the communication aboveground. With more money and installation belowground, comes the need to protect it. Without it we lose the way we live, the way we do business, and the way we connect with the world. The need for communication companies to make investments in damage prevention, and implement preventative actions and programs, is higher than it’s ever been. The sooner that’s understood, the sooner that piece of critical underground communications infrastructure can stay intact, and life can flourish. ■

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ABOUT THE AUTHOR

Ashley Zolot is Marketing Manager, Stake Center Locating. She has experience in Marketing and Public Relations. For more information, visit www.stakecenter.com. Follow Ashley on LinkedIn: [in/ashleyzolot/](https://www.linkedin.com/in/ashleyzolot/). Follow Stake Center Locating on Twitter [@center_stake](https://twitter.com/center_stake), LinkedIn: [company/stake-center-locating](https://www.linkedin.com/company/stake-center-locating), Instagram: [stake_center_locating](https://www.instagram.com/stake_center_locating), and Facebook: [StakeCenter](https://www.facebook.com/StakeCenter).

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Sounding Off About Productivity and Noise

Bringing Nature’s Sounds to the Workplace May Help

By Evan Benway

We’ve known for years that natural light and views of nature can profoundly benefit humans. A hypothesis called *biophilia* suggests that due to our evolutionary biology, people innately tend to seek connections with nature. Architects and designers have embraced this and created biophilic designs by visually incorporating the natural world into the built environment.

Average Heart Rate Across Sound Conditions During Tasks and Rest

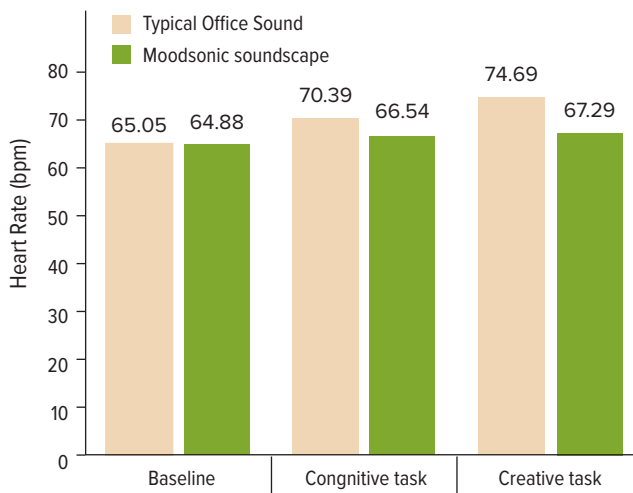


Figure 1. On average, participants’ heart rates dropped when at rest and when engaged in cognitive and creative tasks while listening to Moodsonic’s biophilic soundscapes.

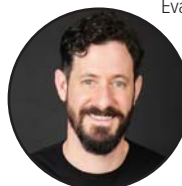
It turns out, though, that the biophilic hypothesis applies not just to sight, but to hearing as well. And while most of us feel our best when out in nature, we spend around 90% of our time indoors. Once inside, research shows that noise is the number one

complaint and the most distracting problem in the workplace.

Because our ears evolved as our primary warning system, they are always on. In workplaces, a myriad of other peoples’ conversations, alerts and other sounds consume valuable cognitive resources, distracting team members and lowering focus and productivity. Noise, whether from traffic, air conditioning, or other sources, causes measurable stress responses, raising cortisol levels, and contributing to health conditions such as high blood pressure. Quite simply, noise affects our ability to concentrate, be productive and creative, and generally feel healthy and well.

Given that, what can we do in our workplaces to embrace nature’s biophilic soundscapes and improve productivity? Our team collaborated with sensory research professionals at Kinda Studios and K-array’s KSCAPE to investigate this very thing. Using a range of measures, the research identified three benefits of biophilic soundscapes in offices. ■

ABOUT THE AUTHOR



Evan Benway is Founder, and Managing Director of Moodsonic. He has more than a decade of experience in product innovation and audio (specifically soundscaping), and his work has resulted in over a dozen patents as well as academic and industry publications on sound and cognition. For more information, email info@moodsonic.com or visit www.moodsonic.com. Follow Moodsonic on LinkedIn: [company/moodsonic](https://www.linkedin.com/company/moodsonic).



But wait, there’s more!

What are the three benefits of biophilic soundscape in offices? Find out at www.isemag.com/14281324



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