5G in retail:From stores to warehouses and beyond

Examples and success stories of maximizing cellular's flexibility and reliability

ERICSSON

Image courtesy of Getty Images

Digitally transformed retailers need Wireless WAN at the edge

The technologies retailers use to improve customer service and secure operations continue to evolve. Whether it's a long-term location, a pop-up store, digital signage, buy online and pickup in-store (BOPIS), or a self-service kiosk, nearly everything relies on dependable connectivity. This enables the modern experience shoppers expect, the operational technologies and IoT devices employees need, and the flexibility and security to handle it all.

Because of these trends and evolving needs, retailers are turning to 5G and LTE to support their digital transformation.

The intersection of retail needs and cellular benefits

Exceptional network performance

Retail applications such as voice and video require high bandwidth and low latency to prove their worth. As 5G and LTE wireless edge solutions continue to evolve, so will the ability to solve the performance needs retailers demand.

Business agility

Time is money, which is why the ability to get network access immediately is so significant for organizations when opening new locations. Companies need edge solutions with the agility to support and optimize multiple types of WAN links, enabling day1 cellular connectivity to support business operations.

Simplicity and flexibility of network management

Few companies with multiple locations place full-time IT professionals at each site, which means the ability to easily deploy, configure, monitor, manage, and troubleshoot remote networks centrally is essential. Cloudbased management platforms are ideal.

Security for all types of traffic

Branches today deal with numerous types of traffic, including direct-to-internet traffic, IoT information, and data that must be sent back to the corporate data center. Retailers need zero trust security capabilities to protect data, devices, and applications.

Retailers rely on cellular solutions in various scenarios

Wireless wide-area network (WWAN) solutions address retailers' agility, reliability, security, and management requirements in many business-critical scenarios. This e-book explores several of those situations, including:

Day-1 connectivity

Many retailers regularly open stores with strict deadlines to meet revenue and business goals. These businesses can't afford the uncertainty and delay of waiting for the installation of wired lines for network connectivity. So, how do new retail stores get internet access quickly?

Main challenge: Waiting for wired line installation

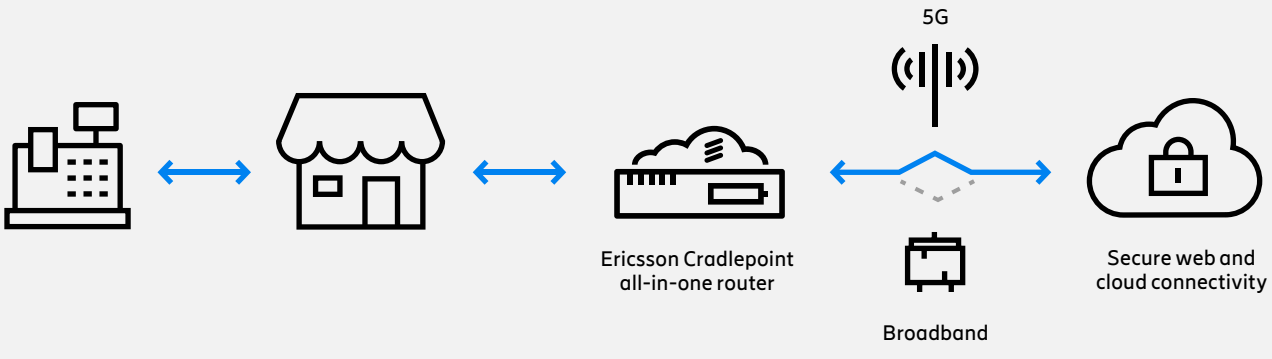
Benefits of 5G and LTE for day-1 connectivity

Setting up cellular broadband immediately

Immediate connectivity through cellular All-in-one routers feature embedded high-performance 5G or LTE modems, eliminating the need to wait for wired lines. These routers establish a secure cellular connection as the primary link, guaranteeing day-1 connectivity at new locations. Stores can open on schedule, unshackled by network delays.

Support of multiple types of WAN and LAN connections

All-in-one routers support various WAN and LAN connection types, including cellular, wired broadband, fiber, and satellite. This allows businesses to leverage the most suitable option for their specific needs. Multi-WAN capabilities and SD-WAN features enable businesses to distribute network traffic across multiple WAN connections for optimal performance and redundancy, as well as for bandwidth augmentation.



Valvoline oil change locations use cellular for hybrid WAN and service with a last mile

Challenges

The hundreds of digitally transformed Valvoline Instant Oil Change locations run by franchisee Henley Enterprises simply can't function without WAN connectivity — and outages were occurring too often for comfort. Downtime cripples essential functions such as the ability to accept credit card payments, and Henley was looking for ways to avoid relying solely on wired broadband.

Solution

In each of its locations, Henley Enterprises uses Ericsson Cradlepoint hybrid WAN routers. These all-in-one hybrid WAN routers support cellular and wired broadband and include Wi-Fi, a firewall, and extensive cloud-based network and security management features and integrations.

Benefits

This solution featuring multi-WAN flexibility with built-in cellular connectivity has helped Henley Enterprises squelch network downtime and streamline IT operations across its considerable footprint of Valvoline service centers — creating marked cost savings and new efficiencies while bolstering the customer experience.

Image courtesy of Henley Enterprises

"We've had great success utilizing cellular as our primary internet connection for Valvoline Instant Oil Change businesses in areas where high-speed wired broadband is scarce."

Robert Reeder, CIO, Valvoline Instant Oil Change franchise, Henley Enterprises

Pop-up store

Pop-up stores allow retailers to be more innovative than ever before by bringing business to where the customers are. From farmers' markets to seasonal storefronts, this growing trend toward temporary retail is driving the need for instant connectivity that is secure, easy to deploy anywhere, and can be monitored and managed without sending IT professionals to each site.

Main challenge: Unavailable or unreliable wired connectivity

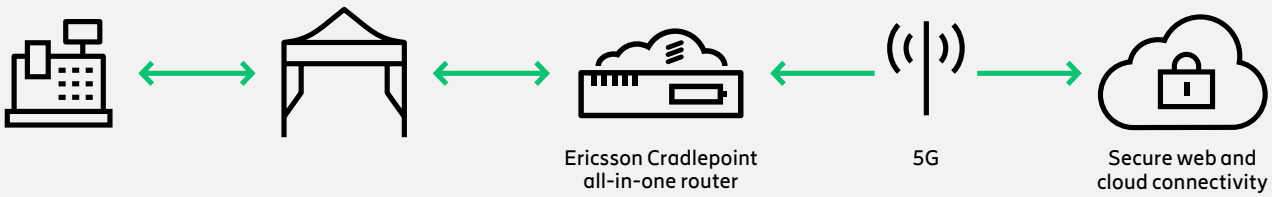
Benefits of 5G and LTE solutions for pop-up network connectivity

On-demand connectivity and security anywhere

Organizations can instantly set up flexible, secure cellular WAN connectivity and cast Wi-Fi on the spot through plug-and-play cellular routers — without sending IT professionals on-site. The mobility of cellular allows businesses to move their pop-up solutions as needed, and scalable security features can be adjusted at any time.

Ensure predictable costs, no matter the area

Using cellular connectivity for pop-up networking standardizes temporary WAN costs across a country, with the ability to rely on one or two network operators instead of a different wired internet service provider in every city.



Cellular connectivity enables flexible retail pop-up at major sports events

Challenges

MainGate sets up its merchandise trailers, kiosks, and mobile stores for temporary, pop-up retail at many major sports events year-round. With so many locations and situations to plan for — and with such a limited time to sell at each event — constant, flexible connectivity for POS services is vital.

Solution

MainGate deployed Ericsson Cradlepoint cellular routers. It's a comprehensive solution that supports both wired and wireless connectivity; includes a built-in firewall and Wi-Fi access point; and is centrally managed by the IT team, with no need for on-site troubleshooting.

Benefits

Ericsson solutions allow MainGate to easily set up the best, most cost-effective WAN configuration at each location — with plug-and-play functionality and simple remote management. Compared to more expensive WAN options such as satellite, cellular is quite cost-effective. In fact, Ericsson helped MainGate reduce its per-device data costs by 50%.

Image courtesy of MainGate

"Some of our events are in the middle of nowhere. We needed a reliable solution that worked everywhere."

Dan O'Reilly, IT support supervisor, MainGate

Store within a store

Many big-box stores or large facilities such as airports invite third-party stores such as kiosks, retail shops, and tax preparation companies onto their premises — but with an understanding that these guests will bring their own network. Keeping other businesses completely off the main WAN is the best way for the larger venue to keep its network secure and avoid unpredictable bandwidth demand.

Main challenge: Quickly getting a physically separate network within a larger store

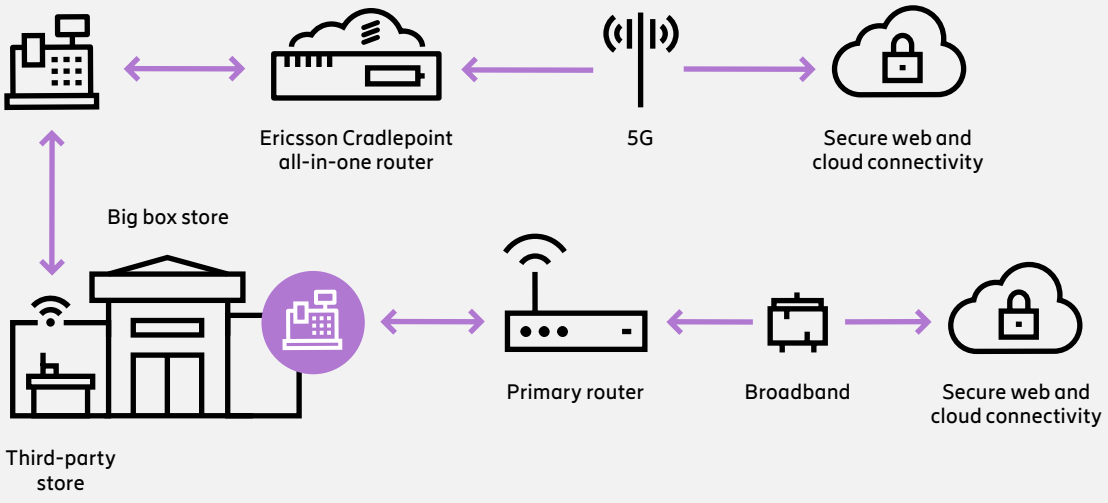
Benefits of 5G and LTE solutions for store within a store

Immediate connectivity with zero-touch deployment

Ericsson Cradlepoint all-in-one routers feature embedded high-performance 5G and LTE modems, which enables flexible connectivity that is completely separate from on-site wired broadband. Ericsson's enterprise wireless solutions include zero-touch deployment, as each router is registered in Ericsson NetCloud before being shipped.

Network security for the business and its host

Businesses located within larger stores usually are required to bring their own network, partly because of the protection it affords it provides to the host company. With an all-in-one solution that includes SASE features, the guest business also can easily lock down its own network security with add-ons such as zero trust networking and hybrid mesh firewalls featuring web filtering and IDS/IPS.



Cellular separates Jackson-Hewitt tax services from big-box networks

Challenges

During tax season, Jackson Hewitt tax preparation kiosks in big-box stores throughout Georgia need internet access and phone service immediately, but they aren't allowed to connect to the host store's network — and deploying a wired line at each location is complex, expensive, and a lengthy process.

Solution

These Jackson Hewitt tax preparation areas leverage Ericsson Cradlepoint routers to provide the cellular-based connectivity the employees need — without the provisioning or installation hassles of DSL or cable.

Benefits

Cellular connectivity allows Jackson Hewitt to get its kiosks up and running in less than an hour, with one carrier instead of a different ISP in each town — and without any need for third-party assistance. Built-in features enable the information security they need, along with total physical separation from the larger store's network.

Image courtesy of Getty Images

"I walk in with everything I need. With the Ericsson Cradlepoint router, in less than an hour, the kiosk is up and running and ready to go. No waiting."

John Beazle, franchise owner, Jackson Hewitt

Hybrid WAN in stores

In retail environments, the continued influx of IoT devices, mobile workers, cloud-based apps, direct-to-internet traffic, and technology-expectant customers has made high availability and excellent agility — along with data, device, and application security — more important than ever. Companies are looking for hybrid WAN routers that also support SD-WAN and zero trust security services at the edge of the network.

Main challenge: Meeting broad site needs without expanding the networking stack

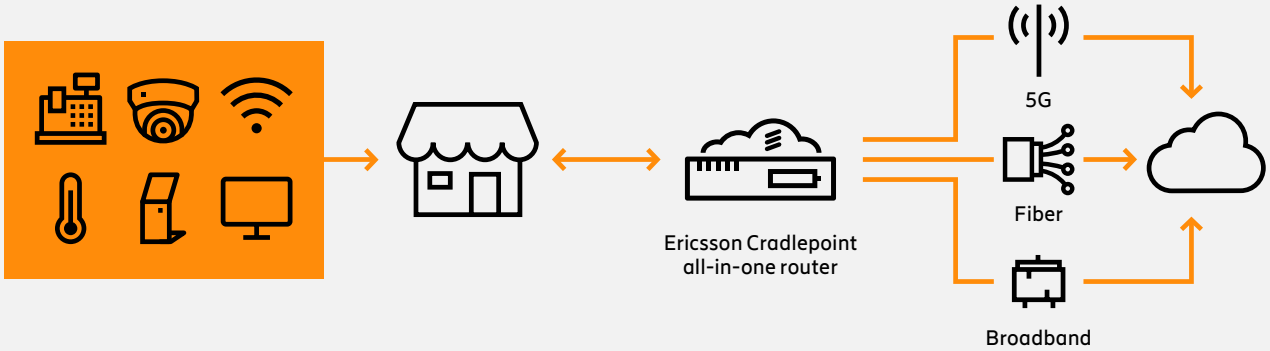
Benefits of integrating 5G, LTE, and SD-WAN technologies through one solution

Simplified, secure branch infrastructure

Hybrid WAN routers offer built-in 5G and LTE, multi-WAN functionality, Wi-Fi, routing, and integrated zero trust security capabilities. These routers also support SD-WAN services including intelligent bonding and network slicing.

Cloud control of network functionality at many sites

With the sheer quantity of network applications running in most locations, cloud-based management and troubleshooting features — including automated alerts — provide the only way to cost-effectively manage WAN conditions at widespread locations.



GAIL's Bakery uses 5G connectivity to elevate the customer experience

Challenges

GAIL's Bakery, a renowned neighborhood bakery in the UK, has more than 120 locations — each of which relies on a variety of technologies to improve the customer experience and operational efficiency. To support continued growth and ensure bakeries can keep up with ongoing digital transformation, GAIL's sought a high-performance router that would provide flexible primary and failover connectivity.

Solution

GAIL's, in collaboration with IT solution provider KFP, successfully deployed Ericsson Cradlepoint 5G hybrid WAN routers in 40 sites and plans to install them at all bakeries from now on. In most locations, the IT team is setting up wired broadband as the primary WAN link, with 5G connectivity providing always-on failover. GAIL's can manage all their routers through a single pane of glass using Cradlepoint NetCloud Manager.

Benefits

With Ericsson solutions in place, GAIL's can ensure seamless connectivity in its bakeries. Ericsson NetCloud Manager gives the IT team clear visibility into the network from anywhere, allowing them to monitor data usage and quickly address issues remotely. This reduces the need for on-site troubleshooting and minimizes downtime — something that is especially useful in remote locations.

Image courtesy of Gail's Bakery

"It's not often that you find a cost-effective solution that is quick to deploy and, once installed, immediately impacts a business for the better."

Alistair Cossins, group head of IT, The Bread Factory and GAIL's Bakery

Primary wireless in stores

Traditional, legacy networking products are no longer sufficient for many of today's hyperconnected retailers. With hundreds or thousands of stores to manage and too much riding on WAN uptime, lots of companies no longer want to simply add a cellular failover solution to their already extensive hardware stack. Instead, they are looking to replace their aging, wired-dependent systems with a streamlined approach capable of supporting new zero trust security capabilities and the technology in and around their stores, such as BOPIS.

Main challenge: Availability and cost variances of wired connectivity between different store locations

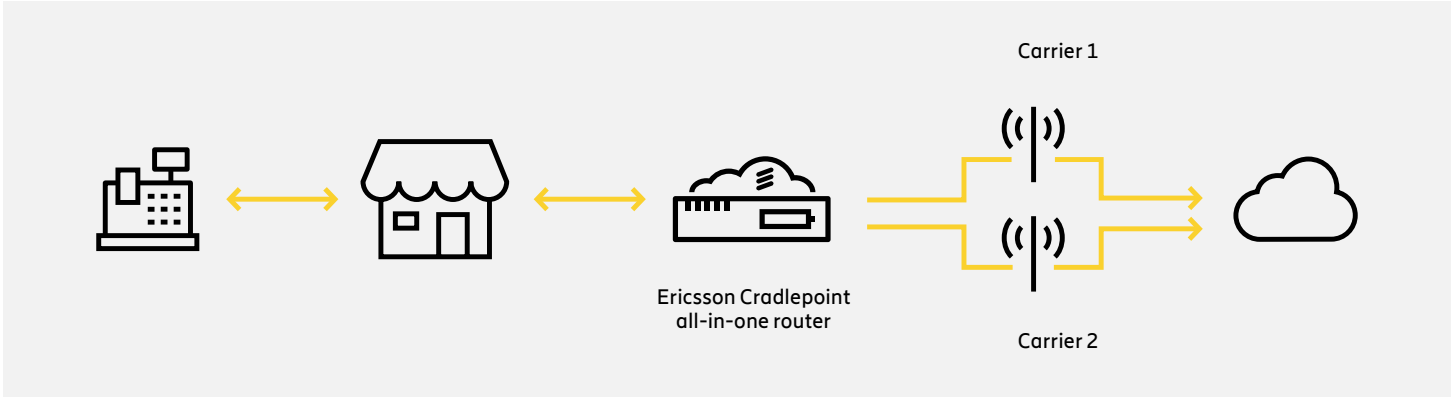
Benefits of using cellular for primary connectivity in stores

Cellular goes where wires can't

Rural settings or new developments may not have access to fiber, T1 lines, or other wired connections, creating islands of nonconnectivity, even in urban and suburban locations. Cellular first or wireless-only networks provide extensive coverage and reach across enterprise-class 5G and LTE networks. Businesses can still take advantage of WAN link diversity using Ericsson Cradlepoint hybrid WAN routers with support for multiple modems and carriers.

Connect on day 1 and avoid delays

Wired networks require significant planning and execution, and often cause delays as businesses and their employees wait for backlogged installation services. Wireless connectivity through an Ericsson Cradlepoint router enables businesses to move, pivot, and expand rapidly. Rather than suffering through the cost and setup of cable installations, 5G and LTE networks can be brought online right out of the box.



Subway franchisee keeps network fresh with 5G connectivity

Challenges

DiPasqua Enterprises, one of Subway's original and largest franchisees, has grown to over 100 locations, with plans to continue diversifying its franchise portfolio. This rapid expansion required a network refresh to accommodate widespread locations without overextending the company's lean IT team or increasing total operational costs.

Solution

DiPasqua implemented Ericsson Cradlepoint routers in each of its restaurants. For locations implementing primary wireless, dual modems ensure cellular connectivity based on the best available network connection. Other locations are supported by a multi-WAN mix of 5G, LTE, and wired links.

Benefits

This Subway franchisee saved 20% in operational expenses by consolidating devices and subscriptions, and future-proofing their network solutions. The two-person IT team can now troubleshoot proactively and remotely, saving time and money that can then be allocated to other resources and innovations to help DiPasqua's continued growth.

Image courtesy of Getty Images

"I truly feel that you get what you pay for, and Ericsson has proven its worth since the proof-of-concept. Now that we've launched in our Subway locations, I see the benefits every day."

David Mole, IT director, DiPasqua Enterprises

Failover and out-of-band management (OOBM) for business continuity

Even a few minutes of downtime — especially during peak business hours — can cripple a retailer's revenue, costs, security, and brand credibility. WAN link failure often limits business continuity, which is the ability to keep connectivity at retail stores up and running at all times.

Main challenge: WAN link failure and downtime

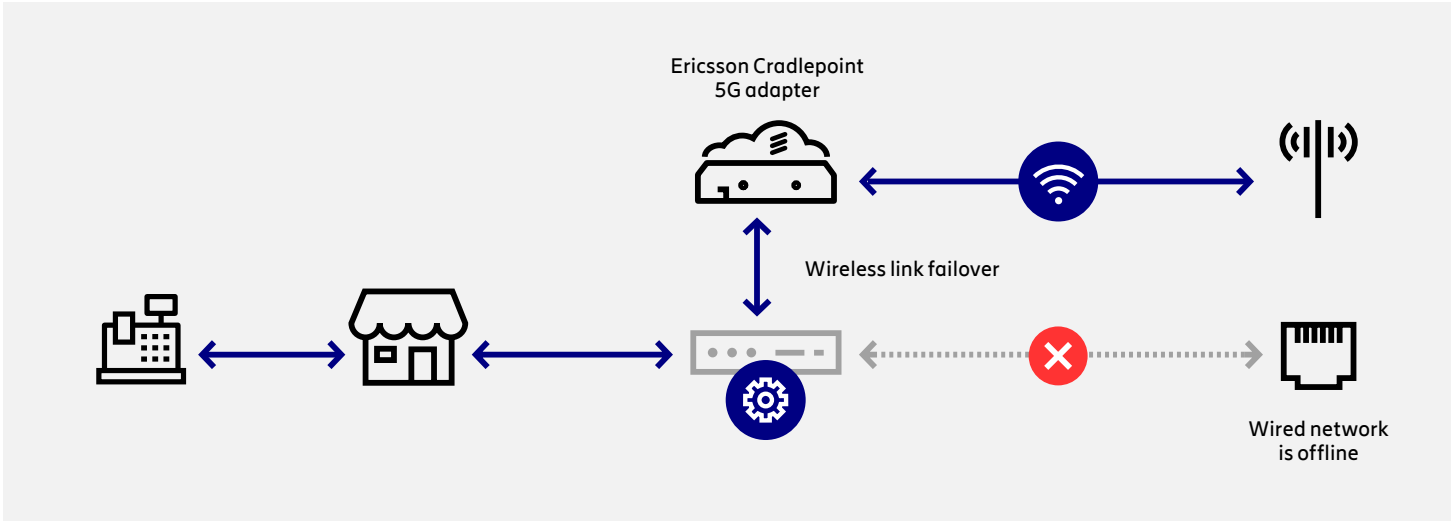
Benefits of overlay cellular failover for business continuity

Seamless automatic cellular failover

Whereas wired failover typically uses the same last-mile trenches and backhaul pathways, a Wireless WAN connection offers a diverse pathway through the air and allows policies to send traffic across a 5G or LTE link immediately. This automatic failover and WAN redundancy enable reliable uptime for networks where 24/7 connectivity is paramount.

Remote visibility into primary hardware failure

With a direct connection from the console port of the adapter to the primary router, administrators can connect to the router over the air, even if IP and Ethernet on the router are not functioning or available. This enables remote troubleshooting without rolling a truck or paying for slow, expensive POTS lines.



T-Mobile retail stores prevent downtime with cellular-based automatic failover

Challenges

T-Mobile has 5,000+ retail stores that depend on connected devices and business-critical applications, including POS systems and digital signs. The need for WAN link diversity was apparent, but running additional wires to thousands of stores wouldn't be cost-effective or logistically prudent. The IT team needed a failover solution that would be easy to stand up and manage from anywhere.

Solution

To enable seamless failover, T-Mobile tapped into its own highly available cellular broadband network and deployed Ericsson Cradlepoint cellular adapters.These endpoints easily integrate into existing network architecture, backing up wired connections and primary routers.

Benefits

Network disruptions no longer derail operations at T-Mobile's flagship stores. When a wired primary link goes down, the network now automatically switches to a cellular link — keeping important applications and IoT devices online. Through Ericsson NetCloud's centralized network management dashboards and features, the IT team can easily configure failover adapters at all locations from anywhere.

Image courtesy of Getty Images

"When we deployed Ericsson Cradlepoint cellular adapters in our retail stores, the results were immediate. We experienced increased availability as we saw our network take over when the primary transport link went down."

T-Mobile Operations Department

Additional scenarios for leveraging cellular in retail

IoT in stores

Cellular solutions empower in-store IoT — enabling retailers to collect, send, and analyze data at the network's edge in a manner that improves efficiency, sales, and customer service. Leverage sensor data for informed decision-making and utilize beaconing for targeted marketing based on customer behavior.

Private cellular in warehouses

Connectivity is difficult in warehouses, where workers need access to devices such as scanners and much more. Wi-Fi for wireless LAN can be very spotty and difficult to manage in these large, crowded spaces. In this setting, private cellular solutions often provide more reliability, control, and security than Wi-Fi.

Coverage extension to support safety

Deep in stores and warehouses, where macro public cellular networks sometimes have poor or nonexistent coverage, a company can use neutral host solutions — the same infrastructure used for private cellular networks — to improve and expand coverage. This is important for giving employees and/or customers the ability to call 911 during an emergency.

Learn more at cradlepoint.com