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The value of 5G WWAN lies in layers

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From FWA to in-vehicle access, there is deep value in simplified integration between cellular and the latest security and performance technologies.

Key insights

- 5G is more valuable to enterprises — providing flexibility and simplicity — when sold in a full solution that meets many networking needs instead of just one.
- Service providers are expanding into managed services for Wireless WAN (WWAN) and this is rapidly becoming the desired networking business model for enterprises that want to streamline their IT operations.
- The ability to deploy and trust 5G WWAN for primary connectivity is beneficial for companies that have already opened, or plan to open, locations in a wide variety of settings.

To fully visualize the potential value of 5G WWAN for service providers, it is necessary to look beyond Fixed Wireless Access (FWA), high-performance in-vehicle connections and large-scale IoT. The bigger picture of 5G enterprise value lies in layers — namely layers of use cases, enhancements, integration and management options that make WWAN a robust opportunity for enterprises to scale and for service providers to enable.

Enabling the network experience that each enterprise needs

The value of 5G for enterprise customers is maximized when sold as a full solution that meets all of their networking needs instead of just one. A layered approach enhances customers' flexibility, and simplifies deployments and management.

Operator-provided managed services

Service providers are expanding into managed services for WWAN and this is rapidly becoming the desired networking business model for enterprises that want to streamline their IT operations.
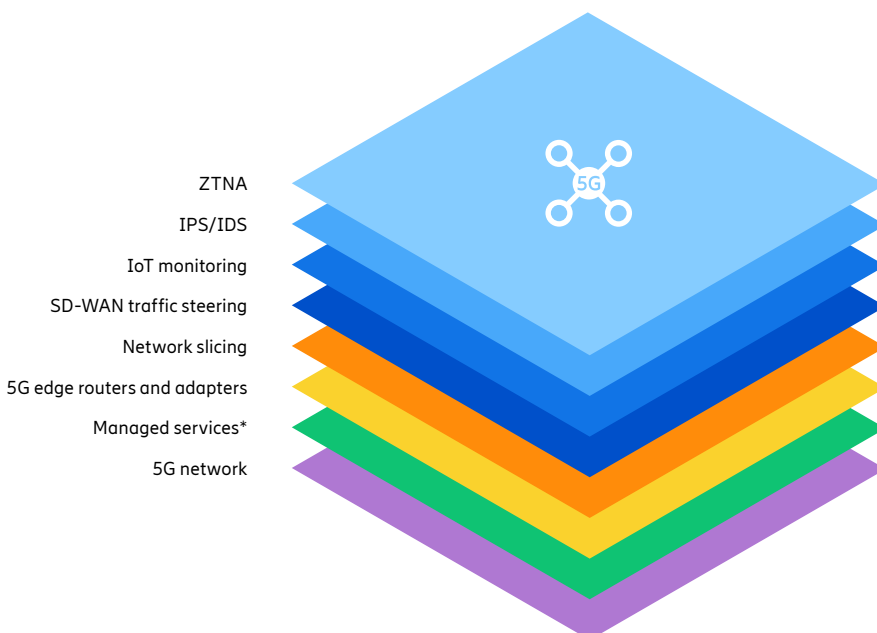
Service providers can expedite their ability to satisfy demand for managed services by onboarding a partner to handle day-to-day services while building their own internal infrastructure and eventually moving to fully internal operations.

Partner-provided managed services

The understandable hype surrounding 5G is not lost on channel resellers, many of whom will be motivated to exploit this latest cellular generation to provide custom services beyond traditional hardware deployments and network management.

Channel partners are agile enough to offer a wide range of options, including site surveys, consultation and break/fix services. Such innovation makes it easier for partners and operators alike to bring on new enterprise customers looking to scale up for years to come.

Figure 19: WWAN layered solutions

- ZTNA
- IPS/IDS
- IoT monitoring
- SD-WAN traffic steering
- Network slicing
- 5G edge routers and adapters
- Managed services*
- 5G network

*Service provider or channel provided managed services

High-value use cases for 5G WWAN continue to emerge as enterprises envisage what is possible.

Technology integrations

Network operators can offer more value to businesses by providing network hardware that easily integrates with the latest, most in-demand software technologies. Cellular router vendors ideally either provision these technologies themselves or have cloud-delivered integrations with best-in-class vendors. In-demand features include:

- zero trust network access (ZTNA) security service, which removes default access and utilizes an adaptive verification policy to protect information

- intrusion detection systems (IDS) and intrusion prevention systems (IPS), which identify and stop prospective data security breaches
- IoT monitoring systems, such as AWS Greengrass and Microsoft Azure IoT Central, which provide remote visibility into analytics for data from sensors and other devices
- SD-WAN traffic steering, which classifies traffic and matches application requirements with network characteristics, conditions and behaviors[1]
- network slicing, which enables a service provider to provision a set of logical networks over shared infrastructure, with each designed to serve a defined business purpose and comprising all the required network resources, configured and connected end-to-end[2]

Network slicing is poised to become a high-value service differentiator, as operators that provide dedicated slices can uniquely impact their customers' quality of service and data security for a variety of custom use cases.

High-value use cases for 5G WWAN continue to emerge as enterprises envisage what is possible with the significantly higher performance and lower latency of 5G.

Meanwhile, network operators can prepare for this wave of innovation by better aligning what they offer with what many different types of collaborators can provide within WAN deployment, optimization, security, management and beyond.

Layered solutions make it easier for enterprises to unlock the power of cellular broadband in a range of settings, including:
- at fixed sites
- in remote locations
- in vehicles
- in residential properties where employees are working from home
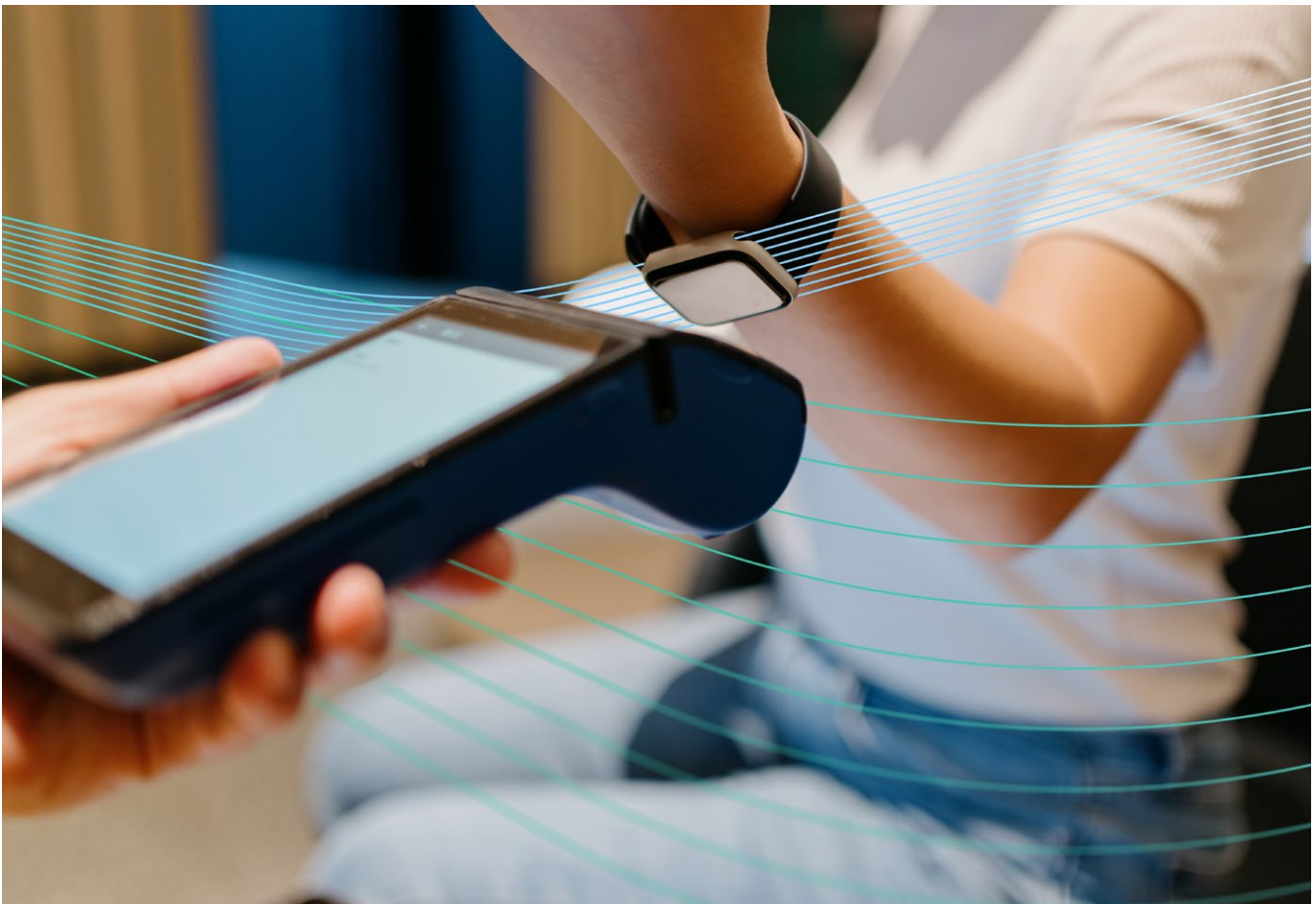
[1] OONUG, "SD-WAN Traffic Steering Moves Enterprise Apps Across Clouds" (May 9 2019).
[2] Ericsson, Network slicing early use cases.

Real-world use cases

What is the real-world result of offering high-performance cellular broadband as part of a larger solution that can include layers of data security, optimization and management features? A key outcome will be that 4G LTE use cases, already proven critical in many industries, will become more feasible, ideal and common for a far greater number of enterprises. For example:

Day-1 connectivity for fixed and temporary sites

Residential FWA has everyone buzzing, but businesses have been leveraging FWA for years. One of the most common use cases is day-1 connectivity.

Often companies can't afford to delay opening their new distributed locations while waiting for wired access to be installed. In these situations, they use cellular-enabled wireless routers to enable on-site connectivity immediately. Once wired access is available — sometimes many months after opening day — the organization can change the WAN configuration according to each location's needs.

The continued rollout of 5G has made day-1 cellular solutions more flexible — and thus attractive to — businesses than ever before. 4G was considered by many to be essential for failover in small to mid-sized spaces but not ideal for primary connectivity.

5G is expanding those WWAN use cases, as businesses are seeing that ultra-high download speeds and ultra-low latency make cellular broadband a viable primary connection for small to mid-sized offices and stores, and can handle failovers for all applications at large sites.

Whether 5G backs up wired, wired backs up 5G, or one 5G carrier backs up another 5G carrier, the setup can be altered from anywhere through a cloud management platform.

Remote locations

In remote and rural places where fiber would take too long to provide or isn't even available, FWA offers high performance and cost-effectiveness that addresses companies' geographical networking challenges. The ability to deploy and trust 5G WWAN for primary connectivity is a boon for companies that have already opened, or plan to open, locations in a wide variety of settings.

Remote work from anywhere

Remote work has changed not only many facets of staff management and business communication, but also enterprise networking. Businesses are dealing with a greatly expanded and more complex network edge, necessitating solutions that help IT teams balance their data security and network control needs with the connectivity demands of off-site employees using data-intensive apps.

Many companies now send cloud-managed, 5G/4G-enabled solutions home with at least a portion of their employees. Using enterprise-grade solutions for remote work enables a "branch of 1" at each staff member's house, with the ability for the IT team to implement and maintain the same level of security and connection performance — critical for high-bandwidth applications, including teleconferencing — that is available at headquarters.

Vehicle fleets

Cellular broadband has long been the ubiquitous connection choice for vehicle fleets. Solutions that support dual-modem 4G LTE, provide Wi-Fi and can be managed centrally have made connected technologies an essential component of fleet management.

However, the steep increase of different technologies within these vehicles — for law enforcement, fire services, ambulances, public transportation, schools, private motorcoaches and more — has left organizations and their fleet managers anxiously awaiting 5G to better accommodate their newly robust performance needs. Now that 5G solutions for vehicles have arrived, organizations can better plan for the next wave of connected technologies for both operations and customer service.

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