Private wireless networks:

Unlocking the door to the digital transformation

To better prepare for the ups and downs in any business climate, companies are always looking to equip themselves with tools that can **manage unpredictability**. Some of the most powerful tools available—automation or machine learning, for example—cannot be harnessed to their full potential with legacy systems. For that, a digital transformation is required that not only relieves cost pressures, but also **accelerates growth at scale** through current and future technologies. With enhanced connectivity and design flexibility, **private wireless networks** powered by cellular-based technologies unlock key innovative tools that **enable** a nimble and successful **digital transformation**.

Although many of today's powerful tools are relatively new, a digital transformation must have the foresight to predict how technologies will mature, and private wireless networks are ready to support new and continuing modernization efforts. These networks are inherently **high performing** and **ultra-reliable**, and support connectivity at scale opening the door for **emerging technologies**, such as Internet of Things (IoT) and edge computing.

Market outlook

It is no surprise that **enterprise interest in private wireless is growing** with digital transformation needs. Private Wireless Networks are the key to enabling AI, Big Data Analytics, Private cloud services and IoT. Around the world governments are making dedicated spectrum available for these private networks.

Thus, the **private wireless market is on the cusp of a projected 22% CAGR from 2020 to 2024**[1]. Indeed, the TBR report Private Cellular Networks Market Landscape (Second Calendar Quarter 2020) estimates that over 1000 business and government entities will deploy private 5G networks globally by 2030, and that they will likely use a 5G core as a common platform that converges all of their wireless and fixed connectivity infrastructure together.

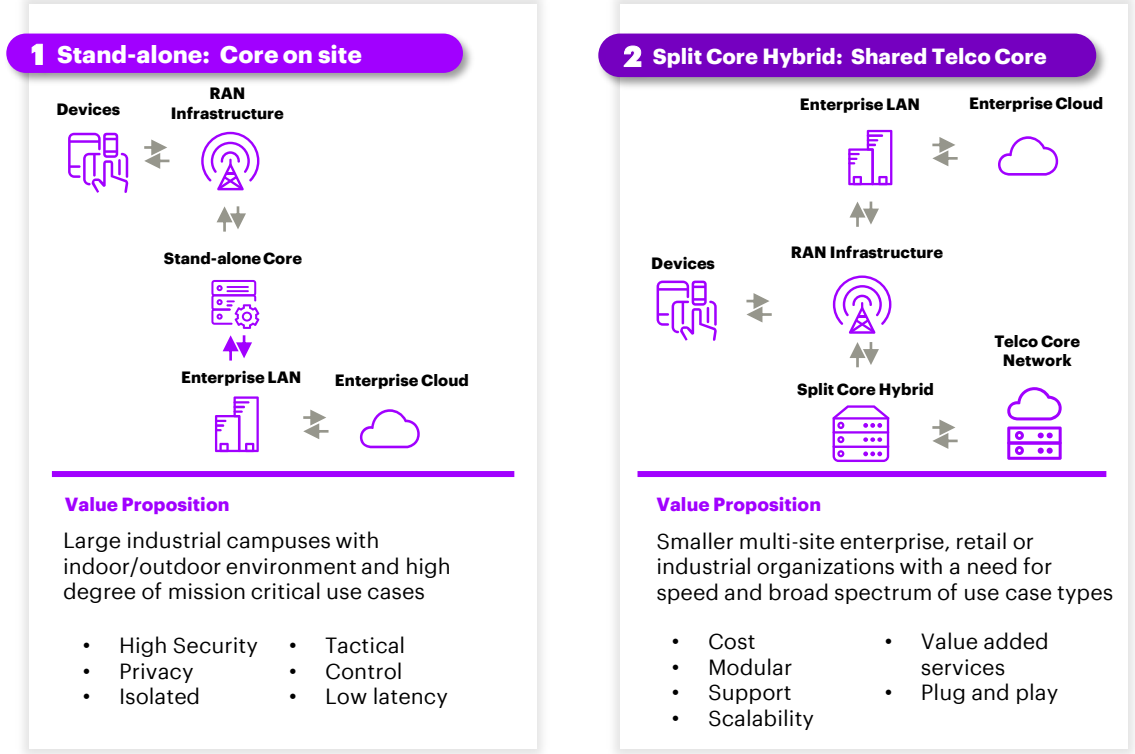
Also, the report considers **5G to be a future-ready platform** that, "can be leveraged to support any use case that requires connectivity. Pairing 5G with edge computing can provide enterprises with a workload-agnostic platform that they can adapt to meet their business needs.[2]"

[1] SNS Telecom & IT - The Private LTE & 5G Network Ecosystem, IDC, enterpriseiotinsights.com, statista.com, prnewswire.com, Polaris Market Research.

[2] Antlitz, Chris, Private Cellular Networks Market Landscape, Second Calendar Quarter 2020, Technology Business Research.

Future-readiness, security, flexibility: the private wireless upper hand

Solution deployment options



Wireless technology has evolved and now sophisticated solutions that were previously only economic with Public carrier scale are available to Enterprises. **Private wireless networks offer new avenues to connect facilities and solve business-critical operational needs.** A private network with dedicated radio and localized cellular equipment can support IoT, computer vision and artificial intelligence in strategic indoor and outdoor operations—previous wireless implementations could not support. These cellular-based networks can be deployed in **standalone** or **hybrid models**, and incorporate technologies such as multi-access edge computing to deliver innovation securely on low latency applications powered by the cloud and augmented with artificial intelligence.

Enterprises can deploy these form-fitted networks to explore highly varied wireless use cases and deliver carrier grade connectivity to both remote and urban areas that are hard to serve with a public network (e.g., hospitals, stadiums, oil fields, industrial plants). When networks are private, carrier grade SIM-based security can be used to add layers of data protection, and network quality and availability can be guaranteed as they can be optimized to handle specific traffic requirements.

Benefits gained from private wireless networks include **pervasive connectivity, simplified device management, amplified capabilities** (e.g. autonomous robotics, IoT or AI) and an **elastic architecture**.

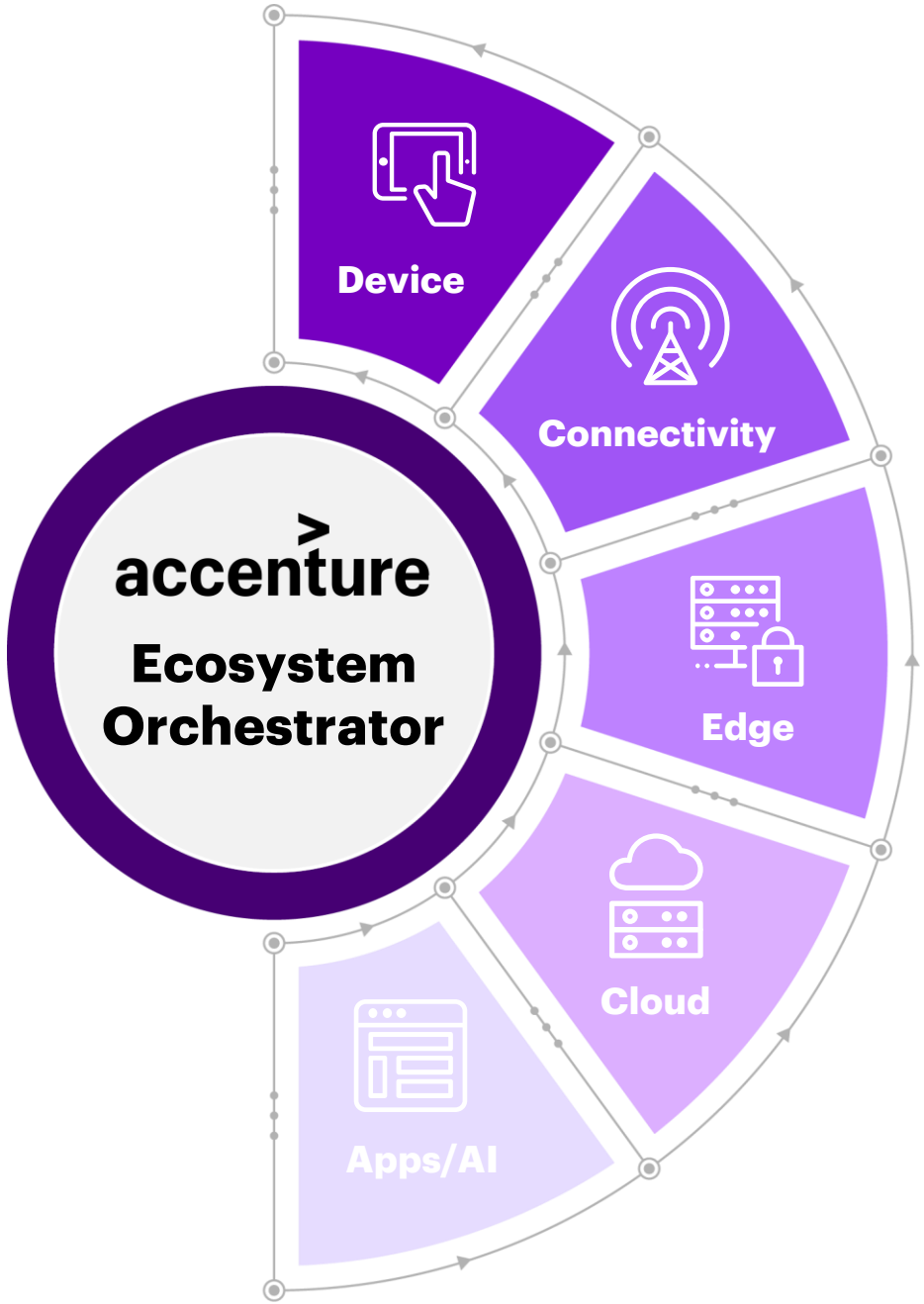
Private wireless solutions give total control over the network, devices and data, and can pull insights into performance and user activity. The solutions can leverage the **cloud at scale**, such that automated applications can be added to support new capabilities, efficiencies and use cases. Cloud at scale may include marketplace services for worker safety, predictive maintenance, automation, security, and build increasingly AI-driven operations.

Transformative ecosystem partners

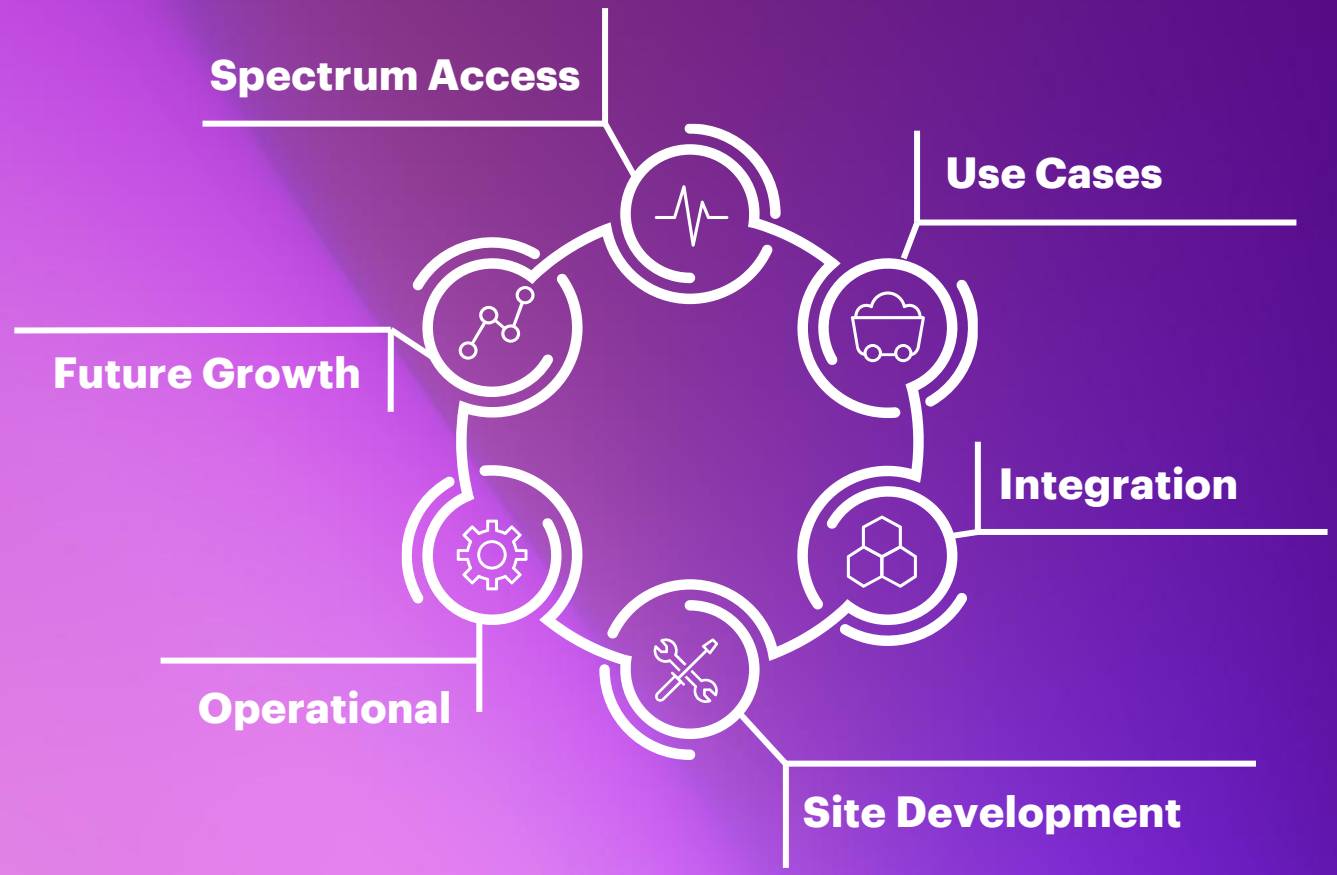
Enterprises can no longer make technology decisions in a vacuum and ensuring the successful deployment of these solutions requires a strategic focus The private wireless market includes an ever-evolving technology ecosystem that spans across hardware (e.g., devices, radio access network), software (e.g., cloud, application) and physical infrastructure (e.g., fiber, towers). **Collaborating with ecosystem partners ensures efficient results** by leveraging best in class ecosystem capabilities to solve complex business problems.

An ecosystem across Communications Service Providers, Network Equipment Providers, Cloud Providers and device Original Equipment Manufacturers will be critical to determine how value is enabled by these networks supporting digital transformation initiatives.

Accenture has direct experience orchestrating ecosystems across different industries to deliver private wireless networks. We understand the challenges and can quickly assemble the right ecosystem players to deploy a solution. **Ensuring a holistic wireless network strategy** with the right ecosystem partners will help companies harness emerging technologies and drive industry innovation.



What to think about an end-to-end solution



For each industry, the success of an **end-to-end private wireless solution requires weighing key factors** ahead of making an investment decision. Developing and deploying a network design is a complex process that should take into account these broad categories before embarking on this journey.

Accenture's experience in understanding how these critical elements shape the business case for private wireless deployments helps ensure that businesses can gain insights into when value can be realized.

Mapping technology decisions to business value

As in all major investment decisions, the **business case is essential**. A robust business case brings an evidence-based approach to understand the different deployment scenarios and how potential value can be generated. A roadmap needs to enable the enterprise's most valuable use cases in a timely manner and be cost efficient.

By **aligning business imperatives to technology decisions**, organizations can map how to link new capabilities, such as edge computing and pervasive wireless connectivity, and bring transformational value. A scenario modeling effort enables the enterprise to critically assess possible use cases, understand the cost drivers of each, and prioritize implementation based on business value. However, not all companies are in a position to make these data-driven predictions related to private wireless networks.

To help enterprises test and build a business case, **Accenture has a patent-pending investment model accelerator [3] tailor-made for specific use cases**, assumptions, values and cost drivers. Sample use cases focus on digitizing and automating operations, efficiency gains and safety improvements. Cost drivers range from connectivity or number of mobile devices, to data storage, application development, installation, and support.

Accenture knows what it takes to build an end-to-end solution. **The business case accelerator helps enterprises understand the cost, value and ROI associated with their form-fit solution.** Enterprises can quickly see the decision alternatives associated with their technology transformation and uncover the true cost of IoT, edge computing, wireless infrastructure, and enterprise integration.

[3] *Patent name: Utilizing Machine Learning for Optimization of Planning and Value Realization for Private Networks*

A private network proof of concept

An oil and gas company had recurring cellular performance gaps with a public network near one of its refineries. The company had started a series of digital transformation initiatives that required increased mobile connectivity, so they turned to Accenture to draft a solution.

The **Accenture team designed a private wireless network**, built from the ground up, tailor-made to address the company's industrial digital requirements and connectivity concerns. As a proof of concept, Accenture partnered across the ecosystem, to bring dedicated private wireless infrastructure onsite and record speed improvements at the refinery.

The private cellular network improved signal strength and penetration into selected process units, showing pervasive cellular connectivity is possible within a heavy industrial environment. The solution will serve as a blueprint for future 5G use cases, including support for Industrial Internet of Things (IIoT) and low latency applications.

Getting started

When a business is ready to explore how a private wireless network can fuel their digital transformation, **Accenture recommends a discovery process.**

In this process, stakeholders come together to share their vision for future operations, describe key use cases, and discuss how wireless connectivity can support their needs. Next, further capability and investment analysis is carried out, followed by strategy and roadmap development—all of which can be completed in a matter of weeks.

About Accenture

Accenture is a global professional services company with leading capabilities in digital, cloud and security. Combining unmatched experience and specialized skills across more than 40 industries, we offer Strategy and Consulting, Interactive, Technology and Operations services—all powered by the world's largest network of Advanced Technology and Intelligent Operations centers. Our 569,000 people deliver on the promise of technology and human ingenuity every day, serving clients in more than 120 countries. We embrace the power of change to create value and shared success for our clients, people, shareholders, partners and communities.

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Authors

Sean Delaney
Managing Director, Strategy & Consulting, Communications and Media

Jorge Gomez
Senior Manager, Technology Global

Kevin Kapich
Senior Manager, Technology North America

Contributors

Vikram Ayra
Management Consulting Manager