avanade

Are you ready for your Any-G future?

Unlock the business value of private networks with 5G and beyond

Do what matters

Any-G: Cutting through the 5G hype

Sure, businesses need to prepare for 5G if they haven't already done so. They should be ready to gain optimal business value from its higher peak data speeds and lower latency, greater network capacity and availability. But that's not enough.

It's not enough because truly forward-thinking companies should be realizing business outcomes with wireless technology today rather than waiting for continued advances tomorrow. We call wireless "Any-G" because, while speeds will continue to climb and costs continue to drop, network components will remain the same. With each successive generation of mobile networking, hyper-scalers like Microsoft, Amazon, Google and Alibaba are making connectivity a commodity, which enables fundamental change in how you do connectivity and networking.

Telcos have traditionally controlled your network, forcing you into their protocols, practices and limitations. Now that's changing, thanks to governmental release of public spectrum, enabling enterprises to buy what they need and bypass the telcos. That puts your enterprise in control of your networking. You establish the speed, scale and availability you need for new, mission-critical apps, apps that enable you to expand in existing markets and enter entirely new ones. By running your own network in conjunction with your cloud investments, you get even more value from those investments and from the ability to control your network via IT.

It's a step-change in networking technology that organizations can't ignore. 79% of businesses believe that 5G will have a significant impact on their organizations – and 57% believe it will be revolutionary. Unsurprisingly, they're not waiting for others to get to 5G first; 54% of businesses are already testing or have partially deployed some level of 5G capability[1]. They're not exploring 5G for its own sake. They're looking to 5G to help grow their corporate revenue up to 2.5X faster over the next three years[2].

79%
of business expected a significant 5G impact

57%
expect a revolutionary impact

54%
are already testing or working with 5G

Washington Maritime Blue's 5G feasibility study paves the way for innovation and sustainability

Washington Maritime Blue - a nonprofit, strategic alliance of key maritime stakeholders formed to accelerate innovation and sustainability - aims to maintain and support the growth and safety of a maritime economy through digitalization. To help this mission, Avanade conducted a series of interviews and workshops that uncovered specific use cases and identified the business value and technology pathway to build and use a private 5G network across the Tacoma Tideflats. Using a design-thinking mindset, we arrived at a set of overarching themes, including:

• Improving safety
• Enabling a sustainable future
• Orchestration and efficiency
• Infrastructure modernization

The study outlines both the business value and the technology pathway to build and use this network to become a global leader in advancing port operations, advanced manufacturing and environmental services.

Read the case study.

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[1] Accenture (2020) Accelerating the 5G future of business
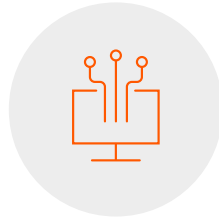[2] Accenture (no date). The future is 5G

Key characteristics of 5G

Speed
100x faster

Today: 300Mbps - 1Gbps
Tomorrow: 1-10Gbps

of Connections
10x more

Today: 10k-100k devices/sq. mi.
Tomorrow: 1M devices/sq. mi.

Latency
<The blink of any eye

Today: 50ms
Tomorrow: <10ms

Security & reliability
Enhanced

Today: hardware-based authenticaion
Tomorrow: software &
cloud-based system

Network virtualization
Control and quality

Today: Coupled network resources
Tomorrow: Creation of dedicated,
customizable slices of the network

Analytics & insights
1,000x more volume

Today: 0.01TB/s/sq. km
Tomorrow: 10TB/s/sq. km

Public and private wireless, better together

Until now, private networks for mobile devices have been hugely expensive, pushing most wireless networks into the public sphere. So, enterprises consume public network services from telcos, manage them through their operational technology departments, conform to telco network traffic requirements and accept the service level the telco provides.

Unlike the traditional, public network, the private network is managed locally or provided as a service, rather than managed by an outside mobile network operator (MNO). Performance is customized for the enterprise's needs, rather than determined by the MNO.

There may be as many reasons to adopt private networks as there are companies now considering that adoption. Chief among them:

Security – Private networks don't carry the security risks of public networks, where data can travel outside the organization and network, making security tougher to maintain and thus limiting the usefulness of the network.

68%
of businesses say 5G will make their operations more secure[3]

Data Costs – Private networks are a way to avoid the higher opex costs associated with high data transfer from the enterprise to the telco's public network.

Network performance – To realize the full business benefit of 5G-based applications, including return on investment, enterprises need more network performance than ever. Telcos traditionally don't provide SLAs for public network access. Cloud and other private network providers typically do.

Coverage – Public networks may not provide adequate coverage in desired areas such as remote manufacturing facilities, mines, and oil and gas fields. Private networks can be devised to provide that targeted coverage.

Optimization – Public networks may not be optimized to handle network traffic with distinctive or unique requirements. Private networks can be.

The interest in private connectivity options to public networks is growing because those options enable enterprises to custom-build networks with the precise feature sets they require for their particular use cases. No surprise there; most technologies over time have been implemented using a mix of sources and configurations. Think hybrid on-prem/cloud data networks designed to meet sovereignty, privacy and other requirements, or hybrid energy systems that run on a variety of fuel types, as well as both self-generated and purchased sources.

[3] Accenture (2020) Accelerating the 5G future of business
[4] TECHnalysis Research Private 5G Networks Study

Why now?

The momentum for 5G is growing now in part because of the "software-ization" of wireless networks and the resulting lower cost, commoditization, and promise of faster speeds when businesses need it.

Another factor: technologies are adopted faster today than they used to be. Think of the years it took for email to catch on. Now think of the speed with which people adopted WhatsApp and TikTok.

And it's not just that adoption now happens faster; there are also more competitors and types of competitors and business models than ever before. Cable companies such as Comcast, Sky, and Verizon once had streaming markets to themselves; now new business models bring content from Netflix and YouTube. Costco and Walmart once competed to bring value-conscious shoppers into their stores; now they face not only global online retailers like Alibaba and Amazon, but new business models like

subscription buying. Financial services firms, too, combine and compete across product and segment lines in new and interesting ways.

When new competitors, technologies or business models come quickly to market, the impact on established players can be just as quick.

Network services were once dominated by telcos. But now, businesses narrowly favor cloud providers over telcos (81% v. 78%, where respondents could make more than one choice) as the partner for planning or using private 5G[4]. One reason for this shift: Enterprises are looking to cloud providers and systems integrators to provide business applications and the network together, as a service, rather than providing just a network.

Cloud helps you put 5G to use

These newer market entrants are enabling use cases that enterprises are taking advantage of right now, including worker safety, remote inspection, logistics, port work, and telemetry data (e.g., automotive and airline).

81% of companies will use 5G to create and deliver new services[5]

Worker safety

There are about 340 million occupational accidents every year, making worker safety a crucial use case to address[6]. Companies can use 5G to enable remote maintenance of assets and improve field worker safety. Beyond saving lives, 5G maintenance solutions can save money: between 18% and 25% of maintenance costs, according to one estimate[7].

The worker safety 5G use case also entails AI and machine learning to initiate maintenance work, GPS-enabled smart devices to guide workers to work sites and update customers, sensors and augmented reality devices to identify assets, digital assistants for troubleshooting, and real-time coaching from control room operators.

Remote inspection

Many industrial tasks are dirty, dangerous and dull. Using robotics for these tasks enables a company to make better use of its workforce while reducing cost. But it has traditionally required companies to onboard, prepare, train, coordinate, coach and support robots that were designed for fixed-location use.

5G and Avanade's robot operations platform can solve these challenges. The Avanade platform maximizes the value of physical automation and enables enterprises to more easily orchestrate robotics as part of an end-to-end business process. Avanade data science expertise helps analyze and report on data captured by autonomous mobile robots.

Warehousing/logistics

As companies seek to shake out wasteful operations as a way to lower carbon footprints and improve sustainability, warehousing logistics and distribution are ripe for innovation. 5G – together with AI, IoT, digital twins and edge computing – can help deliver that innovation.

The Avanade warehouse/logistics bay analyzer solution uses these technologies to optimize the fill rate of trucks and thus reduce the number of shipments, and the amount of carbon emissions and fuel consumption associated with their use.

The solution measures the empty space in cargo trucks in near-real-time. An operational dashboard provides easy access to all collected data in "a single pane of glass."

Avanade estimates that a company with 16,000 annual shipments and an 85% fill rate could use the analyzer solution to avoid up to 2,500 shipments and up to 6,500 tons of CO_2 emissions.

Speeding the supply chain

Ports have proven to be one of the key bottlenecks in the supply chain. Their operators are looking at every technology and methodology possible to make them operate faster and more reliably – especially 5G. Avanade is working with the Port of Tacoma (Washington) to harness 5G to help overcome the limits of the Port's physical and technical infrastructure – on both land and water. Reducing long wait times at the terminal will reduce labor costs and carbon emissions.

[5] Burden, K. (2019) Customer Experience Management in 5G
[6] International Labour Organization (no date) World Statistic
[7] McKinsey (2018) Digitally enabled reliability: Beyond predictive maintenance

Avanade: enabling your Any-G future

The market revolution taking place around 5G will likely continue with 6G, 7G and future generations of mobile technology. There will be massive amounts of hybrid public and private networks of all kinds, sometimes overlapping or intersecting, including Wi-Fi, too. Different types of networks will be best suited for different tasks and business outcomes.

It's this broad future of Any-G wireless technology that you have to prepare for, more than focusing on 5G alone. Look to a new approach to wireless that gets you ready for new relationships with new types of service providers. You should anticipate a significant shift within your own ranks, too, as telecommunications moves from being the province of operational technology (OT) to being a shared responsibility between OT and IT.

Avanade – as the world's leading Microsoft solutions provider – stands ready to help you build your customized Any-G future with high performance, low latency, and connectivity wherever you need it: on the edge or at a remote area.

Wherever you are on your Any-G journey, Avanade can help you develop and refine your strategy, and help you experiment to drive value for your business.

With Avanade's approach to Any-G, "comprehensive, end-to-end service" now means more than a full-featured solution: it includes both that solution and the connectivity that helps to get it and its data anywhere they need to be, anywhere in the world.

Avanade enables you to own your own data path across the Any-G network, so your IP remains as secure as you want it to be. You get a robust business case with low-cost options that accelerate business benefit. You get the reliability you need for mission-critical applications and the flexibility you want to adopt new technologies and business models quickly and effectively.

43%
of businesses plan to work with a partner to develop custom 5G applications[8]

44%
say they'll partner with software and services companies[9]

43%
say they'll partner with cloud companies[10]

Avanade and the 5G Open Innovation Lab

Avanade is no new arrival to 5G. It's a founding member of the 5G Open Innovation Lab, a public/private consortium to advance the developer ecosystem at the convergence of 5G + Edge + Intelligent Apps.

Avanade's clients can leverage our leadership role in the consortium via:

- Executive briefings on 5G and private wireless
- Learnings about startups building next-gen applications
- Innovation network sandbox for 5G and Edge

[8] Accenture (2020) Accelerating the 5G future of business
[9] Accenture (2020) Accelerating the 5G future of business
[10] Accenture (no date). The future is 5G

Take a step towards your Any-G future

To learn more about the benefits of 5G for your company and how to achieve them, contact us today.

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About Avanade
Avanade is the leading provider of innovative digital, cloud and advisory services, industry solutions and design-led experiences across the Microsoft ecosystem. Every day, our 60,000 professionals in 26 countries make a genuine human impact for our clients, their employees and their customers. Avanade was founded in 2000 by Accenture LLP and Microsoft Corporation. Learn more at www.avanade.com.

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