Private Networks & Edge

5G Ecosystem Success Factors

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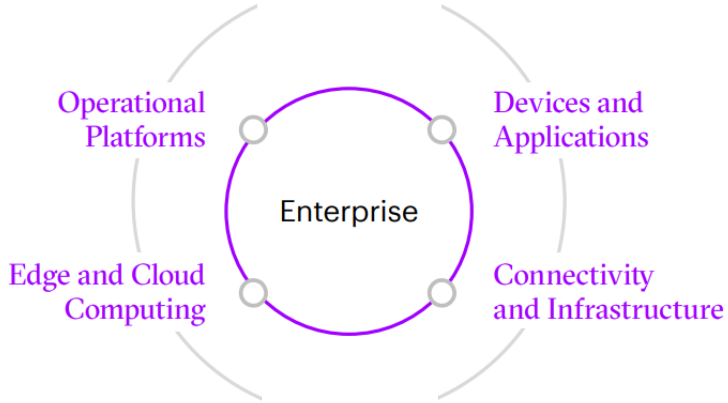
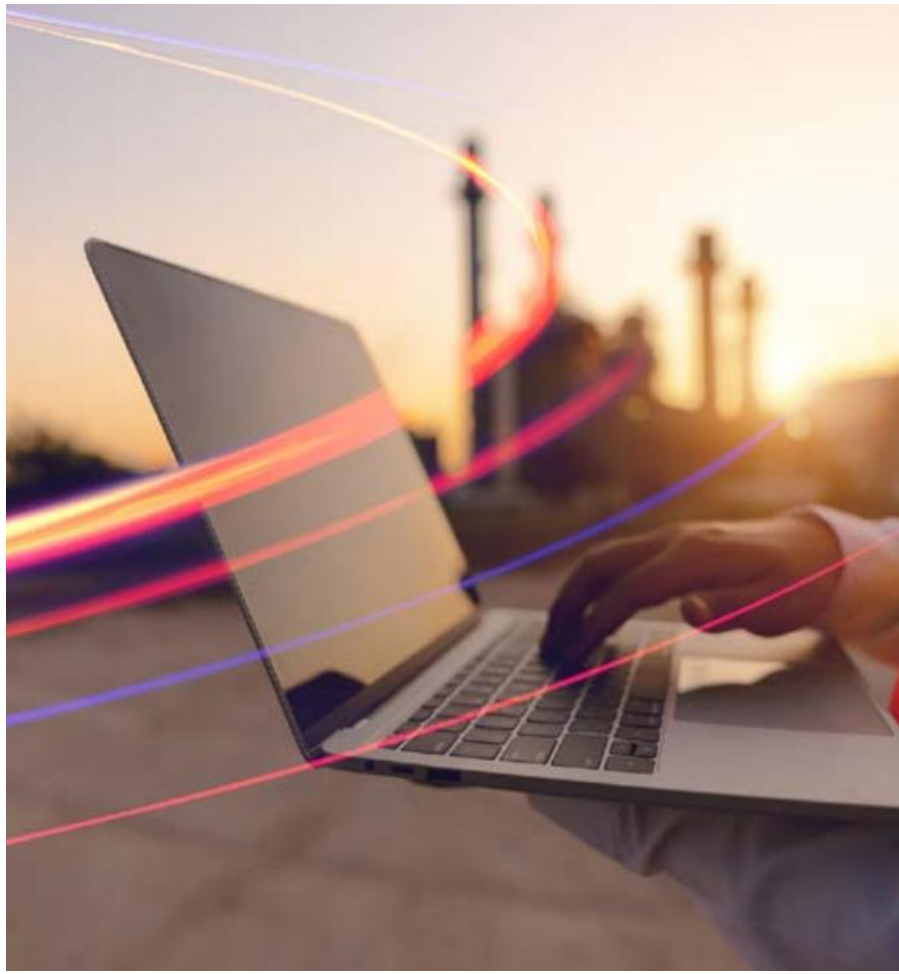
The need for reinvention

A network led transformation is key to achieving the full potential of industrial new digital capabilities.

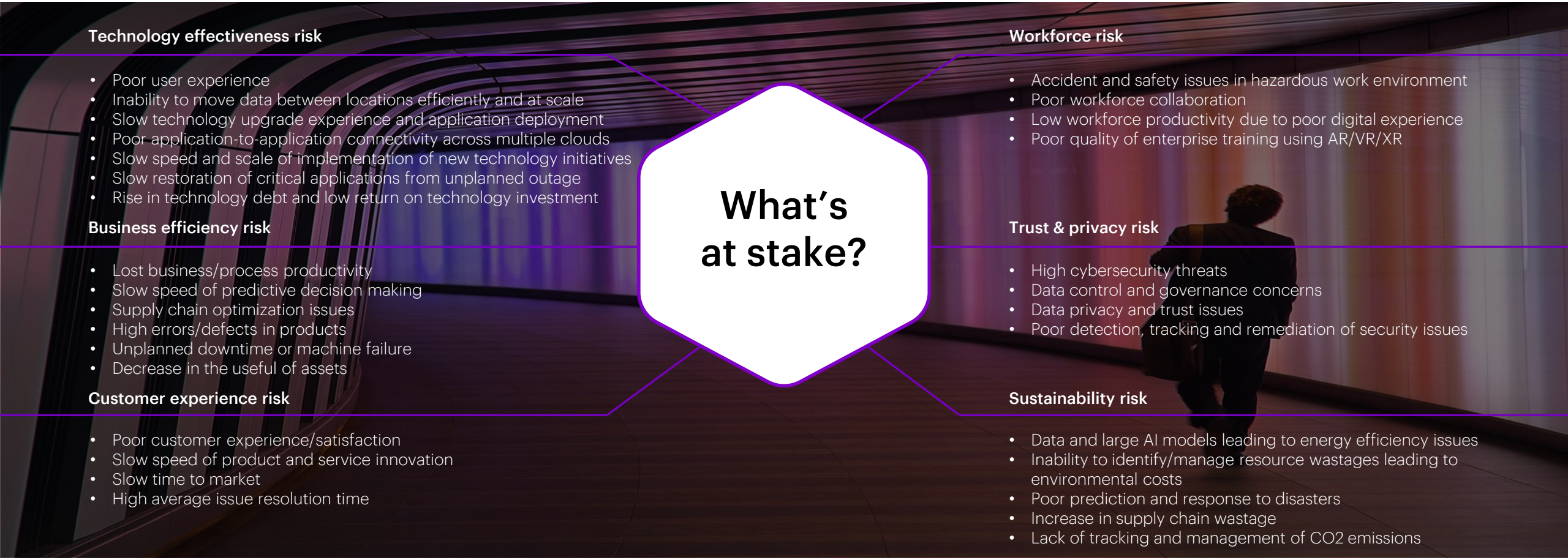
CSPs continue to invest billions in networks, both fixed and wireless. The challenge at hand is how their current network transformation can go beyond a generational upgrade, and in turn reinvent the organization to continuously improve and leverage new technology.



Outside of telecommunications, industries have been also transforming themselves by moving to the cloud, changing the rules of speed, agility, flexibility and the way their products and services are consumed and deployed.



Business risks due to inadequate network infrastructure



Technology effectiveness risk

- Poor user experience
- Inability to move data between locations efficiently and at scale
- Slow technology upgrade experience and application deployment
- Poor application-to-application connectivity across multiple clouds
- Slow speed and scale of implementation of new technology initiatives
- Slow restoration of critical applications from unplanned outage
- Rise in technology debt and low return on technology investment

Business efficiency risk

- Lost business/process productivity
- Slow speed of predictive decision making
- Supply chain optimization issues
- High errors/defects in products
- Unplanned downtime or machine failure
- Decrease in the useful of assets

Customer experience risk

- Poor customer experience/satisfaction
- Slow speed of product and service innovation
- Slow time to market
- High average issue resolution time

What's at stake?

Workforce risk

- Accident and safety issues in hazardous work environment
- Poor workforce collaboration
- Low workforce productivity due to poor digital experience
- Poor quality of enterprise training using AR/VR/XR

Trust & privacy risk

- High cybersecurity threats
- Data control and governance concerns
- Data privacy and trust issues
- Poor detection, tracking and remediation of security issues

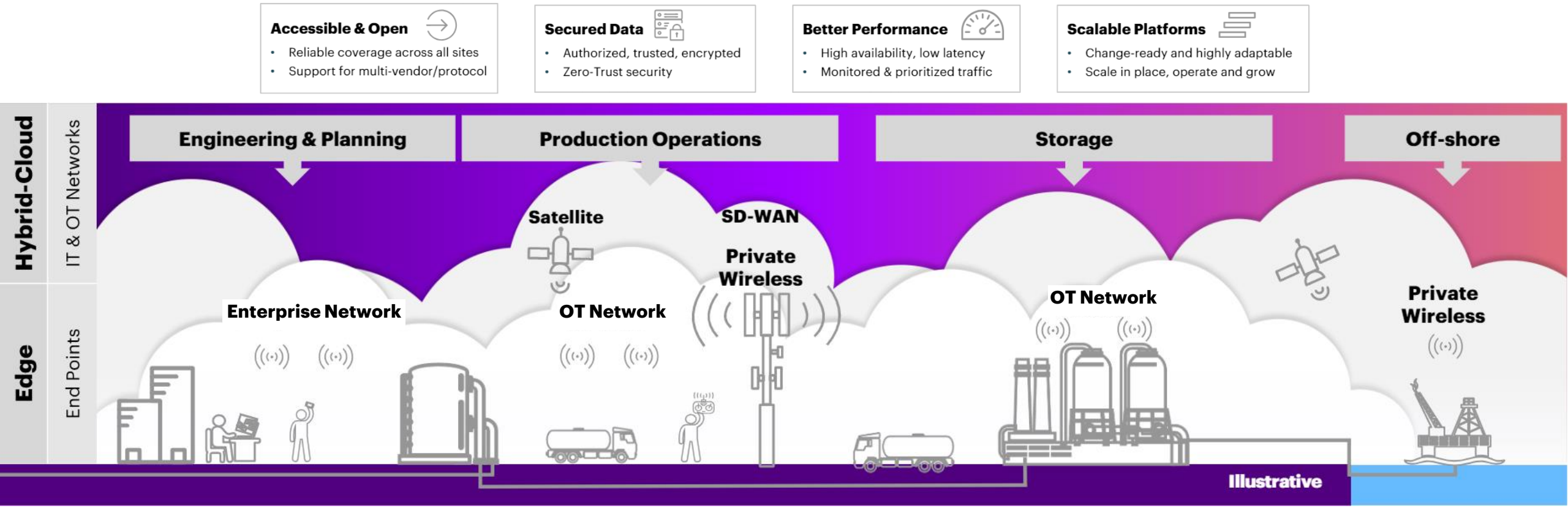
Sustainability risk

- Data and large AI models leading to energy efficiency issues
- Inability to identify/manage resource wastages leading to environmental costs
- Poor prediction and response to disasters
- Increase in supply chain wastage
- Lack of tracking and management of CO_2 emissions

It's clear something needs to change. The network of the future must be a modern one—one that is an enabler of future technologies and innovation, not a cost center that confines the enterprise to the present.

5G is today's industry enabler

Enabling AI, Big Data Analytics, Private cloud services and IoT requires a strong digital core and a beyond-connectivity digital platform



Key Capabilities of Private 5G Networks

Private 5G networks are:

Accessible and open

Flexible, always-on networks provide reliable coverage across all industrial sites. These networks support an "anywhere and everywhere" approach to digital consumption, integrating multiple vendors and protocols.

Secure and trusted

Enterprises using private wireless networks can rely on enhanced security across IT and OT. Critical business data can be authorized, encrypted and wrapped in zero-trust security protocols.

Scalable

Private wireless networks offer a change-ready, automated and highly adaptable platform able to scale in place, support innovation and grow with business needs.

High performing

These networks provide high availability with low latency, which are key for mission-critical industrial applications. They also allow enterprises to monitor and prioritize traffic.

Private 5G networks allow industrial companies to reliably upgrade and extend their connectivity, while unlocking new digital innovations across their products. They also offer both IT and OT a new fabric for reliable service delivery.

What's holding industrial companies back?

To accelerate private 5G implementations, several organizational and technological barriers must be overcome.

A coherent end-to-end vision.

Most industrial sites have brownfield legacy networks, comprised of point solutions, which take time to displace. Companies can struggle to lay out a holistic network transformation strategy, as it must detail the true value potential of the change and explain how new private wireless technologies will work with legacy systems.

Decentralized funding.

Many industrial sites control their own funding for a whole range of operations, from IT to safety to human resources, as well as networking. This decentralization can make it difficult to see the holistic business case (including the value potential of individual use cases) for enterprise-wide network transformation. Individual sites end up purchasing network solutions that solve their own unique pain points without seeing the bigger picture.

Integration skills.

Network transformation requires a complex integration across both IT and OT. Companies need to be able to see how everything comes together —network design and deployment, integration and managing an ecosystem of network equipment providers, civil engineers, network operations. These essential integration skills are scarce and in high demand.

Ecosystem complexity.

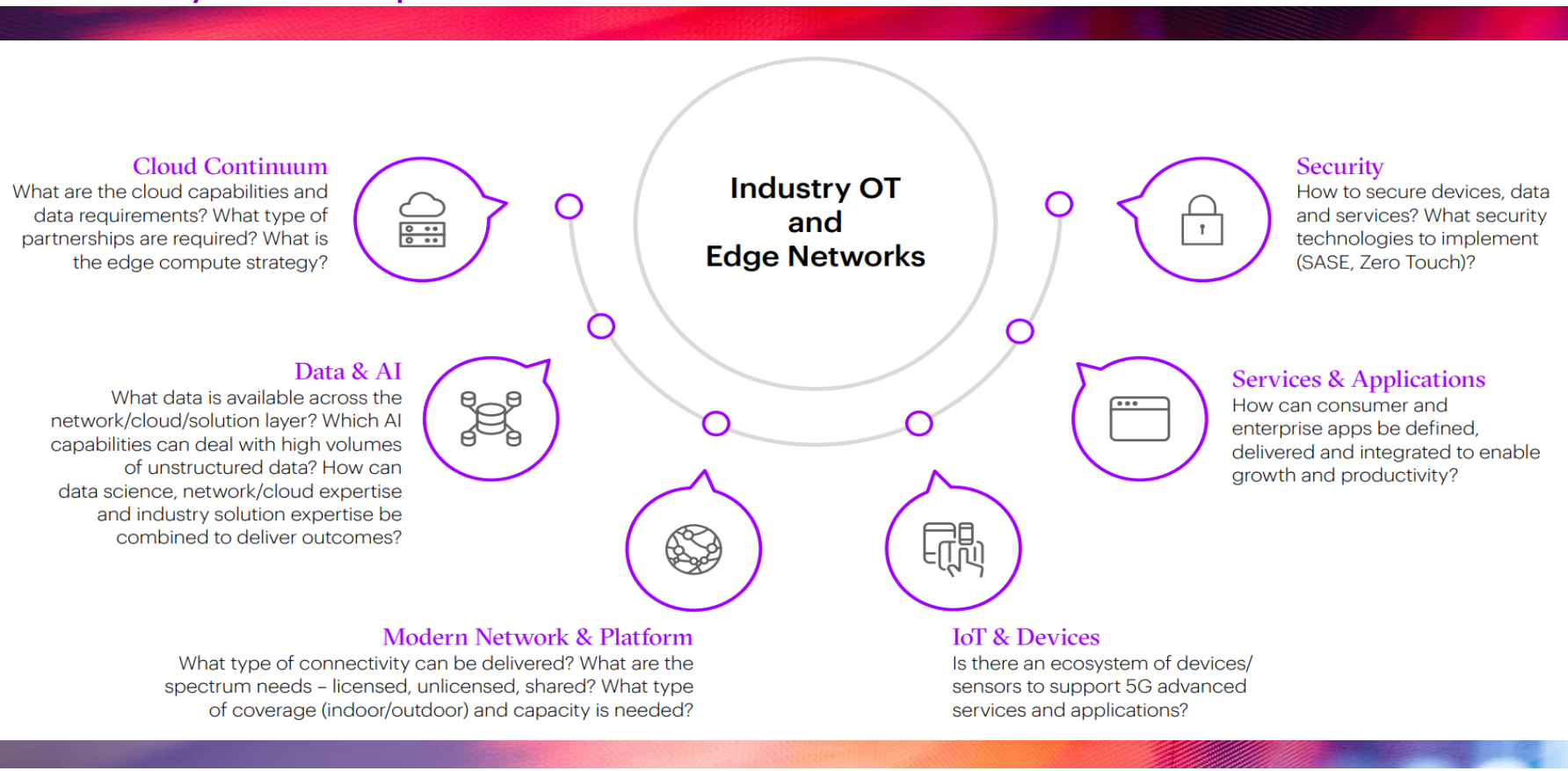
With so many tech solutions and deployment options available in the market, designing a network transformation can be a complex and confusing process. This is often the case, for example, when it comes to deciding between future-focused 5G technology or more established LTE solutions.

Resilience, reliability, security.

Networks in industrial settings have demanding requirements for resilience, reliability and security. For example, traffic to-and-from industrial control systems and process control networks need Zero Trust security and redundancy for added reliability. But industrial companies also have typical enterprise connectivity requirements for handheld devices. The ability to segment traffic to meet these different needs is vital.

Connected Edge Solution Capabilities

Delivering connected edge solutions with 5G and MEC requires orchestration across an ecosystem of partners



Oil & Gas
- Mission critical push to talk
- Industrial IoT
- Worker safety with video analytics

Mining
- Worker monitoring and critical communications
- Emergency broadcast alerts
- Environmental monitoring

Agriculture
- Condition monitoring/ prediction
- Massive data download
- Tele-remote operation

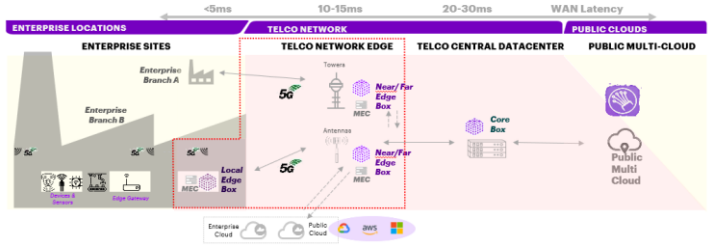
Chemicals
- Predictive maintenance
- Digital forms
- Asset management

Manufacturing
- Legacy Interworking/ PLC bridging
- Collaboration
- Edge analytics

Utilities
- Push-to-talk
- Wild fire resiliency
- Gas measurement collection
- VoLTE and Text Services

Case Study
Creating the first connected warehouse

A leading healthcare solutions company needed to implement automated solutions in its warehouse to improve efficiency, inventory visibility, worker safety and, crucially, throughput



5G powered AR Vision

Custom augmented reality goggles to select items for shipping

Drone Inventory Management

5G-enabled drones to conduct inventory counts

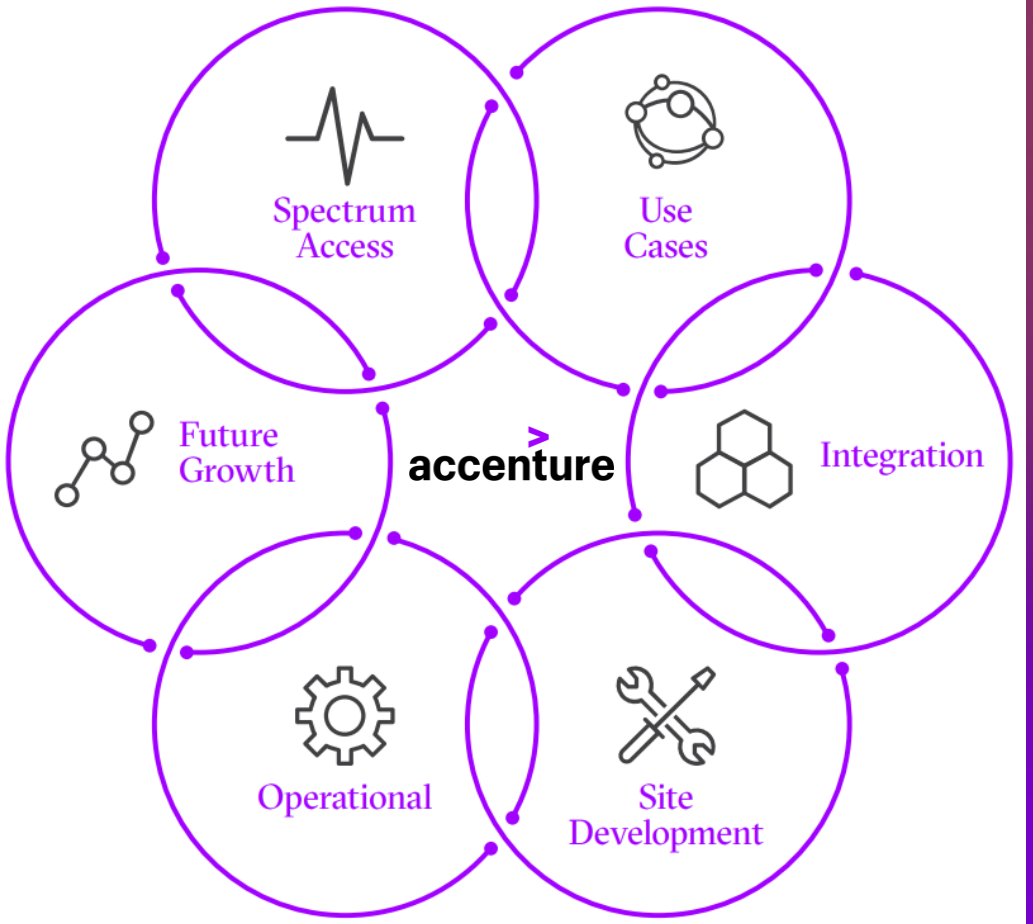
30%
improvement in pick productivity

100%
pick accuracy, plus overall increase in safety

95%
counting accuracy

9
faster counting speed

Network-led transformation needs the right vision, the right plan, and the right partner



Shape the right strategy.

This includes defining the vision, blueprints, use cases, devices and spectrum for a private 5G transformation that will deliver maximum value to the business.

Accelerate the value.

Enterprises looking to de-risk and speed up a private 5G transformation should consider setting up a global delivery management capability.

Run & optimize the network.

Implementing and integrating a private 5G network is only the start. How to run that network in the most efficient and effective way and maximize the value for the business is key as well.

Thank You

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