

# System Integrators' Private Cellular Network **Playbook**





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# Purpose of this Playbook

This playbook serves as a comprehensive guide for System Integrators (SIs) and Managed Service Providers (MSPs) looking to capitalize on the burgeoning private cellular network market. Its primary purpose is to equip you with the knowledge, strategies, and tools to navigate this complex and rapidly evolving technological landscape successfully.

In an era where the demand for secure, reliable, and locally controlled network infrastructure continues to grow, private cellular networks have emerged as a critical solution for enterprises across various industries. This playbook aims to help you understand your unique positioning in this ecosystem and leverage your existing strengths to capture a significant share of this high-growth market.

We recognize that the need for trained and qualified personnel to design, deploy, and operate advanced mobile enterprise networks is not diminishing. This playbook will guide you in positioning your organization as a leader capable of meeting this growing demand in this space.

By following the guidance outlined in this playbook, you will be well-positioned to establish yourself as a trusted advisor and indispensable partner in deploying private LTE & 5G networks across various industries. You'll learn how to articulate the strategic value of maintaining control over sovereign digital infrastructures to enterprise leaders who are increasingly aware of its importance.

**Ultimately, this playbook aims to empower you to confidently seize the immense opportunities the private network revolution presents.** By becoming an expert today, you'll be better positioned for growth tomorrow, driving your business while playing a pivotal role in shaping the future of industrial connectivity.

Throughout this playbook, you'll find guidance on leveraging PrivateWirelessPRO, your comprehensive resource for understanding Private Cellular Networks, finding vendors, contractors, consultants, and answers to your most pressing questions. This platform will be an invaluable tool in your journey to becoming an expert in private cellular networks.

**Beyond merely presenting information, this playbook offers concrete strategies for:**


- Identifying target industries and their specific needs for private cellular networks
- Developing compelling value propositions that address the increasing demand for network sovereignty and control
- Building crucial partnerships within the private cellular network sphere
- Addressing the skills gap by developing internal expertise and offering training services to clients




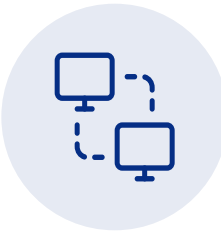
# Why Enterprises Need Better Wireless Connectivity


As a system integrator, you're witnessing an unprecedented surge in demand for advanced wireless solutions. Enterprises across industries are seeking robust, secure, high-performance networks to power their digital transformation. This isn't just about upgrading existing systems; it's about meeting the escalating connectivity needs driven by the proliferation of IoT devices and data-intensive applications.


Private cellular networks offer a compelling alternative, providing a range of benefits that address these challenges head-on:


- 

Indoor Cellular Coverage
- 

Wi-Fi performance & reliability concerns
- 

Separate networks for employees & visitors
- 

High cost for handling rising voice/data traffic within campus
- 

Seamless mobility in both indoor and outdoor
- 

New IoT use cases (sensors, wearables, autonomous machines)

Also, data sovereignty has become a critical priority for enterprises worldwide. It refers to an organization's ability to control its digital infrastructure, data, and operations completely.



**This control is increasingly recognized as a strategic asset, offering several key advantages:**

- ✓ Ensures sensitive information remains under strict organizational oversight.
- ✓ Enables implementation of robust, customized security measures.
- ✓ Reduces reliance on external providers, minimizing disruption risks.
- ✓ Allows tailoring of infrastructure to specific business needs and use cases.
- ✓ Facilitates adherence to data localization and privacy regulations.

**Private cellular networks, especially 5G, offer a powerful solution for achieving network sovereignty. They provide:**

- ✓ Dedicated infrastructure separate from public networks.
- ✓ Ability to implement customized security protocols.
- ✓ Performance optimization for specific enterprise use cases.
- ✓ Complete control over network management and data routing.
- ✓ On-premises data processing and storage capabilities.





# What are the Limitations of Common Wireless Technologies Used Today?

As enterprises increasingly rely on wireless connectivity for critical operations, the limitations of traditional technologies like Wi-Fi and public cellular networks have become apparent. This section examines the shortcomings of these standard wireless solutions.

## Enterprise needs

Deterministic performance & consistent quality with scale

Seamless indoor & outdoor mobility

Network ownership & control

Data security & sovereignty

Cost of ownership

## Private Wi-Fi network

Not suitable for critical applications ●

Limited ●

Short-range results in more handoffs

High ●

Enterprises owns the networks and have full control on policies

High data sovereignty ●

Password-based authentication (Weak) ●

CAPEX heavy ●

Needs a large infrastructure

## Public cellular network

Cellular technology is suitable but public networks are not ● ●

Very Good ●

Although public cellular is weak indoors ●

Low ●

Enterprises do not have any or limited control on the network

Very limited data sovereignty ●

SIM-based authentication (Strong) ●

OPEX heavy (per device) ●

Becomes expensive for large deployments

● Positive status    ● Moderate concern    ● Challenge or issue



# What Makes Cellular A Robust Wireless Technology?

Cellular technology is a robust wireless solution due to its advanced network architecture and sophisticated protocols. Unlike other wireless technologies, cellular systems use a coordinated network of base stations that seamlessly hand off connections as devices move, ensuring continuous coverage over large areas. The technology's ability to efficiently manage spectrum, dynamically allocate resources, and adapt to changing network conditions contributes to its reliability and scalability.

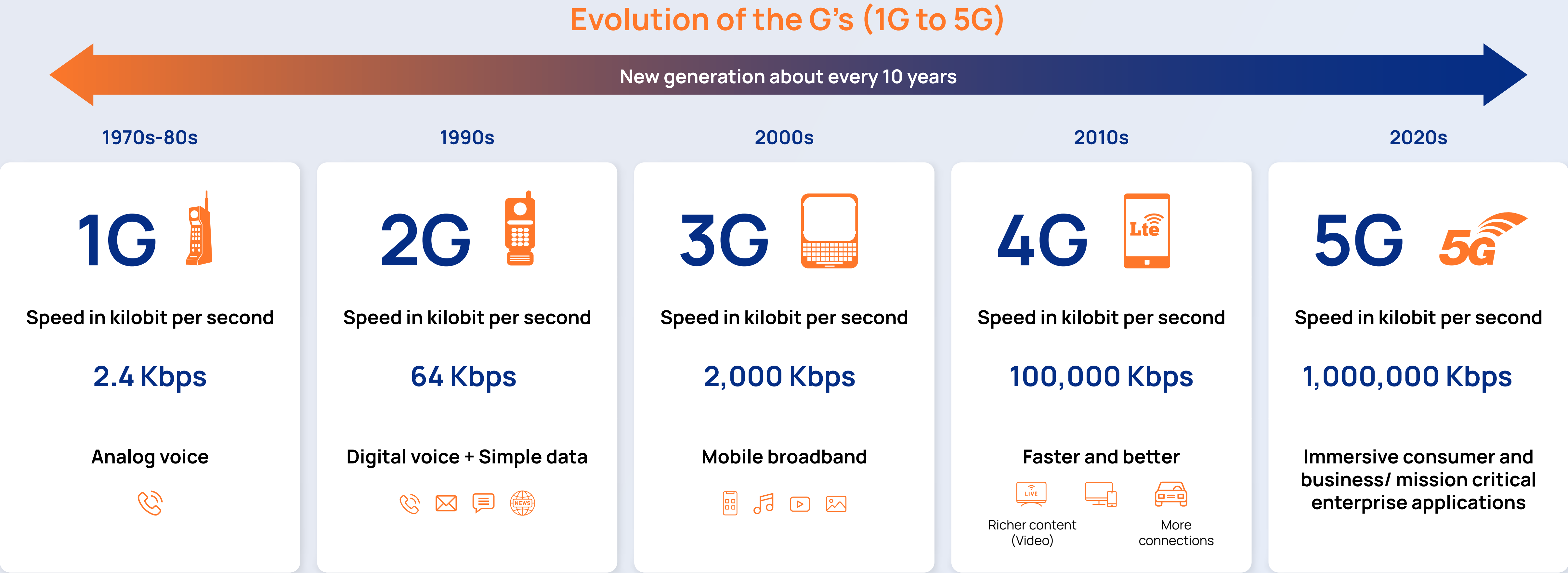
Furthermore, cellular networks employ robust security measures, including encryption and authentication protocols, making them well-suited for critical communications. These inherent strengths, combined with ongoing advancements in 5G, position cellular technology as a powerful and versatile option for private wireless networks across various industries and use cases.





# Understanding Private Cellular Technology and Benefits for Enterprise

Private cellular networks offer enterprises a powerful alternative to traditional wireless solutions, combining the reliability and performance of cellular technology with the control and customization of a dedicated network. These networks leverage 4G LTE or 5G technologies to deliver high-speed, low-latency connectivity tailored to specific business needs.





5G represents a significant shift in wireless technology, offering capabilities far surpassing its predecessors. **It is the first generation whose primary focus is enterprises rather than consumers.** Unlike previous generations, 5G is designed with efficiency at its core, utilizing advanced spectrum management techniques and beamforming to maximize data throughput and minimize interference. Its flexible architecture, built on software-defined networking and network function virtualization, allows for unprecedented adaptability

to diverse use cases. Perhaps most revolutionary is 5G's programmability, extending to edge computing capabilities, allowing for real-time data processing and low-latency applications that were previously unfeasible. These features collectively make 5G not just an incremental improvement but a technology capable of supporting a wide array of innovative services and applications across various industries.

## How is 5G Different?

### Significant efficiencies

10x

reduction in  
latency (< 1msec)

10x

number of  
devices(1M/ Sq. Km)

10x

experienced throughput:  
more uniform multi-Gbps  
peak data rates

100x

network efficiency for  
energy consumption

#### Higher security

Newer authentication methods

### Flexible architecture

Distributed architecture –  
edge & cloud

Open & flexible

Network slicing with  
unique QoS

### Programmable innovation

App developers

APIs



5G network

Innovation Network Aware Applications  
can use 5G APIs to reserve network  
resources, get network availability,  
networks stats, and more



# Building Your Private Cellular Ecosystem

The private cellular ecosystem has a vast selection of solutions, technologies, and services. Ranging from complete end-to-end solutions to a variety of discreet services and products, there are many players with whom you can consider a partnership.

As you navigate the complex landscape of private cellular solutions and partnerships, PrivateWirelessPRO stands out as a valuable resource. This comprehensive platform offers a centralized hub to find verified vendors, discover skilled contractors and consultants, access a knowledge base of best practices and case studies, and stay updated on industry trends. By leveraging PrivateWirelessPRO, you can streamline your ecosystem development process and make informed decisions about partnerships.



## Devices

- User Equipment (UE) includes cell phones, smart monitors, and Internet of Things (IoT) sensors.
- SIM/eSIM cards that uniquely identify each UE and determine access to the private cellular network.
- Gateways to connect user devices that do not support cellular spectrum.



## Spectrum

- Radio frequencies used for wireless communication in private cellular networks.
- Options include licensed (exclusive use), shared (e.g., CBRS), unlicensed, and leased spectrum.
- Choice affects network capacity, coverage, and interference levels.
- Must comply with local regulations.



## Radio Access Network (RAN)

- Network of radio base stations providing wireless connectivity to devices.
- Includes small cells, distributed antenna systems (DAS), and macro cells.
- Manages radio resources, mobility, and initial access to the network.
- Can be virtualized (vRAN) for increased flexibility and cost-efficiency.
- Citizen Broadband Radio Service devices are referred to as CBSDs.



## 4G/5G Core

4G/5G Core Network software provides authentication and authorization of users, data connectivity, mobility management, subscriber data management, and policy management and controls, and can be on premises or in the cloud.



## Multi-Access Edge

Multi-Access Edge Computing (MEC) to run some (or all) core functions on network edge nodes, closer to users to help reduce latency.



## SAS (for CBRS Network)

Spectrum Access System (SAS) allocates frequency channels and power levels to base stations (and is unique to OnGo-based CBRS networks, not public 4G/LTE or 5G).



## Management

Orchestration and Network Management Software to set up and manage private cellular network components, devices, applications, and services.



# Spectrum is the Key to Wireless Connectivity

Spectrum is the lifeblood of wireless connectivity, serving as the invisible highways through which all wireless communications travel. These radio frequencies are a finite and highly regulated resource, making access to suitable spectrum a critical factor in deploying any wireless network, especially private cellular networks. Historically, spectrum allocation for cellular networks was limited to Mobile Network Operators (MNOs). However, recognizing the growing importance of private networks, various countries

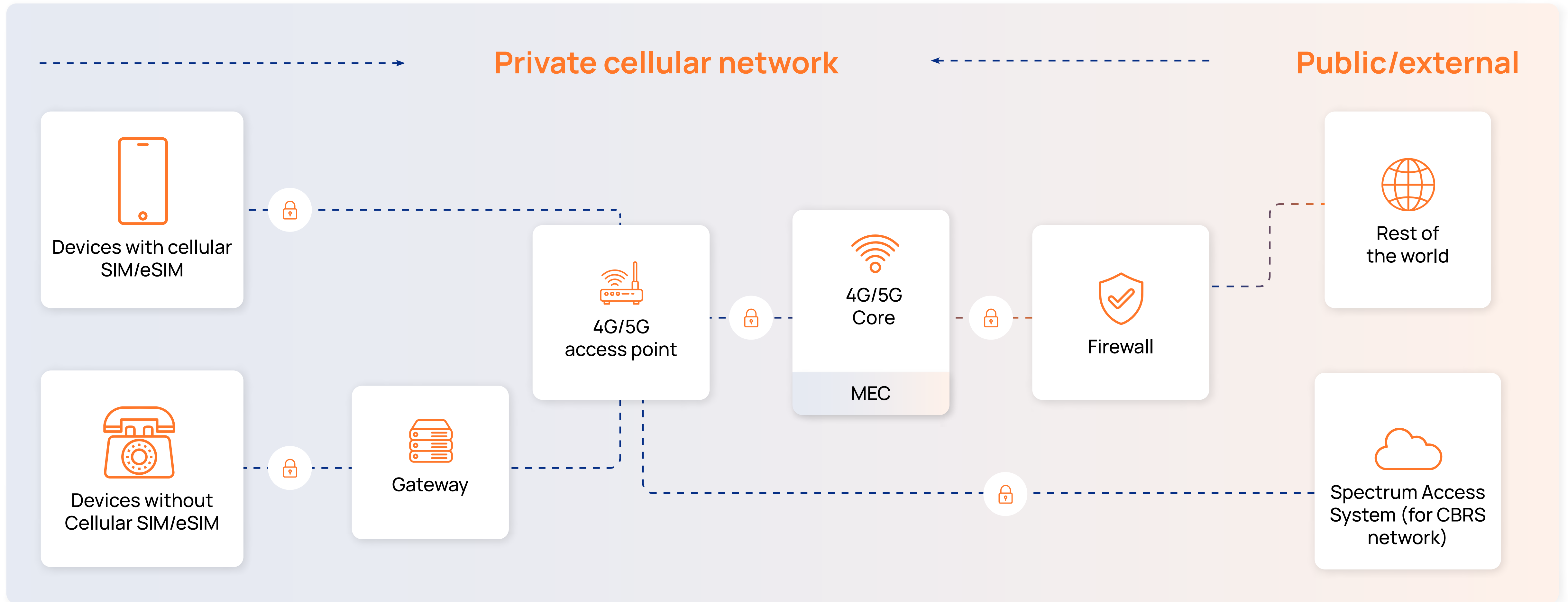
are now making spectrum available through different approaches. For example, the US has introduced shared spectrum for CBRS, while countries like Germany and France have allocated specific frequency bands, called local licenses, for private use. The characteristics of different spectrum bands - such as coverage, capacity, and penetration - significantly impact network performance and use cases. Enterprises are still able to work with MNOs and their frequency holdings.





# How Does It All Fit Together?

While understanding individual components is essential, grasping how they integrate into a cohesive system is crucial for successful private network deployments. This diagram illustrates the architecture of an on-premise private cellular network, showcasing how different elements work together. By examining this end-to-end view, you'll better understand the flow of data and control within the system.





# Why is Private Cellular a Viable Option for Enterprises Now?

Private cellular networks have become viable for enterprises due to converging factors such as maturing 4G/5G technologies, regulatory changes opening up spectrum access, availability of cost-effective equipment, and growing demand for secure, reliable connectivity.



## Spectrum

Free and low-cost options available globally (Unlicensed, Shared, and Licensed)



## Enterprise Readiness

Small footprint and easy to manage solutions available. Growing ecosystem of devices and solution providers.



## Cost Economic

Comparable to Wi-Fi. Enterprise suitable business models available (e.g., Network as a Service/NaaS)



## Regulatory Changes

Many countries have allocated dedicated spectrum for private networks (e.g. CBRS in the US, local licenses in Germany)





# The Role of the System Integrator

System integrators are the linchpin in successful private cellular network deployments, bridging the gap between complex technology and practical business solutions. Their multifaceted role encompasses every project lifecycle stage, from initial conceptualization to ongoing management and optimization.

The private cellular network market is at a critical inflection point, and the importance of developing expertise now cannot be overstated. System Integrators who invest in building their knowledge and capabilities in this field today are

positioning themselves for significant growth and market leadership tomorrow. As the demand for private cellular networks continues to accelerate, those SIs with established expertise will have a distinct competitive advantage. They will be better equipped to navigate the complexities of these deployments, offer more comprehensive solutions, and build stronger relationships with both vendors and enterprise clients.

## Determine Business Outcomes

- Conduct thorough needs assessments with clients
- Align technical solutions with business goals and KPIs
- Develop a clear roadmap for digital transformation using private cellular

## Manage Vendors

- Select appropriate hardware, software, and service providers
- Coordinate between multiple vendors to ensure interoperability
- Negotiate contracts and manage vendor relationships

## Design

- Create comprehensive network architectures
- Plan for integration with existing IT/OT systems
- Design for scalability, security, and future expansion

## Procure & Install

- Source all necessary equipment and software licenses
- Manage logistics and scheduling of equipment delivery
- Oversee physical installation of network infrastructure

## Configure

- Set up and optimize network parameters
- Implement security protocols and access controls
- Configure integration points with existing systems

## Provision Devices

- Onboard and configure end-user devices
- Manage device policies and access rights
- Ensure smooth integration of IoT devices and sensors

## Test & Troubleshoot

- Conduct comprehensive network testing
- Perform regular performance audits
- Identify and resolve issues proactively

## Manage

- Provide ongoing network monitoring and management
- Implement updates and patches as needed
- Offer 24/7 support and troubleshooting



# Key Questions to Ask Your Customer

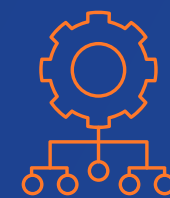
Engaging with potential clients is crucial for successful private LTE and 5G deployments. System integrators can gain deep insights into customers' needs, challenges, and goals by asking the right questions. This comprehensive understanding allows SIs to tailor their solutions, demonstrate value, and position themselves as trusted advisors in the customer's digital transformation journey.

The following list of questions is designed to guide your customer conversations, helping you uncover critical information and align your private cellular network offerings with the client's specific requirements and business objectives.



## Problem Definition and Business Case

- What specific problem(s) must be addressed with a private cellular network?
- Have you specified what the business case is for this project?
- How do you envision private cellular improving your operations or enabling new capabilities?
- What are your primary business objectives for implementing a private cellular network?



## Current Infrastructure and Pain Points

- Can you describe your current network infrastructure?
- What are the limitations of your existing wireless solutions?
- What existing systems and applications will need to integrate with the new network?
- Are you currently using any IoT devices or planning to use them in the future?



## Project Ownership and Stakeholder Support

- Have you determined who has end-to-end ownership of this network upgrade project?
- Do you have support from all stakeholders on the enterprise IT team for this project?
- How do you envision the division of responsibilities between your team and external partners?



## Use Cases and Applications

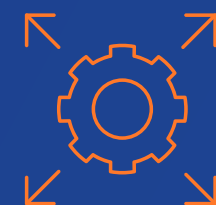
- What specific use cases or applications are you considering for your private cellular network?
- Are there any mission-critical operations that require ultra-reliable, low-latency communications?
- Do you have plans for large-scale IoT deployments or automation initiatives?





### Security and Compliance

- What are your crucial security concerns regarding your network infrastructure?
- Are there specific regulatory compliance requirements you need to meet?
- How do you currently manage data privacy and sovereignty?



### Scalability and Future-Proofing

- How do you anticipate your connectivity needs evolving over the next 3-5 years?
- Are you planning any major expansions or new facilities requiring network coverage?
- What emerging technologies interest you (e.g., AR/VR, AI/ML)?



### Performance Metrics

- What are your key performance indicators (KPIs) for network performance?
- Do you need to meet specific throughput, latency, or reliability targets?



### Budget and ROI

- Have you finalized your budget for this project?
- What's the expected timeline for implementation?
- How are you measuring the potential ROI of a private cellular network?
- Are you considering any government incentives or grants for digital transformation initiatives?



### Vendor Preferences and Internal Resources

- Do you have existing relationships with specific hardware or software vendors?
- Are you open to exploring solutions from multiple vendors or prefer a single-vendor approach?
- Do you have an internal team with experience in managing advanced wireless networks?



# Key Selling Points

Private cellular networks offer unique advantages that differentiate them from traditional wireless solutions. As a system integrator, understanding and effectively communicating these key selling points is crucial to your success in the market. This section explores the fundamental benefits and capabilities that make private cellular networks attractive for enterprises across various industries.

## Network Data Control and Enterprise Sovereignty

In today's data-driven business environment, control over network data is paramount. Private cellular networks offer enterprises unprecedented control and sovereignty over their data.



### Data Ownership

All data can remain in the enterprise's infrastructure, eliminating concerns about unauthorized access



### Customized Security

Enterprises can implement tailored security protocols, enhancing protection against cyber threats and ensuring compliance with industry specific regulations



### Reduced Latency

Processing data on- or near premises can significantly reduce latency for time-sensitive applications

**A healthcare provider using a private 5G network can ensure patient data never leaves the hospital premises, maintaining HIPAA compliance while enabling real-time access to medical records and imaging.**



# The Power of Licensed and Lightly Licensed Spectrum

Access to dedicated spectrum is a game-changer for enterprise connectivity, offering reliability and performance unmatched by unlicensed alternatives.



## Interference-Free Operation

Licensed spectrum provides a protected frequency range, ensuring consistent performance even in crowded RF environments



## Predictable Performance

With dedicated bandwidth, enterprises can guarantee Quality of Service (QoS) for critical applications.



## Flexibility

Lightly licensed options like CBRS in the U.S. offer a cost-effective middle ground between unlicensed and fully licensed spectrum.

One report forecasts that the CBRS infrastructure market will surpass \$1.5 billion by 2026.

# Mobility is a Game-Changer for Enterprises

True mobility is a defining feature of cellular technology, offering significant advantages over traditional Wi-Fi solutions.



## Seamless Roaming

Devices can move across large areas without losing connectivity, essential for sprawling facilities or campuses.



## Support for High-Speed Roaming

Cellular technology maintains connections even at vehicular speeds, crucial for logistics and transportation applications.



## Consistent User Experience

Employees and IoT devices can maintain connectivity as they move between indoor and outdoor environments.

In a large manufacturing facility, AGVs (Automated Guided Vehicles) can operate continuously across the entire plant floor, maintaining real-time communication with control systems for optimal routing and task allocation.



# Ad Hoc Networks: Agility in Deployment

The ability to rapidly deploy and reconfigure networks offers unprecedented flexibility for dynamic business environments.



## Quick Setup

Portable cellular base stations can create instant, high-performance networks for temporary sites or events.



## Scalability

Easily add capacity or coverage as needed, without extensive planning or infrastructure changes.



## Cost-effectiveness

Ideal for construction sites, film productions, or pop-up retail locations where permanent infrastructure isn't feasible.

A construction company can deploy a private cellular network at each new project site, providing secure, high-bandwidth connectivity for project management tools, IoT sensors, and worker communications, all without relying on public networks or installing permanent infrastructure.

# The Wireless First Approach

Embracing a “wireless first” strategy with private cellular networks can transform enterprise connectivity.



## Reduced Infrastructure Costs

Eliminate the need for extensive ethernet cabling, significantly reducing installation and maintenance expenses.



## Flexibility in Layout

Easily reconfigure workspaces or production lines without worrying about network connectivity.



## Future-Proofing

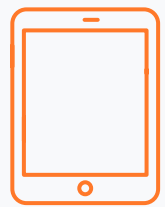
A robust wireless infrastructure can more easily accommodate new technologies and use cases as they emerge.

There are more than 10 devices needing connectivity in every patient room in a hospital, ranging from heart monitors to telemetry to nurse call systems.



# Enabling the Internet of Things (IoT)

Private cellular networks are uniquely positioned to support the explosive growth of IoT in enterprise environments.



## Massive Device Connectivity

5G is designed to support up to 1 million connected devices per square kilometer, far exceeding the capabilities of other wireless technologies.



## Scalability

Critical for real-time control of IoT devices in industrial settings.



## Cost-effectiveness

Process IoT data locally, reducing backhaul traffic and enabling faster decision-making.

A smart city deployment could connect millions of sensors for traffic management, waste collection, and environmental monitoring, all running on a single private 5G network.

# Increased Bandwidth and Capacity

The superior bandwidth and capacity of private cellular networks future-proof enterprise connectivity.



## High-bandwidth Applications

Support data-intensive applications like augmented reality for maintenance or 4K video for remote inspections.



## Network Slicing

Allocate bandwidth dynamically to different applications or departments based on changing needs.



## Consistent Performance

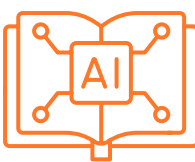
Allocate bandwidth dynamically to different applications or departments based on changing needs.

An automotive plant using private cellular can simultaneously support high-definition video quality control inspections, massive sensor networks for predictive maintenance, and augmented reality guidance for assembly workers, all without network congestion.



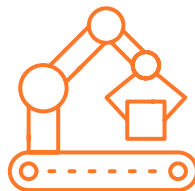
# Support for Emerging Technologies

Private cellular networks provide the foundation for next-generation technologies driving Industry 4.0 and beyond.



## AI & Machine Learning

High-bandwidth, low-latency networks enable real-time data collection and analysis for AI applications.



## Advanced Robotics

Support precise control and coordination of robotic systems in manufacturing and logistics.



## Digital Twins

Enable real-time synchronization between physical assets and their digital counterparts for advanced simulation and optimization.

By 2027 there will be more than 29 billion IoT connections.

# Improved Connectivity and Coverage

Private cellular networks offer superior coverage and connectivity, especially in challenging environments.



## Indoor Penetration

5G networks, particularly those using mid-band spectrum, offer better indoor penetration compared to Wi-Fi, ensuring connectivity throughout large facilities.



## Customized Coverage

Design the network to provide focused coverage exactly where it's needed, including hard-to-reach areas.



## Consistent Performance

Maintain reliable connections in RF-hostile environments like factories with large metal machinery or warehouses with changing inventory layouts

A large distribution center can ensure consistent, high-performance connectivity throughout its facility, including areas with dense metal racking, outdoor loading docks, and high-ceiling spaces, enabling seamless inventory tracking and automated guided vehicle operation.



# The Vast Potential for SIs in this Booming Market

The private cellular market presents an unprecedented opportunity for System integrators to position themselves at the forefront of a technological revolution. As businesses across industries seek to harness the power of cellular networks for their operations, SIs stand to benefit immensely from this surge in demand.





# Core Strengths and Expertise of SIs Relevant to Private Cellular Deployments

Given their extensive network architecture, systems integration, and project delivery expertise, System integrators are ideally positioned to drive private cellular deployments. Leveraging their proven track record of tackling complex, multi-vendor technology projects, SIs can readily incorporate private cellular infrastructure with existing IT/OT systems while ensuring robust security and performance optimization.

	SI Strength	Application to private cellular
Network design	Experience in designing complex, multi-vendor networks	Ability to architect optimal private cellular network topologies, considering factors like coverage, capacity, and latency requirements
Systems Integration	Expertise in integrating diverse technologies and platforms	Incorporating private cellular infrastructure with existing IT/OT systems
Industry-specific knowledge	Understanding of vertical-specific challenges and requirements	Customizing private cellular deployments to address unique industry needs -or- Leveraging deep domain expertise to enhance existing use cases and applications with elevated network performance possible with private cellular.
Project management	Proven track record in managing large-scale technology deployments	Coordinating the multiple phases of private cellular implementation, from site surveys to equipment installation and network optimization
Security	Deep knowledge of cybersecurity best practices and regulatory compliance	Implementing robust security measures to protect sensitive data transmitted over private cellular networks
Vendor-neutral approach	Ability to work with multiple technology providers	Selecting the best-fit private cellular hardware and software components from various vendors to create tailored solutions
Legacy system expertise	Experience in maintaining and upgrading existing infrastructure	Ensuring smooth migration from legacy networks to private cellular while maintaining business continuity
End-to-end service capability	Ability to offer comprehensive services from planning to maintenance	Providing full lifecycle support for private cellular networks, including initial consulting, deployment, and ongoing managed services
Performance optimization	Expertise in network monitoring and performance tuning	Continuously optimizing private cellular network performance to meet evolving business needs and maximize ROI



# How SIs and MSPs can Bridge the Gap Between Technology Providers and End-User Businesses.

System integrators and managed service providers are pivotal in the private cellular ecosystem, serving as the essential bridge between technology providers and end-user businesses. This position is particularly crucial given that selling private cellular is fundamentally different from selling commodity connectivity - it requires a

deep familiarity with the buyer's needs. SIs and MSPs are uniquely positioned to understand both the technical intricacies of private cellular solutions and the specific operational challenges faced by businesses across various industries.

## Technical/business translation

- SIs can translate complex 5G technical specifications into business-relevant language, helping end-users understand the practical benefits and applications of the technology.
- Can convey business requirements to technology providers, ensuring that solutions are tailored to specific needs.

## Ecosystem navigation

- SIs help businesses navigate the complex 5G ecosystem, including hardware vendors, software providers, carriers, and regulatory bodies.
- SIs can manage relationships with multiple stakeholders, simplifying the process for end-user businesses.

## Needs assessment

- SIs work closely with end-user businesses to identify their specific challenges and goals and then match these with appropriate 5G solutions from various providers.
- Ensures businesses invest in technology that truly addresses their needs rather than adopting a one-size-fits-all approach.

## Knowledge transfer

- SIs can provide training and support to end-user businesses, helping them understand how to use and maintain their new 5G networks effectively.
- SIs also feed real-world implementation insights to technology providers, informing future product development.

## Ongoing support and optimization

- Some technology providers may be focused on product sales, whereas SIs offer long-term support and continuously optimize 5G networks as business needs evolve.



# Business Models of Private Cellular Networks

Private cellular networks offer enterprises flexibility in technology and their deployment and management. The choice of business model can significantly impact factors such as upfront costs, ongoing expenses, control, scalability, and required in-house expertise. As a System Integrator, understanding these diverse models is crucial to guiding clients toward the solution that best fits their unique needs and capabilities.

Model	Description	Key characteristics	SI/MSP opportunity
On-Premises Professional Services Model	The enterprise owns and operates all network infrastructure on-site.	<ul style="list-style-type: none"><li>• Complete control and customization of the network</li><li>• Higher upfront costs but potentially lower long-term expenses</li><li>• Requires in-house expertise for management and maintenance</li><li>• Ideal for organizations with stringent security requirements or those in remote locations</li></ul>	Provide end-to-end services from design and deployment to ongoing support and optimization.
On-Premises Managed Service Model	This approach involves on-premises infrastructure owned by the enterprise but managed by a third-party provider.	<ul style="list-style-type: none"><li>• Balances control and convenience</li><li>• Leverages external expertise while maintaining on-site infrastructure</li><li>• Flexible arrangements possible based on specific needs</li><li>• Appropriate for enterprises wanting more control than NaaS but less responsibility than fully on-premises solutions</li></ul>	Provide comprehensive managed services, including 24/7 monitoring, maintenance, and optimization.
Cloud-Based Managed Service Model	This model leverages cloud infrastructure to manage core network functions (owned by the Managed Service Provider) while radio access network (RAN) equipment is owned by the enterprise.	<ul style="list-style-type: none"><li>• Reduced on-site infrastructure and management complexity</li><li>• Easier scalability and updates</li><li>• May offer cost advantages through shared cloud resources</li><li>• Suitable for enterprises seeking a balance between control and ease of management</li></ul>	Offer expertise in cloud integration, ensuring seamless operation between on-premise and cloud components.
Network-as-a-Service (NaaS) Model	A third-party provider owns and operates the network infrastructure (RAN and Core) in this fully managed Network-as-a-Service model.	<ul style="list-style-type: none"><li>• Minimal upfront investment for the enterprise</li><li>• Predictable operational expenses</li><li>• Rapid deployment and easy scalability</li><li>• Reduced need for in-house expertise</li><li>• Well-suited for organizations focusing on core business rather than network management</li></ul>	Partner with NaaS providers to offer value-added services or become the NaaS provider.
Hybrid Models	Many enterprises opt for a combination of the above models, tailoring the approach to their specific needs.	<ul style="list-style-type: none"><li>• Flexibility to mix and match elements from different models</li><li>• Can be adapted to multi-site deployments with varying requirements</li><li>• Allows for phased implementation and gradual transition</li><li>• Ideal for complex organizations with diverse needs across different departments or locations</li></ul>	Showcase expertise in designing and implementing complex, multi-faceted network solutions.



# Developing Compelling Value Propositions Tailored to Different Industry Verticals

## Strategies for developing these value propositions:



Conduct thorough research on each industry's specific challenges, goals, and KPIs.



Use data and case studies to provide concrete, quantifiable benefits of 5G adoption whenever possible.



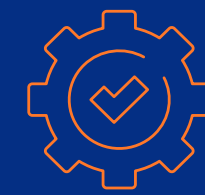
Clearly articulate how 5G solves critical industry-specific problems.



Emphasize features like ultra-low latency or massive device connectivity, which provide clear advantages over existing solutions.



Use industry-specific terminology and metrics to demonstrate your expertise and understanding.



Paint a picture of how 5G can transform their entire operation, not just solve isolated problems.



Tailor your value proposition to address the specific needs of small, medium, and large enterprises within each vertical.



Develop models that show the potential return on investment for 5G implementation, considering both short-term gains and long-term strategic advantages.



Proactively address common industry concerns such as security, integration with legacy systems, or regulatory compliance.



# Key Industries

When developing a private cellular network strategy, system integrators should focus on industries and customers that benefit most from the valuable capabilities of private cellular networks.

Private cellular networks offer tailored connectivity solutions that address specific operational needs. While some use cases, such as autonomous vehicles and high-definition video streaming, are becoming common across multiple sectors, the true power of private cellular lies in its ability to support unique, industry-specific applications. For instance, private cellular enables real-time monitoring of production lines and predictive maintenance of equipment in manufacturing.

The energy sector utilizes private cellular for smart grid management and remote monitoring of oil and gas fields. In logistics, it facilitates automated warehouse operations and real-time tracking of goods. Each industry is discovering innovative ways to leverage private cellular's capabilities, from enhancing safety in mining operations to enabling immersive augmented reality experiences in retail.



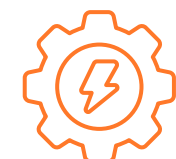


# Manufacturing



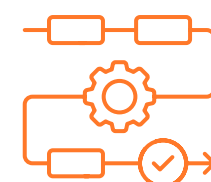
## Types of customers

- Large factories with complex automation needs
- Companies looking to implement Industry 4.0 technologies
- Manufacturers requiring real-time monitoring and control of equipment



## Pain Point

The cost per hour of unplanned downtime in manufacturing ranges from \$39,000 to \$2,000,000, depending on industry.



## Use Cases

- Sensors and devices to monitor industrial equipment
- Secure communication among workers
- Connect autonomous robots



## Focus

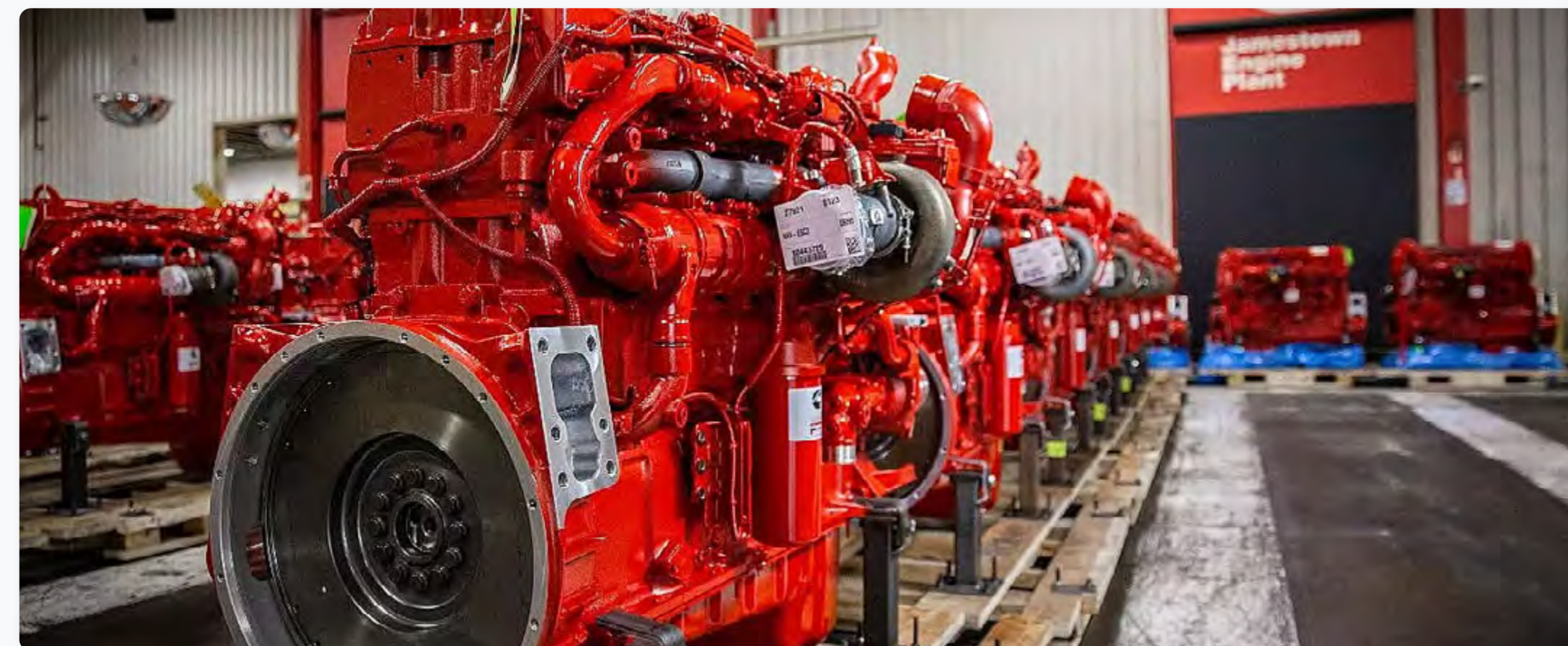
- Increased productivity
- Reduced downtime
- Enhanced quality control
- Workforce enablement



## Value Proposition

Empower your factory with ultra-reliable, low-latency 5G connectivity to enable real-time monitoring, predictive maintenance, and seamless integration of IoT devices, boosting productivity and reducing unplanned downtime.

## Example Deployment



### Cummins Jamestown Engine Plant

**Application:** Robotics, AR/VR, computervision, IoT sensors, neutral host

**Ecosystem:** Verizon Business, Ericsson

**Country:** US

**Private Network:** 5G

The networks will provide comprehensive connectivity across the massive 2 million square ft. facility, enabling both secure private 5G capabilities for Cummins' industry 4.0 initiatives as well as a neutral host network to allow employees and visitors to access improved public cellular coverage.

For a comprehensive collection of nearly 100 manufacturing deployments, check out:

<https://www.private5g.com/category/manufacturing/>

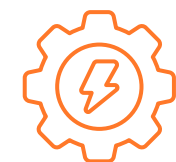


# Healthcare



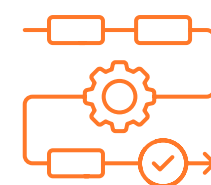
## Types of customers

- Hospitals and large medical centers
- Telemedicine providers
- Medical device manufacturers
- Pharmaceutical research facilities



## Pain Point

Over 100,000 nurses in recent years have left healthcare, with over 600,000 more planning to leave by 2027.



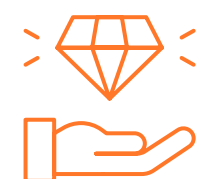
## Use Cases

- Telemedicine
- Asset tracking and patient monitoring
- Wearable sensors



## Focus

- Improved patient care
- Enhanced data security
- Operational efficiency



## Value Proposition

Transform patient care with high-speed, secure 5G networks that enable real-time telemedicine, instant access to medical imaging, and reliable connectivity for critical IoT medical devices, all while ensuring HIPAA compliance and reducing operational costs.

## Example Deployment



### Oulu University Hospital



**Application:** Wearables, improved connectivity



**Ecosystem:** Boldyn Networks, WIOCAR Technologies



**Country:** Finland



**Private Network:** 5G

Europe's first private 5G network in a functioning hospital, Oulu University Hospital in Finland, is enabling innovative wearable solutions that promise to revolutionize patient care by improving data access, enhancing doctor-patient interactions.

For a comprehensive collection of more than 25 healthcare deployments, check out:

<https://www.private5g.com/category/healthcare/>

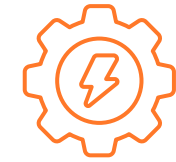


# Transportation and Logistics



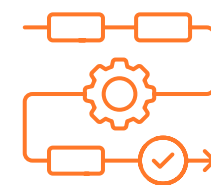
## Types of customers

- Ports and airports
- Warehouse and distribution centers
- Fleet management companies
- Railway operations
- Intermodal transportation hubs



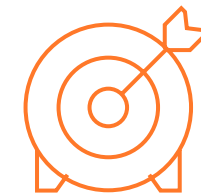
## Pain Point

Around 68% of shippers and 80% of providers cite cost as the biggest challenge for transportation transformations.



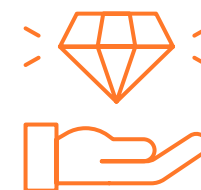
## Use Cases

- Monitor traffic flow
- Track vehicle and fleet performance
- Improve freight and supply chain management



## Focus

- Enhanced tracking
- Improved safety
- Operational efficiency
- Visibility and control



## Value Proposition


Revolutionize your logistics operations with 5G-powered real-time asset tracking, autonomous vehicle support, and seamless warehouse automation, leading to faster inventory turnover and reduced operational costs.

## Example Deployment



### East-West Gate (EWG) Intermodal Terminal

 **Application:** Smart rail logistics

 **Ecosystem:** Huawei, Vodafone

 **Country:** Hungary

 **Private Network:** 5G

The East-West Gate Intermodal Terminal leverages a private 5G network to enable advanced automation and remote control of its operations, offering unprecedented capacity and efficiency in rail freight logistics between Asia and Europe while utilizing green technologies for sustainability.

For a comprehensive collection of more logistics deployments, check out our website at:

<https://www.private5g.com/category/logistics/>

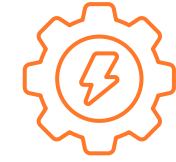


# Energy & Utilities



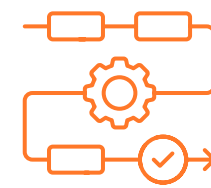
## Types of customers

- Oil and gas companies
- Power generation facilities
- Smart grid operators
- Renewable energy farms
- Water treatment plants



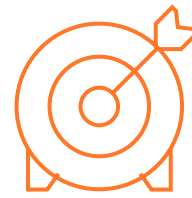
## Pain Point

The energy sector is increasingly vulnerable to cyberattacks. In 2020, the US Department of Energy reported over 1,000 cybersecurity incidents affecting energy companies. Protecting critical infrastructure from cyber threats remains a priority.



## Use Cases

- Remote asset monitoring
- Field workforce connectivity
- Smart grid communication



## Focus

- Grid modernization
- Predictive maintenance
- Worker safety



## Value Proposition

Modernize your energy infrastructure with 5G-enabled smart grids, real-time monitoring, and remote asset management, improving grid reliability and reducing maintenance costs while enhancing worker safety in hazardous environments.

## Example Deployment



### Abu Dhabi National Oil Company (ADNOC)



**Application:** Enhanced automation, connectivity, safety



**Ecosystem:** e&



**Country:** UAE



**Private Network:** 5G

ADNOC's partnership with e& to build the energy industry's largest private 5G network promises to revolutionize oil and gas operations by enabling AI integration, enhancing automation, improving worker safety, reducing emissions, and generating significant economic value through real-time data processing and advanced asset management across its vast operational area.

For a comprehensive collection of energy deployments, check out our website at:

<https://www.private5g.com/category/energy/>

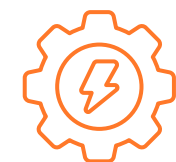


# Mining



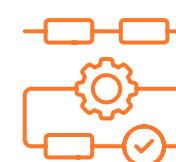
## Types of customers

- Large open-pit mines
- Underground mining operations
- Companies looking to implement autonomous vehicles and equipment



## Pain Point

Mining is inherently dangerous. In 2020, the global mining industry reported 573 fatalities, with coal mining being the riskiest sector. Ensuring worker safety and minimizing health risks (such as silicosis and black lung disease) are ongoing challenges.



## Use Cases

- Autonomous vehicles
- Worker safety and communication
- Asset tracking and management



## Focus

- Worker safety
- Operational efficiency
- Autonomous operations
- Remote operations



## Value Proposition

Enhance mine safety and productivity with 5G-powered autonomous vehicles, real-time environmental monitoring, and seamless communication in underground environments, increasing ore extraction efficiency and reducing safety incidents.

## Example Deployment



### Sigma Lithium

**Application:** Improved communication, safety, and productivity

**Ecosystem:** Nokia, Alcon

**Country:** Brazil

**Private Network:** LTE

Sigma's private LTE campus network at its Grotta do Cirilo lithium mining site in Minas Gerais, Brazil, will connect 200 employees and enable a range of smart mining applications powered by industrial edge computing.

For a comprehensive collection of energy deployments, check out our website at:

<https://www.private5g.com/category/mining/>

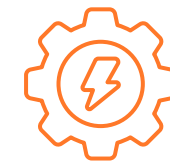


# Smart Cities



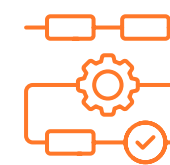
## Types of customers

- Local governments implementing IoT initiatives
- Public transportation authorities
- Emergency services organizations
- Traffic management systems
- Smart waste management services



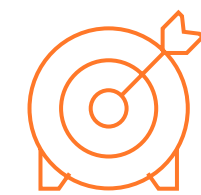
## Pain Point

Cities **consume** over 60% of the world's energy and generate approximately 70% of global CO2 emissions. Smart systems can help address these environmental challenges.



## Use Cases

- Track vehicle and fleet performance
- Determine parking availability
- Monitor traffic flow



## Focus

- Improved public services
- Sustainability
- Quality of life
- Economic growth



## Value Proposition

Build the foundation for a truly smart city with 5G infrastructure that enables real-time traffic management, efficient public transportation, enhanced emergency services response, and comprehensive IoT integration, reducing energy consumption and improving emergency response times.

## Example Deployment



### City of Sunderland

**Application:** Improve capacity and connectivity

**Ecosystem:** Airspan, Boldyn Networks

**Country:** UK

**Private Network:** 5G

The smart city network uses outdoor small cells, discretely incorporated into existing street furniture, to provide high-performance, high-capacity 5G connectivity. This first phase saw the successful rollout of next-generation connectivity in Sunderland, laying the foundation for progress in critical sectors such as smart homes, digital skills, education, and Industry 4.0.

For a comprehensive collection of more than 20 Smart City deployments, check out our website at: <https://www.private5g.com/category/smart-city/>

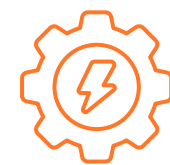


# Education



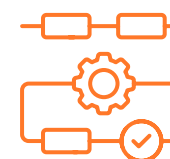
## Types of customers

- University campuses
- K-12 school districts
- Research institutions



## Pain Point

According to the National Center for Education Statistics, 14% of U.S. children aged 3 to 18 lack access to the internet at home.



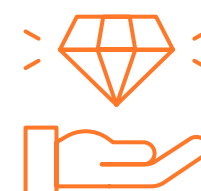
## Use Cases

- Digital learning initiatives
- Campus and home connectivity
- Real-time communication among teachers, students, and administration
- Support for contactless purchases



## Focus

- Enhanced remote learning
- Smart campuses
- Advanced research capabilities



## Value Proposition

Revolutionize your educational institution with 5G-powered smart campuses. Enable seamless hybrid learning experiences, support cutting-edge research with high-speed data transfer, and create immersive AR/VR learning environments. Increase student engagement and support more concurrent users for online learning platforms.

## Example Deployment



### Fraunhofer Heinrich-Hertz-Institute



**Application:** Industry 4.0, AGVs



**Ecosystem:** IS-Wireless



**Country:** Germany



**Private Network:** 5G

IS-Wireless will deploy a private 5G network at Fraunhofer HHI in Berlin for the CampusOS project, enabling advanced Industry 4.0 applications and fostering an open 5G ecosystem that promises to upgrade industrial operations across Germany and Europe.

For a comprehensive collection of more than 40 education deployments, check out our website at:

<https://www.private5g.com/category/education/>

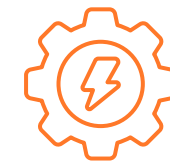


# Entertainment & Sports



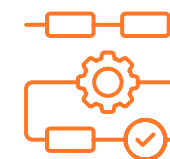
## Types of customers

- Stadiums and large event venues
- Theme parks
- Film and television production companies
- Concert halls and large venues



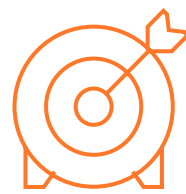
## Pain Point

Sports organizations are investing significantly in aggregating and managing fan data. Building proprietary fan databases is a priority.



## Use Cases

- Real-time stats and replays on mobile devices
- Crowd flow management and security
- Cashless payment systems



## Focus

- Immersive fan experiences
- Real-time content streaming
- Crowd management



## Value Proposition

Transform the fan experiences with 5G-enabled stadiums and venues. Deliver ultra-high-definition video streaming, support AR-enhanced live events, and enable real-time interactive experiences. Increase fan engagement, support 4K broadcasts, and improve crowd flow efficiency.

## Example Deployment



### The Open Championship at Royal Troon



**Application:** IBroadcasting, fan experience enhancement



**Ecosystem:** NTT Data, The R&A



**Country:** Scotland



**Private Network:** 5G

NTT DATA deployed a private 5G network at The Open Championship, enabling innovative technologies like ShotView digital twin, a massive data visualization wall, and an AI-powered digital human. These technologies provide fans with unprecedented insights into gameplay, real-time statistics, and interactive experiences, setting a new standard for sports broadcasting and spectator engagement.

For a comprehensive collection of more deployments, check out:

<https://www.private5g.com/category/sports/>

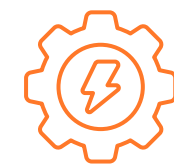


# Agriculture



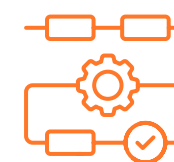
## Types of customers

- Large-scale farming operations
- Precision agriculture technology providers
- Indoor farming facilities
- Agricultural research centers



## Pain Point

The Food and Agriculture Organization (FAO) estimates that 33% of global soils are degraded due to poor management practices. Efficient crop and soil management are critical for sustainable agriculture.



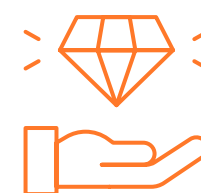
## Use Cases

- Precision irrigation systems
- Crop and soil monitoring
- Autonomous farm equipment
- Livestock tracking and health monitoring



## Focus

- Precision farming
- Autonomous machinery
- Real-time crop monitoring
- Livestock management



## Value Proposition

Elevate your farming operations with 5G-powered precision agriculture. Enable real-time soil and crop monitoring, support autonomous farm equipment, and implement data-driven decision-making. Increase crop yields by up to while reducing water usage and optimizing resources.

## Example Deployment



## Industry and Education Team Up for Smart Agricultural Innovation



**Application:** IPrecision agriculture, autonomous



**Ecosystem:** GXC, CNH Industrial, Ohio State University



**Country:** USA



**Private Network:** 5G

GXC is deploying a private 5G network using the CBRS band at Ohio State's agricultural research center. This network will enable advanced precision agriculture applications, including autonomous operation of CNH Industrial's farming equipment, real-time IoT sensor data collection, and autonomous vehicles. The project aims to accelerate the adoption of digital agriculture technologies, improving productivity and sustainability in farming.

For a comprehensive collection of agriculture deployments, check out:

<https://www.private5g.com/category/agriculture/>

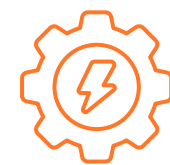


# Retail



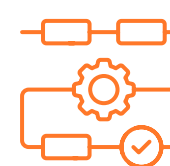
## Types of customers

- Large shopping malls
- Retailers implementing AR/VR experiences
- Companies focusing on automated checkout systems
- Warehouse retail chains
- E-commerce fulfillment centers



## Pain Point

Retailers in the US **reported** a loss of \$112 billion in revenue due to theft in 2021.



## Use Cases

- Asset tracking and inventory management
- Video surveillance and security
- In-store analytics & customer experience







## Value Proposition

Redefine retail with 5G-enabled smart stores. Deliver personalized AR shopping experiences, implement real-time inventory tracking, and enable seamless online and in-store shopping integration. Increase sales through customized recommendations and reduce stockouts with intelligent inventory management.

## Example Deployment



### American Tower Puts Private 5G Networks in Miracle Mile Shops

-  **Application:** POS systems, venue security, energy efficiency
-  **Ecosystem:** American Tower
-  **Country:** USA
-  **Private Network:** 5G

American Tower deployed a private 5G standalone network at Miracle Mile Shops, a premier shopping and entertainment venue in Las Vegas. This network operates alongside the existing neutral-host cellular DAS, supporting various low-latency retail services and applications. The deployment aims to accelerate digital transformation in the retail space, showcasing innovative 5G use cases for indoor retail environments and positioning the venue at the forefront of retail technology trends.

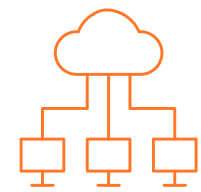
For a comprehensive collection of retail deployments, check out:

<https://www.private5g.com/category/retail/>



# Adjacent Market Opportunities

As System integrators establish themselves in the private cellular network space, several adjacent market opportunities emerge that can expand their service offerings and create additional revenue streams:



## Neutral Host Networks

Neutral host networks present a significant opportunity for SIs to address the growing demand for improved in-building cellular coverage. These shared infrastructure solutions allow multiple mobile network operators to provide service using a single set of equipment. SIs can position themselves as expert deployers and managers of neutral host networks, particularly in high-traffic venues like stadiums, shopping malls, and office complexes. This approach solves connectivity issues and offers a more cost-effective solution for property owners and mobile operators alike.



## Fixed Wireless Access (FWA) for Businesses

With the advent of 5G and advanced LTE technologies, fixed wireless access has become a viable alternative to traditional wired broadband for businesses, especially in areas with limited fiber infrastructure. SIs can leverage their expertise in wireless networks to offer FWA solutions, providing businesses with high-speed, reliable internet connectivity. This service can be particularly valuable in rural or rapidly developing areas where laying fiber is costly or time-consuming.



## Digital Automation Applications

To maximize the value of private cellular networks, SIs should look beyond just network deployment and management. By expanding into the application layer, SIs can offer end-to-end solutions that directly address specific business challenges and drive digital transformation.

### This could include:

- Developing and implementing IoT solutions that leverage private cellular networks' high-speed, low-latency capabilities.
- Creating custom applications for industry-specific use cases, such as predictive maintenance in manufacturing or patient monitoring in healthcare.
- Providing data analytics and AI/ML capabilities to help businesses derive actionable insights from the vast amounts of data generated by their connected devices and systems.

By evolving their services beyond just network deployment and management, SIs can position themselves as comprehensive digital transformation partners. This approach adds significant value for clients and creates stickier, longer-term relationships and higher-margin service opportunities.



# Working with **Your Partners**

Building strong partnerships is crucial for success in the private cellular market. As a system integrator, you must collaborate effectively with a diverse ecosystem of technology providers, carriers, and industry specialists to deliver comprehensive solutions for your clients. Strategic partnerships allow you to expand your

capabilities, access new markets, and provide more value to customers. However, managing these relationships requires careful planning and ongoing effort. The following guidelines will help you develop and maintain productive partnerships in the private cellular space.



## Focus on the private network core

- Develop expertise in core network technologies, as this is where much of the network intelligence and control resides.
- Partner with multiple Radio Access Network (RAN) vendors to offer flexibility and best-of-breed solutions to clients



## Establish innovation labs

- Foster partnerships between universities and private enterprises to create innovation labs
- Use these labs to test new technologies, develop use cases, and showcase capabilities to potential clients.



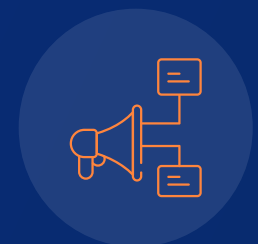
## Partner with industry-specific solution providers

- Align with vendors who offer vertical-specific applications that leverage private cellular networks.



## Invest in technical training and certification

- Participate in partner training programs offered by equipment vendors and carriers.
- Obtain relevant certifications to demonstrate expertise (e.g., Cisco's 5G Certification, Nokia's 5G Certification Program).



## Engage in co-marketing activities

- Develop joint case studies and whitepapers.
- Co-host webinars and events to showcase partnership benefits
- Collaborate on targeted marketing campaigns for specific industries or use cases.

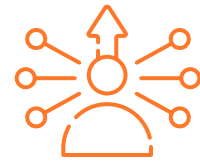
For a comprehensive list of companies you should consider partnering with, please visit [PrivateWirelessPRO](#).



# Effective Sales and Marketing Tactics to Position SIs as Trusted Advisors

To succeed in the private cellular market, system integrators must position themselves as trusted advisors rather than mere technology providers. The key is to frame the discussion around solving specific business challenges rather than focusing solely on the technical capabilities of 5G. By adopting a consultative approach and demonstrating a deep understanding of the customer's needs, SIs can establish themselves as indispensable partners.

Here are some strategies to consider:



## Develop thought leadership

- Publish whitepapers, blog posts, and articles on private cellular trends and applications
- Contribute to industry publications and speak at conferences
- Host webinars and podcasts featuring your 5G experts and industry guests



## Showcase expertise through case studies

- Develop detailed case studies of successful private cellular deployments
- Quantify the tangible benefits and outcomes, such as improved productivity, reduced costs, or enhanced user experiences.
- Use these case studies in marketing materials and sales presentations



## Offer free assessments or workshops

- Provide complimentary 5G readiness assessments for potential clients
- Host workshops to educate prospects on private cellular benefits and implementation strategies
- Use these engagements to demonstrate your expertise and build relationships



## Leverage partner relationships

- Expand your service offerings and technical capabilities.
- Provide access to co-marketing resources and joint sales opportunities.
- Strengthen your credibility through association with industry-leading brands



## Develop a solid online presence

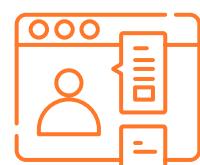
- Create a dedicated section on your website for private cellular solutions
- Optimize content for search engines to attract traffic
- Maintain active and engaging social media profiles, particularly on LinkedIn





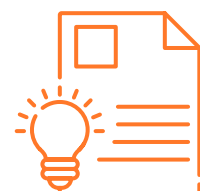
### Implement a content marketing strategy

- Develop a content calendar focusing on various aspects of private cellular
- Create diverse content types: blog posts, infographics, videos, eBooks



### Utilize customer testimonials and references

- Collect and prominently feature client testimonials on your website and marketing materials



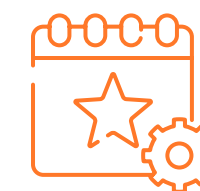
### Offer proof of concept (PoC) projects

- Propose small-scale PoC projects to demonstrate the value of private cellular
- Use these projects to build trust and pave the way for larger deployments



### Create an educational video series

- Develop a series of short, informative videos explaining various aspects of private cellular.
- Share these videos on your website, social media, and in email marketing campaigns.



### Host industry-specific events

- Organize roundtable discussions or seminars focused on private cellular applications in specific industries
- Invite industry experts and existing clients to share their experiences



### Leverage partner relationships

- Co-market with technology partners to expand your reach
- Participate in partner events and leverage their marketing resources



### Offer value-added services

- Develop complementary services such as private cellular security audits or performance optimization
- Use these services to differentiate your offering and provide ongoing value



# Educational Resources to Up Your Private Cellular Network Skills

Staying at the forefront of private cellular network technology requires continuous learning and skill development. As the field rapidly evolves, SIs must have access to up-to-date, comprehensive educational resources.

[PrivateWirelessPRO.com](https://www.privatewirelesspro.com) provides a curated list of valuable learning materials, including industry reports, case studies, and technical documentation. By leveraging these resources, you can deepen your understanding of private cellular networks, stay informed about the latest trends and best practices, and enhance your ability to deliver cutting-edge solutions to your clients.

## Training Programs for SIs to Build Their Private Cellular Network Expertise

If you're interested in additional training regarding private cellular networks, visit us at [PrivateWirelessPRO.com](https://www.privatewirelesspro.com).

## Relevant Industry Associations and Groups Focused on Private Cellular Network

For a comprehensive list of relevant associations and groups concerning Private Cellular Networks, visit us at [PrivateWirelessPRO.com](https://www.privatewirelesspro.com)





# Conclusion: The Private Cellular Network Opportunity is Real. Act Now!

It's crucial to recognize the startling potential of private cellular networks and the pivotal role that system integrators will play in this technological revolution.

The private cellular market is poised for explosive growth, driven by the increasing demand for ultra-reliable, low-latency communication in various industries, from manufacturing and healthcare to transportation and smart cities. As private cellular technology matures and more spectrum becomes available, we anticipate even faster adoption rates and the emergence of innovative use cases that will further fuel market growth.

## An enterprise is a good customer for a private cellular network if it has any of these needs:

- High-security requirements
- Mission-critical applications
- Customization needs
- Large IoT deployments
- Remote or challenging environments

System integrators are uniquely positioned to capitalize on this burgeoning market. Their expertise in network design, integration, and project management, combined with a deep understanding of specific industry verticals, makes SIs indispensable in the private cellular ecosystem.

## As the bridge between technology providers and end-users, SIs will play a critical role in:

- Translating complex private cellular capabilities into tangible business solutions
- Designing and implementing customized private cellular networks
- Integrating private cellular with existing IT and OT systems
- Ensuring seamless interoperability between various private cellular components
- Providing ongoing support and optimization of private cellular deployments

The future of private cellular deployments will be shaped by SI's ability to innovate, adapt, and deliver value to their clients. As trusted advisors, they have the power to guide organizations through their digital transformation journeys, leveraging private cellular as a cornerstone technology to drive efficiency, productivity, and innovation.

## Now is the time to take decisive action. We urge you to leverage this playbook as a roadmap for success in the private cellular era. Here are key steps to position yourself as a leader in this space:

- Invest in building your private cellular expertise through training and certifications
- Forge strong partnerships with key players in the private cellular ecosystem
- Develop industry-specific private cellular solutions that address critical pain points
- Implement the sales and marketing strategies outlined in this playbook to establish your thought leadership
- Start small with proof-of-concept projects and scale up as you gain experience
- Stay informed about the latest private cellular developments and continuously refine your offerings

The private cellular revolution is underway, and system integrators are at the forefront. By embracing the strategies and insights in this playbook, SIs can position their organization to participate in this market and lead it. The opportunity is immense, and the time to act is now. Seize this moment to become a catalyst for innovation and a driving force in shaping the future of private cellular deployments.



Appendix

5G SA	A 5G Standalone Network has a 5G RAN with a 5G core.
5G NSA	A 5G Non-Standalone Network has a 5G RAN with a 4G/LTE core. It is often seen as a steppingstone between a 4G/LTE and a 5G network.
5G	5G, or fifth generation, is the latest mobile network technology, offering significantly faster speeds, lower latency, and greater capacity than previous generations.
Augmented Reality	Augmented reality (AR) is a technology that overlays digital information, such as text, images, or 3D models, onto the real-world environment in real time, creating an enhanced or augmented view of reality.
Authentication	Authentication refers to verifying the identity of a user or device attempting to access the network or its services. This ensures that only authorized entities can connect to the network and access sensitive data or resources.
CBRS	CBRS (Citizens Broadband Radio Service) is a band of spectrum from 3.55-3.7 GHz that the FCC has opened up for shared wireless broadband use in the United States. It enables the coexistence of incumbent users, priority access licensees, and unlicensed users in the same spectrum through a dynamic spectrum-sharing framework and Spectrum Access Systems (SAS).
Cell	A cell refers to the geographic area covered by a single base station, antenna, or transmitter. It represents the fundamental unit of coverage and capacity in cellular networks, where mobile devices can establish and maintain wireless connections within the boundaries of that cell.
Industry 4.0	Industry 4.0, also known as the Fourth Industrial Revolution, refers to integrating advanced technologies like AI and IoT in manufacturing, enabling more intelligent, automated, and data-driven production processes.
Infrastructure	Mobile network infrastructure consists of physical components like cell towers, cables, and core network equipment that enable communication by transmitting signals, carrying data traffic, and processing information.
Internet of Things	The Internet of Things connects everyday objects to the mobile network, enabling them to send data and receive instructions, creating a network of smart devices for diverse applications.
Massive MIMO	Massive MIMO (multiple-input multiple-output) is a crucial technology for 5G networks that uses a large number of antennas (e.g., 64 or more) at the base station to increase capacity and improve spectral efficiency by allowing more simultaneous data transmission to multiple users. See MIMO.
Mobile Edge Computing	Mobile Edge Computing moves processing power closer to where it's needed instead of relying on a distant server, resulting in faster speeds, less congestion, and potentially improved security and privacy.

mmWave	mmWave bands (24 GHz - 40 GHz) offer ultra-fast speeds and high capacity for mobile networks but have shorter range and limited penetration, requiring denser infrastructure.
MNO	Mobile network operators (MNOs), also known as wireless carriers or cellular companies, are businesses that provide wireless voice and data services to mobile phone users. They own and maintain the infrastructure (cell towers, fiber optic cables) and spectrum licenses to operate these networks.
Network Slicing	Network slicing is a technique that allows a single physical mobile network to be partitioned into multiple virtual networks or slices, each customized to serve a specific use case or application with its performance, security, and quality of service requirements. It enables efficient sharing of network resources among different services on a shared infrastructure.
Non-Public Network	A non-public network (NPN) or private network is a mobile network deployed for the dedicated use of an enterprise, industry, or organization within a specific location or premises.
Open RAN	Open Radio Access Network refers to vendor-neutral hardware and software-defined technology standards for the cellular radio access network. It aims to create open interfaces and enable interoperability among different vendors' equipment in the RAN, avoiding proprietary implementation and vendor lock-in.
O-RAN Alliance	The O-RAN Alliance is a global organization comprised of mobile network operators, vendors, and academic institutions in the Radio Access Network (RAN) industry. Their mission is to transform the RAN into more open, intelligent, virtualized, and interoperable.
Radio Access Network	The Radio Access Network bridges the gap between devices like smartphones, computers, or remotely controlled machines and the core network.
Shared spectrum	Shared spectrum allows multiple users or services to utilize the same radio frequency band. This enables efficient use of limited spectrum resources.
Small Cells	Small cells are low-powered base stations with a limited range compared to traditional cell towers. They're typically deployed in densely populated areas or indoors to improve network capacity and coverage.
Spectrum	Spectrum refers to the radio frequency bands utilized for wireless communication.
URLLC	Ultra-reliable low-latency communication is a critical feature in 5G networks that enables exceptionally high reliability and minimal delays for mission-critical applications like autonomous vehicles and remote surgery.





## PrivateWirelessPRO

Transforming SIs and MSPs into Private Wireless Experts

### About Private Wireless Pro

PrivateWirelessPro.com is dedicated to equipping system integrators with the expertise needed to excel in the rapidly evolving field of private 5G networking. Recognizing the gap in cellular solutions knowledge among system integrators, we offer comprehensive training, thought leadership, and expert guidance to empower them to meet their clients' growing demands for private 5G deployments.

Our services cover every aspect of the industry, from identifying market opportunities and selling private 5G solutions to mastering installation, deployment, and providing tailored solution recommendations, ensuring integrators are well-prepared to lead in this cutting-edge technology space.

For more resources and guidance for system integrators and private cellular networks, visit us at : [PrivateWirelessPRO](https://PrivateWirelessPRO.com)