Connectivity: The Forgotten Infrastructure

Manufacturing companies cannot survive in today's unpredictable world without making the transition to digital-first operations. Still, manufacturers have long trailed behind other sectors in their business transformation efforts. Poor connectivity in manufacturing floors, warehouses and shipping yards means a large gap remains between the promise of transformation and the reality on the ground.

## Poor Connectivity Affects Digital Transformation Efforts

Agile Manufacturing	Transforming Worker Productivity	AGV/AMR Operations
• Wired manufacturing lacks agility	• Poor worker device performance	• Poor operation in dense metal areas
• High latency challenge for PLC	• Inaccurate scanning	• Mobility issues for AGVs at speed
• Poor IoT data affects AI models	• Ineffective fork-lift dispatch	• Scalability of AGV fleets
	• Unreliable worker communications	• Increase in collisions/stoppage

Real-world performance of Celona Private 5G vs Wi-Fi

Superior Coverage

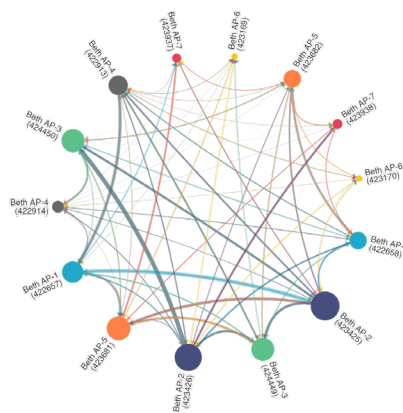• 1/5th – 1/10th the APs as Wi-Fi

• Indoor and outdoor

Wi-Fi Heat Map

29 Wi-Fi APs
59% coverage

5G LAN Map

3 Celona 5G LAN APs
95% coverage
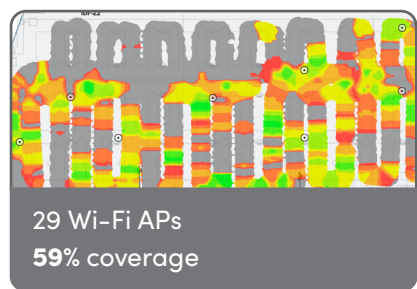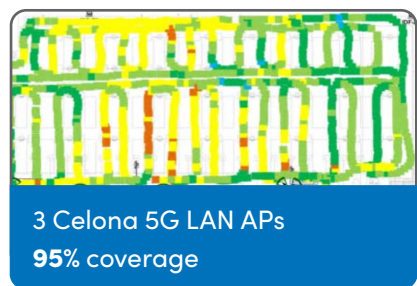
Seamless Handovers

Flawless roaming across APs

• 400 AGVs

• 61K Handovers/day

• 25mph speed

Plot showing handovers between APs in a live deployment

Ultra-low Latency

MicroSlicing™ enabled QoS

• Guaranteed latency < 30msec

• Latency sensitive PLC, sensors etc.

Average Ping Response Time (msec)
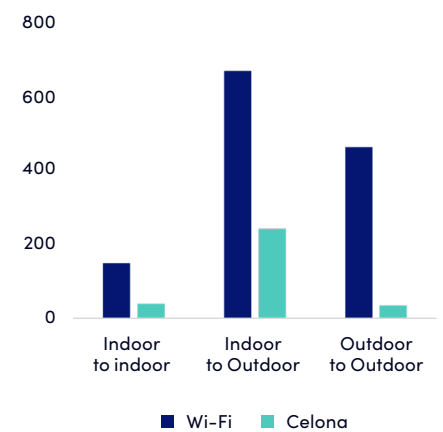
■ Wi-Fi ■ Celona

Celona 5G LAN: Turn-key Enterprise Friendly Solution for Manufactoring

Edge Devices: AGV and AMRs, AI-powered tablets, Automated robots, Industrial handhelds, Smart cameras

Celona Access Points — Plug-n-play deployment

Existing on-premises IT/OT infra

AAA/NAC policy | DHCP/DNS services | Firewall

Celona Edge OS — Scalable, cloud-native 5G core with full IP stack

Secure telemetry data

Celona Orchestrator — Cloud-based network administration platform

Key differentiators

- **Comprehensive turnkey solution**
- **Advanced security**
- **MicroSlicing QoS technology**
- **Global reach**
- **Enterprise-friendly operation**

Significantly Better Network with Lower TCO than Wi-Fi

■ Subscription ■ Installation ■ Other Equipment
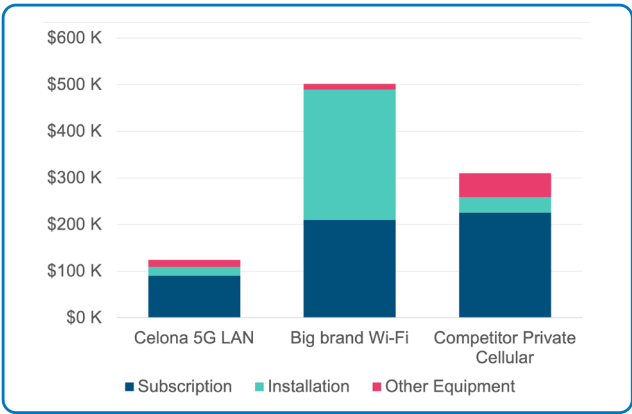
Outdoor Manufacturing Yard | 2.8M sq-ft
Equivalent Wi-Fi APs required: 47
Celona 5G LAN APs required: 3

■ Subscription ■ Installation ■ Other Equipment
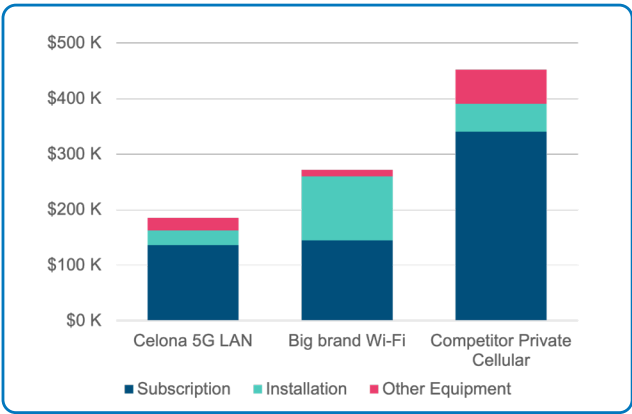
Indoor Manufacturing Plant | 320000 sq-ft
Equivalent Wi-Fi APs required: 59
Celona 5G LAN APs required: 8

"If I had to continue to deal with the Wi-Fi issues I have to deal with every day at the plant, I'd have to hire more people. And frankly, that wouldn't even fix the technical challenges that I have with using Wi-Fi technology within our environment. With Celona's technology, all that goes away. The solution pays for itself."

Head of IT operations for the U.S Steel Manufacturer

Starting fresh or upgrading? Build a future-proof network with better performance—for less than Wi-Fi.

LEARN MORE