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wireless

Transforming Hospital Operations with Private 5G Networks

#WirelessSimplified

Contents

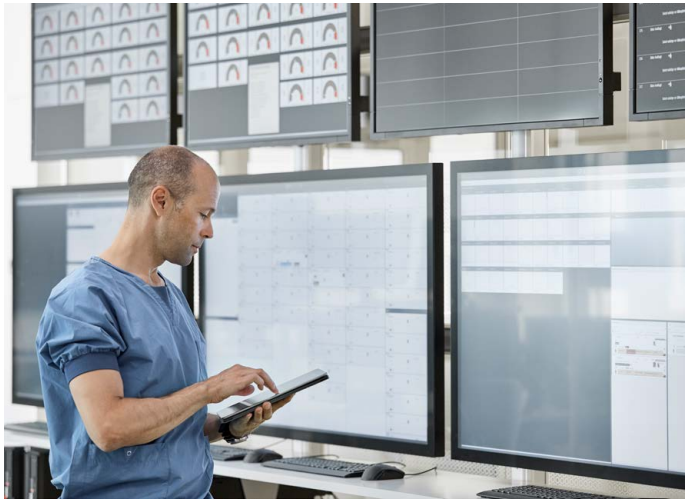
What's driving the digital health demand

The COVID-19 pandemic has skyrocketed demand for digital health solutions. This digital shift is impacting all facets of the healthcare industry—from staff operations and administration to care delivery—and puts new levels of pressure on hospital IT departments. Because of the pandemic, an astounding **89% of companies require more agile and scalable IT.**

Hospitals worldwide are figuring out how to successfully create and foster a digital first environment—so much so that the global investment in digital transformation is projected to double by 2024.

DIGITAL TRANSFORMATION DRIVERS

- **Staffing shortages**
- **Supply chain interruptions**
- **Patient demand for mobile, touchless engagement**
- **Constantly growing threat of security breaches**
- **Emergence of telehealth, robotics and automation tools**
- **Environmental and sustainability initiatives**



"The global COVID-19 outbreak has put healthcare systems across the globe under tremendous pressure and highlights the urgent need to advance toward smart healthcare systems. COVID-19 has also presented the perfect application scenario for the deployment of 5G networks in hospitals, doctors' practices and social care environments."

LEO GERGS, 5G MARKETS SENIOR ANALYST OF ABI RESEARCH

IMPROVE OPERATIONAL EFFICIENCIES AND STAY AHEAD OF PATIENT AND STAFF NEEDS

Implementing the latest healthcare technology

"Clearly the thing that's transforming is not the technology — it's the technology that is transforming you."

JEANNE W. ROSS OF MIT SLOAN'S CENTER FOR INFORMATION SYSTEMS RESEARCH

To address operational challenges and consumer mobile demands, digital health has emerged and is here to stay.

What 3G and 4G did for consumers by putting the internet in their pockets, 5G is set to do for healthcare by connecting billions of things. 5G's fast speeds, flexibility and security open new opportunities for hospital and medical center operations. Digitizing operations is setting hospitals up for success by powering essential life-saving technologies, improving the patient and staff experience, maximizing efficiency and reducing downtime.

Dedicated, secure hospital networks are at the heart of 5G proliferation and are poised to help hospitals realize the promise of connected applications.

CONNECTED APPLICATION	THE OUTCOME
Point of care testing	Secure communication of patient data and enhanced effectiveness and efficiency of healthcare treatment
Asset tracking	Reduced administrative time wasted locating equipment
Smart utilities	Meet environment regulations and create a more cost-efficient, sustainable facility
Security management	AI solutions and video analytics integrated with advanced cameras identify potential threats to improve overall campus safety, protect patients and reduce liability

What are private 5G networks and how do they save time, money and resources

Hospitals can no longer rely on traditional wired and Wi-Fi solutions to connect digital environments. New machines, software, mission-critical devices and lab equipment require next generation 5G connectivity to deliver quality care, improve efficiencies and decrease costs. Private networks are custom built for healthcare environments to provide hospitals direct control over cellular wireless coverage, location, quality and security with dedicated bandwidth that is independent of a public network.

Internet of Medical Things (IoMT) devices encompass all physical objects embedded with sensors, trackers or other technologies with the ability to connect to the internet. Examples include wearable devices, MRI machines and smart beds.

$100 Billion

Annual dollar amount that IoMT can save in operational and clinical costs.

64%

of physicians believe IoMT can help make things easier for medical staff.

ULTRA-RELIABLE WIRELESS ON YOUR TERMS

Coverage: Delineate wireless coverage location based on connectivity needs and coverage gaps.

Control: Define which users, devices and use cases connect to the network.

Capacity: Move operations traffic off the public network to free up capacity and improve the quality of service.

Flexibility: Quickly adapt to changing patient and business needs with flexible wireless infrastructure that can move from one network to another.

Security: Enhance security with a closed network and 24/7/365 network monitoring.

RETURN ON INVESTMENT

Cost Effective: Quickly deployed and compatible with existing network infrastructure.

Increased Efficiency: Realize cost savings, increase productivity and boost sustainability with Internet of Things (IoT) and IoMT devices such as predictive utility alerts and automated equipment maintenance monitoring.

Data & Analytics: Gain access to rich network insights to improve patient care and safeguard assets.

Understanding 5G network options: Wi-Fi, wired or private cellular

"The way for hospital IT teams to accommodate skyrocketing internet data traffic is with all available spectrum technologies: 5G, Wi-Fi, CBRS and others. We need to move away from siloed solutions and toward cointegrated models that bring all available technologies together to solve increased demand."

MICHAEL ZETO, CHIEF COMMERCIAL OFFICER OF BOINGO WIRELESS

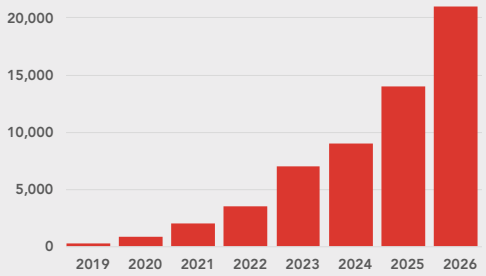
For a truly connected healthcare campus that supports IT operations, patients and staff and is ready for the innovations of the 5G future, all network technologies—from cellular to Wi-Fi to private networks—must work in unison. Convergence is key.

PRIVATE NETWORKS rely on 5G cellular technology and are the go-to choice to power dedicated connected applications and critical digital operations that require a secure, uninterrupted, fast, high-powered connection. Private networks can operate seamlessly alongside distributed antenna systems (DAS) and solve the security and reliability pain points of Wi-Fi. Private 5G also provides wireless data backhaul in areas like mobile kiosks and makeshift clinics where fiber install is costly.

WI-FI can be leveraged to provide hospital visitors and guests with super-fast connectivity for all their mobile needs, including social media, app usage and internet browsing.

WIRED NETWORKS are challenging for hospitals as they limit flexibility and introduce the complexity of wires in space constricted environments such as operating rooms and patient care units.

Private Networks (LTE and 5G)



Hospitals must now add private cellular networks to their IT mix. Industry research indicates the number of private LTE/5G networks will grow to more than 20,000 by 2026.

How private 5G, MEC and the cloud ensure strong network security and data protection

Patient data must be protected and should only be transferred over secure networks. From HIPAA compliance to preventing a breach, digital hospital operations require layers of security and constant monitoring.

CHALLENGE

- Of more than 500 reported healthcare data breaches in 2022, over 31,000,000 patient records were exposed.
- Of all healthcare organizations, just 16% claim to have fully functioning cybersecurity measures in place.

SOLUTION

- A new level of security is achievable with private 5G, multi-access edge computing (MEC) and a borderless infrastructure that moves content from edge to cloud to a data center seamlessly.
- Highly secure data environments ensure that sensitive data does not leave the premises.
- Ultra-low latency networks process data that is near real time.
- Machine learning and AI can analyze network traffic, delivering data insights for proactive decision making.
- Sensors can identify threats for prevention and rapid response.
- Encrypted systems and perimeter policies protect data.

The advantage of responsible data ownership

Hospital leaders want to know how they can better understand and responsibly make use of their data.

The solution lies in owning their own operational data.

With a private network partner like Boingo, hospitals and healthcare centers can outsource network design, deployment and management, while still retaining full ownership of their operational data.

The data provides invaluable information for business decision making and opens the door to implement predictive and machine learning network tools for intelligent, more secure and more automated infrastructure. Does the respiratory ventilator need maintenance? Is the MRI scanner due for an update? Examine the data.

Data has become the most valuable resource in the world.

97%

of businesses use data to power their business operations.

76%

of businesses where data serves as an integral part of forming business strategies.

Network models that support your organization's goals

92%

of healthcare executives believe their organization's ability to generate business value will increasingly be based on the limitations and opportunities of their technology architecture.

55%

of IT organizations surveyed plan to increase IT security outsourcing due to the rise of high-profile security and privacy breaches.

For success in a rapidly changing digital world, your business strategy now requires an IT approach that prioritizes a strong wireless network foundation.

With resource strapped IT teams and the complexity of network operations, network-as-a-service (NaaS) is a preferred long-term strategy that provides a turnkey, cost-effective connectivity solution. A NaaS model means any 5G technology—DAS, Wi-Fi, private networks—can be fully managed by an experienced network service provider. This allows executives and IT teams to focus on what they do best.

Boingo's NaaS model delivers end-to-end private network support:

DESIGN

Private networks are designed to power use cases with a cost-effective, dedicated, secure network that doesn't compete for bandwidth with licensed carrier solutions or enterprise Wi-Fi.

INSTALLATION

Equipment procurement, supply chain management, logistics management and deployment testing.

OPERATION

On-site launch support, high-performance SLAs and a self-service portal with real-time reporting.

SUPPORT

Dedicated network operation center and built-in preventative maintenance.

SECURITY

24/7/365 threat monitoring and malicious code detection.

Why partner with Boingo Wireless

One network partner. Endless possibilities.
Not all wireless is created equal. Boingo is one of the largest and most trusted operators of indoor wireless networks in the United States. Here's how we work as a full-time partner to support your hospital's goals.

Vision

Bring your vision for digital transformation, use cases and desired outcomes. Boingo will make that vision a reality with next generation connectivity.

Design

Boingo custom designs network infrastructure with cellular, Wi-Fi and private networks based on your needs.

Build

Our end-to-end connectivity platform is technology-agnostic, neutral host and interoperable. We deliver connectivity across voice and data communications as well as IoT networking.

Manage

NaaS model offers a 24/7/365 world-class network operations center with full security service suite, reporting and data insights.

Leading organizations trust Boingo to be their total connectivity provider.

Indiana University Health
TISHMAN SPEYER
StateFarm
PORT AUTHORITY NY NJ
CDA CHICAGO DEPARTMENT OF AVIATION
ONE WORLD TRADE CENTER
SDSU San Diego State University
MTA
LIVE NATION
LAX
ROCKEFELLER CENTER
Hines
SOLDIER FIELD

LET'S GET STARTED

Transform your hospital and healthcare operations with a Boingo Private Network

TAKE THE NEXT STEP

Talk to the Boingo team to get started. Email Boingo at **healthcare@boingo.com** and visit **www.boingo.com/healthcare.**

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#WirelessSimplified

Boingo Wireless, Inc. simplifies complex wireless challenges to connect people, business and things. We design, build and manage converged, neutral host public and private networks at major venues around the world. Boingo's vast footprint of distributed antenna systems (DAS), Wi-Fi, small cells and macro towers securely powers innovation and connectivity in airports, transit stations, stadiums, military bases, hospitals, commercial properties and enterprises worldwide. Learn more at boingo.com.

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