

Building the venue of the future, today

How 5G private networks
enable venues to exceed
audience expectations



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Today's technological advancements have drastically changed the way fans experience live events in stadiums, arenas and music venues. Innovations like crowd analytics, accelerated access and cashierless checkout not only increase engagement and convenience for consumers, but also empower venue staff to streamline operations and more effectively provide on-site security.

Running future-driven technologies on outdated infrastructure, however, can result in spotty coverage, increased operational costs and low-service quality. Security gaps can also arise on overworked and out-of-date systems.

Smart venues require a dynamic, secure networking solution that enables them to overcome such challenges while simultaneously providing owners and operators tools to take charge of their enterprise from end to end.

5G as an end-to-end solution

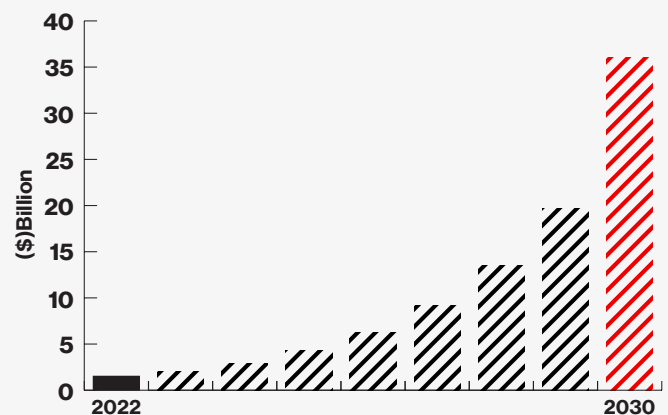
Modern stadiums and event spaces are digitalized and leverage the power of operational technologies like artificial intelligence (AI), edge computing and Internet of Things (IoT) applications to transform traditional experiences into exceptional ones for patrons, personnel and partners.

Advances in operational technology require lower latency and greater processing power, allowing venue operators to capture near real-time data and support enterprise performance. This improves the overall user experience and helps drive on-site revenue like never before.

According to ResearchandMarkets, the global private 5G network market size is expected to reach \$36.08 billion by 2030 at a compounded annual growth rate of 47.5% across an eight-year period.³

A private 5G wireless network is a secure, scalable, wireless network with dynamic networking attributes. It is customized for a facility's specific structures and operational requirements and provides business-critical applications with both consistent, predictable coverage and bandwidth. It also affords users higher data transmission speeds and more resilient connections than typically possible with public Wi-Fi and 4G.²

Traditionally, stadiums and music venues have relied on a combination of public cellular networks, Wi-Fi and Ethernet for their public and back-of-house needs.⁵ But one big challenge these venues face is bandwidth constraints.



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As more devices seek to connect to available networks, the available bandwidth gets clogged and causes issues to arise.

Verizon's private wireless network solution allows venue operators to deliver optimal security, performance and responsiveness for the most demanding applications and tomorrow's innovations.

Steve Walter, Verizon's Sports, Media, Entertainment and Technology Global Marketing Lead, expands on this idea and further demonstrates why Verizon is a leader in the market today. "Due to the strength of our network and expertise," Walter says, "Verizon continues to be the industry's leading network and technology partner, with a long track record of helping customers solve for their biggest pain points like improving venue operations, transforming content production and elevating the fan experience."

Verizon has partnered with the National Football League to support their coach-to-coach communications on the field with a dedicated private network.⁴ It will be using Citizens Broadband Radio Service (CBRS) spectrum at 3.5 GHz.⁶ Dedicated communication channels exist for coach-to-coach, coach-to-player, security detail and other back-of-house personnel to prevent communication delays. This technology stops interference between channels and enables the simultaneous use of dozens of headsets all at once with no lag or interruption of service.⁶

Verizon also brought private wireless network solutions to the 2023 Formula 1 Crypto.com Miami Grand Prix.⁷ This enabled venue management applications including ticket scanning, digital sign management, multiple point of sale terminals for various merchants and immediate uploads for photographers looking to cover the action as it unfolded.

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Put in action

Some venue owners may be hesitant to implement private 5G wireless networks due to upfront costs, but they stand to realize gains in operational efficiency, enhanced customer experience, safety and security. The implementation of private 5G wireless should allow venue owners to take advantage of many new technologies. These include:¹

- **Accelerated access:** Enables event goers to take control of their entry into smart venues simply by showing their face to a sensor at the gate. With an opt-in facial authentication system, a person will be able to use their face as the ticket by opting in, uploading a photo and linking their tickets – all from home.
- **Cashierless checkout:** Increases convenience for customers by providing frictionless, self-directed and contactless shopping experiences – like purchasing gameday gear, artist merchandise or even concessions – without needing to wait in line for a cashier.
- **Crowd management:** Monitors crowd movements to help streamline the attendee experience. AI, LiDAR technology and people-counter sensors can help reduce wait times in key areas to increase overall customer satisfaction, ease congestion and address potential safety issues.
- **Security solutions:** Protect data, devices and systems – like patrons' personal mobile devices, live event feeds and back-of-house devices – with comprehensive solutions featuring agile interfaces.
- **Staff communication:** Connects on-site staff and enhances employee collaboration across devices with voice, multimedia, dispatch and broadcast capabilities enabling real-time event coordination throughout the venue.
- **Facilities management:** Reduces venue operating costs with HVAC monitoring systems and energy consumption controls like intelligent lighting and air quality monitoring. Intelligent lighting makes it easier to identify and fix broken lights and enables customizable venue lighting experiences that bring even more excitement to the fans.
- **Content production.** Allows broadcasters of live sports and entertainment to send live video from the venue securely, with low latency and without compromising speed or reliability. 5G is expected to soon allow for untethered cameras and more efficient and cost-effective remote production.

Benefits of private 5G wireless networks:

- **Reliability and scalability.** Provides dependable and consistent connectivity over large areas.
- **Faster speeds.** Enables quick and efficient access to high-bandwidth applications.
- **Low latency.** Helps reduce delay when transmitting data, making it more suitable for near real-time applications.
- **Increased capacity.** Enables more devices to be connected to the network without a drop in performance.
- **Improved security.** Provides incremental, built-in security features.
- **Cost savings.** Use the spectrum Verizon provides to help reduce costs and speed time to market.





References

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Getting started

Venues can have their private 5G networks up and running quickly when working with an experienced partner like Verizon. With the increasing pressure to move to digitalization, venue operators are realizing that high-speed, high-performance connectivity is essential today and going forward. For those ready to take the next step, Verizon can deploy a fast, secure network that will help optimize every facet across the business. By maximizing use of advanced technologies, these enterprises will operate more efficiently and more effectively, standing out as leaders in today's market.

Learn more at [verizon.com](https://www.verizon.com)

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