

As Airwaves Get Crowded, Building Owners Need A 5G Solution

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There is an invisible traffic jam growing on the nation's cellular networks.

Tech-forward building owners are competing to be the first to make their properties ready for 5G, hoping to attract tenants that will pay a premium for stronger connectivity. But what owners may not realize is that good cell reception is a scarce resource that is quickly disappearing.

Every call and every video conference takes up signal that no other device can use. As the number of devices on desks, in employees' pockets and inside smart buildings multiplies, signals are suffering. Cellular and WiFi networks are struggling to keep up with increased demand, and though new bands of the electromagnetic spectrum have been licensed for use, these may only be temporary fixes.

"A long-term in-building wireless solution is going to have to involve enhancing existing networks like WiFi and 4G and building new networks like private LTE," Airwavz President Mark Horinko said. "But all of that signal won't mean anything without a physical in-building wireless system."

Bit by bit, networks are slowing down. Horinko said office occupants may not notice the changes at first, but growing traffic on their existing cellular and WiFi networks could eventually bog down

their signal to a crawl. With wireless data consumption doubling every two years, the wireless networks in buildings today will buckle under the data consumption to come in the early 2020s.

The short-term response to this issue is to open up more of the electromagnetic spectrum to cellular traffic. In 2018, the Federal Communications Commission wrapped up the licensing rules for a band of spectrum known as the Citizen's Broadband Radio Service, or CBRS. The band had previously been used by the U.S. Navy for communications, but now cellular providers are hungry to begin using the spectrum to relieve pressure on their overburdened networks.

CBRS also has some promising uses for in-building solutions. Building owners could use the spectrum to offer private, in-building LTE networks, Horinko said. These proprietary signals could provide faster speeds for office occupants and also connect smart devices and sensors throughout the building.

"Private LTE has the potential to give landlords a more 'command and control' relationship to their networks," Horinko said. "They can gain visibility into the performance of their in-building networks without being beholden to any other service provider. Revenue growth and cost-saving opportunities should be quite prevalent."



But Horinko said that while CBRS can certainly relieve some of the burden on existing networks it is not going to be a cure-all.

“CBRS is a part of the solution, but it can’t bring us all the way to 5G,” Horinko said.

Horinko’s company, Airwavz, recently partnered with GlobalStar to secure the rights to its unused spectrum. Airwavz can now lease out GlobalStar’s licensed spectrum for in-building wireless systems.

“It’s like having eight lanes of a superhighway all to yourself while everyone else deals with the frustrating wireless gridlock on the other roads,” Horinko said. “You need more bandwidth. To do anything with 5G inside your building, you’ll need an in-building wireless system.”

Airwavz also partners with owners and developers to install and manage in-building wireless systems and works with wireless carriers to link their networks to buildings. An in-building wireless system has an advantage over WiFi in terms of performance, security and seamless access to public cellular networks.

While a company may rely on a single WiFi router and a handful of nodes and extenders, an in-building wireless system can provide dozens of nodes running throughout a single office. That proximity will make 4G and 5G services the dominant signal providers in offices in the coming years.

“It’s a wireless world today, and that will only be amplified further as building owners seek ways to gather actionable data on their occupants, provide new services and ensure the tens of thousands of wireless devices and sensors inside their buildings are connected to a functioning network,” Horinko said.

Bringing on a partner to design, build, deploy and manage a system is becoming more crucial as wireless carriers themselves have largely abandoned installing in-building wireless systems on their own.

“The wireless carriers are hyper-focused on building their own 5G networks outdoors,” Horinko said. “So if building owners want to provide 5G to their tenants, they are going to have to take it upon themselves and find a partner that understands the 5G migration path and an economical way

to make that happen.”

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