

Is Cell Phone Coverage A Disconnect for Residents?

Several remedies for poor cellphone signals exist – but there's no silver bullet.

By Valerie M. Sargent / *Multifamily Broadband Council*

When I moved into my current home, I was frustrated to find that my cellphone, which had worked at my previous location, did not work well in my new neighborhood. I eventually had to switch cellphone carriers – after talking to neighbors and ensuring my chosen carrier had a strong signal – so that I had a workable phone at home.

At the 2016 **BROADBAND COMMUNITIES** Summit, a multifamily professional asked me whether the MBC had found a solution for poor cellphone signals. Her issue was related to metropolitan high-rise buildings, but this is a common issue for other types of MDU communities as well. In an MDU, asking all residents to change carriers won't work, but several helpful technology approaches can enhance service quality if needed.

DAS. A DAS, or distributed antenna system, is one option. It sends the cellular signal inside from a rooftop antenna, distributes it via broadband, then amplifies and repeats it to small antennas throughout the community. This method is well-suited to high-density communities, and the technology is stable and mature. However, DAS is expensive, ranging from thousands to tens of thousands of dollars. Many property owners, including the woman I spoke with at the Summit, find DAS too expensive and continue to search for a better solution.

Cell Repeaters. Cell repeaters are another possible choice. In this scenario, the antenna outside is cabled to an internal repeater. This solution is simpler and less expensive than a DAS but can have quality-of-service issues if not implemented correctly. A 150,000-square-foot building probably needs 10 to 12 repeaters.

Wi-Fi Calling. Wi-Fi calling enables residents to make cellular calls via a Wi-Fi system installed in a building. This, of course, takes up bandwidth on the Wi-Fi system and requires traffic prioritization to avoid quality-of-service issues. However, it may be one of the more viable options for owners in need of a solution. Some cellular carriers make Wi-Fi calling available for their customers.

Small Cells. As an affordable alternative to DAS, an owner can install small cells. This alternative might cost

hundreds or thousands instead of tens of thousands of dollars to install. However, an owner will have to buy small cells dedicated to the licensed spectrum for each carrier; some limit the number of cells an owner can buy, if they make them available at all. Each small cell enhances connectivity back to its respective network but is able to cover only a small area.

Small cells can cause interference and may interact with one another. An unlicensed small-cell product is in the works, but phones would have to be able to connect in the unlicensed spectrum, and the unlicensed small cells would have to be able to communicate with the core networks of the service providers.

Neutral Hosting. Neutral hosting companies offer a service to extend a cellular company's service onto a property. They handle everything on the owner's behalf, installing and maintaining equipment that builds connectivity on an MDU property to connect with all the carriers. If there is a service issue, the property owner calls the neutral hosting company, not the carriers. The solution usually requires fiber: A fiber demarcation point that ties back to the carrier's network has to be built on the property.

In a world in which owners have traditionally looked for revenue shares, who pays for these upgrades? Therein lies the rub. There is no revenue to share, because neutral hosting companies do not pass any charges on to residents. Unfortunately, no carriers will share expenses with owners; carriers pay to build only in areas such as stadiums and airports.

There's no silver bullet! Think of cell coverage as being like curb appeal. Owners regularly pay to install and maintain landscaping to make their properties attractive. So it will go with improving cellphone coverage. The questions to ask are these: How attractive is better reception for your residents, and what are those bars worth to you? ❖

Valerie Sargent is the executive director of the Multifamily Broadband Council. Contact her at vsargent@mfbbroadband.org or 949-274-3434, or visit www.mfbbroadband.org. MBC Tech Committee member David Coffey of Advanced Media Technologies contributed to this article.