

Fiber Extension Technology Creates Seamless, Affordable MDU Connectivity

High-speed broadband has become necessary to enable digital inclusion. MDU owners can leverage existing building wiring to ensure affordable services for every resident.

By Helge Tiainen / *InCoax Networks*

The continued reliance on fixed broadband highlights the significance of digital inclusion. It ensures equitable access to and use of information and communication technologies for development and participation in social and economic life. Because of the aftereffects of the COVID-19 pandemic, online experiences enable people's everyday lives, and there is a global dependence on ubiquitous connectivity in every part of a home.

Once a luxurious selling point, high-speed broadband is now necessary for all types of homes. More than a third of the U.S. population lives in apartments, mobile home parks, condominiums and public housing. As multiple-dwelling-units (MDUs) remain popular, landlords must ensure reliable connectivity so their tenants' day-to-day quality of life remains high. MDU residents must have as much connectivity freedom as those in standard housing or single-family units (SFUs).

Texas is home to some of the fastest-growing industrial property markets in the country. However, four of the five least-connected cities in the U.S. are in Texas, according to a 2019 National Digital Inclusion Alliance analysis.

MDU CONNECTIVITY IMPACT, COMPLEXITY

Stoneridge Apartments outside Austin, Texas, offered its tenants many desirable recreational services and amenities. The affordable 256-unit housing complex boasts an outdoor swimming pool, a playground area and an on-site fitness center (see "Stoneridge Apartments: Promoting Digital Equity by Providing Free Internet to Low-Income Residents," <https://www.bbcmag.com/property-of-the-month/stoneridge-apartments-promoting-digital-equity-by-providing-free-internet-to-low-income-residents>). Despite these facilities, however, there was a unit vacancy rate of 55 percent due to the absence of seamless connectivity.

To remain attractive to current and potential future tenants, landlords of MDUs must move away from offering a "hotel" and community Wi-Fi-like connectivity and instead look at adopting a solution that creates a more home-like experience.

Low-cost, high-speed broadband was needed for all Stoneridge tenants. However, like many MDUs in the U.S., fiber cabling was not present or prepared for in the 13 buildings. Because of its bandwidth capacity, an all-fiber solution could provide residents with faster and more

attractive connectivity. However, installing full fiber connectivity to an MDU is considerably more complicated than installing it in SFUs and other types of premises.

The installation of new cable routing in an MDU is incredibly complex and the process must overcome many barriers. Naturally, an MDU involves more people, meaning that gaining approval from tenants and building owners can take time, especially if anyone has concerns. Building owners must also avoid cosmetic damage and noise complaints. Installations in MDUs are large-scale projects, which means the potential costs of reforming the network are extensive.

ENSURING DIGITAL INCLUSION

The average annual income of a public housing resident is \$14,500, so not all tenants living in MDUs can afford excellent internet connectivity. Therefore, landlords must agree with service providers to support many connected, intelligent devices, demanding video and gaming services, and other high-bandwidth wireless applications.

The property owner of Stoneridge Apartments looked to PCs for People for the low-cost, high-speed solution it needed. PCs for People is a nonprofit 501(c)(3) organization focused on digital inclusion by providing low-cost computers and delivering affordable broadband connectivity to the homes of low-income families.

PCs for People looked beyond traditional fiber-to-the-home deployments, installing InCoax Networks' fiber access extension technology at Stoneridge. Fiber connectivity and high-bitrate services were provided to each building and each level. The technology utilized the existing, fully functional coaxial network, previously used for satellite TV, to offer a fiber-like broadband performance to tenants.

InCoax's MoCA Access 2.5-based fiber access extension technology provides tenants with the necessary symmetric gigabit network connectivity. The Multimedia over



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Coax Alliance (MoCA) is a global, member-driven, nonprofit trade association that develops the multi-gigabit broadband coax connectivity standards used in this application. MoCA industry standards let homes, apartments, flats, hotels and buildings reuse existing in-building coax as the last-mile access and connectivity medium for broadband communities, reducing broadband installation costs. These standards can effectively reduce overall broadband installation costs.

The modems and apartment routers allow internet access through Wi-Fi in all apartments and social areas. Operators can manage the system using their existing management tools and InCoax Manage software. Installing InCoax technology is an expedient, cost-effective solution to the global MDU broadband access challenge of deploying high-speed, multi-gigabit fiber broadband. It can improve the quality of day-to-day life for tenants and demonstrate that MoCA Access can be a key complement to fiber in bringing multi-gigabit networking to any MDU by reusing existing coax infrastructure.

ENABLING ESSENTIAL HOME ACTIVITIES

Preliminary calculations showed an average in-building total installation cost drop from \$440 per apartment with fiber to \$125 per apartment by

reusing the Stoneridge Apartments existing coaxial cabling infrastructure. The building complex upgrade remarkably impacted the apartment vacancy rate, which dropped from 55 percent to less than 11 percent. Seamless connectivity will empower Stoneridge tenants for years to come.

The fiber access extension technology allows tenants to perform all essential remote activities and benefit from the increased connectivity to keep in contact with friends and family and shop, stream, work and learn online. These have all become essential aspects of everyone's overall quality of life. By deploying the right connectivity solution, operators can reduce overall complexity and expense and still bring ubiquitous connectivity to all corners of a home.

Complementary access technologies can be an answer for operators looking to navigate away from costly, complex fiber-to-the-premises deployments and deliver high-quality broadband to tenants no matter the location. ❖

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