FUTURE-READY BROADBAND: UBIQUITOUS CONNECTIVITY FOR MDUs

Future-ready Broadband: Ubiquitous Connectivity for MDUs

A robust network is the foundation for modern living. This is as true for residents of multi-dwelling units (MDUs) like apartments, condominiums, and dormitories as it is for single-family residences. Building on advanced connectivity services, MDU property managers and owners can leverage the benefits of smart home devices and smart property solutions to drive revenue and increase net operating income.

This whitepaper addresses the growing demand for exceptional connectivity in MDUs. It evaluates the benefits of next-generation connectivity services for MDU property managers and residents, as well as the role of the service provider as a key partner in smart MDU living.

53% of consumers report they value technology more now than before COVID-19.

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Benefits Of Next-Generation Connectivity Services

MDU Property Managers and Owners

- More efficient property management
- Attracting longer-term residents
- Creating new value

MDU Residents

- Safety, security, convenience, and energy-saving benefits
- Reliable and high-performing broadband

The Role of Ubiquitous Connectivity in MDUs

Multi-dwelling units (MDUs) are designed to house multiple families contained in a single building or several buildings within one complex. Building types typically include apartments/condominiums, duplexes, quadraplexes, townhomes, dormitories, and even military bases, boat slips, and mobile home parks.

Types of Housing

Single Family — MDUs — Other

Apartments/Condos — Townhomes — Duplexes — Dormitory
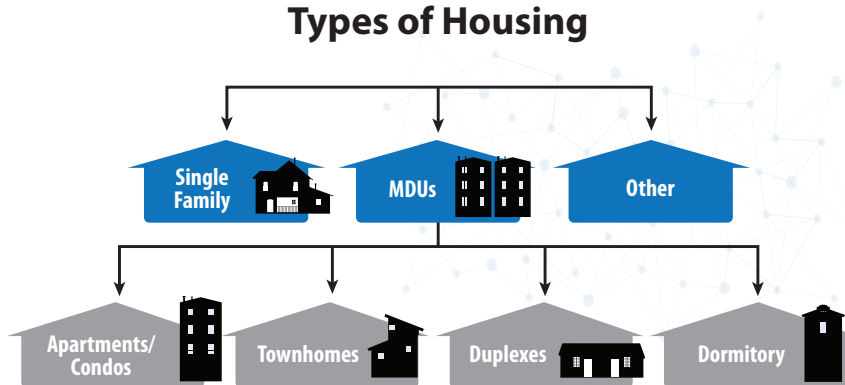
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MDU residents are a major segment of the US population. Parks Associates research indicates that **31%** of US broadband households or 34 million households live in MDUs.

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Consumers need broadband to live, work, learn, shop, and connect to healthcare, banking, and more. Social distancing during the COVID-19 pandemic has made it abundantly clear that consumer lifestyles are dependent on reliable connectivity and high-speed access. MDU residents have relied on new connected services like telehealth, video conferencing, and online fitness solutions to meet their daily needs.

These consumers are dependent on their home's broadband in order to participate in daily activities that require high download speeds, high upload speeds, and a reliable internet connection.

As of September 2020...

59% of workers reported a household member working remotely.

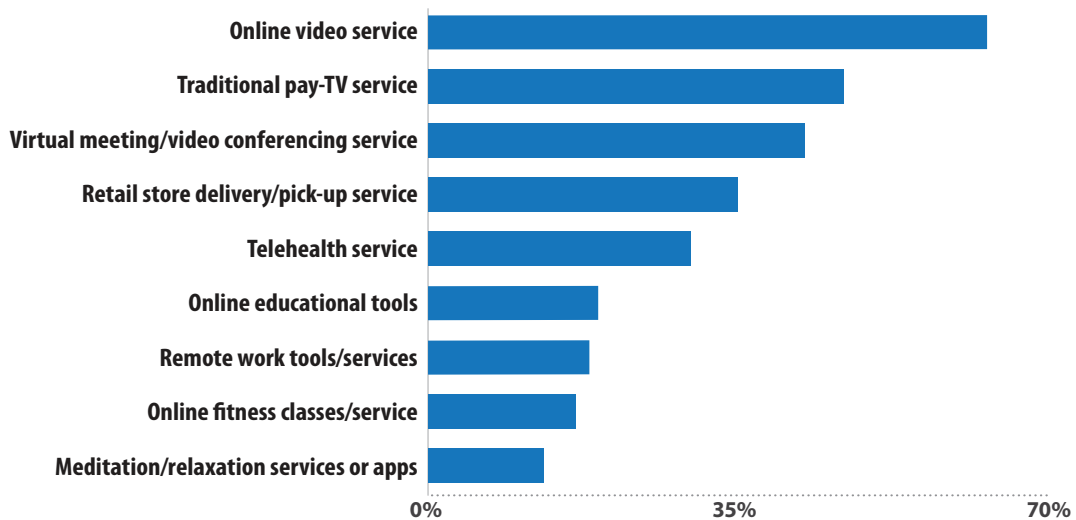**63%** of parents reported a child schooling remotely.

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Reliable, high-speed broadband is now a must-have for MDU residents. While the majority of MDU residents acquire broadband service for their units directly through providers via a retail service model, a growing number of properties offer managed high-speed internet access (HSIA) as an amenity.

Services Used During COVID-19 Crisis
US MDU Residents with Broadband Internet

Service	
Online video service	
Traditional pay-TV service	
Virtual meeting/video conferencing service	
Retail store delivery/pick-up service	
Telehealth service	
Online educational tools	
Remote work tools/services	
Online fitness classes/service	
Meditation/relaxation services or apps	

0%   35%   70%

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Managed HSIA Can Be Deployed To Support A Range Of Networking Needs:

A property-wide resident network

A private network for MDU staff

A property-wide guest network

A network to connect MDU-controlled IoT devices, or smart apartment deployments.

For luxury properties in particular, managed HSIA is becoming an expectation as residents come to demand residences that keep up with their connected lifestyles.

Building on managed HSIA services, properties can offer community-wide Wi-Fi that is available upon move-in for residents and allows seamless Wi-Fi coverage across the community. These solutions may also offer a superior cost/benefit ratio. MDUs offer service providers the ability to scale services across their tenant population, meaning residents may enjoy speeds of up to 1Gpbs at lower prices than they could acquire on their own. Of course, a fast and dependable network is the key foundation to scalable Wi-Fi solutions. Internet service providers have an opportunity to provide both bulk broadband services and property Wi-Fi solutions, delivering an end-to-end, seamless experience for property managers and residents.

Taken together, managed high-speed internet services provide MDU properties with the advanced and flexible networking backbone needed to meet both operational needs and resident expectations for connectivity services. Yet, even beyond internet access itself, ubiquitous broadband and managed networking become the foundation for operational efficiencies for property owners and more enhanced living experiences for MDU residents.

40% of MDU renters in broadband households are interested in bulk broadband internet bundled with their rent.

77% of those interested are willing to pay higher rent for the service.
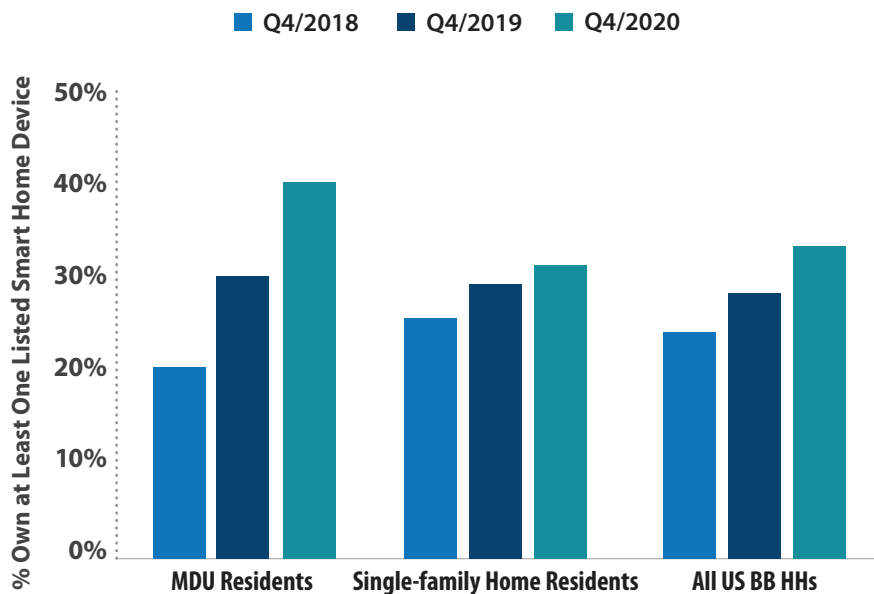
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Use of Connected Devices Skyrockets among MDU Residents

The expanded use of technology in and around MDU properties is evident in residents' use of connected devices. Adoption of smart home devices like smart thermostats, video doorbells, smart lights, and smart door locks among MDU residents has grown dramatically since 2018.

In 2020, MDU resident adoption of smart home devices surpassed adoption among residents of single-family homes: 41% of MDU broadband households report owning at least one smart home device, compared to 34% of single-family households.

Smart Home Device Ownership by Type of Residence

■ Q4/2018 ■ Q4/2019 ■ Q4/2020

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High smart home device adoption among MDU residents correlates with age. Consumers 25-34 years old are among those more likely to adopt smart home devices. This is also the age group most likely to live in a multi-dwelling unit. Adoption rises even higher among condo owners.

Property owners must invest now in the connectivity solutions that make their buildings future ready as young consumers bring their expectations for smart living at home to their next residence.

The majority (56%) of condo owners now report owning a smart home device, compared with 29% of MDU renters.

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The Value of Connected Properties for Building Owners and Managers

Building on a high-performing broadband backbone, MDU property managers can leverage connected devices and smart platforms that integrate connected solutions to streamline property management tasks and lower operating costs, attract and retain residents, and even increase rental revenues. Sixty-five percent of MDU builders report their business model leverages smart home technology to differentiate properties and add value.

Smart property solutions targeted to property managers lower operating costs primarily through reduced energy costs, labor efficiencies, and damage minimization.

For instance, building owners and managers are responsible for paying the utilities for unoccupied units. Property managers can leverage smart thermostats, smart lights, and smart outlets to reduce energy consumption in unoccupied units to drive down monthly property expenses. Tracking smart device data on heating and cooling all year round can also help property managers identify HVAC equipment inefficiencies that waste energy, and identify the need for equipment maintenance before critical—and expensive—failures occur.

The effects from water damage are often long-term; the property may reduce future rental value from permanent damage and incur higher insurance rates stemming from the incident. Smart water leak detectors allow property managers to receive alerts about freeze and flood conditions detected in units and provide the ability to make the appropriate responses such as increasing room temperatures to prevent pipe damage from a freeze or entering the property to address issues with water leaks. Thermostats can identify and prevent freeze conditions from damaging pipes within each unit, minimizing overall risk with frozen pipes.

Finally, property managers may gain substantial labor efficiencies through a variety of connected property use cases, most notably through access control solutions.

Potential Costs for Property Damage

Insurance Information Institute
45% of insurance losses come from water and freeze damage and **$13 billion** paid by insurance companies to repair water damage each year.

The American Water Works Association
1 in 5 toilets is leaking at any moment, meaning a large apartment building could be wasting hundreds of thousands of gallons year after year.

Fixr.com
The national average cost of restoring a room after a "clean" water leak is **$2,700**. A "clean" leak is one where the only problem is the water that escaped the pipe, but no additional problems— such as mold, mildew, discoloration, carpet damage— occur.

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For instance, smart door locks allow property managers to grant access to a property remotely. Integration with property manager solutions—such as Yardi, RealPage, Resman, MRI, and Entrata—is especially valuable for property managers who manage multiple properties and must travel back and forth to various properties to grant access.

Access control solutions also enable maintenance staff to schedule and enter units when needed, allow prospective residents to take self-guided tours, and easily reset entrance authorization (aka, re-key) when turning over units between residents. Package management services can utilize smart door locks to grant access and smart cameras to monitor the activities of delivery personnel—similar to the Amazon Key services. These services have revenue-generating potential. MDU residents who own or intend to purchase a smart lock indicate willingness to pay a monthly subscription and per package fees for these services.

One-half of MDU residents are willing to pay $0.99 to $1.98 per package to have packages delivered inside their home or garage.

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Popular Smart Home Device Features for Property Managers			
Service	**Device**	**Property Manager Benefits**	**Value**
Access Services	Smart Door Locks	• Provide maintenance staff and contractors access to unit remotely, removing need for accompanying staff • Grant access to units remotely for unaccompanied viewings, package delivery, or third-party services • Monitor labor time for contractors in each unit • Minimize key replacement costs	Lower operating costs
		• Track who enters and leaves the property using temporary, unique access codes	Lower operating costs Security
		• Bar access to evicted residents	Security
Energy Management Services	Smart Thermostat	• Automatically adjust temperatures in unoccupied units to save energy	Lower operating costs Security/safety
		• Identify system issues that lead to energy waste • Monitor units to prevent abuse of shared energy meters	Lower operating costs
	Smart Lighting	• Manage the use of lights in unoccupied units • Remotely prepare rooms for viewings	Lower operating costs
		• Vary lighting color settings to enhance aesthetic appeal of property	Product differentiation
	Smart Outlet	• Remotely turn on/off electronics plugged into the outlet	Lower operating costs Security/safety
		• Monitor energy consumption of products plugged into the outlet	Lower operating costs
Damage Minimization	Smart Water Leak Detector	• Receive alerts about freeze and leak conditions	Lower operating costs Security/safety
	Smart Thermostat	• Monitor HVAC system to prevent major emergencies • Remotely adjust temperature in unoccupied units to prevent pipe damage during winter	Lower operating costs

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Parks Associates' 2020 study, *MDU, Home Builders, and Smart Home Technology* asked MDU builders about the importance of smart technology in multifamily residences.

Clearly, the level of estimated savings is correlated with the degree of smart technology envisioned to be installed.

Simple access control would provide a modest level of savings, while a robust utilization of smart access control, smart energy management, smart water damage protection, smart safety devices, preventative maintenance, etc. could drive substantial savings.
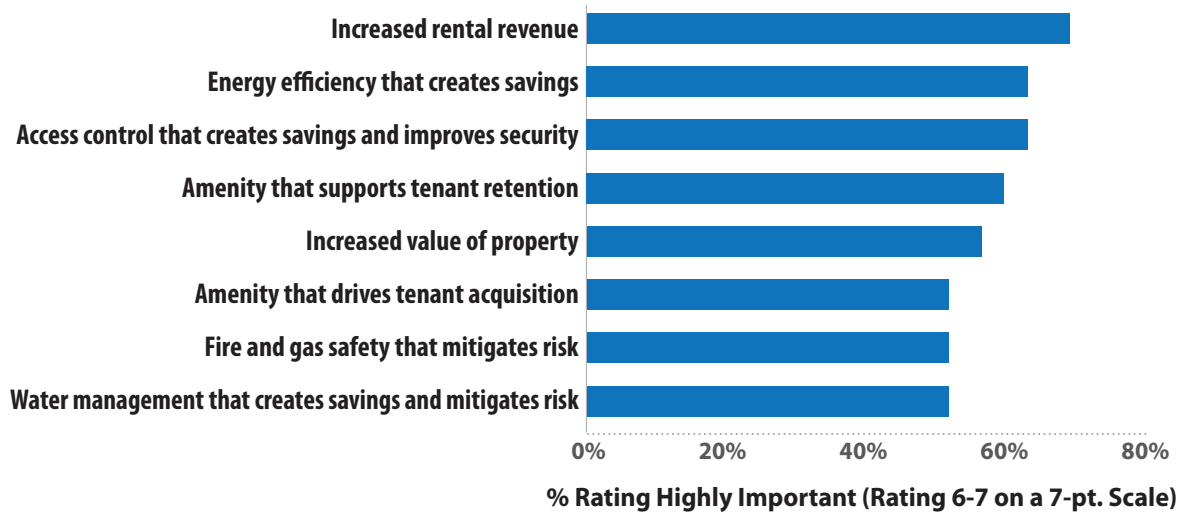
54% of MDU builders estimate that smart home devices drive operational savings of 6% or less, while slightly less than half (45%) believe they can drive savings of 7% or more.

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Yet the value of connected solutions for property managers extends beyond operational efficiencies. The majority of builders rated eight distinct value propositions of smart technology as "highly important" for multifamily managers and owners, including increased rental revenue, energy efficiency, increased security from smart access control, and the ability to acquire and retain residents by positioning technology as an amenity.

Top Smart Technology Value Propositions for MDU Properties
US Multifamily Home Builders

Increased rental revenue	
Energy efficiency that creates savings	
Access control that creates savings and improves security	
Amenity that supports tenant retention	
Increased value of property	
Amenity that drives tenant acquisition	
Fire and gas safety that mitigates risk	
Water management that creates savings and mitigates risk	

0%   20%   40%   60%   80%

% Rating Highly Important (Rating 6-7 on a 7-pt. Scale)

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Traditional sources of product differentiation such as pools and fitness centers are now baseline amenities in many multifamily markets. **Integrating smart home devices in renter-occupied MDUs creates differentiation and allows property managers to charge higher prices or attract more residents at the same prices as other properties.**

The exact premium that property managers can charge in rental fees from the inclusion of smart home devices will depend on various factors including geographic location and building type. Property owners must also carefully evaluate the decision to increase rent. While rental increases will increase Net Operating Income (NOI), rental increases may also alienate some consumers and make it more difficult to maximize property occupancy rates.

Adjacent factors that may contribute to NOI include discounts on monthly insurance rates stemming from the implementation of safety-related smart home devices as well as rebates from energy service providers from the implementation of energy saving devices.

The smart home device benefits of product differentiation, improvements in operational efficiency and convenience for residents are highly promoted by platform providers offering products in the space.

Having reliable broadband and advanced Wi-Fi enables MDUs to integrate smart home technology throughout their properties, and capitalize on the opportunity to generate value operationally, competitively, and in generating new or additional revenue from residents.

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The Value of Connected Properties for Residents

The connected consumer markets that make up the consumer IoT are progressing in most developed nations. This is driven, in part, by widespread access to technologies such as broadband, Wi-Fi networks, cloud services, and smartphones. In recent years, connected devices across various categories including entertainment, smart home, health, and wellness have experienced real technical and market development. This development has led to a growing expectation for technology in daily lives.

Security and safety constitute the core value proposition of the smart home, followed closely by energy and cost savings. Among smart home device feature sets, MDU residents generally find those relating to access control most valuable, followed by smart thermostats and smart lighting.

Access Control – MDU residents who intend to purchase a door lock find security features that prevent it from hacking most important. Features that prevent break-ins and detect intruders are next, followed by those that monitor activities outside the premises and those that provide convenience for access, including "hands free" access. Smart door locks typically provided to MDU renters are those that allow residents to grant access to guests remotely and receive notifications when maintenance enters their unit.

Smart Thermostats – Thermostat capabilities that help save money are most important to consumers who intend to purchase a smart thermostat. Safety use cases, such as adjusting thermostats to prevent growth of mold and viruses, and convenience use cases, like sensing humidity and temperature controls, rank highest in importance within the category.

MDU renters value energy saving features via smart thermostats higher than do MDU owners and all broadband households, so smart home device manufacturers and solutions providers targeting MDUs must promote the energy-saving capabilities for both property owners and residents to score broad-scale deployment within properties.

36% of MDU renters are interested in a remote climate control service using a smart thermostat, and more than 70% of MDU renters are willing to pay more money in rent per month for this feature.

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Smart Lighting – MDU households generally find automated lighting features that help save energy most valuable. Approximately 50% of MDU households who intend to buy smart lighting find bulbs that sense how much energy is used and that minimize energy costs as valuable. Use cases related to safety and security follow energy savings. MDU residents perceive smart lighting features that enhance ambience and mood least important. Forty-four percent of consumers find a feature that senses light in the room and adjusts the light from the bulb to provide optional lighting valuable; 38% find smart lights that work with apps that allow residents to change bulb colors for cool effects important. The smart lighting features typically provided to MDU renters is the ability to control lights remotely. This feature is not typically automated, but can help consumers to save energy.

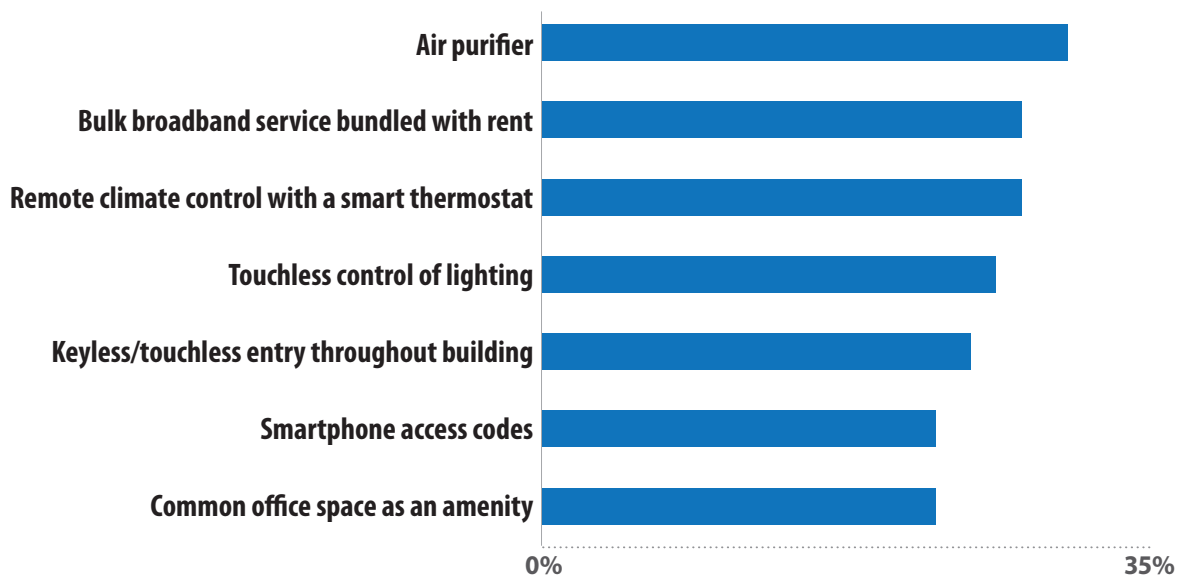PARKS ASSOCIATES   COX | Communities

Coming out of COVID-19, MDU residents also show interest in apartment amenities that promote a healthy living environment and provide space for remote work. All of these new amenities benefit from robust, integrated connectivity; relatedly, **30% of MDU renters are willing to pay to access bulk internet services bundled in with their rent.** High levels of interest in smart home-related products and services, and willingness to pay for these solutions among MDU renters, mean the opportunity for new revenue among property owners in the US alone is easily more than $1 billion annually.

- 35% of MDU renters report they are willing to pay higher rent for air purification.
- One-quarter report they are willing to pay for touchless lighting controls and building access.
- 20% report they are willing to pay higher rents for common office areas.

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Willingness to Pay for Apartment Rental Features
US MDU Renters with Broadband Access

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Opportunity for Service Providers to be Trusted Advisors for Smart Communities

Residents need reliable, high-speed broadband internet and seek to upgrade their service to meet their needs. In September 2020, 12% of MDU residents reported upgrading their home's broadband service in the prior 12 months, with an additional 12% initiating a new broadband subscription—either as a first-time subscriber or re-subscribing after going without for some time.
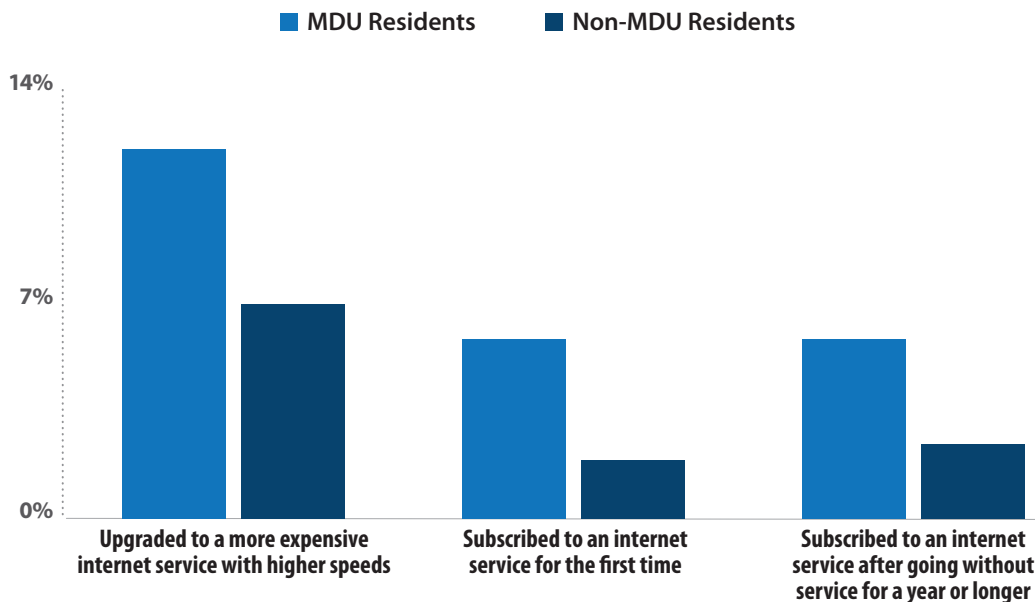
31% of MDU residents with broadband access, or about 10 million households, report they are likely to upgrade their home internet service to a higher speed in the next six months compared with just 21% of residents of other housing types.

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MDU residents also report higher intentions to upgrade broadband services than consumers in single-family homes or other resident types. MDU residents are particularly interested in gigabit speed service, with the majority of all MDU residents indicating a likelihood to subscribe if made available to them. Broadband providers have an opportunity to address underperforming connectivity for MDU residents and upgrade subscriptions to the highest tiers available.

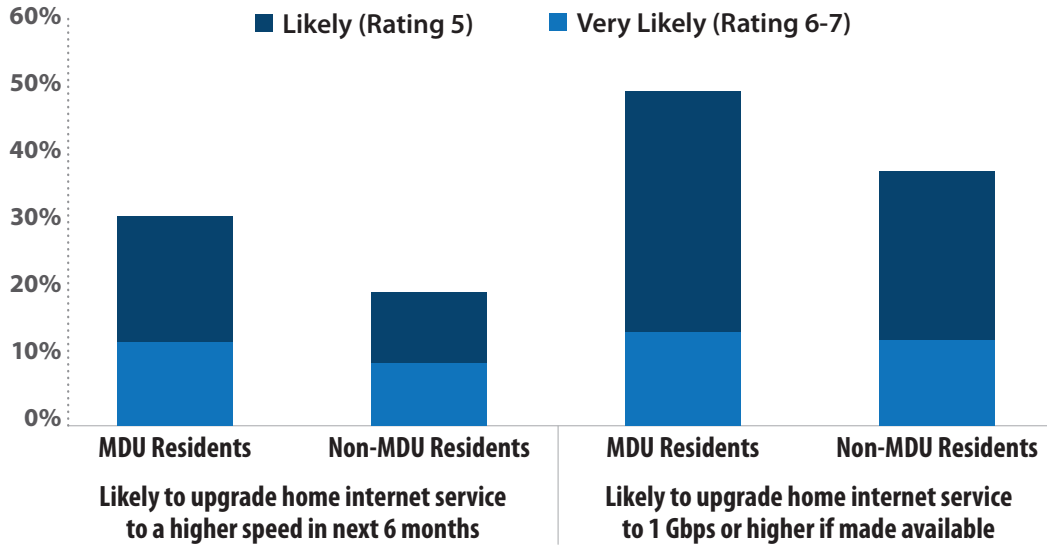## Changes to Fixed Broadband Service in Past 12 Months

■ MDU Residents   ■ Non-MDU Residents

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Likelihood of Upgrading Broadband Service

Legend: ■ Likely (Rating 5)   ■ Very Likely (Rating 6-7)

Likely to upgrade home internet service to a higher speed in next 6 months
- MDU Residents: ~30% total (Very Likely ~11%)
- Non-MDU Residents: ~19% total (Very Likely ~8%)

Likely to upgrade home internet service to 1 Gbps or higher if made available
- MDU Residents: ~49% total (Very Likely ~13%)
- Non-MDU Residents: ~37% total (Very Likely ~11%)

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Beyond connectivity, ISPs also have an opportunity to be a partner to MDU residents and property managers in supporting the connected living experience. Consumers report that the loss of wireless connectivity is their leading problem when using smart home devices. Wi-Fi will continue to be a growing problem for consumers as more and more devices are used on the network and as use of video services also increases. Some residents may have older routers that do not have the security capabilities to meet current standards/requirements. This creates exposure to security threats. Residents also have concerns about solution providers and property managers having greater control over the data generated by their smart devices.

Smart home devices are relatively new to consumers when compared with other more traditional connected devices such as computers, tablets, and smartphones. When they do experience problems, lack of experience with these devices makes it more likely that consumers will require professional support. While platform providers, at a minimum, all provide some level of onboarding and training to property managers, these managers are not likely equipped to

handle all the issues their residents may encounter when setting up and learning to use their smart home devices. The continued growth of connected devices and subsequent network complexity have created a new role for **service providers as trusted advisors to both segments—MDU building owners/managers and MDU residents.**

Broadband service providers have an opportunity to increase revenue by creating unique offerings of robust networking technology and additional services. This fulfills a valuable niche as a solutions provider for whole communities of users. This creates better value for the consumer and can give property developers and managers a competitive advantage. Along with providing smart home solutions for MDUs, technical support is a key offering. The level of support provided for installation, service onboarding, and ongoing technical support for products varies among providers and is a source of competitive differentiation. This helps the MDU property manager, who may not have the time or expertise to manage these issues.

The ISP can be the partner to provide residents and property staff with the support they need to make connected MDU living work.

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Future Implications

Due to the increasing need for high-performance connectivity, it is essential that MDUs have a strong and reliable broadband network. This demand for greater connectivity also creates a lucrative opportunity for property managers to drive revenue and increase net operating income. The growth of smart home devices and more widespread platform integration creates a bottom-line incentive for MDU owners to build the infrastructure and networking now, with residents' technology needs and expectations in mind. This future proofing also gives property owners and managers the opportunity to modify the applications that rely on that connectivity as property and resident needs change.

The impact of COVID-19 will continue to have long-term implications for work and school from home needs. While participation in remote work will likely decline post-pandemic, demand for flexibility among employees—and greater willingness among employers—will help maintain interest in advanced broadband.

Emerging technologies like AI, machine learning, and 5G, will help drive MDU adoption of smart home technology. Broadband network improvements geared at increasing overall internet speed and reliability will improve responsiveness and reduce latency when using smart home devices. Advanced broadband service that promotes seamless integration and interoperability among connected devices will also contribute to cohesive, rather than disjointed smart home experiences.

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Cox Communities is the division of Cox that delivers solutions, value, and trust for MDU owners, managers and developers, SFU developers, and the residents and owners within their communities. The Cox Communities team acts as their client's trusted advisor by supporting them in reaching their business goals of optimizing rents, occupancy, and making their properties future ready.

Cox Communications is committed to creating meaningful moments of human connection through technology. The largest private broadband company in America, we proudly serve six and a half million homes and businesses across 18 states. We're dedicated to empowering others to build a better future and celebrate diverse products, people, suppliers, communities and the characteristics that make each one unique. Cox Communications is the largest division of Cox Enterprises, a family-owned business founded in 1898 by Governor James M. Cox.

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About Parks Associates

Parks Associates, a woman-owned and woman-led internationally recognized market research and consulting company, specializes in emerging technology solutions serving the consumer and small to medium business (SMB) markets. Celebrating its 35th year in 2021, Parks Associates is a partner to companies navigating the changing consumer technology landscapes through data-driven market insights, extensive consumer and industry intelligence, custom marketing services, and executive networking experiences and conferences.

The company's expertise includes home automation, control systems and security, digital media and platforms, entertainment and gaming, home networks, internet and video services, connected health and independent living solutions, mobile applications and services, support services, consumer electronics, and energy management solutions. Each year, Parks Associates hosts industry webcasts, the CONNECTIONS™ Conference Series, Connected Health Summit, Smart Energy Summit: Engaging the Consumer, and Future of Video: OTT, Pay TV, and Digital Media. **www.parksassociates.com**

About The Authors

Jennifer Kent**,** *Vice President, Research,* **Parks Associates**

Jennifer manages the research department and Parks Associates' process for producing high-quality, relevant, and meaningful research. Jennifer also leads and advises on syndicated and custom research projects across all connected consumer verticals and guides questionnaire development for Parks Associates' extensive consumer analytics survey program. Jennifer is a certified focus group moderator, with training from the Burke Institute. Jennifer earned her PhD in religion, politics, and society and an MA in church-state studies from Baylor University. She earned her BA in politics from the Catholic University of America in Washington, DC.

INDUSTRY EXPERTISE: Connected Health, Connected Home Technologies and Services, Connected Entertainment Products and Services

Tam Williams**,** *Contributing Analyst,* **Parks Associates**

Tam serves as a resource primarily to the Marketing Team, contributing to press releases, content marketing, event speaker logistics, marketing research, and many other projects.

With undergraduate and graduate degrees in business and theology, respectively, Tam's ongoing experience involves freelance writing and editing projects across multiple industries.

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