NMHC OPTECH_

CONFERENCE & EXPOSITION

October 25–27, 2017

Mandalay Bay Resort and Casino

Las Vegas, NV

SPECIAL SUPPLEMENT BROUGHT TO YOU BY NMHC

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WELCOME TO LAS VEGAS!

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The 2017 OPTECH Conference & Exposition heads to Sin City in October for three days of multifamily data insights, information exchange and innovation.

FOR THE FIRST TIME EVER, NMHC IS HOSTING A CONFERENCE IN FABULOUS LAS Vegas—and we couldn't be more excited that it's the 2017 NMHC OPTECH Conference & Exposition. For an industry that has been on a winning streak for many years now, Vegas gives us a chance to both celebrate our good fortunes and contemplate how we can adjust our strategies to keep the good times rolling in a market that may be more mixed.

OPTECH is the perfect place to get a pulse-check from your colleagues, meet with your supplier partners and make new connections with industry pros and new solution providers. We'll also have fascinating forward-looking discussions on topics such as the emergence of robots and what they may mean for the industry, as well as more tactical conversations about your daily challenges.

Just like you, we're always innovating and trying new concepts to keep OPTECH on the cutting edge. Here are few program highlights:

More peer-to-peer discussion. We've packed our opening day with almost three hours of valuable peer-to-peer conversation. We're kicking off with our popular owner, developer and manager roundtables. We've also added four new OPTECH Town Halls to provide a platform for broader engagement on key issues in corporate social responsibility, cybersecurity, telecom and innovation. Come with any and all questions.

Coffee talk. We're bringing back the networking coffee break on the trade show floor. Catch up with your colleagues or suppliers over your favorite morning eye-opener, or use the time to take in the amazing products and services from more than 100 industry partners.

Exciting multifamily tech startups. Don't miss the four finalists from our annual Launch Pad competition live pitch a panel of industry and innovation experts on Thursday. Audience vote determines this year's multifamily tech startup winner. Also don't miss the new Startups Center in the exhibit hall, where more multifamily startups will showcase their new products or services.

New resident preferences data. We will release for the first time the results of the 2017 NMHC/Kingsley Resident Preferences Survey on Wednesday afternoon. This year's survey includes a number of updates, including new questions about short-term rentals. Plus, we'll show you how the data can be sliced and diced six ways to Sunday.

Stellar keynote speaker. We are so excited to have Peter Diamandis as our 2017 keynote speaker. Peter is the founder and chairman of the X-Prize Foundation, a non-profit organization that hosts high-profile competitions that motivate diverse individuals and groups to develop innovative ideas and technologies to solve the grand challenges that restrict humanity's progress. Peter's keynote is sure to inspire as he examines the factors that support an organizational culture that has a focus on growth and innovation.

I'll close by disagreeing with Vegas's most well-known tag lines. I hope what happens in Vegas on October 25-27th at the Mandalay Bay stays with you throughout another successful year!

Alison Johnson
Director of Programming

NMHC

OPTECH_

CONFERENCE & EXPOSITION

October 25-27, 2017
Mandalay Bay Resort and Casino
Las Vegas, NV

Don't Miss Out:
Early Bird Registration Savings End September 22!

A forum for senior practice leaders from a wide variety of disciplines to collaborate on strategic action, incubate new ideas and elevate the industry across all areas of business operations and technology.

KEYNOTE SPEAKER

PETER DIAMANDIS

Founder & Executive Chairman, XPRIZE Foundation

Hear from Peter Diamandis, a successful serial entrepreneur, author and innovator, on how organizational culture drives creativity and growth.

THOUGHT-PROVOKING CONTENT

Our program provides a unique blend of deep dives on critical topics, silo-breaking panels and inspirational discussions covering all facets of the industry including marketing, sustainability, telecommunications, operations and technology.

- **New Revenue Models With Short Term Rentals**
- **VR and AR for Multifamily**
- **Rethinking the Mobile User Experience**
- **Corporate Social Responsibility and Reputation Management**
- **Keeping Communities Safe When Everything Is Going Online**
- **Energy Efficiency to Attract And Retain Residents**
- **Ask the Tech Pros**

HEAR HOW 100,000 RENTERS CHOOSE APARTMENTS

The 2017 NMHC/Kingsley Resident Preferences Survey: a preview of what the nation's apartment residents say they like, love and can't live without!

EXPLORE THE EXHIBIT HALL

Ranging from promising startups to industry leaders, the exposition brings over 100 of the industry's top solution providers together in one place. Featuring exhibitor SnapSessions.

LAUNCH PAD

The multifamily industry's leading tech startup competition and premier showcase of new and innovative multifamily technology solutions.

HIGH-LEVEL NETWORKING

Featuring NMHC's exclusive networking opportunities with your peers from the nation's leading multifamily companies.

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Open to NMHC members and non-members alike!

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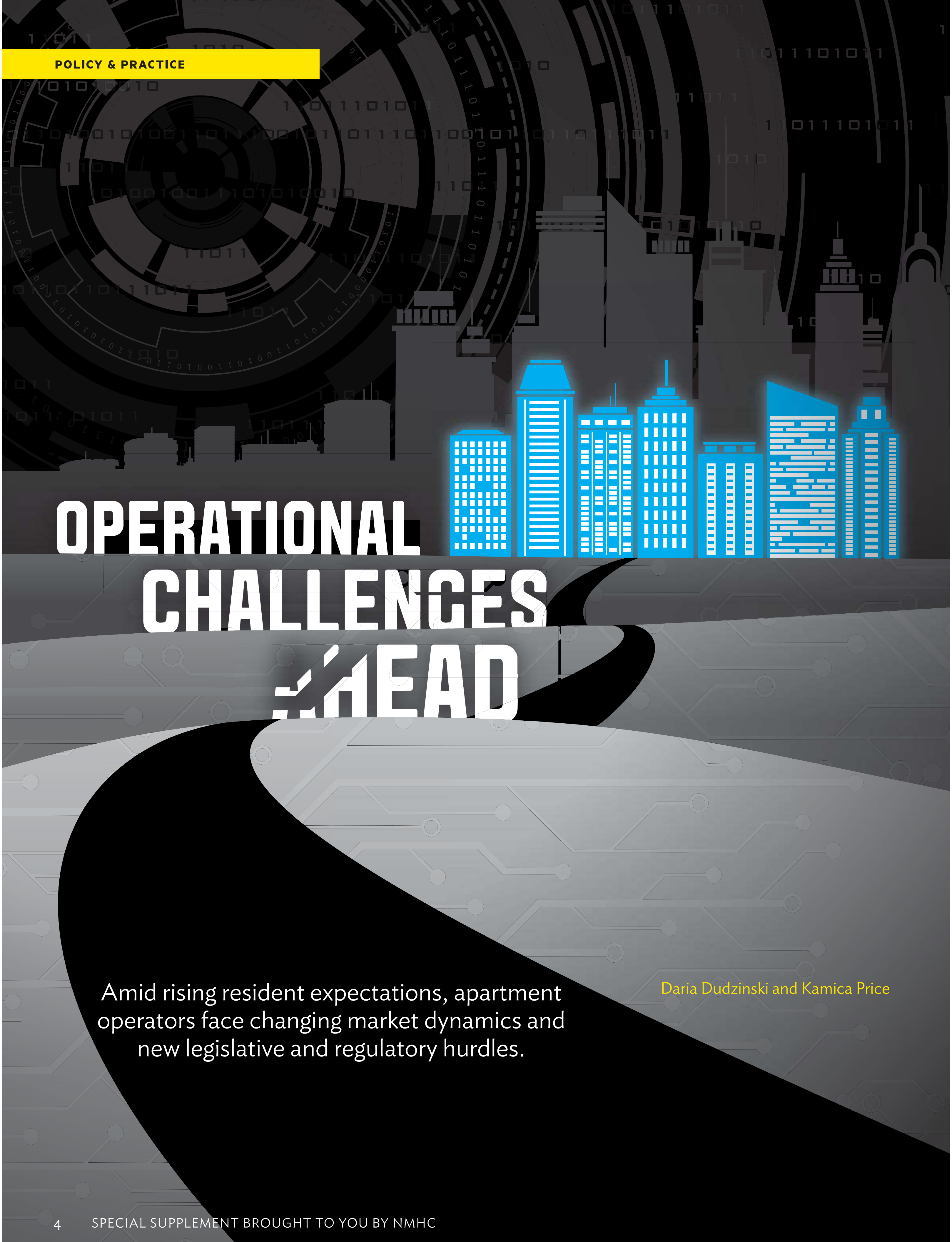


OPERATIONAL CHALLENGES AHEAD

Amid rising resident expectations, apartment operators face changing market dynamics and new legislative and regulatory hurdles.

Daria Dudzinski and Kamica Price

Technology and innovation have reshaped residents' needs and expectations when it comes to apartment living. As a result, things like broadband services, on-site and online security and package delivery have risen in importance and become significant factors in resident satisfaction.

However, as apartment firms look to satisfy the needs of their residents in those areas, they are encountering new challenges. Along with shifting market forces, new legislative and regulatory efforts are leading multifamily firms to reevaluate policies and best practices. Here are a few areas to watch.

MAKING THE CONNECTION

Apartment residents, like the rest of the world, are increasingly reliant on the internet and that almost sacred broadband connection. So much so that residents' satisfaction with their apartment communities appears to be linked to the strength of their internet connection. In fact, high-speed internet was ranked as the top apartment feature for 94 percent of residents in the latest NMHC/Kingsley Apartment Resident Preferences Survey.

Apartment owners have seen this trend coming and quickly adopted the necessary business operations, design, technology, and infrastructure to ensure quality internet service on site. However, regulatory and legislative efforts are underway that could introduce new challenges, ultimately deterring broadband investment in multifamily buildings.

In mid-June, the Federal Communications Commission (FCC) announced it was seeking public input on the market for broadband services in apartment communities. Specifically, the FCC is examining the impact of exclusive marketing, bulk billing, revenue sharing and exclusive wiring contracts on broadband deployment and competition in the multifamily and commercial real estate markets.

This follows the controversial enactment of a mandatory access law recently passed in San Francisco that is making waves across the country. Known as Article 52, the ordinance allows residents to request any communications provider regardless of whether, or how many, providers already serve the property.

"Such policies interfere with an apartment owner's ability to negotiate with broadband providers to invest in their properties and bring quality service to apartment residents," explains Kevin Donnelly, vice president of government affairs at the National Multifamily Housing Council (NMHC).

Moreover, the ordinance establishes a system of wire sharing among providers that disincentivizes building and maintaining infrastructure. Grey areas in these sharing agreements threaten the quality and reliability of broadband service—an undermining of the very purpose of the ordinance.

As similar efforts pop up across the nation, the multifamily industry has fought back, arguing to policymakers and regulators at the FCC that the market for communications services is competitive and substantial choice already exists for residents. Legislative efforts like San Francisco's ordinance conflict with federal law and, in the end, consumers and owners alike may lose.

ENSURING SAFETY AND SECURITY

Safety at home—whether it be on site or online—is a top priority for both residents and multifamily housing providers. To that end, multifamily firms invest in many technologies and services, from tenant screenings to enhancing their cybersecurity posture—to help keep residents and their personal information safe. But as the market threats continue to evolve, apartment operators are under pressure to adjust their policies to keep up.

For example, international renters represent a huge source of apartment

MULTIPLE CONNECTIONS

In response to the proposal of Article 52, which aims to support more broadband competition, NMHC surveyed some of the nation's largest owners and managers of multifamily properties on broadband service. Seven out of 12 respondents reported that, relative to their total national portfolio, a higher percentage of their San Francisco properties already had multiple telecom providers offering broadband services on site—making the need for the legislation questionable. The respondents represented ownership and management of more than 725,500 apartments.

% OF PROPERTIRES WITH MORE THAN ONE COMMUNICATIONS/INTERNET PROVIDER

> *"Such policies interfere with an apartment owner's ability to negotiate with broadband providers to invest in their properties and bring quality service to apartment residents"*
>
> Kevin Donnelly, vice president of government affairs, NMHC

demand. In fact, according to NMHC research, today, one in four apartment households is headed by an immigrant. And that number could rise as population trends shift and immigration begins to exceed natural population growth. However, screening international prospects is challenging since they often lack a U.S. credit history and other relevant information may be unavailable.

While screening partners can help find data from alternative credit sources like rent-to-own services, payday loans and cell phone providers, this can still result in limited background information and, ultimately, delays in the decision-making process. In a potentially softening market, when demand might not be as strong, this can have business implications.

Similarly, changing market dynamics are also raising the question of whether there are ways multifamily operators can safely and sensibly dial back screening thresholds in response to weaker demand while still maintaining propriety.

Regardless, Brian Battaglia, senior vice president of Rental Property Solutions at CoreLogic, says the effects of applicant selection decisions "affect results beyond the basic question of 'how likely are they to pay rent on time?' and may also influence length of stay and likelihood to cause damage."

While on-site security is always a major concern, online security is also quickly rising to the top of multifamily operators' list of worries. Multifamily firms have turned to technology not only as a means of improving operations and efficiencies but also as a response to current and prospective residents' demand for more convenience and control over their experiences. But this growth in and reliance on online platforms and connected devices—including the Internet of Things—is creating new vulnerabilities.

"Privacy and security risk have given some operators cause for pause as they pursue these intriguing tech ideas, especially those around smart home technology. The assurance of safety and security are threshold requirements when it comes to unleashing the potential of the Internet of Things," says Rick Haughey, NMHC's vice president of technology initiatives.

With Congress also placing cyber and data security and consumer privacy high on its legislative agenda, multifamily firms look to adopt new approaches to safeguarding their residents' privacy while thwarting cyberattacks.

DELIVERING NEW CHALLENGES

Connectivity and convenience continue to drive e-commerce growth, resulting in more package and parcel deliveries to multifamily properties everywhere. "It has forced apartment communities to change how they operate, shift resources, divert staff time and manage storage space," explains NMHC's Donnelly.

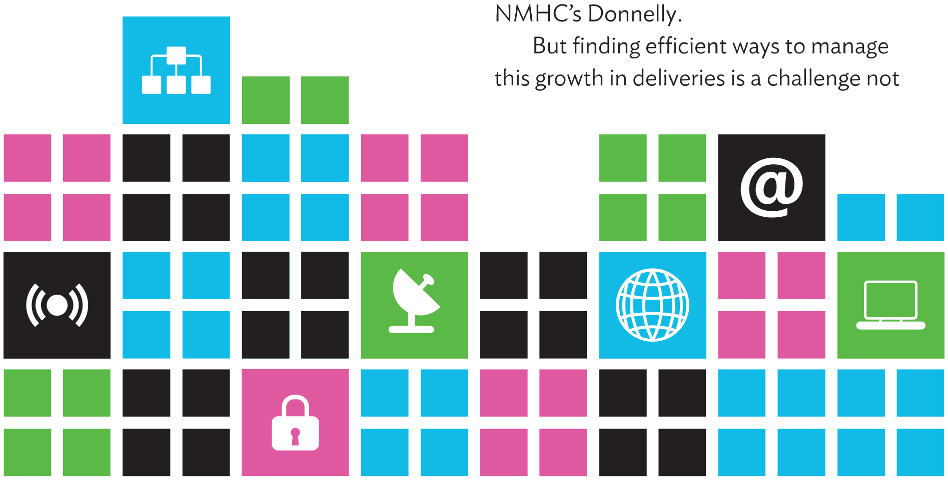
But finding efficient ways to manage this growth in deliveries is a challenge not only for multifamily operators but also delivery service providers. Both Amazon and FedEx have partnered with retailers such as 7-Eleven and Walgreens, respectively, to establish centralized delivery points. And the U.S. Postal Services (USPS) is working on its own form of centralized delivery in the hopes of helping the financially challenged agency save time and money on delivery routes. The proposal was introduced as part of The Postal Services Reform Act of 2017.

While more efficient mail and parcel deliveries might sound like a good thing for apartments, the proposal could make processing mail and packages even harder for the multifamily industry. The postal bill lacks clarity with regard to who—the USPS or the property owner—would be responsible for constructing, maintaining and securing these community delivery drop boxes and also ensuring compliance with the American with Disabilities Act/accessibility requirements.

It's also unclear how this bill fits in with other local, state and federal regulation. When converting to this system, owners have to consider building codes; safety and security; construction and design costs; available space and building design; accessibility and convenience; historic designations; and weather and geographical landscape.

Even if a community checks all regulatory boxes, a last roadblock could be the discretion among local and regional postmasters. Given the structure of the postal service, an apartment owner may implement centralized delivery technology that is approved for use by the USPS only to find their local postmaster refuses delivery based on preference. This structure has created a patchwork of accepted delivery points and confusion over how to roll-out centralized delivery in apartment communities.

Postal reform faces an uncertain future in the Congress and for now, the industry must wait and prepare for the potentially far-reaching effects.



WHAT RESIDENTS WANT

The results of the **2017 NMHC/Kingsley Resident Preferences Survey** will be released at this year's OPTECH on Wednesday, October 25. Be among the first to find out what they like, love and can't live without.

FROM THE TRENCHES

Three areas where apartment firms are shifting focus to better serve stakeholders and improve operations.

Robyn Lawrence

LAST YEAR, MILLENNIALS OVERTOOK baby boomers as America's largest generation. Multifamily companies from coast to coast covet these opinionated late bloomers as residents and employees. To recruit and retain this tech-savvy, socially conscious generation, however, they need to take advantage of the most advanced 21st-century tools.

To that end, forward-looking companies are seeing three areas where more attention and investment could go far in not only making themselves more relevant for the next wave of prospective customers, residents and employees but also benefitting operational performance. The latter of which not only makes investors happy but could prove to a strategy for better navigating a potentially more challenging market.

THE TRIPLE BOTTOM LINE

When Pinnacle Senior Vice President for Marketing and Training Jennifer Staciokas is interviewing millennials, she gets asked a lot about the company culture and how her company, which manages more than 172,000 units nationwide, gives back.

"It's top of mind," she says, and she's proud to answer that Pinnacle's core values are community and service—giving back to the communities where the company resides.

Company culture matters to millennials, both in employment and purchasing decisions, studies show. In Nielsen's Global Corporate Sustainability Report, 73 percent of millennials said they would pay more for sustainable brands and 81 percent expect companies to make public declarations of corporate responsibility.

In a 2015 Cone Communications study, 87 percent of millennials said a company's commitment to corporate social responsibility (CSR) influenced their purchasing decisions, and in a 2014 study sponsored by The Case Foundation, 63 percent of millennial women and 45 percent of millennial men said CSR impacted whether they took a job.

Millennials are the marketers' darling, but CSR—commitment and service to people, planet and profit—increasingly factors into how all generations decide to work, live, invest and partner. Companies that build a culture of caring about residents, associates, vendors and the neighborhoods they serve make more money, retain more residents and associates, and recruit the best talent. Recognizing this, many companies are dedicating staff to CSR and investing in software to manage it.

Last year, Greenbelt, Md.-based The Bozzuto Group, which manages more than 60,000 apartments on the East Coast, began using Causecast, which automates all aspects of the company's individual and team volunteering and giving. Jessica Itzel, senior director for marketing and brand development and co-chair of the company's employee-led volunteer and giving committee, says the software allows her team to organize and track events in a centralized place—previously "one of the biggest obstacles Bozzuto Care faced."

In March, Baltimore-based ManagInc launched Everyone Can Win, the first platform that assesses CSR strategy for multifamily companies and identifies opportunities for improvement across portfolios.

"It's critically important the multifamily industry embrace CSR because it matters to consumers more than ever, especially millennials," says founder Doug Miller. "CSR factors heavily into younger generations' employment and purchasing decisions, and that is the fastest growing segment in the marketplace."

HOME SHARING 2.0

You can fight it, put up with it or join it—but the short-term rental market is not going away.

Since Airbnb was founded, just months before the housing crash in 2008, the home-sharing platform has become a $30 billion brand with 2.3 million worldwide listings—the third largest accommodations seller in the world, according to 7Park Data. Technavio's analysts predict the global vacation rental market will grow at a compound annual growth rate of roughly 7 percent from now until 2021—much of that in urban centers.

"We are seeing the mainstreaming of private accommodations," Douglas Quinby, vice president for research at travel industry research firm Phocuswright, told VRM Intel.

For the most part, that has meant headaches for multifamily owners and operators, who have little interest in taking on the additional traffic and liability for tourists and other transients for no compensation. Many buildings have responded with lease restrictions against short-term rentals.

Last year when Airbnb realized it was losing scores of multifamily listings—which account for 66 percent of its inventory—to these rules, the company offered a revenue-sharing plan to buildings that allow tenants to list their apartments. That has been tepidly received, but a host of new business-to-business platforms that do everything from facilitate and monitor residents' listings to manage short-term rentals for vacant units are showing more promise.

"We think short-term rentals have huge potential to add value for everyone involved, but—big caveat—it takes a lot of work to do it right and ensure the safety and quiet enjoyment of the rest of the residents. Broadly, the individual operator is not in a position to do that," says Joe Fraiman, co-founder of Parallel, which leases anywhere from 5 to 10 percent of the units in scientifically chosen buildings, designs and furnishes them using local talent and supplies an in-house hospitality team to operate them as short-term rentals.

Parallel is one of the newest in a string of platforms aimed at generating revenue by populating vacant units. WhyHotel is similar, but it turns apartment buildings into pop-up hotels only during lease-up, when vacancies are highest. WhyHotel takes over and manages roughly half the units, which are offered to the general public at market rates and as an amenity to residents for $50 per night. Stabilized occupancies were above 90 percent in WhyHotel's Washington, D.C., pilot, and the company plans to roll out nationally once that market scales, says CEO and co-founder Jason Fudin.

"Really, energy efficiency, water efficiency, waste and materials management—it's all about improved operations"

Andrew White, LEED AP BD+C, associate manager, JDM Associates

The nascent short-term rental industry is coming to cities in a big way, Fudin adds. "Whenever you have a large volume of people change the way they use assets and stay in places, that's going to change markets."

Sean Conway, CEO of Pillow Homes, which facilitates and manages residents' short-term rentals and gives building owners a 5 percent to 20 percent revenue share, says the ability to legally and transparently make a little money through Airbnb and similar platforms has become an amenity as sought after as a gym or a pool, especially for people in urban areas—millennials—who could be paying up to 40 percent of their income in rent.

"Millennials are digital nomads, if you will," Conway says. "They value the sharing economy, freedom, mobility and experiences, and this allows them that. I would say this is a differentiating amenity."

ENERGY PERFORMANCE

Just as millennials want the companies they buy from and the companies that they work for to do good, they also want their apartment communities to be planet-friendly. While this could mean everything from having an on-site recycling program to a green building certification, energy efficiency is where many young people see a lot of value.

According to the most recent NMHC/Kingsley Resident Preferences Survey, more than a third (36.5 percent) of respondents under 34 years old reported not only being familiar with ENERGY STAR® ratings and products but also looking for them when shopping for their next home.

Moreover, 81 percent of the under-34 set also indicated interest or strong interest in smart thermostats, which allow users to remotely control heating and cooling, saving energy and costs. And they say they might be willing to pay for it. Survey results showed that the younger the apartment renter the higher the premium they would expect to pay for such a device. For example, those were were aged 25 to 34 said they would expect to pay $39 more per month to have a smart thermostat; those under 25, on the other hand, said they'd expect to pay $51 more per month.

For apartment operators, reducing energy use in both units and common spaces helps control operating expenses and can ultimately improve net operating income. For example, buildings certified by ENERGY STAR® use 35 percent less energy than typical buildings, which means substantial savings. That's great news in a market in which rents are flattening and inventory is growing, but energy efficiency and sustainability add a lot more than that to the bottom line.

"When people talk about sustainability, they're talking about actual operations—and you're seeing capital markets respond."

Laila Partridge, CEO, WegoWise

"Really, energy efficiency, water efficiency, waste and materials management—it's all about improved operations," says Andrew White, LEED AP BD+C, associate manager for energy management and sustainability consulting firm JDM Associates. "We liken it to management in general. Energy efficiency is a proxy for strong managers."

Laila Partridge, CEO of energy- and water-management software provider WegoWise, says utility performance is a litmus test for how buildings perform overall. "When people talk about sustainability, they're talking about actual operations—and you're seeing capital markets respond."

Fannie Mae and Freddie Mac have made green lending the focus of their business strategy, Drew McCreery, technical director of agency services at Partner Engineering and Science, told MULTIFAMILY EXECUTIVE in a recent article, calling it "a potential game changer in the industry." Earlier this year, the Federal Housing Administration enhanced its mortgage insurance premium reductions on green multifamily loans, and late last year, Freddie Mac came out with a green financing program to rival Fannie Mae's Green Advantage program, which has been around since 2012.

Green lending allows borrowers who meet energy and water use restrictions to reduce the price of their loans by anywhere from 10 to 39 basis points with Fannie and up to 45 basis points with HUD. "On a $20 million mortgage, you're talking about hundreds of thousands of dollars over the course of a five-year loan," Partridge says. "That's real savings—especially when interest rates go up."

Fannie and Freddie aren't the only ones paying attention to energy and water use, Partridge adds. Growing cities like Austin, Boston, Seattle and New York need to squeeze more performance out of old utility infrastructures, and thus, are requiring buildings to benchmark, or provide ongoing annual utility performance data comparing the building against itself, other buildings in a portfolio and peers.

"That's really data analytics," Partridge says. Using that data to monitor and manage energy and water use can reduce utility use—the second largest building expense for property owners after debt carry—by up to 10 percent in 26 months and 15 percent by the third year, she added. "You can actually measure, compare buildings in a number of ways, and find things to act upon."

Benchmarking is easy, White says, with ENERGY STAR®'s free Portfolio Manager®, an online tool for measuring and tracking energy and water use with access to more than 150 different metrics. ENERGY STAR® also offers an online tool to find out if whole-building data is available for specific properties. Still, getting whole-building data is a challenge for multifamily buildings, and some companies have been forced to benchmark only common-area performance.

"That might be only 30 percent of the building's total energy consumption," White adds, "but we can control and reduce that."

A TECH TIPPING POINT

New advancements are pushing emerging technologies like smart homes, virtual reality and artificial intelligence closer to the realm of reality for multifamily housing.

Marcie Geffner

THE GROWTH OF INVESTMENT IN apartments has ushered in a new era of tech for multifamily, making marketing, leasing, managing units and measuring performance more efficient and scalable. While this acceptance of technology has led to better business intelligence and more data-informed decision making, there's more uncertainty when it comes to emergent technologies and the future of multifamily.

A fully connected, automated and even voice-controlled, smart apartment home is something from The Jetson's cartoon show for many. For others, the term virtual reality conjures up scenes from The Matrix. And artificial intelligence? Robots will take over the world.

Despite the mischaracterizations, these technologies are set to cross the threshold into the real world in the not too distant future. Here's a look at how soon we could see these technologies mainstream and what the implications for multifamily might be.

SMART APARTMENTS

With dozens of smart technologies being tested at a number of apartment communities across the country, the era of the smart apartment is fast approaching. On trial are a variety of smart devices that are connected to the Internet so users can control them remotely with mobile device apps or voice-controlled home hubs.

AvalonBay Communities LLC, for example, has equipped some 200 apartment homes in Virginia and Connecticut with approximately 20 different so-called smart devices to find out which of them residents like and which they don't, says Karen Hollinger, vice president of corporate initiatives at the company, which develops, acquires and manages apartment homes in 10 states.

AvalonBay doesn't provide the hub that allows residents to control the smart devices, but rather, it lets residents integrate their own hub into their home. The devices on trial include the Nest thermostat, Phillips Hue lighting, Pet Net Smart Feeder and Hydrao showerhead.

So far, the thermostat looks like the big winner because it offers residents clear energy savings, Hollinger says. The smart

With dozens of smart technologies being tested at a number of apartment communities across the country, the ***era of the smart apartment is fast approaching****.*

showerhead, which casts changing colors of lighting as more water is used, may offer a similar opportunity, she adds.

Smart thermostats could soon offer significant energy savings for building owners as well. Hollinger says the next ability will be to use electronic occupancy rolls to turn off heating and cooling in vacant apartments and schedule heating and cooling when those apartments are ready to be shown to prospective residents.

"There is energy saving potential with these devices—once they become a little bit smarter—to fit the multifamily owner's needs," Hollinger says.

However, smart home technology is still so new that Hollinger says the vision for how—or if—it will be more widely implemented is "still forming." One crucial question is whether these devices will benefit property owners as well as their residents.

"Other than door locks and alarms, which change the operation of the unit, the majority of devices are still consumer-focused," Hollinger says. "I am on the fence as to what value the resident gets and the owner gets in pre-installation."

Longer term, maintenance costs are a concern. A standard thermostat lasts 20 years while a Nest model must be replaced or have its software updated more frequently.

"There will be added maintenance for installed items," Hollinger says. "It takes us five minutes to reset the Nest back to its factory state. That's only five minutes, but with the old thermostat, it used to take zero."

While the technologies are being tested today, the smart apartment is "not going to happen overnight," says Donald Davidoff, president of D2 Demand Solutions, a Littleton-Colo.-based consulting firm that helps apartment companies create technology road maps for marketing, sales, pricing and other demand-side strategies. That's because (1) the cost to retrofit existing buildings is high and (2) the technology has yet to become standardized.

"There is no one standard that if I install it today, I know it will be forward-compatible with anything I want to do in the future," he says.

A case in point is the Revolv smart-home hub, which Nest, now owned by Google, acquired in 2014 and abandoned two years later. The glowing red devices, which sold for $300 with free lifetime updates, are now useless.

Eventually, market forces will decide which devices add value and which don't. If early adopters lease up apartments faster or at higher rents, others no doubt will follow until the technology becomes widely adopted, at least in A-class and possibly B-class buildings.

VIRTUAL REALITY

Hard-core gamers and internet hipsters are no longer the only ones sporting Oculus wrap-around virtual reality (VR) headsets or the funky Google cardboard versions. More real estate professionals are experimenting with virtual reality technology, hoping to leverage it as an effective marketing and sales tool for multifamily.

Rohit Anand, a principal at KTGY, an architecture and planning firm, says his firm has begun designing projects for viewing in VR. New technologies allow Anand's teams to take drawings that they've developed in traditional building information modeling (BIM) software and import those drawings

"There is energy saving potential with these devices—once they become a little bit smarter—to fit the multifamily owner's needs"

Karen Hollinger, vice president, AvalonBay

GET A DEMO!

Want to learn more about VR and augmented reality? Swing by the OPTECH exhibit hall and check out these companies' booths:

- LCP360
- roOomy
- Virtual Xperience
- Matterport
- uForis VR

"What AI might promise is the ability to simultaneously look at a lot more data and actually figure out what matters and what doesn't matter better than the humans who built the current [algorithmic] systems could."

Donald Davidoff, president, D2 Demand Solutions

into another software program that converts architectural plans into a 3-D experience that can be viewed with VR goggles. This technology allows users—investors, developers, owners and even prospects—to walk through a building, apartment unit or amenity area in VR at a very early stage of its design and see what it will look like when it's completed, Anand says.

While some remain more skeptical about VR, others are more enthusiastic about augmented reality (AR), which involves adding simulated pictures and sounds to images of the physical world as in the Pokémon Go mobile device game.

AR may be especially intriguing when it's combined with other technologies, such as mobile alerts, for examples. Apartment companies could send prospective residents an alert when they're driving through a neighborhood where they might want to live and the alert could include AR images of how apartment buildings under construction in the area will look in the physical environment when they're completed, Davidoff suggests.

"The system is pulling it all together so that it's easier for the prospect to find [an apartment] and easier for the resident to enjoy their life in the neighborhood," he says.

Virtual staging is another area where augmented reality is gaining traction in real estate. San Jose, Calif.-based roOomy—the company spells its name with three Os—adds virtual furniture to photographs of room interiors to create virtually staged high-resolution 2-D and web-viewable 3-D images. The company recently introduced an AR app that allows users to add images of virtual furniture inside a physical apartment. The app works on devices that have Google Tango.

The goal is to lower or eliminate the cost of physical staging, says Taylor Wilding, roOomy's director of business development.

AvalonBay has virtually staged several thousand apartments and found that the process is much cheaper than staging the same spaces physically, Hollinger says. Virtual staging has been so effective at helping prospects understand what furniture can fit in an apartment that the company has brought the technology in-house and eliminated model apartments at most of its existing properties.

ARTIFICIAL INTELLIGENCE

Of all the emerging technologies that are likely to affect multifamily housing companies in the next decade, artificial intelligence (AI) may turn out to be the furthest away and highest value, says Davidoff.

While definitions of AI vary, the concept generally refers to intelligent machines or, more specifically, intelligent computer programs that process enormous amounts of data to solve highly complex problems in innovative ways.

"What AI might promise," Davidoff says, "is the ability to simultaneously look at a lot more data and actually figure out what matters and what doesn't matter better than the humans who built the current [algorithmic] systems could."

The clearest opportunities for AI exist where algorithmic systems are already in use, such as rent pricing and digital media spend. AI systems are used today in other industries to manage digital media spending. For apartment companies, AI could supplant current pricing models within three to five years, Davidoff suggests, though he also says "a lot of blocking and tackling" is still needed to get there.

AI might not produce the dramatic improvements in net operating income that algorithms have achieved, but smaller returns could still pay for the technology and then some.

"Let's say the pricing systems raise revenue about 3 percent," Davidoff says. "An AI system won't get another 3 percent because the leap from manual [calculations] to smart algorithms is bigger than the leap from smart algorithms to AI. But if AI added just another 1 percent, that is still a lot of money."

More magic happens when AI is equipped with natural language voice-recognition software, giving intelligent machines the ability to listen to and speak to human beings. Combined, these technologies could one day enable apartment residents to query a smart home device about an apartment property and get intelligent answers, for example.

"Instead of having to call the office or look on the website, I could just ask my home system: 'What are the pool hours? What's my rent balance?' and maybe more sophisticated questions. The machine could understand all the policies and procedures for that property and become a virtual concierge," Davidoff says.