



Solving Multifamily Maintenance Demands with Smart Appliances

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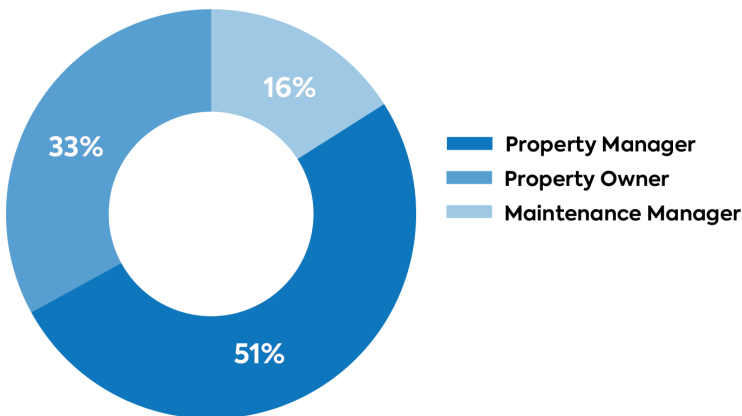
GE APPLIANCES
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The Current Multifamily Property Landscape

Multifamily properties in the United States invest in new technologies to improve resident experiences and increase operational efficiencies. These properties face challenges with regards to staffing, including difficulties in hiring and retaining maintenance staff. Technology solutions have the power to help mitigate those staffing difficulties.

Positions Held By Survey Participants



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In Q4 2022, Parks Associates, in partnership with GE Appliances, conducted a survey investigating the impact of labor shortages on properties' maintenance teams. We surveyed 100 property owners, property managers, and maintenance managers to ascertain the key issues they face with their maintenance staff, current appliances, and how they assess the value proposition for smart appliance solutions.

This white paper addresses how smart appliances can benefit property managers, maintenance staff workers, and residents by improving the efficiency of appliances and adding new features and functionalities such as maintenance monitoring, automation, and remote control. In addition, the white paper details the perceived value proposition of smart appliances to multifamily property owners and managers as well as the drivers and barriers of smart appliance adoption.

Networks to Enable Property Management and New Use Cases

Multifamily properties, also known as multi-dwelling units, or MDUs, are widespread throughout the United States. The US Census Bureau reports that as of 2021, there were roughly 33M housing units in MDUs, defined here as structures with three or more units.

The MDU market is coming off a period of rapid growth, with CE Pro Magazine reporting 530K MDU housing starts in 2021.¹ However, with rising interest rates and an uncertain macro environment, this growth is slowing.

30% of US internet households live in MDUs, including apartments, condos, and duplexes.

Although the United States has exited the active phase of the COVID-19 pandemic, its impact on labor and the supply chain still lingers. Inflation and a highly competitive labor market continue to be a challenge for many companies. In the multifamily space, property managers are facing difficulty in retaining and/or hiring new staff, which in turn, impacts the experience of their residents. Properties experiencing shortages in maintenance staff often result in residents having longer wait times for repairs and maintenance, which impacts their satisfaction and retention and also risks potential damage to the property.

Staffing shortages and overall labor pressures have had an outsized impact on the multifamily market. Parks Associates' MDU survey found 24% of property owners/managers report being understaffed for maintenance labor, with 45% reporting difficulty retaining staff, and 48% having difficulty hiring staff.

It has become more difficult for MDUs to attract staff or to retain staff. Increased labor costs, although necessary to resolve this challenge, strain companies' bottom lines. Compounding this challenge is continued supply chain issues, making it difficult for MDUs to source parts and equipment needed for repairs. Moreover, training new staff takes time in and of itself. During the active phase of the pandemic in 2020 to 2021, many MDUs were forced to delay maintenance activities; these are now coming due.

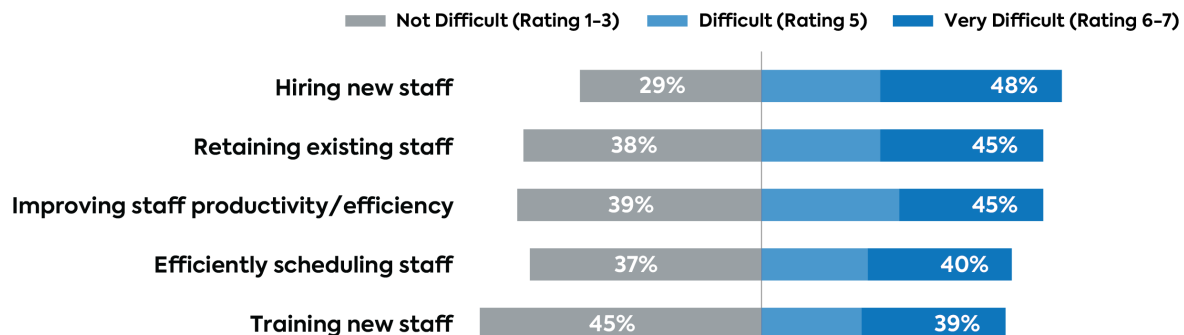
Maintenance Staffing and Appliances: Study Findings

Property managers require new solutions to increase maintenance team productivity, efficiency, and job satisfaction. A top concern for property owners and managers of MDUs is the ability to hire and retain maintenance staff, and the inefficiencies these staffing issues can cause. With nearly a quarter of property owners/managers reporting being understaffed and nearly half reporting issues hiring and retaining staff, the ability to service tenants' appliances in a suitable time period is difficult.

- 45% of property owners and managers report that improving the productivity and efficiency of maintenance staff is difficult for them
- 40% of property owners and managers had difficulty scheduling maintenance staff and training new maintenance staff
- 31% report servicing appliances in an appropriate time frame as a challenge, directly impacting resident experiences

¹<https://www.cepro.com/news/2021-housing-starts-increase-15/#:~:text=U.S.%20Census%20Bureau%20reports%20overall,family%20homes%20and%20530%2C000%20>

Difficulties in Managing Maintenance Staff



These staffing difficulties are caused by several factors. During the COVID-19 pandemic, many maintenance staff workers exited the workforce due to fear for their health. Maintenance workers were uncomfortable entering units to repair or fix residents' issues due to the risk of contracting COVID-19. Also, many property managers reported having to cut costs during the pandemic era; they either had to let maintenance staff go or reduce their salaries.

Below are quotes from property managers and owners, reflecting the difficulties they've encountered and continue to experience.

“How did the COVID-19 pandemic impact your maintenance staffing, if at all?”

- “A lot of people left and never came back. I had to rehire an entire staff. Everyone wants to work from home, but it is not possible.”
- “...many quit due to getting covid/long covid or the risk of doing so. Some were willing to work but didn't believe in taking safety precautions so had to be let go...”
- “We had to let go a lot of good workers, so it was bad for us.”
- “It had a great effect on our [maintenance] staff because of payroll being cut back.”
- “We took a serious hit in staffing; it was difficult to hire new employees who wouldn't end up leaving shortly after hiring them.”

“Thinking about how the last few years have impacted aspects of your role such as managing, hiring, and retaining maintenance staff, and the reliability of staff members, what has changed?”

- “Hard to keep employees... the good ones are hard to keep because you can't pay them what they deserve.”
- “It's much harder to find good people. And I've got to pay way more per hour.”
- “Difficult to pay wages that compete with other companies.”

Property owners and managers are facing the challenge of a reduced workforce but conversely having an increased demand for maintenance workers. Supply chain disruptions continue to impact MDUs, with shortages and extended lead times for needed components and appliance parts. This lengthens the time before repairs occur which causes resident dissatisfaction and a more difficult time keeping units occupied.

Parks Associates' MDU survey finds that a significant number of property owners report difficulties maintaining and servicing their appliances:

- **34%** of property owners/managers note challenges in completing unexpected maintenance and repairs
- **33%** of property owners/managers report issues around their staff's ability to repair appliances
- **32%** of property owners/managers report challenges keeping up with appliance warranties
- **31%** of property owners/managers have difficulty keeping up with general maintenance of appliances

When reporting difficulty repairing specific appliances, a significant number of property owners report difficulties across all appliances surveyed. HVAC systems and water heaters were the most often reported to be difficult to service. The appliances in this survey and the percentage of property owners/managers reporting difficulty with those appliances follows:

1. HVAC systems, 49%
2. water heaters, 43%
3. refrigerators, 39%
4. window heating and cooling units, 38%
5. dishwashers, 37%
6. clothes washers and/or dryers, 36%
7. ovens/cooktops, 34%
8. microwaves, 30%

With a significant number of property owners/managers experiencing issues hiring and retaining maintenance staff and challenges maintaining and servicing their appliances, an increasing number of properties are turning to smart appliances to mitigate these challenges. Smart appliances are a solution that can help alleviate the dependence and strain on the maintenance staff and improve residents' living experiences. Smart appliances can provide residents with convenience and potential energy savings with data and mobile control features, and also be serviced more efficiently by providing data back to property managers and staff.





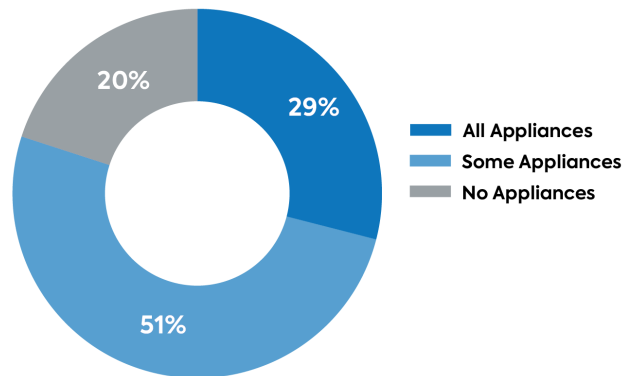
Drivers and Barriers to Smart Appliance Adoption

Smart appliances aid property owners and managers by detecting appliance issues prior to machine failure, alerting staff to maintenance needs, providing property staff remote control of the appliance, and providing staff detailed instructions and video tutorials on maintenance issues detected.

Smart appliances can help property owners/managers with staffing and servicing challenges by increasing the efficiency of service and decreasing the time needed to repair an appliance. These benefits help reduce the dependence and strain on staff workers, prevent unexpected costs by notifying staff of needed appliance maintenance or issues. This can help prevent appliance from more expensive repairs or malfunctions that can cause property damage such as flooding, and improve tenants' experience in living at the complex.

80% of survey respondents report that at least one property they managed or owned had deployed smart appliances to residents in some form or fashion.

Smart Appliances in Property that Respondents Manage



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A smaller percentage – nearly one-third of property managers/operators – report going all-in within at least one of their communities, with all appliances now smart. Many property managers and owners are either experimenting with smart appliances or actively deploying them within segments of the market.

A significant percentage of property owners and managers report that smart appliances overall help maintenance staff to better conduct operations, prevent costly adverse events, and reduce energy consumption in a significant percentage of properties. However, attracting residents is the most reported driver for adoption.

The opportunities property managers can benefit from smart appliances exist in multiple facets of reducing dependence and strain on the maintenance staff, attracting and retaining new residents with convenient and potential energy cost saving smart appliances that can be serviced more efficiently, and a reduction of higher cost repairs with notifications and feedback smart appliances can provide when needing routine maintenance or servicing.

When those without any deployed devices were asked what prevented them from investing in smart appliances, many described challenges such as budget limitations and high cost. Other significant barriers include concerns about usability and the user experience. Notably, of the 20% of respondents who have not yet invested in any smart appliances, 20% report that they plan to acquire smart appliances at some point.

Top Drivers of Smart Device Deployments

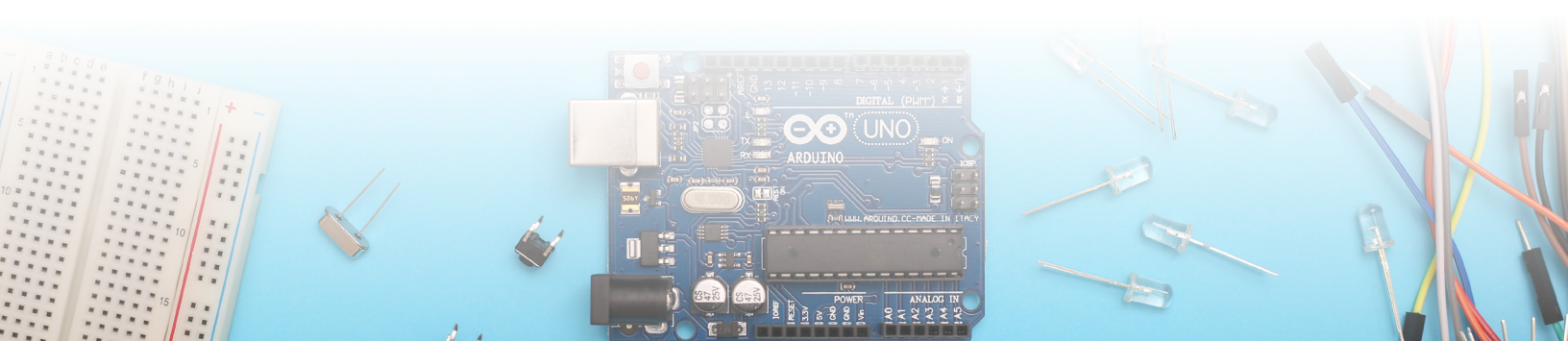
1. To attract residents, 68%
2. Improve maintenance staff efficiency through diagnostic tools and videos, 54%
3. Help prevent water damage or fires, 46%
4. Reducing unexpected appliance servicing, 45%
5. Control/reduce energy consumption for “bills included” business models, 43%
6. Manage vacant units’ energy usage through software, 38%

Top Barriers to Smart Appliance Deployments

1. Annual budget limitations prevent investment, 65%
2. Smart appliances are too complicated for tenants, 35%
3. Smart appliances are too expensive, 30%
4. Concerns with cybersecurity or data privacy, 15%
5. No issues with their conventional appliances, 15%
6. Concern about possible connectivity issues, 10%

There are several options to overcome these challenges:

- Provide vendors with strong financing options; low monthly payments may help property owners/managers fit smart appliance purchases into their annual budgets.
- Research connectivity modules that help make older non-connected products ‘smart’; this can allow conventional appliances to gain some benefits of a connected community without upgrading all appliances at once.
- Seek solutions with easy-to-use UI and manual controls, and/or provide easy-to-access video tutorials that assist users on how to use the features of the smart appliances.



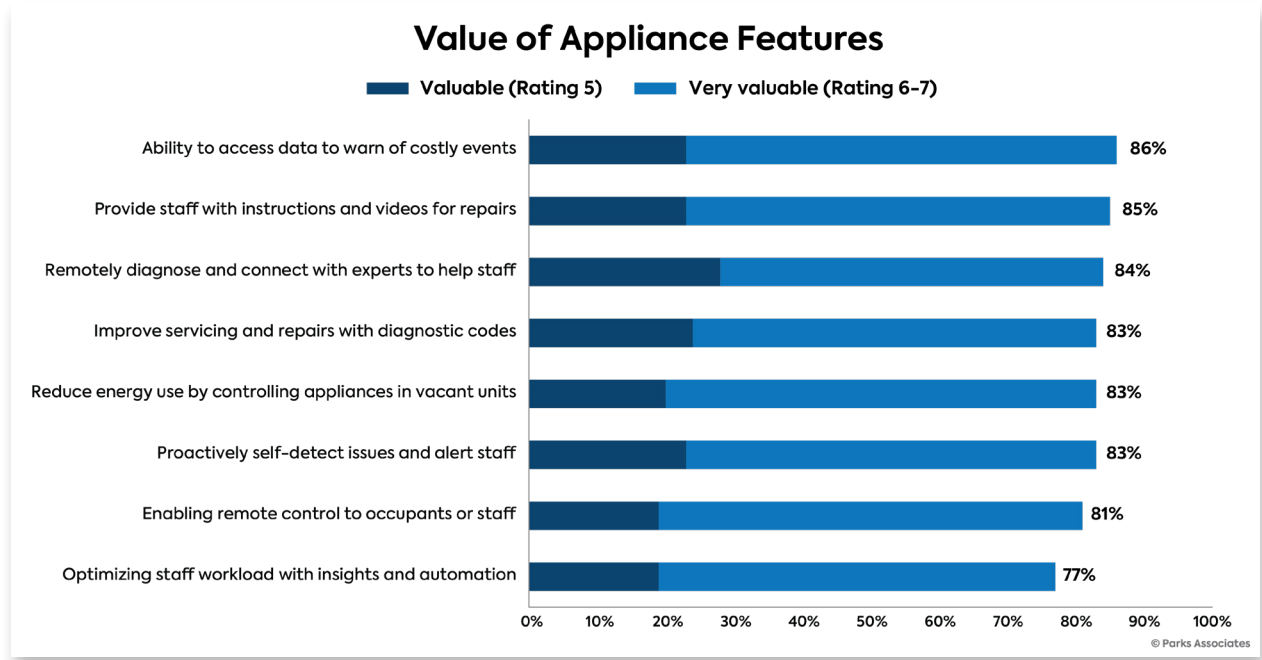
Perceived Benefits of Smart Appliances

When asked to quantify the value of smart appliances, most property owners/managers perceive all tested features and functionalities of smart appliances as valuable.

Smart appliances help property owners/managers reduce unexpected costs by...

- Optimizing maintenance staff workload
- Preventing or minimizing damage from costly events such as flooding and fires
- Sending alerts of needed service to prevent expensive repairs
- Reducing energy costs

Smart appliances also improve the living experience of residents. Though property owners/managers believe smart appliances offer a good value proposition, fitting their costs within annual budget limitations remains the main obstacle to adoption.





Future of Smart Appliances

Technology that helps operators/property managers reduce core challenges will be adopted according to budget constraints. Maintenance staffing is a top concern for MDUs; nearly a quarter of property managers and owners report they are understaffed. Property owners/managers find it more difficult to retain, hire, and afford staff in recent years. In addition, it is common for property owners/managers to report problems when servicing unit appliances, with nearly half experiencing challenges servicing HVAC alone. These challenges can lead to unexpected costs, increased workload strains on the maintenance staff, and a worse living experience for residents.

Smart appliances provide at least a partial solution for these challenges. Property owners/managers view smart appliances as valuable for preventing costly events, optimizing maintenance staff workloads, increasing efficiency in servicing and repairing appliances, and reducing energy costs. Over half of property owners/managers who already had smart appliances in their units reported the drivers to purchase smart appliances were to assist maintenance staff when servicing appliances and attract residents, demonstrating the multitude of potential benefits respondents listed smart appliances can provide for both easing demand of maintenance staff and enhancing the living experiences of residents.

Smart appliances provide information on needed services, diagnostic codes, and instructional videos, aiding maintenance staff in efficiently diagnosing and servicing the appliance. This also reduces the time residents will experience a malfunctioning appliance, and also provide them with the convenience of having connected appliances controlled from their mobile devices.

Smart appliance manufacturers still need to address barriers facing property owners/managers. To overcome these budget barriers, manufacturers can provide financing options or other creative payment options. For those that cannot afford the purchase of smart appliances, offering connectivity modules may substitute while budgets are resolved. To lessen property manager concerns about resident useability, manufacturers need to continually improve the UI of devices and provide video tutorials on how to use device features. Finally, testimonials from real property managers who have experienced meaningful benefits will help allay some concerns. Overall, property owners/managers see smart appliances as a solution to many of their challenges and a way to attract residents, but financial constraints need to be lifted to increase market adoption among MDUs.

About GE Appliances



At GE Appliances, a Haier company, we come together to make “good things, for life.” We’re creators, thinkers and makers who believe that anything is possible and that there’s always a better way. We’re a company powered by our people, made stronger through our diversity — allowing us to grow closer than ever before to our owners, anticipate their needs and enhance their lives. This is what we call “The GEA Way”.

About Parks Associates



www.parksassociates.com
info@parksassociates.com
972.490.1113

Parks Associates, a woman-founded and certified business, is an internationally recognized market research and consulting company specializing in emerging consumer technology products and services. Founded in 1986, Parks Associates creates research capital for companies ranging from Fortune 500 to small start-ups through market reports, primary studies, consumer research, custom research, workshops, executive conferences, and annual service subscriptions.

The company’s expertise includes new media, digital entertainment and gaming, home networks, internet and television services, digital health, mobile applications and services, consumer apps, advanced advertising, consumer electronics, energy management, and home control systems and security.

About the Author



Kristen Hanich, Director of Research, Parks Associates

Kristen Hanich heads Parks Associates’ consumer electronics and mobility research, with expertise in other verticals including connected cars, mobile networking, healthcare, wellness, and independent living. She leads a mix of custom and syndicated research projects throughout the year, with a focus on major players and emerging trends. Kristen specializes in bridging the gap between data-driven and narrative approaches to understanding the consumer markets via a mix of qualitative and quantitative research approaches.

Kristen has dual master’s degrees in applied anthropology and public health from the Universities of North Texas in Denton and Fort Worth. She earned her BSc in health at the University of Texas at San Antonio and has a graduate certificate in Geographic Information Systems.

ATTRIBUTION

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RESEARCH & ANALYSIS

for Emerging Consumer Technologies

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Smart Home Devices and Platforms



Digital Media and Platforms



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Digital Health



Support Services



Entertainment & Video Services



Consumer Electronics



Energy Management



Home Control Systems



Home Security

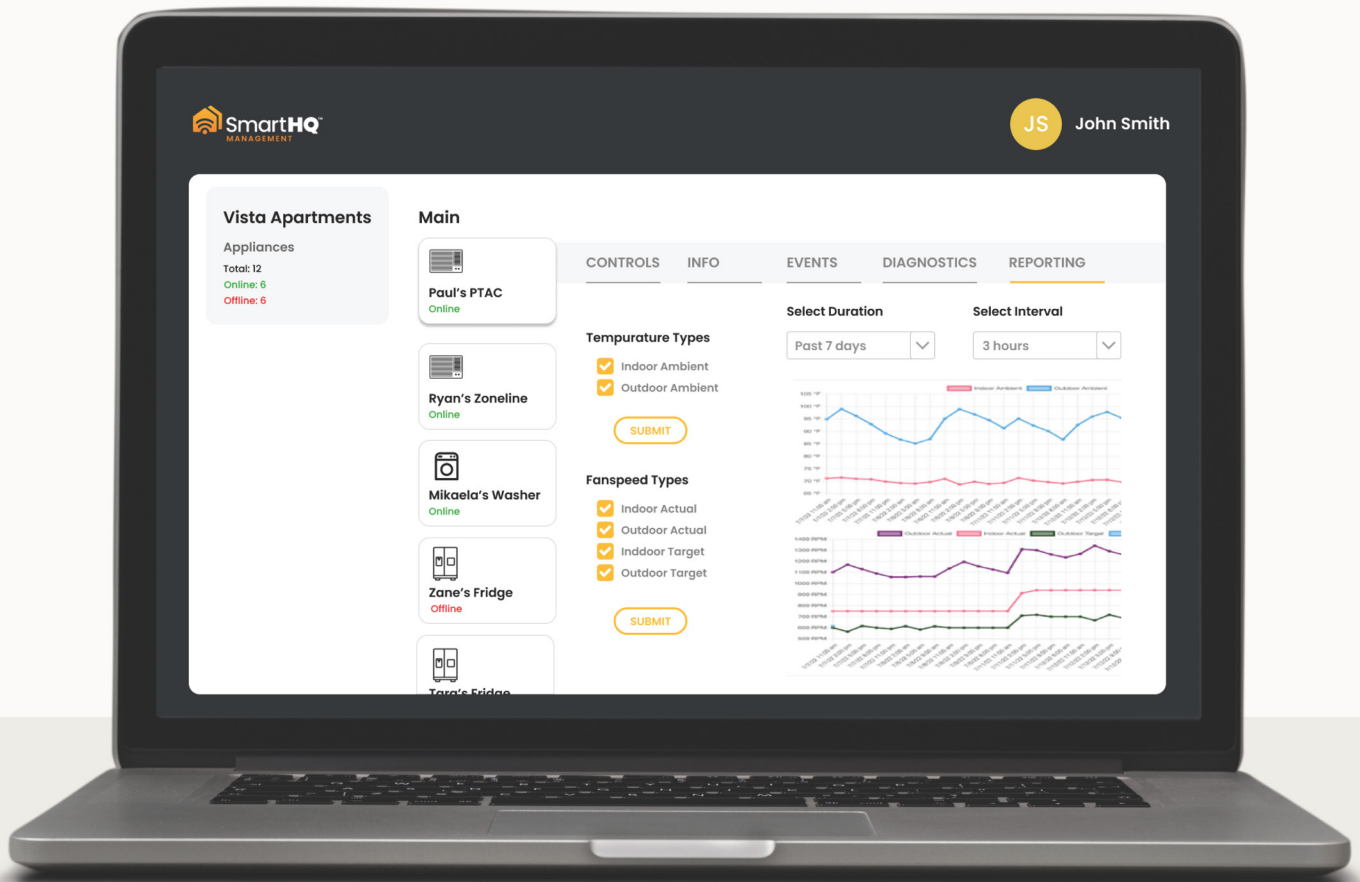


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