Control the Network, Control the Costs: Solving the Wi-Fi Problem in Home Security

Stop Wasting Truck Rolls!

The first Wi-Fi purpose built for Pros

Alarm.com Integration
Remote support from anywhere

Easy Install
Intuitive on screen pairing and access through panel and Alarm.com integration

IQ Panel Integration
Intuitive end-user controls

Wi-Fi Partitions
Separate your Wi-Fi devices from the customer

✓Speed ✓Coverage ✓Mesh
Gigabit speed, 1500 sq ft coverage, add up to 8

Independent or Parallel
Replace the existing network or leave it alone

Qolsys · DSC · PowerG · Johnson Controls

Introduction

Wi-Fi is ubiquitous in US internet households, and consumers rely now more than ever on reliable, high-performing connectivity at home. However, consumers continue to experience problems with range issues and loss of connectivity. At the same time, security dealers are increasingly integrating Wi-Fi devices into security systems, responding to growing consumer demand for video doorbells, network cameras, and many other Wi-Fi smart home devices. Yet, dealers are not in full, end-to-end control of system performance, as they are with security and life safety sensors and Z-Wave devices.

Instead, they place the installed Wi-Fi devices on the customer's Wi-Fi network, which introduces several challenges:

- Reliability, bandwidth, and speed issues with the home network affect the performance of the security devices on the network
- Dealers are called to support faulty Wi-Fi devices and networks, driving up operating costs
- Maintaining users' home networks is difficult and expensive
- Demand for better home networking support is on the rise, given COVID-driven lifestyle changes and work from home trends

Dealers need more sophisticated products and services that make installing Wi-Fi products and maintaining security solutions with Wi-Fi components easier and more cost effective.

This whitepaper highlights the rise in demand for Wi-Fi devices integrated with security and smart home solutions, the current impact of poor Wi-Fi network performance on the pro install channel, and the opportunity for dealers to own and manage the Wi-Fi network remotely, reducing their cost of ownership and improving user experience.

Consumers Want a Smart and Secure Home – and Product Choice

After a strong increase between 2018 and 2019, the home security market continued slow-but-steady growth through the pandemic. Parks Associates' research finds 35% of US broadband households had a security system at the end of 2021. Additionally, households have more smart home devices than ever: 37% of US broadband households own a smart home device, up from 24% in 2018.

All indications are that COVID-19 and the civil unrest and economic uncertainty that have marked the past two years have been net drivers for the security industry. Consumers' desire for peace-of-mind solutions drives security product and system sales, and the availability of affordable DIY installation and self-monitoring systems give consumers more choice to meet their needs.

Home Security System Ownership
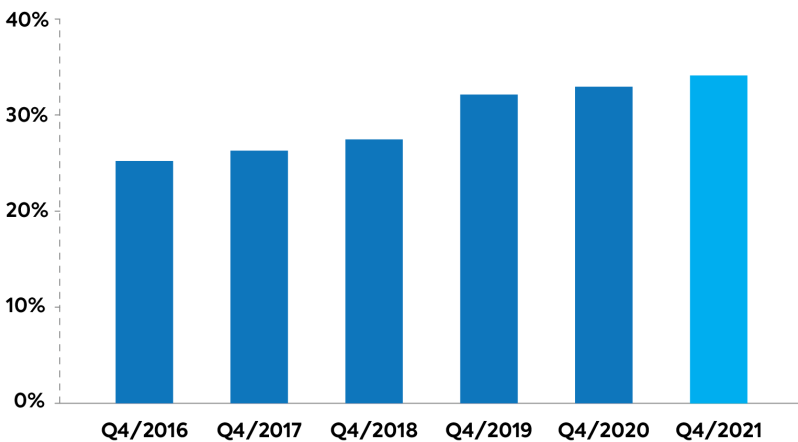
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Smart home device-owning households have an average of eight devices, and 27% of all households own 3+ smart home devices.

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Meeting Expectations: Simplicity for Complex Actions

Security system owners are among the most enthusiastic technology adopters, and they want a smooth user experience. Seventy-six percent of security system owners have a connected home device, and security system apps are the most common tool for controlling multiple smart home products.

The increasing demand for seamless integration has created an opportunity for dealers to drive the entire device setup and integration experience—by controlling the network. It creates a new role for security providers as the source for new integration solutions and the support for any problems associated with them. This means an increasing number of support calls and truck rolls to resolve matters.

Parks Associates' research reports 59% of dealers say they offer smart home devices because customers want the simple, unified experience resulting from combining smart home capabilities with security.

This is the top reason dealers offer smart home devices, and like the proverbial duck working underwater, nothing is more difficult to accomplish than simplicity for complex actions. Dealers also offer smart home devices for additional RMR and increased customer stickiness. Creating stickiness is always top of mind for services, and security monitoring companies are plagued by high attrition, making growth a double-duty job: replace lost customers and then grow. Cutting attrition in half would add additional money (profit) to the bottom line, and a simple, reliable user experience with integrated smart home devices can help retain customers.

Dealers' Top Reasons for Offering Smart Home Services

Customers want simple, unified experience of combining smart home capabilities with security

Additional monthly revenue from services built on smart home devices/control

Smart home devices create stickiness for monitoring contracts, reduce attrition

Customers are asking if our company offers these features

Keeping up with competitor offerings

| 0% | 35% | 70% |

% Ranking Reason in Top 3

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"Works with my security system" is a top purchase consideration for security system owners when purchasing smart home devices.

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Smart Camera and Video Doorbell Adoption, by Security System Ownership

Legend:
- ■ Security System Owners
- ■ US Internet HHs with No Security System

Own Smart Camera
- 33%
- 5%

Own Video Doorbell
- 30%
- 5%
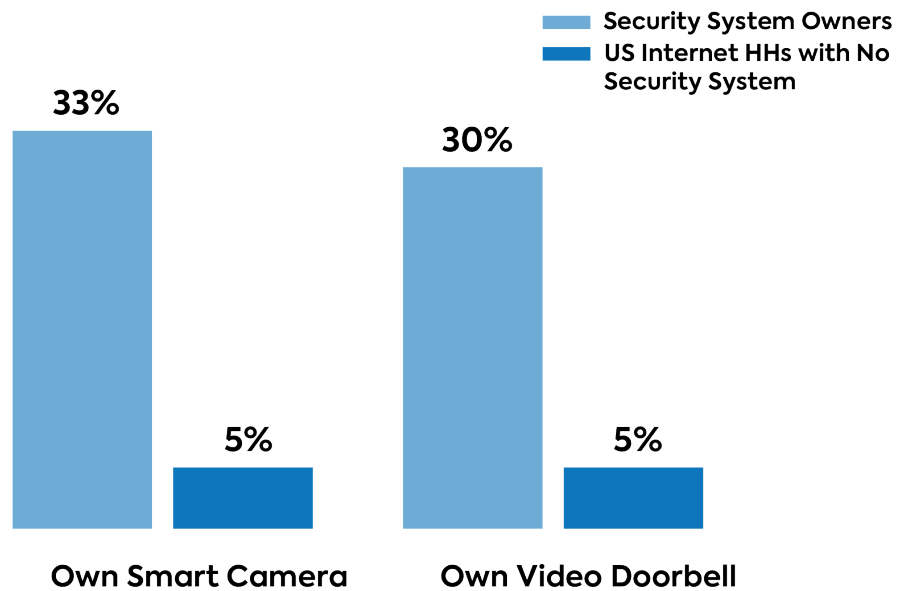
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Video Products Drive Need for Wi-Fi Device Integration

Users want Wi-Fi products as part of the safe and secure home and expect to be able to integrate Wi-Fi products into their systems. IP cameras and smart video doorbells—typically Wi-Fi based devices—are now the leading smart home device categories after experiencing strong growth over the past three years.

Security system owners are strong users of these products, adopting them at six times the average rate of all internet households. One-third of security system owners own a smart camera, and 30% own a video doorbell. Security dealers also report a surge in video product installs. Dealers rank video doorbells as the #1 smart home solution sold by their company, followed by external video cameras.

Due to the need for high bandwidth data transfer, video products require dealers to rely on consumers' home networks for connectivity, rather than protocols like Z-Wave that support low-bandwidth sensors and devices.

At the end of 2021, 14% of US internet households owned a network camera and 15% owned a video doorbell – up from 9% and 10%, respectively, just two years prior.

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Wi-Fi Issues Challenge the Connected Home Experience

As users shift to more long-term at-home lifestyles, new use cases make a high performing, reliable Wi-Fi network a must: work at home, school at home, and health at home, among others. Smart security devices like IP cameras and video doorbells join a number of high-bandwidth activities like OTT video streaming, video conferencing, and online gaming that increasingly strain the network. Furthermore, the growth in connected devices out to the perimeter of the home— smart garage door openers, smart door locks, smart outdoor lighting— call for better coverage across the whole home.

Yet, many consumers' home Wi-Fi networks are not reliable. Over one-half of wireless network owners report incurring some network problem over the last 12 months, with slow or interrupted service being the most common problems.

Wi-Fi problems impact the smart security experience: among smart home device owners experiencing at least one technical problem in the past 12 months, 51% report they experienced a loss of wireless connectivity.

Home Network: Technical Problems

Wi-Fi network seems slow

Wi-Fi network frequently stops working for some reason

It seems to lose connection to my device

Wi-Fi coverage gaps throughout the home

Difficulty getting other devices to connect to the Internet using Wi-Fi

Difficulty getting devices to connect to each other using Wi-Fi

Difficulty managing Wi-Fi password/access credentials

0%   5%   10%   15%   20%   25%   30%

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Loss of wireless connectivity is the top problem affecting owners of smart home devices, and this has been consistent for the past four years.

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Consumers Seek a Solution for Wireless Problem

Parks Associates research finds that consumers are seeking better Wi-Fi experiences in a number of ways:

1. **Connection speed upgrades** – Consumer-reported download speeds have steadily increased—72% of US internet households report receiving download speeds faster than 100 Mbps, up from just 32% in 2016. Nearly half now receive upload speeds faster than 20 Mbps as well.

2. **Wi-Fi equipment upgrades** – During the COVID-19 pandemic, many consumers proactively upgraded their networking equipment, turning to new models of routers, gateways, and mesh networking equipment to solve network performance issues. This equipment comes with the advanced features and functionality that meets customers' needs and gives them a superior broadband experience. As of Q1 2022, 41% of router owners report owning mesh networking equipment.

3. **Add-on services** –The increase in virtual work, education, entertainment, and smart home and security solutions are driving consumer interest in a variety of add-on network services.

   · 42% of US internet households are "very interested" in a network monitoring service that proactively identifies and remotely resolves network issues.

   · 41% are very interested in a cybersecurity service that monitors network traffic and network-attached devices for malicious behavior.

   · 36% are very interested in a service that sends alerts if devices go offline.

Interest in network services doubled from 2020 to 2021, and it strongly correlates with the total number of smart home devices owned—the greater the number of devices owned, the higher the interest in these services. Consumers also show a strong willingness to pay for a bundle of advanced network monitoring services. One-half of all broadband households are willing to pay $20/month for a home network support service. An additional 7% will pay $10 per month.

Willingness to Pay for Add-On Home Network Support Service

56% **Willing to Pay** $10/month

49% **Willing to Pay** $20/month

A service that...

· Ensures my home has good Wi-Fi coverage
· Alerts me if my devices go offline
· Proactively identifies and remotely resolves network issues
· Provides tips to optimize network speed
· Provides tools for parental control
· Provides cybersecurity protection for all traffic and devices on the home network

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Security Dealers: Impacts and Costs of Supporting Wi-Fi Devices

Wireless network issues that impact the smart security owner also impact the dealer. As security dealers position themselves as providers of a seamless integration experience, they are increasingly called upon to resolve issues tied to network performance and stability.
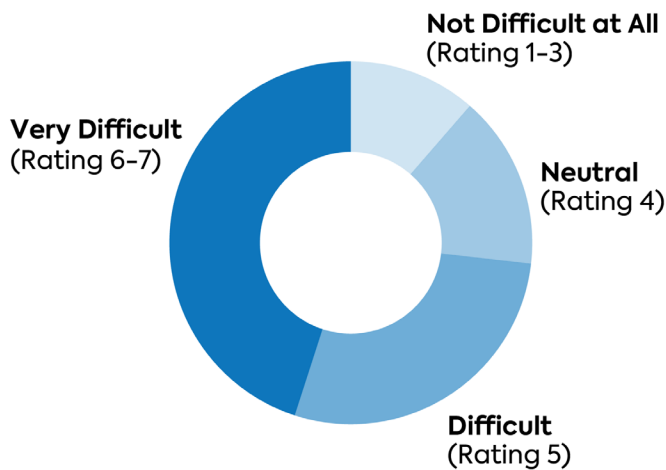
Smart Home Device Integration: Not as Easy as It Seems

Security dealers report that, on average, 35% of residential system installations include both interactive services and smart home devices, with IP cameras, video doorbells, smart door locks, smart garage door openers, and smart lighting the most popular integrated devices. Dealers also increasingly report integrating devices from these leading smart home device categories that consumers already own into the security system. This integration process requires simplification. Nearly three-fourths of dealers who integrate consumer-owned smart home devices into security systems find it difficult, and nearly half—who are PROs—find it very difficult. More training, more tools to help, and simplification are necessary to optimize sales opportunities.
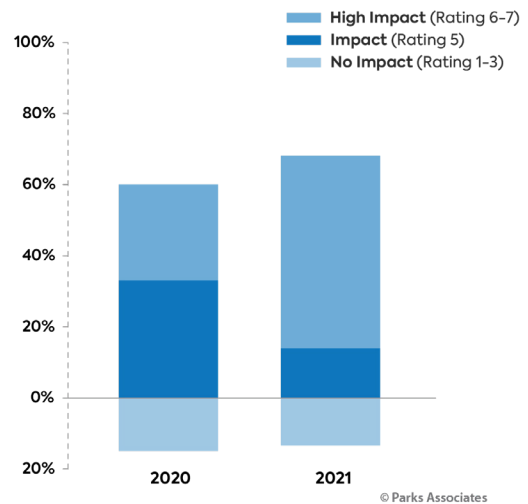
After install, dealers must support the growing number of smart home devices integrated with security systems. The impact on support demand is dramatic. In 2021, 54% of security dealers who install interactive systems with smart home devices said that smart home devices had a high impact on their support costs. This is up significantly from the prior year—27% in 2020.

> As the number of Wi-Fi devices continues to rise, the support requirements will rise alongside.

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Dealer Difficulty Integrating Consumer-Owned Smart Home Devices with Security System

- Not Difficult at All (Rating 1–3)
- Neutral (Rating 4)
- Difficult (Rating 5)
- Very Difficult (Rating 6–7)

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Smart Home Devices Impact on Dealer Support Costs, YoY

- High Impact (Rating 6–7)
- Impact (Rating 5)
- No Impact (Rating 1–3)

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Quantifying the Impact: Cost of Dealer Support Truck Rolls

The majority of dealers who sell interactive systems with smart home devices report that they most frequently resolve the issue using remote diagnostics, but 9% most commonly roll a truck.

Sending a technician along with a truck and materials into the field is expensive and has become even costlier. Dealers are facing rising inflation, including fuel prices at all-time highs. Labor costs are also increasing due to staffing shortages and the new training required for more complex smart home and security installations. The average cost of a truck roll is well over $350. According to the Technology Services & Industry Association (TIA), the true cost of a field visit can reach over $1,000, factoring in administrative expenses, repeated field visits, and equipment needed to diagnose and fix issues.

Remote support can dramatically reduce truck roll costs for dealers.

Industry interviews indicate that the cost of one virtual appointment roughly equals a quarter of what it costs to send a technician into the field, due to savings on labor, fuel, and truck maintenance costs. Additionally, if the technician gets "porched" (a customer is not home or does not answer the door), it still costs time, fuel, and wages. However, if a customer does not keep their virtual appointment, then the agent can move on to next customer in a matter of seconds.

Companies like ADT are finding that remote and automatic support solutions can help dramatically reduce the number of truck rolls and related costs. In Q1 2022, ADT reported a net income of $52M in Q1 2022 versus a $48M loss in Q1 2021. The smart home and security company pointed to its remote support program as one of the contributing factors to its success. The virtual program has allowed ADT technicians and customer service agents to perform over 200,000 virtual service visits during Q1 2022. This has resulted in an 80% truck roll avoidance rate and consistently high customer satisfaction scores.

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Minimizing the Impact with Remote Support

The operational transformation that comes with remote diagnostic and support services has impact well beyond the direct cost savings of reduced truck rolls. Dealers who take advantage of remote diagnostics and virtual support reap benefits beyond hard cost savings.

- **Gain efficiencies in cost of materials:** With remote diagnostics, dealers can understand the precise nature of a support request and dropship equipment to a customer's home with the option of same or next-day delivery. A virtual appointment can then be quickly set up to guide the customer through the setup/installation process.

- **Increase customer satisfaction and stickiness:** Today's consumer expects a quick and convenient troubleshooting experience. Resolving an issue during a thirty-minute virtual appointment is more satisfying to customers than a four-hour window scheduled for a field visit. ADT found that customer satisfaction scores rating its remote service program matched or exceeded those given when a technician physically visited a customer's home. Automated and managed monitoring can also help detect and prevent troubling conditions or systems issues. These solutions translate to additional value for customers and a competitive advantage and increased brand appeal for dealers.

- **Retain technicians with flexible work:** Offering remote support allows technicians to take advantage of work-from-home options that are quickly becoming a staple in the workplace. Offering remote work opportunities allows companies to stand out and be competitive in an economy where remote work benefits are in demand. Adopting these new models of work also allows companies to take advantage of savings associated with a reduced in-office workforce.

- **Improve the dealers' environmental impact:** Fewer trucks on the road means less carbon emissions and waste pollution. The environmental impact of automobiles continues to be a pressing concern for many consumers. In fact, 67% of security system owners say that being green is important to them, compared with 59% of US internet households without a security system. Reducing the number of truck rolls is a proactive step towards a greener organization.

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Smart Home Security – Connected, Reliable, Frictionless

Wi-Fi 6: the Next Generation of Home Networking

Increased bandwidth usage, growth in the number of concurrent device connections, and the need to access the internet in more areas of the home are driving internet service providers and router manufacturers to offer Wi-Fi 6 equipment. Wi-Fi 6 offers several benefits:

- **Supports more connected devices:** Wi-Fi 6, 6E, and mesh products are capable of supporting up to 200 connected devices.

- **Greater speeds and less congestion:** Wi-Fi 6 offers theoretical maximum speeds more than twice that of the previous generation, Wi-Fi 5. Wi-Fi 6 routers have more built-in antennas and can communicate with more devices at once. They can also schedule data transmission with different devices to help minimize congestion.

- **Low energy consumption:** Wi-Fi 6 devices can allow the Wi-Fi to go to sleep at scheduled times, saving on battery consumption. This is a major benefit for battery-powered smart home devices and security sensors.

With the ongoing silicon shortage and supply chain constraints, chip makers have focused on making higher margin Wi-Fi 6 chipsets available and either reduced capacity of Wi-Fi 5 production lines or retired Wi-Fi 5 production entirely. In 2022, Comcast, Netgear, ASUS, Amazon, Ring, and Johnson Controls have all

released Wi-Fi 6 home networking products. Dealers can reap the benefits of Wi-Fi 6 by proactively upgrading subscribers' home networking equipment to improve the user experience and reduce the number of technical issues often experienced with older Wi-Fi equipment.

Dealers Take Control of the Network

Dealers now have the opportunity to take control of the Wi-Fi network, with mesh Wi-Fi solutions designed to support the needs of the security professional. These mesh devices allow coverage of any home or business, Wi-Fi partitioning to enable separation of dealer-installed devices and end-user devices, and remote connectivity to allow dealers/installers to resolve issues without rolling a truck. These benefits help dealers cut costs by reducing the time and labor necessary for truck rolls, and customers' problems are solved in a shorter amount of time or potential problems are headed off due to network monitoring from the dealer. A better network experience means a better smart home security experience and highly satisfied and loyal customers.

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Conclusion

As the technology used in smart homes and security systems grows in complexity, home networks have struggled to keep up. Consumers opting for professionally installed and monitored systems rely on their providers' expertise for configuration and support, resulting in increased support costs for dealers. At the same time, competitive turbulence and pricing/fee pressures have dealers on the hunt for competitive differentiators that offer significant consumer value. Consumers want more, and in this turbulent market, leaders will provide it. Providers must determine how to seize the service opportunities most valuable to their customers or some other provider will.

Consumer demand for Wi-Fi devices like smart cameras and video doorbells will only increase over time. Integration capabilities across smart home devices and security systems create a stickier customer base that is engaged with their system. Since the security industry remains a key channel for smart home services, security dealers are in a unique position to leverage that strength. Security dealers must reposition and rebrand themselves as more than a security provider. They must morph into smart home and network solutions providers, with the remote control, diagnostics, and support capabilities to deliver these services profitably.

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About Parks Associates

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.

For more information, visit **www.parksassociates.com** or contact us at **972.490.1113**, **info@parksassociates.com.**

About Johnson Controls

Johnson Controls is a global diversified technology and multi-industrial leader serving a wide range of customers in more than 150 countries. Our Security Products team focuses on security for homes and businesses and enables smart home connectivity through the use of our secure PowerG technology. We help our customers have a smart space, but more importantly a space that is safe and secure, providing the comfort, convenience and possibilities expected today. For additional information, please visit http://www.johnsoncontrols.com or follow us @johnsoncontrols on Twitter.

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