



Zero Response Time – Security System Intervention



Introduction

Security system adoption has steadily increased in recent years, reaching 36% of US internet households.

Adoption is driven by recent advances in DIY installation, reduction of service and hardware costs, and a growing need for peace of mind. Residential security customers in single-family and SMB properties have a myriad of installation methods, alert methods, device types, and associated services.

Most consumers can find a system that provides the peace of mind they are seeking; however, many traditional security solutions have gaps in their coverage where there is too much time between detecting the break-in, sounding the alarm, and the arrival of the police to prevent property damage or loss. New technology innovations can help overcome the limitations of the previous generation of security systems through advanced applications.

In the future, the most successful companies will incorporate the innovations that overcome the limitations of the previous generation of security systems and most effectively lean into these peace-of-mind demands from consumers.

This whitepaper addresses how new active intervention techniques can move security systems beyond detection and alerts to enhance the effectiveness of response to an intruder. Regardless of system type and monitoring status, security system customers demand optimal response times between security events and first responders' arrival. With new innovations, built-in security features can interrupt and deter crime in real-time, bringing required response times down to zero.

Residential and Commercial Demand for Security Solutions Grows

Security system ownership is at an all-time high in multiple sectors. Advances in video verification technology, new AI and ML technology, smart features that deter bad actors or stop them in their actions, and industry partnerships continue to enable new applications and services driving the adoption of these systems.



For the residential sector, more than half of each of the following key demographics own a security system:

- Households with children
- Households with an income of \$100,000 or more
- Heads of household ages 35-44
- Residents in an urban area

Security system use is particularly common in multi-dwelling properties.

- 41% of multi-dwelling unit (MDU) property managers have a security/access system for common property areas and parking garages.
- 36% of properties with a common-area security system incorporate internet-connected devices into the system for remote monitoring and control.

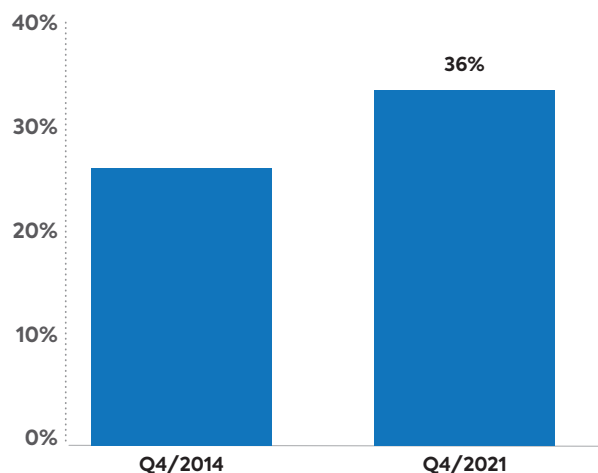
Smart camera monitoring and smart parking rentals are the most common safety and security use cases among property managers that currently use smart home devices.

SMBs with more employees, more revenue, and working in locations out of the home are more likely to use security systems. Warehouse and retail locations have particularly high-security system presence. The past several years have been a net driver for security solutions among SMBs. Along with the pandemic itself, the spring and summer of 2020 were characterized by social and political unrest, resulting in heightened concerns about safety and security.

In 2020, one in five SMBs reported that the COVID-19 crisis had increased their need for products and services to protect or monitor the safety and security of their business locations and employees.

Home Security System Ownership

Among All US Broadband Households



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50% of US SMBs use safety or security products, and **90%** of SMBs with a security system have the system professionally monitored.

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Security Systems Get Smarter – but Limitations Remain

Advancements in security system technology have allowed growth to trend with that of other connected devices, which have been increasing particularly with affluent young adults and families. The lines blur between a security system and a smart home with security functionality. New sensors can detect external movement and internal home occupancy. Smart door locks can grant access to authorized users, and smart lights can mimic resident patterns to give the impression that someone is home.

Yet, limitations remain despite all advancements the industry has achieved in the past five years. For households to retain their security services and keep their system in use, they need to perceive the solution as effective.

Responses to a triggering event were commonly sirens, flashing lights, and a call to a monitoring company or dispatchers, but 29% of system owners who experienced these events did not feel that their system alerted them appropriately.

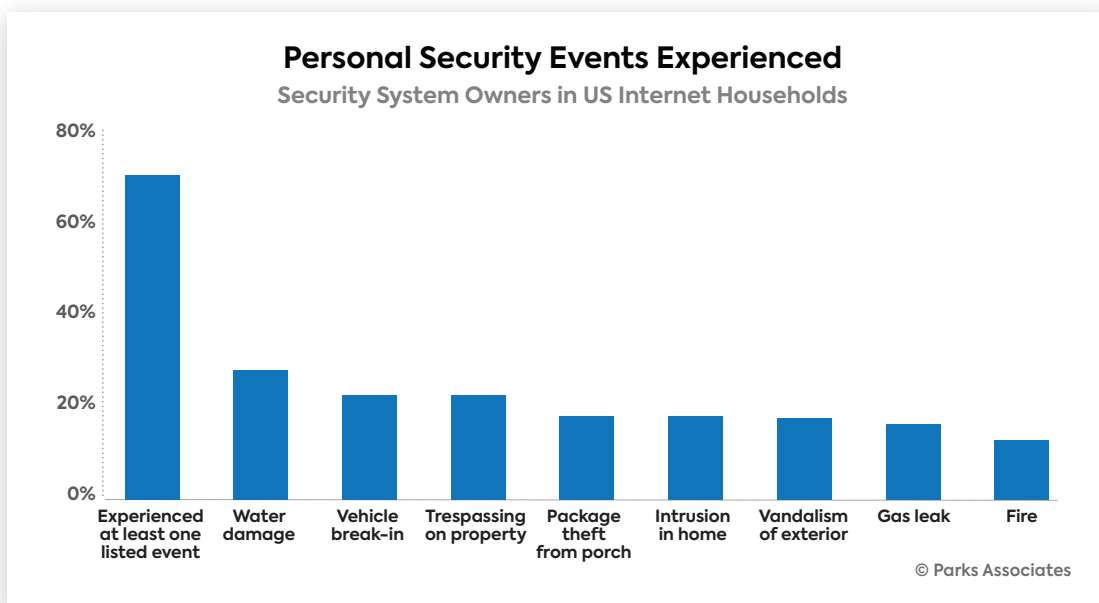


70% of security owners have experienced an event that could trigger a response from their system.

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Today's systems can improve in several key areas where the system's performance in an emergency is at stake:

- accuracy of detection
- deterrence or interruption of a crime or emergency
- reducing response time



The Need for Accurate Detection

Cameras and motion sensors have limitations in area surveilled and ability to detect motion accurately from an intruder. Many of these top-priority events occur in or around the exterior of the home, where traditional window and door sensors cannot help. In fact, of the four top events that security system households report went completely undetected by their security system, three of them were on the home exterior: **trespassing on the property, vehicle break-ins, and package thefts**. Cameras may have limited range and viewing angles, so for proper detection of these issues, an optimum setup is needed to minimize blind spots.

Sensors and video streams that are not properly configured can cause false alarms.

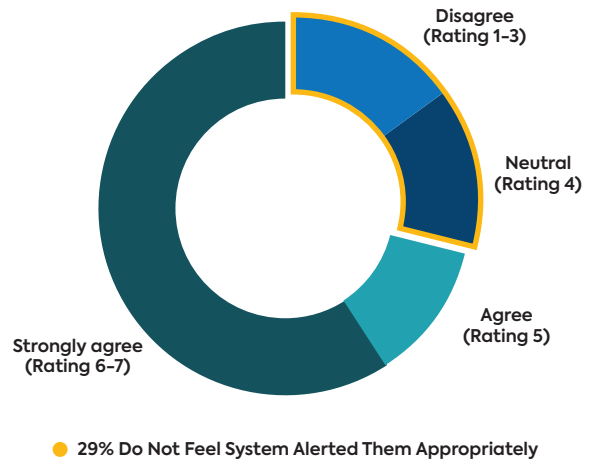
False alarms threaten user satisfaction with their system. They can result in unnecessary emergency response runs and fines for the security system owner. **About two out of three security system owners have paid a fine for a false alarm, with an average cost of almost \$150.**

The Effectiveness of Deterrence Methods

Security systems themselves are thought to deter unwanted activity simply by making it known to intruders that a system is present. Most security systems offer yard signs, window stickers, and other means of advertising the presence of a security system. Audible sirens and flashing lights are additional physical deterrents designed to scare off intruders and alert residents to a safety or security issues.

System owners who have experienced a safety or security issue indicate that a **siren or flashing light** was the most effective method for their understanding that an emergency was taking place. In-app notifications, texts, and phone calls from monitoring companies are seen as far less effective in alerting the resident to an issue.

My Security System Alerted Me to a Real Security Issue Appropriately

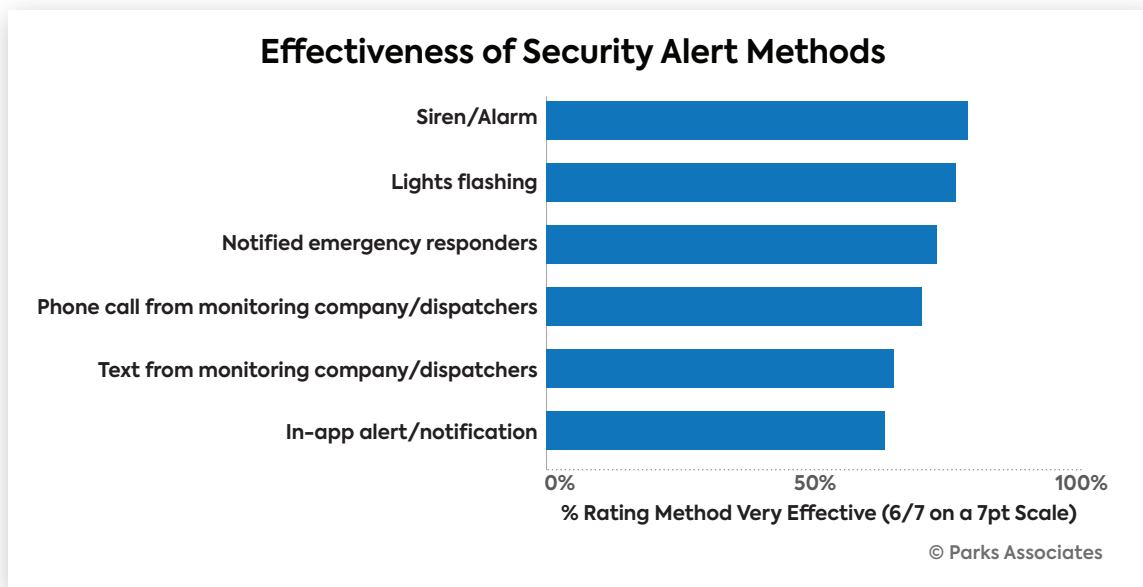


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62% of security system owners report that their system triggered an alarm that was false over the past 12 months.

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These onsite interventions would typically trigger the moment the event is detected before emergency responders arrive. The perceived strength of these methods among security owners, which rivals police contact, indicates consumers are very interested in a system that can respond immediately to deter criminal activity.

Still, these classic deterrents may fall short. Advertisements of security system presence are just that—advertisements. Plenty of security systems are no longer active and working. More disruptive tools, such as sirens and flashing lights that alert neighbors and drive would-be burglars away, are known responses. Burglars may be ready for them, and the long history of false alarms may slow response.

The Time between Alarm and Arrival

Response times to an emergency vary depending on a variety of factors, including the nature of the crisis, the location of the business or residence, and the information collected by dispatchers. A critical new factor in the security space is the rise in self-monitored security systems. These self-monitored systems send alerts to the users' phones for a lower monthly fee. However, self-monitored system owners may miss an alert or be unavailable to respond when an emergency happens.

Those who subscribe to a professional monitoring service value the service's core purpose of assisting in an emergency. The majority of professional monitoring subscribers believe that their service made emergency responders somewhat or much quicker than they would otherwise have responded. That said, 18% felt they had no impact on response time or slowed response.

33% of self-monitored security system owners who intend to switch to a professional monitoring service report that they were not available when a security event happened, and they could not take proper action.

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Upon notification of an emergency, first responders need time to respond. At best, a first responder arrives in the middle of the event and has to assess the situation to take the appropriate action. In the case of break-in and theft, a police officer must determine if the intruder is still onsite and, if so, confront the offender. In another scenario, first responders show up late and miss the intruder altogether. The only action, in this case, is to determine the property loss and write a police report for the property owner's insurance company. The system worked exactly as it was supposed to but failed to prevent property damage or loss.

Technology Advancements: Improving System Effectiveness

Security industry players are working to overcome or minimize the impact of limitations that may impact system performance in the case of an emergency. Lower costs for more sophisticated devices are making solutions more available, and new innovations are coming to the market.



Better Cameras and Detection Technology

Camera technology has increased even while costs for these devices have come down. Video doorbells are a product category that is less than ten years old and has already seen significant improvement. Just a few years ago, Ring and Nest doorbells had 720p resolution and are now 1080p or even 4k with substantial enhancements in motion detection. Some models have expanded their audio data gathering to a three-microphone array.

Improved perimeter detection

These more powerful cameras at the access points can better surveil the home's exterior, and even more, cameras can be placed in the yards, gardens, and driveways as cameras are incorporated into more outdoor devices. Vivint's outdoor camera pro, for example, uses the edge power of its Ambarella chipset to perform video analytics rapidly so suspicious activity can be met with voice messaging or lights as a warning and potential deterrent. Outdoor floodlights with cameras such as those offered by Google Nest can provide more information on a security event than the more common outdoor light with a motion detector.

Improved interior detection

There are also new monitoring technologies that can contribute to a home security solution in the interior of the home. Radar devices can monitor movement patterns inside the house without creating a privacy concern because the device is not truly listening or watching. Wi-Fi and RF-based sensing software can leverage existing connected devices to detect motion in and around the home. Trifo has even developed a smart vacuum with microphones, a high-quality camera, and night vision that can patrol the premise after everyone has gone to bed.

Better Analytics Reduces False Alarms

False alarms are a source of frustration, regardless of the type of alarm, for both homeowners and small-to-medium businesses. Many states and municipalities have put forward initiatives to fine security providers for false alarms instead of home dwellers, and many existing laws require some form of prior verification of a real emergency before contacting emergency responders, which can further delay onsite arrival for true emergencies. The security industry has scored some recent wins against these local false-alarm fines, with several states banning local municipalities from fining security providers for the false alarms caused by their customers, but the ideal circumstance for all is to reduce the number of false alarms.

Reduction of false alarms is a major goal for device manufacturers in the space. It involves some of the system's most advanced technology, including video verification and artificial intelligence. Improvements in analytics and the proliferation of these technologies across the security device ecosystem can reduce the number of false alarms. Parks Associates data indicates consumer expectations are high that the security industry will solve these challenges.

Direct Intervention Before First Responders Arrive

The best result in a security event is for the event to be interrupted or deterred completely. New security solutions, enabled by smart home connectivity and remote control, can enable quicker automated notifications, more immediate and direct intervention, and a more effective system. Smart home connectivity and remote control allow for homeowner-enabled intervention before first responders arrive.

- Smart security cameras with two-way talk allow homeowners, renters, and SMBs to see whether anyone approaching their home is a friend or intruder before reaching the house. They can communicate directly to the visitor, offering a welcome greeting or issuing a verbal warning through the camera's speaker system.
- Personal security apps, such as Bond, offer preventative live security monitoring and give users on-demand access to certified bodyguards and safety professionals to assist with a number of safety-related situations that users might find themselves in. Some of these situations may be serious but not enough to warrant a 911 call or trigger a security alarm system.
- Neighborhood safety apps, such as Citizen, allow for communal surveillance in a smart version of traditional neighborhood watch programs. These apps can provide real-time home security footage, safety, and emergency alerts to a user's neighbors and community to prevent or help intercept home intrusion. The popular **Nextdoor app** can warn neighbors of recent break-ins so residents can take additional precautions.

With connectivity nearly ubiquitous and smart home and security technologies constantly advancing, there are opportunities to develop and offer more unique and effective security solutions that can directly intervene and deter intruders before significant property loss occurs.

Essence MyShield

Essence has recently launched a solution that essentially closes this gap between an intrusion and emergency response. The device physically intervenes and is more effective than a homeowner's angry voice in a speaker, investigating neighbors, or noisy sirens. Billed as an "On-site first responder", the Essence MyShield security fog generator security system, with an on-board PIR and HD camera for detection and verification, and 2-way voice, is designed to prevent intruders from exploiting the generous window of response time to a break-in. It presents a more proactive approach and can prevent theft or limit the amount of theft from an intruder who is already in the home or business.



Once deployed, the resulting fog both startles intruders and limits their visibility. Since time is critical for intruders, being impaired by the smoke closes the time gap between intrusion and arrival of first responders. The appearance of a thick fog forces the intruder to flee or create confusion that slows their activity until the police arrive. The MyShield device has done its job in either case, and theft is prevented.

Smoke-emitting devices are not new to the broader security space as they've been used, particularly in Europe, to protect ATMs, warehouses, gas stations, and retail establishments for years. These devices are generally geared towards large warehouses and high-value establishments and cost in the thousands of dollars. Products such as Protect's Fog Cannon line, SmokeRhino's F and R devices, and Concept's Smoke Screen product line could also require integration into existing security panels and can be triggered by key fobs, alarm systems, or the owner's phone during an emergency.

The MyShield combines several detection and verification sensors in a self-contained unit that connects independently to the cloud using cellular CAT-m infrastructure, is battery operated and is not dependent on local communications. The device can be self-monitored or connected to a professional monitoring service. With this all-in-one security device, a home or business owner can easily install a device not susceptible to loss of power or internet with the peace-of-mind of a near zero response security intervention.



Conclusion

As smart home security devices grow in familiarity, value, and affordability, new security alternatives will continue to blur between traditional security systems, creating a market with a mix of professional and DIY solutions. There are several major opportunities in the residential, MDU, and SMB spaces to target customers likely to be interested in security solutions:

- Security system households are twice as likely to have a smart home device as the average broadband household and approximately five times as likely as a non-security household.
- Security product adopters tend to be young, affluent and educated consumers with children at home. This segment is also more likely to be innovators or early adopters of technology. Security product intenders, meanwhile, are more likely to be early adopters/early majority, have less than a college degree, 35-54 years old, and have mid-range salaries of \$30-75,000.
- Thirty-eight percent of MDU property managers say their residents want more security in common areas, and 33% report their residents want more security in their units.
- Small business owners are motivated by the need to protect both their merchandise and their staff. Businesses with security personnel with smartphones or tablets would benefit from the more sophisticated mobile event reporting that cameras can provide.



Regardless of system type and monitoring status, security system customers demand optimal response times between security events and the arrival of first responders. Networked cameras and smart doorbells can show users what is going on, but more active solutions are needed to prevent property damage or loss. New device innovations and security-adjacent tech present new opportunities for security systems to move beyond alerts and detection and to interrupt the intrusion.

To build on recent growth in the space and expand into new customer segments, security device-makers and service providers must work to enhance the appeal of their products and expand the scope to further prevent loss or damage, which would strengthen the peace-of-mind benefits of their solution.



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. 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. www.parksassociates.com



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About Essence



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ATTRIBUTION

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RESEARCH & ANALYSIS

for Emerging Consumer Technologies

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Smart Home Devices and Platforms



Digital Media and Platforms



Home Networks



Digital Health



Support Services



Entertainment & Video Services



Consumer Electronics



Energy Management



Home Control Systems



Home Security