



Next-Generation Smart Home: Building for the Future

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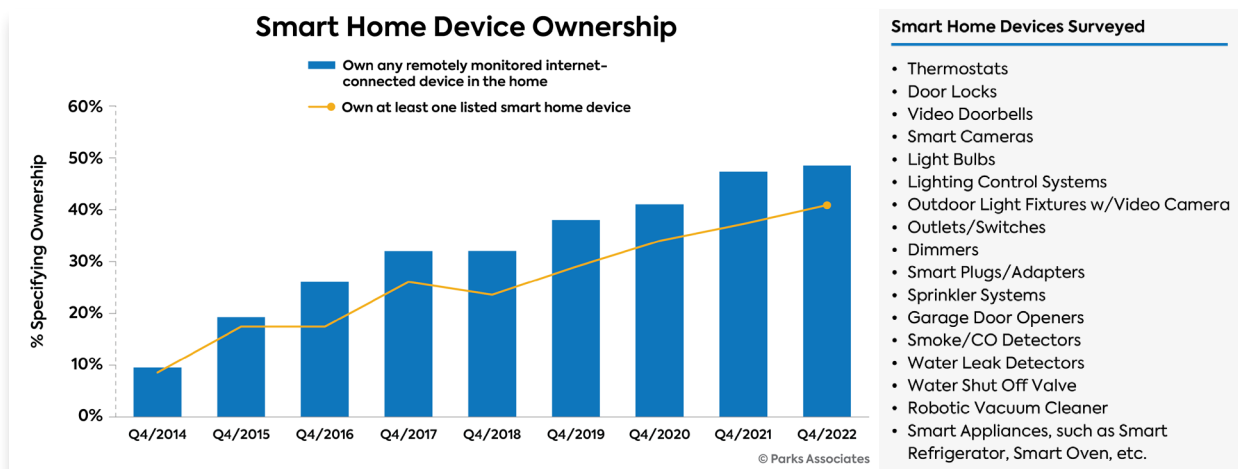
Intelligent and Personalized Experiences

The smart home market has experienced several years of strong growth. Nearly half of all US internet households now own at least one connected home device, and the majority own a smart speaker. Most product categories have seen growth in the past two years, including doorbells, thermostats, and cameras, as well as more niche devices like water leak detectors and smart lighting switches.

Though still an early market, it is maturing. The past 10 years of smart home development have resulted in a basic level of infrastructure available in homes upon which market creators can innovate.

~ 90% US households have high-speed internet to the home, ~ 92% use Wi-Fi.

New and established standards make it easier than ever for devices to communicate, even with the wide variety of product types, brands, models, and control platforms. Sensors integrated into smart products create a foundation for connectivity and learning, bringing about more intelligent and personalized use cases.



This white paper assesses the motivations and market dynamics driving the smart home market forward, the strategies for engaging new buyers to the smart home, and expanded use cases building on the substantial landscape of existing solutions, including aging-in-place solutions, energy management, insurance, and monitoring.



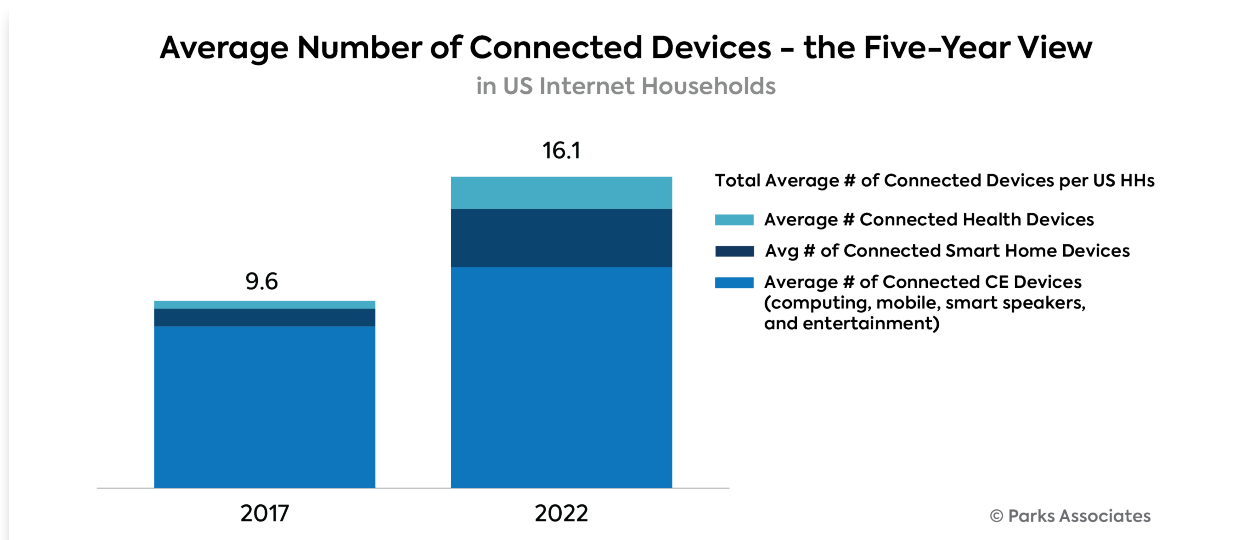
The Foundation is in Place

After decades of build-out and investment, and a pandemic that pushed work, school, entertainment, and healthcare further into the home, households in the US and other developed markets are more connected than ever. Parks Associates research of 10,000 internet households shows increased adoption:

- 92% of US homes have internet
- 92% of US internet households have Wi-Fi
- 87% of US internet households have a smartphone
- 41% of US internet households have at least one smart home device
- 60% have a smart speaker and sensor innovation is rapidly growing

The home broadband market is growing at the fastest rate in well over a decade, and Parks Associates forecasts that by the end of 2025, approximately 93% of US households will have a broadband subscription — either fixed or mobile. The home network is a critical point of visibility and control for all the smart home, computing, entertainment, health, and other consumer electronic devices and has the potential to enable a new dimension of value by offering integrated applications.

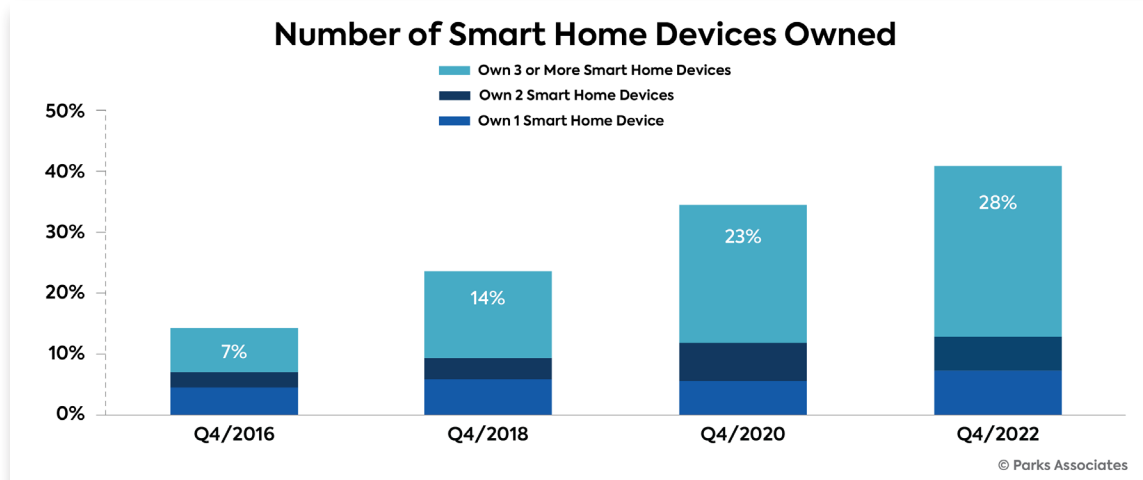
The average US internet household has more than 16 connected devices in the home.



Platforms & Standards Ease the Burden of Fragmentation

Now, 41% of US internet households report owning at least one core smart home device, with access control and security devices like locks, video doorbells, and cameras leading the way. Smart thermostats and lighting are also perennial frontrunners. Households with smart home devices are more likely to own multiple devices than they are to own just one.

On average, smart home device owners own eight devices, and the more devices owned, the more intense the desire that they work together seamlessly and intelligently.



A unified smart home experience is the holy grail of convenience and value for consumers, but fragmentation and interoperability issues have hindered the early development for the smart home. Curated, systems-based approaches – most notably through home security platforms and hub-based smart home systems – have been critical for providing a unified, seamless, smart home experience. Still, most consumers buy point solutions for particular use cases. This widespread purchase behavior limits the opportunity for integration and whole-home experiences.



Industry players have been building standards for decades, and the new Matter standard provides a possible solution that serves an enormous number of stakeholders in the smart home marketplace, including solution providers, manufacturers, and consumers.

With 200+ leading manufacturers aligning behind the Matter protocol, the smart home industry is a step closer to offering interoperability across various brand devices and platforms. This is important because mass-market adoption of smart home technologies requires interoperability – a unified, easy, and simple experience for the end user.

Nearly 75% of US internet households indicate that a single “mark” on a device which communicates interoperability would be an important consideration when making smart home purchases.

Looking forward, platform development and innovation that enable greater interoperability will make ecosystem system fragmentation less prohibitive to the market.

Creating Value: The Future of Smart Home

In the next phase of smart home development, reliable connectivity and basic interoperability between products are going to be standard. Manufacturers will leverage these benefits to differentiate their product lines, find competitive advantages, and create new value for the user. They will deliver on the SMART part of the smart home promise through home ecosystem partnerships, expanded distribution channels, and intelligence derived from sensors that will increasingly expand and personalize services, which will in turn generate recurring revenue.

Next Gen Value Creation: Intelligence, Services, Bundles

STANDARD

Smart Home 1.0

from traditional to connected products

Connectivity

Smart Home 2.0

products work together with choice of interfaces

Interoperability



DIFFERENTIATION

Next-Gen Smart Home

differentiation through value-added services

Services

Adjacencies

Partners

Bundles

Features

Intelligence

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Smart home leaders are focusing on these elements to achieve expanded business goals:

- Broadband providers leverage value-added services to generate revenue and provide customer-oriented services that drive loyalty and retention.
- HVAC dealers can provide proactive HVAC monitoring and maintenance service subscriptions, enabled through added sensors, connectivity, and data, that provide strong value to homeowners and business operations.
- Residential security players are expanding their position in the energy market with solar installs and partnerships.

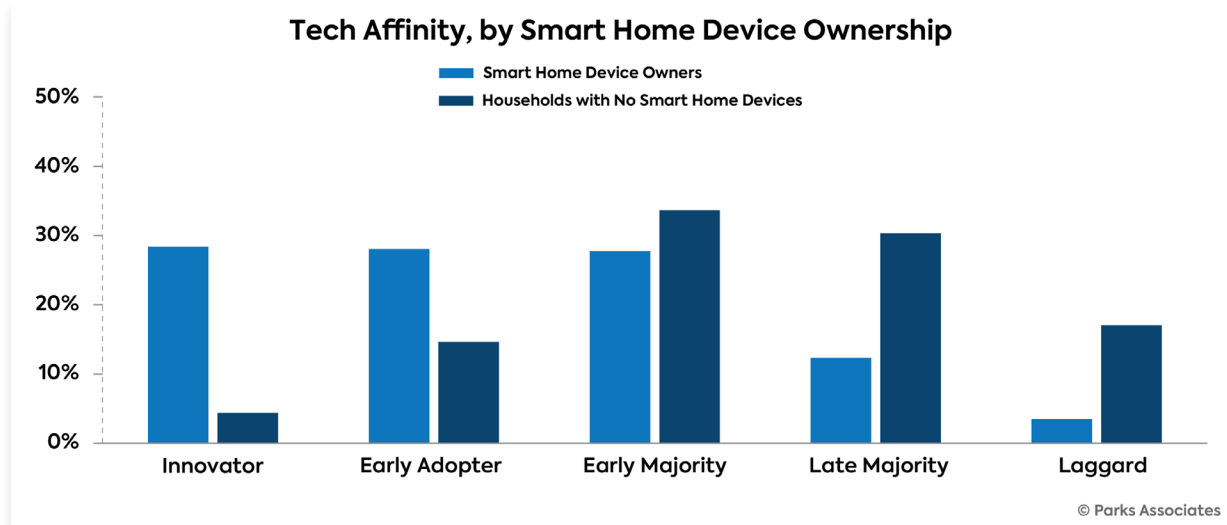
The smart home market is fragmented because of the different ecosystems and volume of players and products in each ecosystem.

Widespread reliable connectivity and standards like Matter form a solid foundation for growth among different ecosystem players. The next generation of the smart home is about integration and services, with the same drivers as the past: safety and security, convenience, and energy management.

Consumer Purchase Journey: New Paths for New Buyers

Most smart home device owners self-identify as innovators or early adopters, and the majority of those who do NOT own a smart home device select attitudes that place them in the Late Majority or Laggard categories. But 28% of smart home device owners now identify as early majority, and this portion has grown since the early days of the smart home. Slowly but surely, these devices and the concept of a connected home experience are moving more mass market.

There is a lot of opportunity ahead in attracting those later adopters into the smart home market and serving their needs. For example, more than 50 million US consumers ages 65 and older tend to skew on the later side of this curve.



Reaching Mass Market: Jumpstarting Adoption

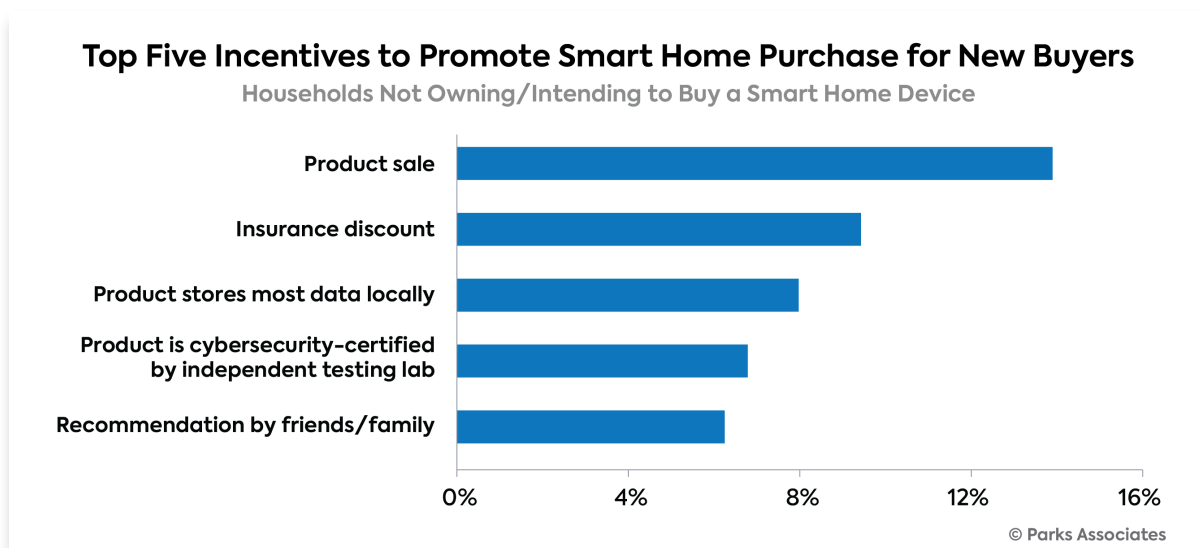
More than a decade into the connected home market, more than half of US internet households have at least one smart speaker or smart display, which Parks Associates categorizes as primarily a streaming audio device. By comparison, no individual smart home product category is owned by more than 20% of US internet households. Simply put, smart-home manufacturers have saturated the early adopter market but are having difficulty attracting greenfield buyers that offer greater volumes.

Parks Associates research finds that over the past five years, familiarity with key smart home products has grown meaningfully.

37% of US internet households are familiar with smart locks, compared to 28% in 2016.

Perceived affordability of smart home devices is also increasing but not perceived value. Price reductions, product bundles, and promotions are likely contributing to perceived affordability, but data suggests this concept is not strictly a question of income vs. costs. Even those households with sufficient income to afford premium-tier products have difficulty relating to the benefits offered by smart home devices and the relevance of technology to their lives.

After affordability and lack of personal benefit, the third top purchase inhibitor is the consumer's concerns over data privacy and security—31% of those without a smart home product and no intention to buy one cite data privacy and security concerns are keeping smart home devices out of their homes. Accordingly, two of the top five incentives that would help convince non-owners to buy a smart home device are security related. Savvy consumers seek assurances from third-party testers and for security to be baked into product design, with data stored locally when possible.



Evolving Product Strategies for Mass-Market Buyers

The strategies that attract early adopters may not be sufficient to reach new customers. Where early adopters seek out new technologies, customers new to the smart home experience will be skeptical and need to be drawn to the product. These new customers will be unforgiving of bugs or setup difficulties and will need excellent technical support for the return or disuse of products.

In a given year, 2-4% of US internet households report buying a smart home device and later returning it.

Manufacturers and service providers need to re-evaluate their strategies according to their next customer's outlook on technology, their motivations for buying, their pricing preferences, and the receptivity to different marketing messages.

Diffusion of Innovation: Meeting Customer Needs

	Innovator	Early Adopter	Early Majority	Late Majority	Laggard
Technology	<ul style="list-style-type: none"> • Techies 	<ul style="list-style-type: none"> • Quick to see benefits of new technology 	<ul style="list-style-type: none"> • Can relate to technology 	<ul style="list-style-type: none"> • Not comfortable with technology • Need aftermarket support 	<ul style="list-style-type: none"> • Somewhat fearful of technology • Technology needs to be buried in the product
Motivation	<ul style="list-style-type: none"> • Looking for latest and greatest • Technology is chief interest 	<ul style="list-style-type: none"> • Visionaries • Easily imagine compelling use-case, order-of-magnitude improvement 	<ul style="list-style-type: none"> • Practical, pragmatists • Buy for marginal improvement 	<ul style="list-style-type: none"> • Conservatives • Limited risk 	<ul style="list-style-type: none"> • Skeptics • Content with what they have • View connectivity as hassle, interruption
Pricing	<ul style="list-style-type: none"> • Low cost • Beta testers 	<ul style="list-style-type: none"> • Least price sensitive 	<ul style="list-style-type: none"> • Need ROI based on lower value expectations 	<ul style="list-style-type: none"> • Need low marginal cost for new capabilities 	<ul style="list-style-type: none"> • Commoditized market
Marketing	<ul style="list-style-type: none"> • They find you 	<ul style="list-style-type: none"> • Show compelling applications • Easy to sell • Hard to please 	<ul style="list-style-type: none"> • Need proof of value 	<ul style="list-style-type: none"> • Need proof of limited risk • Loyal, hard to win 	<ul style="list-style-type: none"> • Need to eliminate all risk, hassle

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Designing Tech for New Consumer Segments

Companies offering emerging technology solutions naturally design for early adopters first, but this can blind designers to the differing needs, preferences, and motivations of a very diverse market of potential users. Young, affluent, highly educated consumers, parents, and those who own their own home have formed the core of the smart home market. A more inclusive mindset uncovers opportunities to reach new customer segments that have been overlooked thus far.

- **Seniors** value safety-related technologies, including smart smoke/CO detectors, medical alert products, and smart shut-off technology for stove tops; they are also particularly likely to value professional monitoring services.
- **MDU residents** want products that help monitor activity outside their doors and are particularly likely to value smart lighting products.
- **Lower income consumers** need not be shut out of the market. Product promotions and bundling can make these devices more appealing and affordable to households with lower incomes.

Adding technology to homes means understanding the many unique formations of a household and the residents in it. Opportunity lies in identifying unmet needs for the many consumers not served by products designed for early adopters.



Value-Driven Services: Creating New Demand

Manufacturers, app developers, service providers, and partners from a diverse set of industries are building the next generation of great smart home experiences. Over the next three to five years, there will be strong development in four benefit areas: productivity, peace of mind, energy, and health.

Productivity and Utility: Getting Beyond Convenience

The first layer of value in adding connectivity to traditional products gave consumers a new way to interact with their homes and their everyday devices – often simple on/off remote control through an app and some basic insight into the function of the device. This provides real value of convenience for the user and new information and insights, but it is time to go further.

Households new to the smart home value practicality, so they want experiences that save time and money or can simplify or automate a currently manual household process:

- 66% of internet households would pay \$10/month for smart HVAC monitoring with proactive maintenance
- 70% of smart refrigerator owners are highly interested in a water filter replacement service
- One half of internet households are willing to pay \$20/month for a home network support service

Predictive, ambient sensors are diffusing throughout the home via smart home devices, entertainment devices, smartphones, and increasingly intelligent mesh networking systems. These sensors know more and can be more useful regardless of the use case or product category. Consumers will expect experiences to be more thoughtful and personalized and will be less tolerant of experiences that feel like a new job to do, that are not personally relevant, or that are plagued with bugs or false alarms.

Expanding Peace of Mind

Safety and security have long been the top value propositions for the smart home market. Now, players are expanding on the peace of mind concept to end users with new applications of familiar technologies and service models.

- **Vehicle monitoring** — In 2022, ADT and Ford announced a joint venture leveraging ADT’s monitoring and Ford’s smart in-vehicle camera technology. The companies join Alarm.com and Vivint in offering auto monitoring services. 69% of security system owners are interested in a vehicle monitoring add-on service.
- **Personal security outside the home** — Consumers want to protect themselves, their children, and their older relatives, regardless of their location. Mobile PERS solutions and SOS apps from security providers are a start, but consumers’ use of smart tag solutions, like Apple Air Tags, to track people and pets indicates demand for more. 70% of security system owners are interested in a personal emergency add-on service.
- **Smart insurance** — Insurance policies give consumers peace of mind about their home, and smart home devices can extend the property owners’ ability to protect their home as an asset. Smart security products and systems stand to save insurers billions of dollars through proactive monitoring, detection and deterrence for burglary, home, and fire damage. In September 2022, State Farm invested \$1.2 billion in ADT, marking a turning point in the slow and somewhat tepid progress of insurers moving into the smart security space. Insurance discounts are the #2 motivator to get greenfield buyers into smart home.

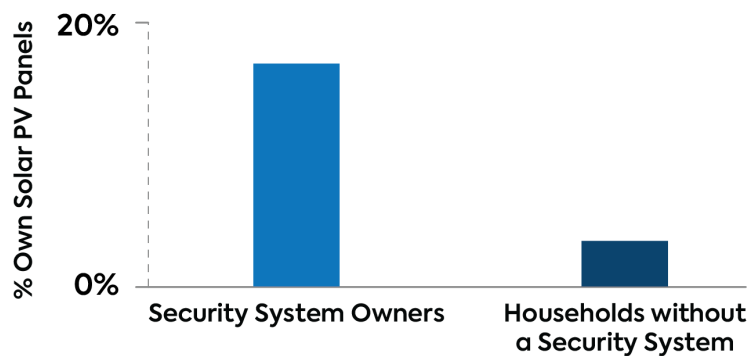
Energy

Strong momentum is building in the energy space that directly impacts the smart home, and major brands in the smart home are onboard. In the past year, NRG acquired Vivint, ADT acquired Sunpro Solar and launched ADT Solar, Brinks Home partnered with Sunnova, ecobee launched a home security service, and Google Nest partnered with utilities and energy providers on the new Nest Renew service.

These leaders see opportunity in shifting energy market trends, as well as a strong overlap with security and smart home households. For instance, 17% of security system owners report also owning solar panels, compared to just 3% of households without a security system.

Prepare for the Coming Paradigm Shift in Energy: Solar, Storage, EVs

Security System Owners are Top Targets for Solar



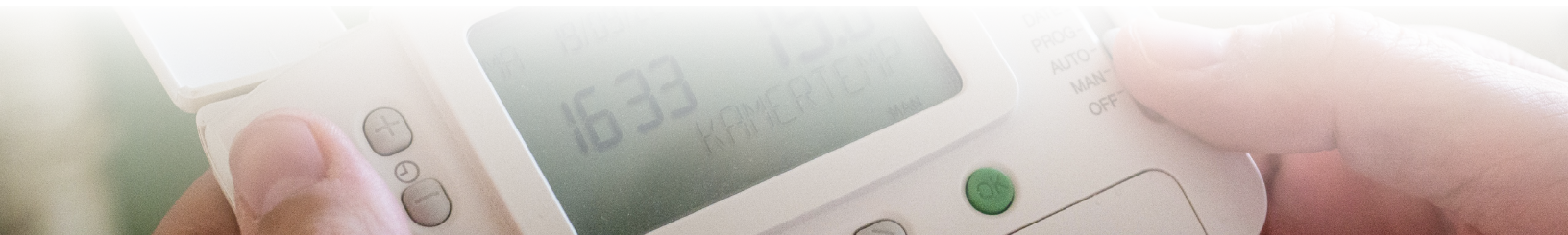
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Smart thermostats have been the bellwether product in the smart home-energy category, and category leaders have created important links between consumers, product manufacturers, utilities, and energy providers. The next wave of smart energy solutions will offer consumers and the industry valuable and necessary benefits.

- **Energy insights save money:** People want to save energy and money, but they don't know how to find and use energy information. Almost two-in-three consumers are interested in energy consumption details regarding their devices and appliances, and a similar number want real-time energy data. Utilities and smart energy platform and app makers are partnering to deliver clear, accurate energy-consumption information to their customers. Connecting this data to the energy bill and cost savings will maximize impact.
- **Solar and storage promote grid independence:** Energy uncertainty, economic incentives, and technological innovation have all contributed to the rapid growth of the solar panel industry over the last decade. What was once perceived as a luxury or off-grid option has become more accessible. 50% of US internet households agree that they would prefer to live in a home powered by a source independent of the local electricity provider.
- **Electric vehicles require smart coordination:** Major auto OEMs have committed to a conversion to fully electrified fleets across the next 10 years, so the EV revolution has already begun. Just 6% of US internet households own an EV today, but 19% indicate a high likelihood of buying one in the next 12 months (if supply allows). The majority of EV owners prefer to charge at home, which could create a major strain on the electrical grid. Smart solutions usage could coordinate usage to reduce that risk.

The next few years represent a challenging time for players in energy and connected technology industries. They will have to determine the impact of shifting energy forces on their industries and customers and then adjust strategies to ensure their solutions will be part of the new reality.



Connected Health at Home

The pandemic has forever changed the trajectory of healthcare. A new perspective is taking hold among providers, payers, vendors, and consumers that the home is a viable and valid location for health management and healthcare delivery. At the same time, connected health sensors and devices are critical to expanding the applications of care in the home, and adoption of connected health and wellness devices is growing.

Most US internet households own at least one connected health or wellness devices in 2022, and 55% used a virtual care service in the prior 12 months.

- **Virtual care is here to stay:** While telehealth visits are down from pandemic highs, consumers like the convenience of accessing care virtually when appropriate. Medical providers are also on board. Prioritizing patient care for the best possible location for health outcomes and cost efficiencies sometimes means care happens in the home. Consumers are increasingly looking to share data from their health devices at home back with their providers. 47% of internet households say the ability to share data from an internet-connected health device with a healthcare professional is a “highly important” feature of telehealth services. Over a third of patients report they are more likely to choose a care provider who offers remote patient monitoring and data sharing.
- **A smart home is a healthy home:** Coming out of the pandemic, there’s more focus than ever on the health of our living and work spaces. Consumers seek homes with clean, healthy air that controls allergens, viruses, and mold, assurance that their water is pure and clean, spaces that are well-lit and conducive to working at home and mental health, and resources that promote quality sleep. 47% of consumers have a condition that may be sensitive to indoor air quality, and 1 in 3 consumers are concerned about the air quality inside their home.
- **Empower seniors to live safely and well at home:** Internet service and technology adoption by seniors are at all-time highs, resulting in a heightened ability for seniors to comfortably use independent living solutions and a larger potential market for many solutions. Medical alert solutions lead the market for caregiver-sourced independent living solutions, but a high percentage of these customers have adopted multiple solutions, including smart speakers and smart home devices, to care for their aging loved ones.

Features such as fall detection, alerts in case of fire/smoke/gas, voice calling solutions, and alerts if stoves and burners are left on have universal appeal regardless of where the senior is living. *Monitoring services highly appeal to the 36% of family caregivers with a loved one living alone.*

As more and more healthcare activities take place from home, continuous monitoring solutions – including those that can track a patient’s status overnight – and artificial intelligence will be critical to support communications between consumers, their physicians, and their family caregivers. Solutions that offer continuous and passive monitoring will play a critical role in helping to fill the gaps, particularly in assessing patient deterioration or important changes in vital health conditions. The sensors built into both health-specific devices and smart home devices built for other primary purposes can contribute important data in determining the health of the home and the residents in it.





Creating the Next-Generation Smart Home Market

Industry players can move the needle by focusing efforts on key strategies.

- **See the big picture:** point solutions that solve specific pain points are important and valuable. Yet there is untapped opportunity for creators to tap into the infrastructure that now exists in connected homes—including the network, ecosystem of connected devices, and the various sensors that detect home conditions and resident patterns – to build solutions that are more useful and integrated.
- **Give consumers choice:** ensure a solution can serve multiple householders with different preferences. Where possible, give end users choice of installation, with monitoring, control, and support tools that reflect their individual preferences.
- **Develop for new market segments:** there are new populations and market segments that are underserved by today’s products, pricing, and marketing strategies. Re-think solutions for tomorrow’s customers to expand the target market. At the same time, look beyond the single-family home for customers that value the connectivity, insights, and control that smart products provide. Multifamily residents, multifamily property owners, utilities and energy providers, health systems, insurance providers, and small-to-medium businesses (SMBs) all represent relatively untapped markets primed for growth.
- **Earn consumers’ trust:** Data security and privacy concerns have always been barriers to adoption of connected devices, and how companies address these concerns may be the next big differentiator. Solution providers who are willing to store most data locally and forgo the desire to see all possible data can differentiate themselves from the pack. As tech giants, service providers, and device manufacturers battle it out to become the primary control interface for the connected home experience, building – and keeping – consumer trust will be paramount.

In the last 10 years of development, the smart home market has established important foundations for future growth. In 2023 and beyond, solution creators have the necessary ingredients to deliver on the promise of the vision of the smart home where the sum – an intelligent, integrated, helpful home – is greater than the individual parts.

About Parks Associates



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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 Connectivity Standards Alliance



The Connectivity Standards Alliance is the foundation and future of the Internet of Things (IoT). Established in 2002, its wide-ranging global membership collaborates to create and evolve universal open standards for the products transforming the way we live, work and play. With its members' deep and diverse expertise, robust certification programs, and a full suite of open IoT solutions the Alliance is leading the movement toward a more intuitive, imaginative, and useful world. <http://www.csa-iot.org>

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Jennifer manages the research department and Parks Associates' process for producing high-quality, relevant, and meaningful research. Jennifer also leads and advises on syndicated and custom research projects across all connected consumer verticals and guides questionnaire development for Parks Associates' extensive consumer analytics survey program. Jennifer is a certified focus group moderator, with training from the Burke Institute.

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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