

CONNECTIONS™

The Premier Connected Home Conference

May 24-26, 2016

EVENT SUMMARY

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CONNECTIONS™: The Premier Connected Home Conference Event Summary

In the 20 years that Parks Associates has hosted CONNECTIONS™, the connected home has evolved from a high-end concept toward a mass-market opportunity with incredible revenue potential. Adding connectivity to consumer electronics, security, and home controls has been wildly successful in driving the evolution of the connected home ecosystems into what is now popularly termed the Internet of Things (IoT).

Today, several high-profile market disruptions are emerging as the Internet of Things influences every aspect of the broadband household and connected consumer. Consumers are standing on the threshold of a technology explosion and “post app” era unlike anything we have seen before, and many industries are realizing new revenues generated through cloud-based services, OTT content, and new advertising models.

- More than two-thirds of U.S. broadband households now have an entertainment device connected to the Internet.
- Nearly one-fifth of U.S. broadband households own a smart home device, with nearly 50% planning to buy one in the next 12 months.
- Smartphone ownership is at nearly 90% of all U.S. broadband households, and 58% own both a smartphone and a tablet.

The IoT and connected home vision is a complex mix of safety, security, comfort, convenience, entertainment, personalization, and data-backed intelligence; for two decades, CONNECTIONS™ has explored the best strategies for technologies and businesses to realize this vision for consumers. We especially would like to thank our sponsors, who supported the 20th anniversary of this conference:

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TUESDAY, MAY 24

Welcome to CONNECTIONS™: Disruptions, Engagement, Technology Integration, and New Partnerships for IoT

Stuart Sikes, President of Parks Associates, set the stage with a summary of important consumer technology developments in 2016. He analyzed the top disruptions, trends, consumer engagement strategies and adoption trends, and the impact of technology integration and new partnerships within each ecosystem of the consumer IoT.

Speaker:

Stuart Sikes, President, **Parks Associates**

Key Points

- Home security and energy management are leading drivers to create a smart home experience for consumers.
- The smart home concept has expanded to include entertainment technologies, which are large drivers for new technology services to become part of the home. Right now is an important time to play a role in the smart home industry; the product is one aspect to master, but business models and customer engagement are also important in continuing the growth of the smart home market.
- Twenty years ago, the big question in the tech space was whether or not Microsoft would unseat Netscape. Home networks, PC-to-PC connectivity, and residential gateways were also big topics during that time.
- Smart thermostats cost three to four times more than traditional thermostats, but people are willing to buy them because they're connected and serve a purpose to help save energy. The energy-saving ecosystem can become even more important than the product itself.
- Low familiarity and awareness of these devices are ongoing challenges, even with the increase in device adoption. User experience is the differentiator, along with data that can result in customized experiences for users.

Looking Back – Understanding Growth in the Connected Home Ecosystems

Parks Associates and other industry experts discussed the history of the connected consumer and the emergence of the connected home as the Internet of Things. This session addressed the evolution of connected home technologies and services over the past 20 years, including broadband, home networking, mobility, and connected devices.

Speakers:

- Tricia Parks, CEO, **Parks Associates**
- Duane Paulson, Senior Vice President Product & Market Development, **Nortek Security & Control**

- Dr. Kenneth Wacks, President, Home, Building & Utility Systems

Key Points

- As a video from the 1986 Builder Show clearly demonstrated, the marketing messages and value proposition for smart home solutions have not changed over the past 20 years, but technology has changed, driving costs down and enabling mass-market adoption. Today, technology is a necessary component in marketing the smart home, yet alone it is insufficient in alone demonstrating an actual value to consumers. This is shown when companies sometimes use technology as an excuse for not doing the serious work of marketing and sales.
- Usability is still an obstacle. In his book *The Design of Everyday Things*, author Don Norman highlights the needs for human-centered design. Shortfalls in the technology require humans to figure out how to use products. For example, each hotel alarm clock seems to have a different (nonstandard) interface, requiring the user to relearn operation with each use. We are beginning to embark on the opposite approach, having machines figure out what humans want.
- Applications still need to be perfected for a seamless operation. In the IoT, there are business model problems—no one has learned how to sell this technology on a mass basis. People expect IoT devices to work and look good.
- Aging-in-place is a critical marketplace for IoT as demographics are moving in that direction.
- History shows that successful products get three things right: industrial design, UI/UX, and buzz through marketing and sales. Getting two out of three is nice, but all three are necessary for a product to take off and be successful.
- Sometimes an improvement on an existing product is a disrupter. Nothing sells like pleasure. Entertainment will pick up the newest technology, and then that technology will move into other products. Amazon Echo and Sonos are disrupters. Sonos made multiroom audio affordable. In the past, a multiroom system would cost \$18,000.
- To determine what consumers prefer, companies often have to flood the market with a variety of products. For example, manufacturers displayed dozens of different TVs at CES because they needed to determine which models with which features would resonate with consumers. Making products flexible will help improve sales.
- Natural-language processing will be a game changer. Amazon Echo greatly simplified the user experience and created an experience that resonates with consumers through voice controls. It offers consumers the ease of use that current smart home solutions lack. The product also has great industrial design, UI, and UX, and the company has done a masterful job of creating buzz.
- A combination of problems affects the growth of the smart home, including development of channels, retail, and technologies. Interconnection of products is still one of the biggest problems for the Internet of Things (IoT).

Service Providers and Device Makers: Smart Home Friends or Foes?, *Sponsored by Icontrol Networks*

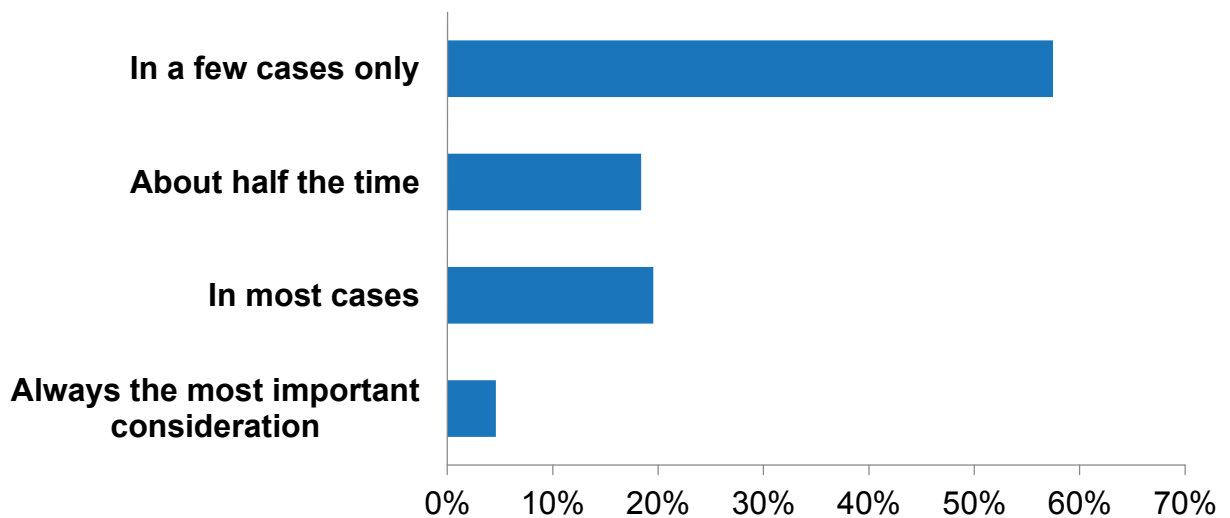
Service providers, including professionally monitored security providers, telcos, and cablecos, have driven implementation of interactive home devices to a larger market. Device makers, using online or retail sales channels, have had some success in gaining consumer awareness.

This DIY (do-it-yourself) market appeals to a small number of consumers but has yet to create large-scale adoption of a “mass market.” Service providers have controlled the configurations offered to markets, but increasingly, consumers insist that single products, such as Nest thermostats, be included in service provider offerings. Do these consumer trends portend a loss of control of service providers over the architectures of their offerings? Will this lead to a change in business models and pricing as well?

This session, sponsored by Icontrol Networks, brought perspectives from service providers and device manufacturers to share how services and technologies are impacting the smart home and connected consumer. The chart below shows the results of a CONNECTIONS™ audience poll regarding their insights on consumer buying behaviors.



Do consumers consider other product and service ecosystems when evaluating a smart home solution?



© Parks Associates

Speakers:

- Amena Ali, SVP and General Manager, **WeatherBug Home**
- Kristine Faulkner, Vice President / General Manager, Home Security & Smart Home, **Cox**
- Scott Harkins, Vice President IoT Partner Programs, **Honeywell Connected Home**

- Letha McLaren, CMO, **Icontrol Networks**

Moderator: Stuart Sikes, President, **Parks Associates**

Key Points

- Business objectives of service providers and device makers are not aligned. As far as consumer awareness, the goals for service providers and device manufacturers are symbiotic in that they are driving awareness for all.
- Peace of mind is a broad value proposition beyond safety, and new solutions could provide information to inform and relieve anxiety, including: weather data, lock status, package delivery, and arrival or departure of home occupants. The industry needs more meaningful notifications and alerts beyond simple remote control, such as imminent appliance malfunctions or high humidity levels in the basement, which are events needing the homeowner's attention.
- Services and standalone devices must coexist. Service providers need the stream of new smart home device owners entering the market through standalone device purchases. DIY device owners need champions and solution providers, like HVAC contractors and security providers, to help DIY solutions work with other platforms.
- Cable TV providers have opportunities to integrate value propositions through their other services, such as delivering smart home notifications through the TV or using the DVR to store networked camera recordings. Services need to ask whether there is a lower level service that they can provide to give consumers a taste of home automation. These new on-ramps, such as on-demand models, are important.
- Consumers are responding positively to compelling standalone devices, but interconnected systems are much more complex. New solutions to satisfy consumers' needs involve technical support and customer service; cable providers, with their large subscriber base, are well positioned to provide these solutions.
- Service providers need to increase the levels of consumer trust, particularly in regards to data privacy and security. While cable companies and telecoms can sometimes have low consumer trust ratings, they are in the strongest position to build-in security from the bottom up.
- Device setup through a service provider or a DIY option both need to exist. Service providers provide awareness about value propositions; people want peace of mind and won't purchase a device if there isn't messaging around that. Video, storage, and the cloud are ways to onramp people to a connected home experience. Price has a place to play in affecting adoption.
- Safety and security are the two value propositions that ring true with customers at this time, but we need to expand on what those mean, and go beyond the call for emergency services scenarios.
- Awareness is still a primary hurdle for consumer adoption of smart home solutions. Consumers remain unaware of value propositions, and what and where to buy.

KEYNOTE – Platform Disruption: Overcoming IoT Adoption Challenges

Daniel Herscovici, Senior Vice President and General Manager of XFINITY Home, discussed the importance of and strategy behind unifying the consumer experience of the Internet of Things. As the use of smart home devices increases, quality customer experiences decrease. This rapid market adoption has the potential to cause industry-wide issues. Daniel discussed the solution—a disruptive platform approach that will set the standard for the future of IoT.

Speaker:

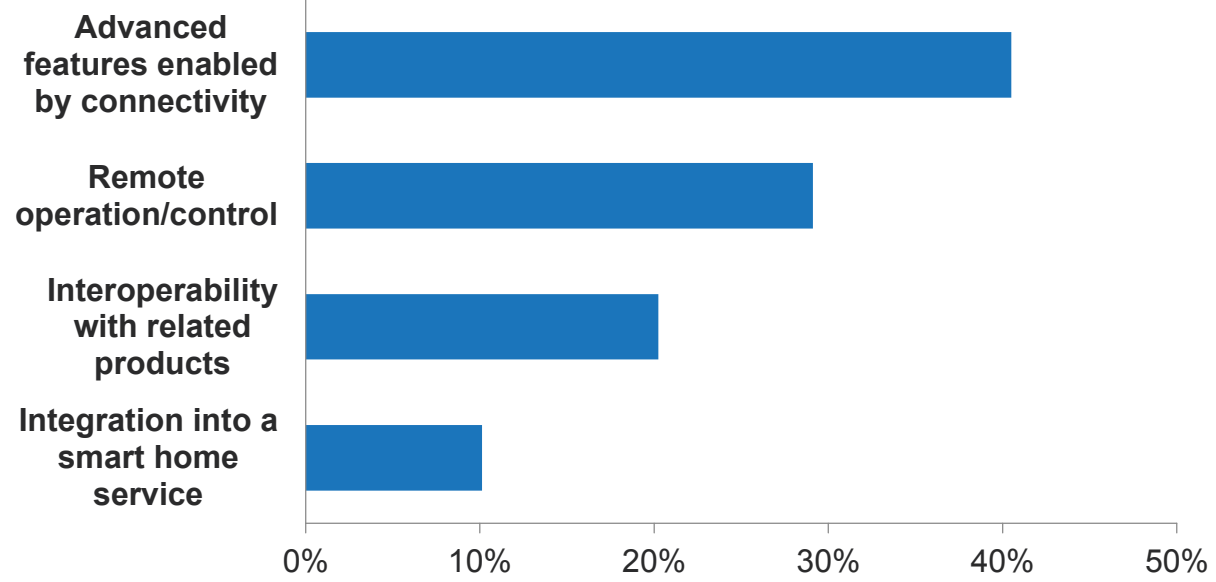
Daniel Herscovici, SVP & GM, Xfinity Home, **Comcast Cable**

Driving Value with New Use Cases in the Smart Home

New categories of connected devices entering broadband households present both a challenge and an opportunity for manufacturers and service providers. The increase in the number of devices and the added complexity of devices are forcing all players in the smart home to make choices and prioritize integration that adds clear value to the consumer. The following two charts show the results of CONNECTIONS™ audience polls on topics key to connected products.

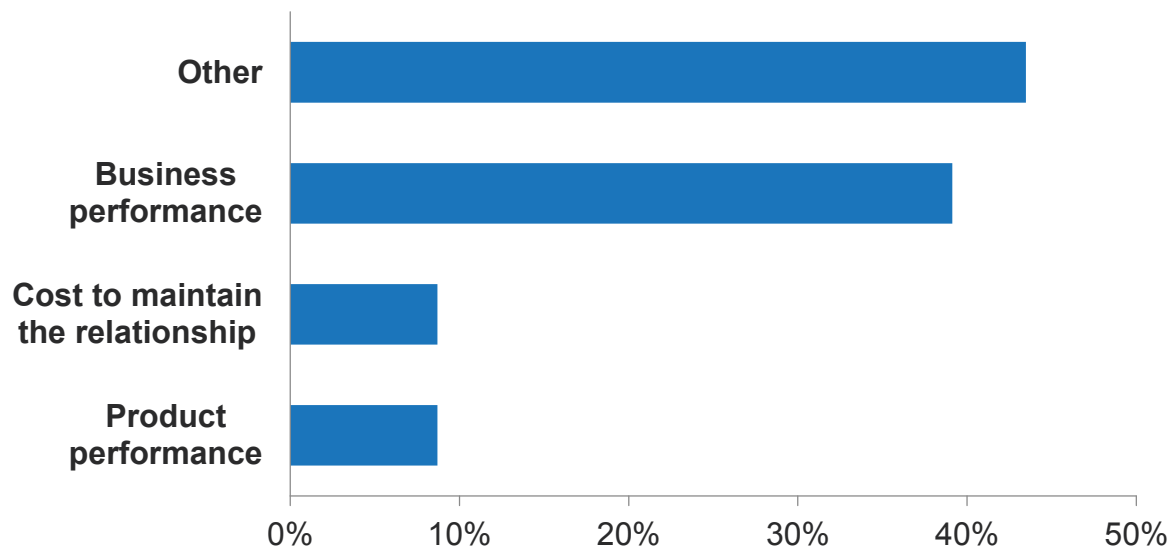


What is the biggest driver of value for connected products?



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What is the biggest challenge to managing partnerships?



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This session examined the value of integration, the challenges in managing partnerships, and the opportunities to simplify and streamline integration.

Speakers:

- Winifred Chang, Director IoT Business Development, **LG Electronics**
- Jay Kenny, Senior Vice President of Marketing, **Alarm.com**
- Curt Schacker, VP, Managing Director, Connected Products, **EVERYTHING**
- Mark Skarpness, Chair of the IoTivity Steering Group, **Open Connectivity Foundation**
- Mike Stauffer, Senior Director of Business Development, Internet of Everything, **Qualcomm Atheros**

Moderator: Tom Kerber, Director, Research, Home Controls & Energy, **Parks Associates**

Key Points

- There are approximately eight connected devices in the average U.S. broadband household, according to Parks Associates.
- The relationship between service providers and device manufacturers must align so that both groups win and develop a symbiotic relationship. Products need to work well together for mass market adoption to occur.

- For the sake of practicality, providers have to constrain the number of solutions. The industry has to find a happy medium between choice and the number of solutions and offerings available.
- Technology should help save time and be easy to use. Interoperability is key for providing value with connected devices. One of the reasons most home devices are not secure is because achieving interoperability with all devices is extremely difficult.
- Industry standards are much more efficient than partnerships in achieving interoperability. One-to-one partnerships are an incredibly time-consuming way to achieve interoperability.
- Insurance companies are looking for other verticals beyond the auto industry. Services such as leak detection and fire prevention offer significant advantages to insurance companies because they can prevent major insurance expenses. The insurance industry could be the dark horse in the connected home space over the next several years.
- Providers and consumers need to see connected devices as a service that comes with the product. People will pay extra money for convenience, such as being able to turn on the AC 20 minutes before getting home.
- For consumers, going through a service provider has several advantages over seeking DIY solutions. A service provider is more secure and reliable; it can keep you safer, while making your home more efficient and providing peace of mind.

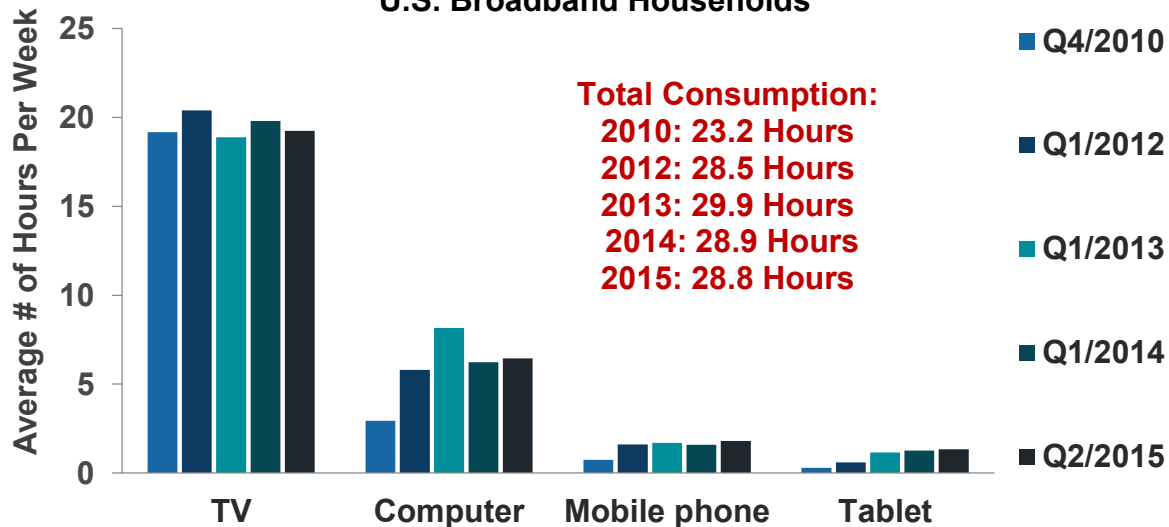
Disruption in Interfaces: Evolving Cloud Services and Content Access

It is no surprise that the way consumers watch video is changing. From viewership on multiple devices to a shift toward non-appointment viewing, consumers want to watch any content anytime, anywhere, and on any screen. In order to keep up with a rapidly evolving viewer base, content providers must focus on providing a seamless user experience between content offerings, services, and devices. A fully converged interface has been difficult to implement, as competing content providers rarely want to share their offerings and data with each other. However, the industry has made some steps in this direction, with pay-TV service providers incorporating streaming services like Netflix into the set-top box interfaces.

The following chart details the video consumption by platform in broadband households, from 2010 to 2015.

Video Consumption by Platform (2010 - 2015)

U.S. Broadband Households



© Parks Associates

This panel examined challenges and opportunities for the pay-TV industry to personalize and enhance the consumer experience.

Speakers:

- Jonathan Beavon, Director Strategy, Video Software & Solutions, **Cisco Systems, Inc.**
- Chris Drake, Vice President, Business Development, **thePlatform**
- John Driver, CEO, **Lynx Technologies**
- Dave Mowrey, VP of Product Management, **Clearleap**
- Scott Williams, EVP Americas, **Piksel**

Moderator: Glenn Hower, Research Analyst, **Parks Associates**

Key Points

- The need for personalization is compounded by the excessive amounts of content available.
- With OTT video services entering into the space, pay-TV services are experiencing a disruption that has not occurred in the recent past. Operators are adapting to the need for robust content discovery to remain competitive.
- Consumers do not really care where their content comes from, only that they can access it on their own terms. Content providers in the space have not played nicely together, so a converged interface that presents consumers with all of their options has not been possible.

IoT: Smart Home and Connected Health Applications

The connected health market represents several interesting use cases that cross over to the smart home industry. Consumers spend less than 1% of their time interacting with the healthcare system (i.e., hospitals, clinics, doctors and health coaches). Home, on the other hand, is where consumers spend the most time with their family, care for themselves and others, and enjoy life—food, drink, exercise, sleep—experiences that also impact their health and well-being.

The leading value propositions for smart home systems today relate to personal and family security, followed by home control and energy management. Many offerings are adding or will add home health, wellness, and aging-in-place solutions.

The opportunity for smart home systems to add connected health solutions is an advantage and a challenge: while these care solutions are considered to be adjacent/synergistic smart home use cases that can afford providers incremental revenues and broaden a smart home system's appeal to end users, they bring a different set of integration challenges and business model questions to the smart home industry. These differences have yet to be fully addressed by smart home players. One thing is clear, however: many providers will leverage their respective smart home platform's capabilities to introduce connected health solutions as value-added services.

This session focused on current developments in connected health and the next steps for a more holistic connected home experience.

Speakers:

- Joe Liu, CEO, **MivaTek / Home8**
- Kian Saneii, Chief Executive Officer, **Independa, Inc**
- Tim Smokoff, Group Vice President, Health & Wellness, **Nortek Security & Control**
- Krijn van der Raadt, Vice President of IT and Software Development, **GreatCall**
- Gene Wang, CEO & Co-founder, **People Power**

Moderator: Harry Wang, Sr. Director, Research, Health & Mobile Product Research, **Parks Associates**

- Massive amounts of information are generated from the digital health industry and not many solutions of how to make the data relevant and actionable. A key question for the healthcare industry is what to do with all of the information created and available as a result of connectivity.
- If you want to sell to millions of customers, sell to the companies that already have tens or hundreds of millions of customers—the insurers.
- The wellness market and the medical market need to be viewed as one market rather than two. The wellness market monitors and informs medical professionals, providers, and insurers to help realize and achieve cost savings in the system as a whole.

- Industry players should be very cautious about the claims they make regarding solution benefits and capabilities, as claims to diagnose or provide medical advice in any way invites regulatory scrutiny.

KEYNOTE – Accelerating Smart Home Adoption through Voice Control and Alexa

Voice control is breaking into the smart home market in a big way. Using voice as a device and application interface enables customers to interact with smart home devices in a more intuitive way and indicates the beginning of the post-app era of consumer engagement. But what are the limits, if any, to a product that provides hands-free interface to the smart home, voice-controlled search, and now voice-controlled banking? This keynote session addressed the role of voice control, as the ecosystem of partners grows and use cases expand across traditionally separate verticals.

Speaker:

David Isbitski, Chief Evangelist Alexa and Echo, **Amazon**

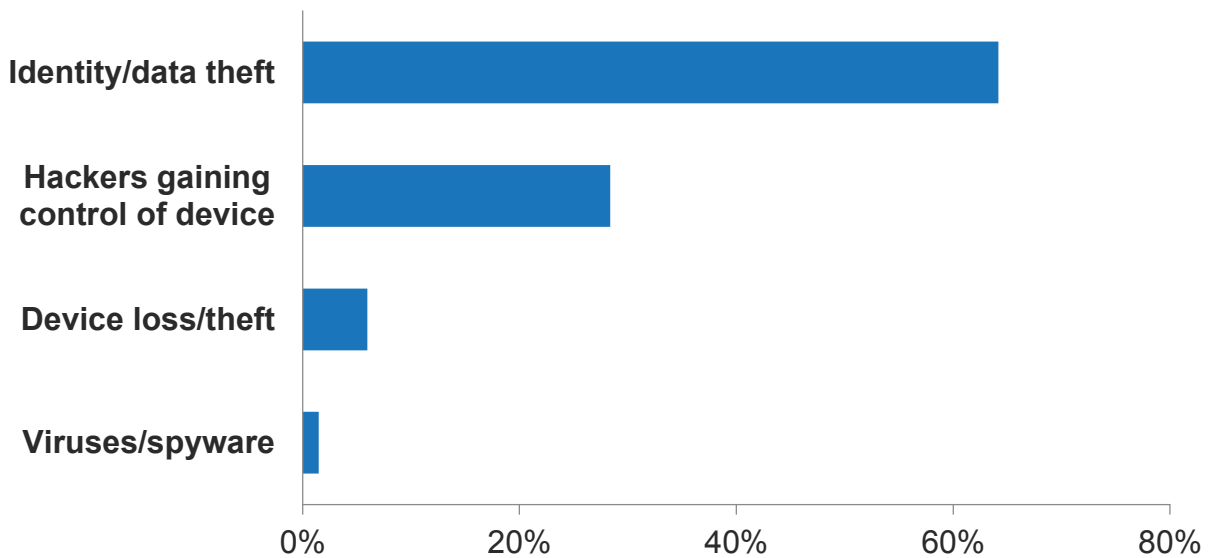
IoT: Protecting the Consumer Experience, *Sponsored by PlumChoice*

Superior product and support experiences are not only critical to drive adoption of new connected products and systems, but they also serve as competitive differentiators among the many brands competing in the IoT space. Consumers who encounter fewer technical problems and service interruptions are significantly more likely to have positive feelings about, and continue to support, a brand.

Parks Associates research shows only 34% of consumers who encountered a problem while setting up their connected device report that they would purchase another product from the same brand, compared to 54% of consumers who did not encounter a problem. As technology brands compete for market share, it is important for companies to remain mindful of changing customer service expectations, and to ensure that these are met or exceeded.

The following chart shows the opinions of the CONNECTIONS™ audience on what most concerns consumers.

What are consumers most concerned about?



© Parks Associates

This session assessed support service models that address current challenges and align customer experiences with expectations. Panelists also discussed new opportunities for service providers to holistically manage the consumer experience.

Speakers:

- Rob Conant, CEO, **Cirrent**
- Lee Gruenfeld, VP of Strategic Initiatives, **Support.com**
- John Kieny, VP, Business Development, **CSS Corp**
- Channing Lai, Director, Product Management, **PlumChoice**
- William Oget, VP of Engineering, **Arrayent**

Moderator: Patrice Samuels, Research Analyst, **Parks Associates**

Key Points:

- Consumers, including early adopters, are more interested in tangible value propositions than they are concerned about device and service security. Usually only in the event of a publicized breach do consumers elevate their security concerns.
- When consumers don't know what to expect and then experience friction and frustration with products, they end up returning them. Twenty minutes to get a product out of the box, set up, and running is unacceptable.

- The smart home is currently in the hands of the tech savvy, who will tolerate pain points as they are more likely to solve problems on their own. Mass-market adopters do not have the time or know-how to solve their tech problems. There needs to be a technology-based solution to effortlessly, and securely, diagnose and fix problems at all levels and through all possible interfaces (e.g., phone, live chat, web, or in person).
- A major differentiator in support services is adding value to support calls. Incorporating customer usage and behavioral data where possible can enhance the customer's experience with their product.
- Assistance for the user at the front-end, when trying to understand options to buy, helps to sell devices and services.
- Conducting user testing allows companies to solve problems before they get into the field. It also allows companies to understand what types of support calls they are likely to receive. Armed with that information, companies can provide simple, straightforward service.
- Consumers will pay for premium support for only a limited time. Therefore, it is necessary to create efficiencies through data analytics. Access to diagnostic and usage data is necessary. Support services need not be considered a cost that must be managed but as an opportunity to retain and acquire new customers.
- Truly superior customer support that includes coaching and proactive consumer engagement may be able to drive recurring revenue of a few dollars per month.

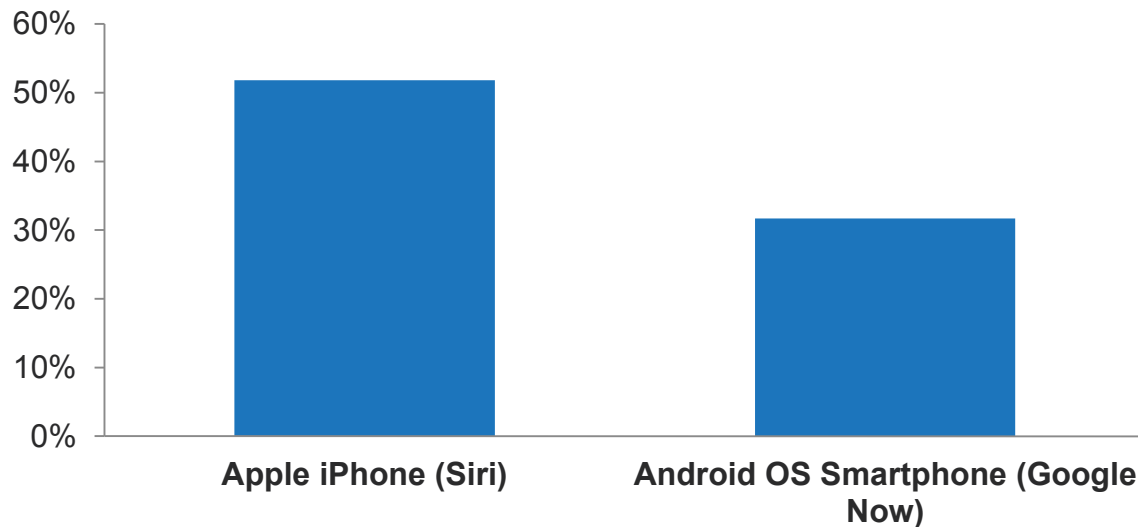
CE Innovations to Navigate Virtual Reality (VR) and Personalize the Content Ecosystem

Industry players have been focused on providing immersive content experiences for years. 3D has not yet been successful, and 4K remains in the early stages of growth. The industry is now looking into virtual reality as a more immersive content experience. VR headsets have the potential to be the hot holiday product in 2016 via releases by Oculus, Sony PlayStation, and HTC.

This panel examined current content strategies; the perspectives of consumers, content providers, and device manufacturers; and how upcoming innovations will impact the relationship between CE and content. This panel also looked at the hype and reality of virtual and augmented reality, the timing of VR devices and services, the appeal of immersive content, and the potential impact of VR on consumer viewing habits.

The following chart of Parks Associates consumer research shows the number of smartphone owners who regularly use the voice recognition feature on their smartphone.

Use of Smartphone Voice Recognition Software U.S. Broadband Households Owning the Specified Smartphone



© 2016 Parks Associates

Speakers:

- Noam Geri, VP Sales & Business Development, U.S., **Giraffic**
- Paul T. Kim, Director, Content & Services, **Samsung**
- Danny Vossen, Director Innovation & Strategic Partnerships, **Technicolor**

Moderator: Barbara Kraus, Director, Research, **Parks Associates**

Key Points:

- VR will have much more staying power than 3D because the VR experience is much more powerful than the 3D experience.
- VR creates an isolated atmosphere more than in AR (augmented reality). While people can connect *virtually* in a VR experience, they can't experience VR together in a *physical* way.
- VR buffering is a big problem in delivery; consumers won't accept a buffered VR experience.
- Consumer education is the biggest hurdle to VR right now. To fully understand the benefit of VR, consumers need to experience VR; currently, ~95% of the population has not tried it yet.

Smart Home: Making Products Interoperable and Easy to Use

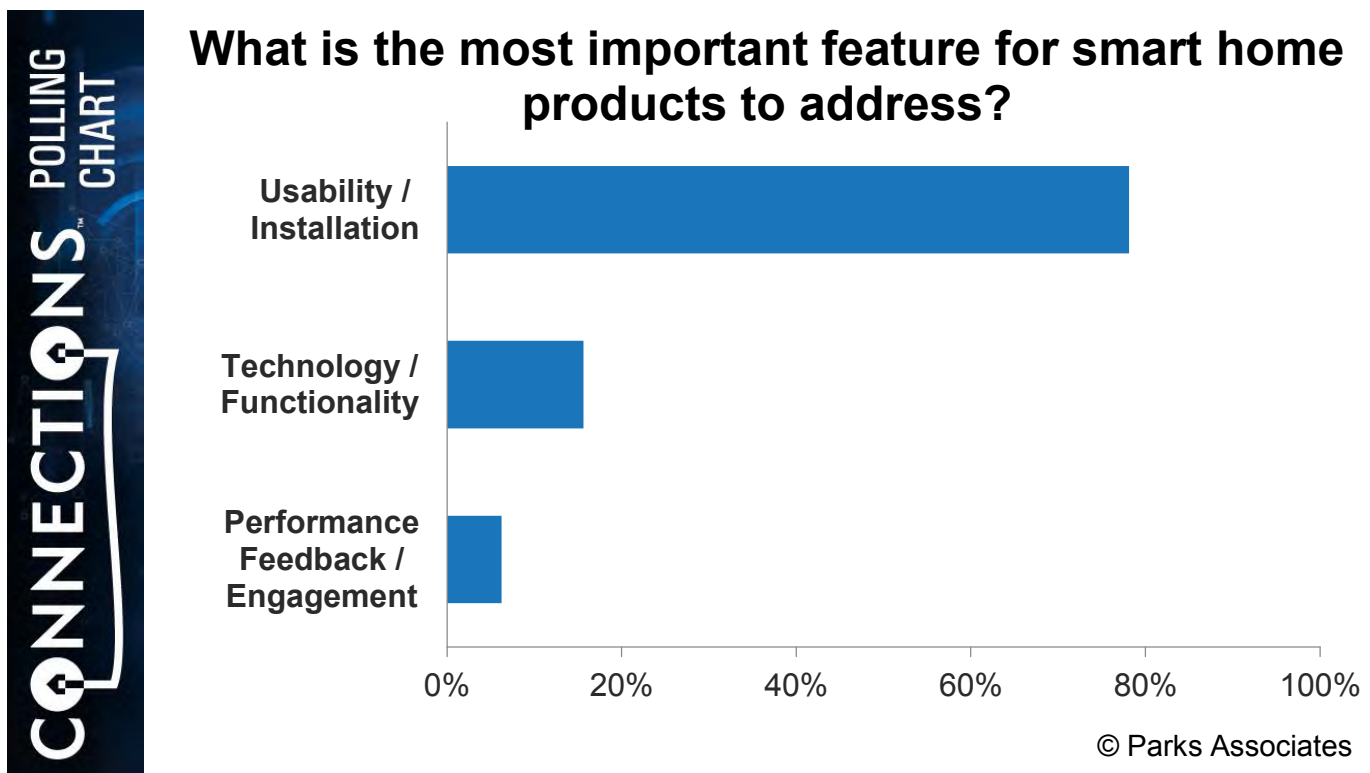
Smart home devices, security systems, and entertainment devices have been developed in different ecosystems by different companies. The variability in form and function inherent in

these systems is becoming more visible as the need to connect disparate smart devices emerges.

Initial interoperability was enabled by network layer technologies including ZigBee, Z-Wave, and INSTEON. Connectivity to the cloud and cloud APIs (Application Programming Interfaces) offer an alternative approach to integrate products, and application interoperability initiatives such as AllJoyn and OCF offer another approach to providing interoperability on a broad scale.

Parks Associates research shows that today, almost two-thirds of smart devices are purchased as part of a security system or smart home ecosystem. Garage doors, smoke detectors, and CO₂ detectors have a legacy in the home as standalone systems but are now being used more as part of a system of some kind. Determining interoperability is more important than ever, as it defines the value proposition for the smart home.

The following chart shows the results of a CONNECTIONS™ audience poll on the most immediate challenge for smart home products.



This panel looked at specific areas to address the interoperability challenge and possible directions for service companies and device manufacturers to take. Speakers discussed the challenges and opportunities associated with providing smart home products that are easy to install, easy to use, interoperable, and secure.

Speakers:

- Erik Davidson, Director of Product Management, **CEL**
- Aditya Pendyala, Head of Growth, **mnuvo**

- Joe Wytanis, Sr. Director & Strategist, Connected Living, Consumer Technology Group, Flex

Moderator: Eddie Accomando, Research Analyst, Parks Associates

Key Points:

- IoT product adoption is inevitable, but devices need to learn how to talk to each other in a simple way. There is no perfect standard for connectivity; the average home has 2-3 different ways to connect products.
- An ideal smart home ecosystem would be a federation of products working together.
- Collaboration with partners is absolutely necessary.

Connected Cars: Innovation and New Consumer Experiences

The connected car market is revving up. Awareness is growing and consumers are increasingly reporting access to connected experiences in the vehicle. Twenty-four percent of car owners in the U.S. report having at least one connected feature built directly into their vehicle, and 31% of car owners who use a smartphone report accessing connected car features through some method of smartphone tethering. Still, usage lags behind the demand; 81% of U.S. car owners with a smartphone want access to at least one connected vehicle feature in their next vehicle.

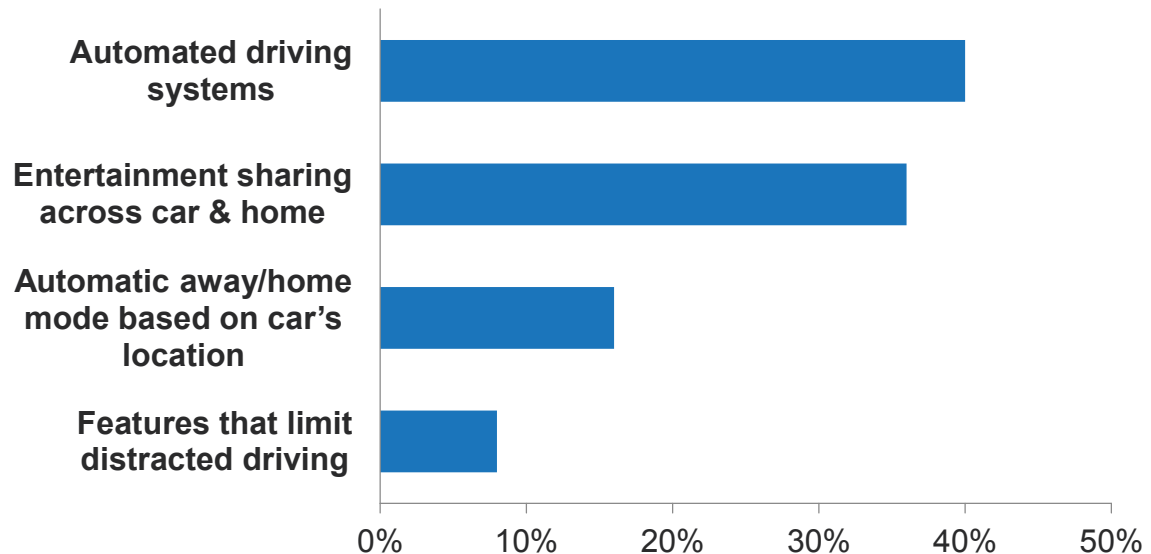
As the market has grown, so has the ecosystem. Auto manufacturers, mobile network operators, aftermarket device manufacturers, and software and service providers from both the auto and mobile industries have vested interests in this space. The auto industry is grappling with how best to evaluate potential partners, and how to respond to new entrants that potentially threaten the auto manufacturer's role in the ecosystem.

At the same time, smart home devices and services have been gaining traction. In many ways, the smart home ecosystem has been growing in parallel with the connected car system. This growth has been enabled by the falling costs of sensors, networking technologies, and data; expanded cloud services; the mass penetration of smartphones; and consumer demand for the connected lifestyle. In 2016, these ecosystems are beginning to converge, in areas such as remote home controls, entertainment on-the-go, and home energy management.

For instance, Parks Associates data from Q1 2015 reveals that 42% of electric vehicle owners in U.S. broadband households finds "*very appealing*" the concept of *a solution that helps optimize their home energy consumption by coordinating the charging of their EV with other energy-consuming appliances in the home.*

The following chart shows insights from a CONNECTIONS™ audience poll on which connected car use cases will gain traction.

Which connected car use cases will gain traction with consumers next?



© Parks Associates

This panel explored current connected vehicle strategies from a variety of industry viewpoints, and provided insight into partnerships that cross the three ecosystems of connected vehicle, mobile, and smart home.

Speakers:

- Matt Bornski, Director and Chief Architect of Enterprise Services, **Wink**
- Navin Ganeshan, Chief Product Officer, **Zubie**
- David Jumpa, Chief Revenue Officer, **Airbiquity, Inc.**
- Diomedes Kastanis, Chief Technology Officer, **Ericsson**

Moderator: Jennifer Kent, Director, Research Quality & Product Development, **Parks Associates**

Key Points:

- Since 80% of cars today are not connected, developing aftermarket hardware is the best strategy to expand the consumer base.
- Adoption and implementation of the connected car ecosystem are far ahead of the adoption and implementation of the smart home market.
- Broadband access in the car can potentially offer surveillance for one's car and home, even for incidents not involving the car itself. For example, owners can see what happened

moments before and after an incident, such as someone bumping into their parked car or breaking into their home.

- When it comes to the connected car, the most important thing for consumers is convenience.
- The next big thing will be implementing Wi-Fi spots into connected cars.
- In order for drivers to share their data, they have to receive something in return. The number of drivers willing to share their driving data has increased dramatically in recent years.
- We are still quite a few years away from autonomous driving. Autonomous driving is inevitable and will ultimately cause a decline in car ownership.
- There will be a tipping point where consumers will look back and be unable to imagine cars without certain connected features, such as how we see cars without seatbelts today.

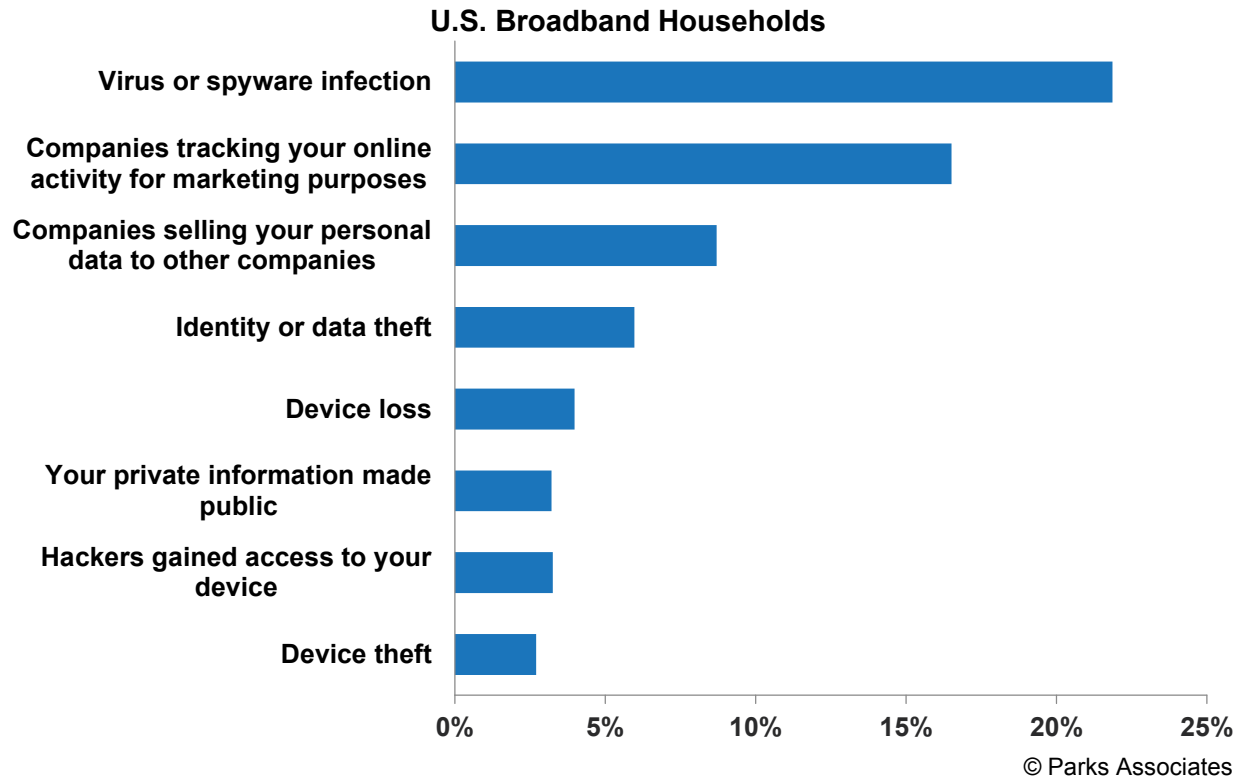
IoT and Smart Home Devices: Privacy and Security

From a consumer perspective, the topics of data privacy and security cover a broad range of potential threats, from spyware to hacking. In Q3 2015, 40% of broadband households had some kind of privacy or security problem in the past 12 months with a connected device. While “virus or spyware infection” topped the list at 22%, “identity or data theft” was indicated by 6% of broadband households.

In the past year, we have heard a national conversation on the use of smartphone encryption and its impact on national security. We have heard criticism of some device makers who rush to market with a minimally viable product, without including adequate security protections at the device level. On the other hand, other device makers are pushing over-the-air firmware and software updates for security patches, encrypting data, and taking intentional steps to minimize unnecessary data gathering. Due to the varying technologies and levels in which companies place importance on privacy and security, industry alliances are at work advocating for and developing security standards they believe are required to secure the future of IoT. Finally, there is a renewed effort to secure the home network, with companies introducing new smart home routers that promise closer vigilance against suspicious activity on the home network, and tighter monitoring controls for all devices using the network.

The following chart shows the frequency of security and privacy issues in U.S. broadband households.

Security/Privacy-Related Problems Experienced in Past 12 Months

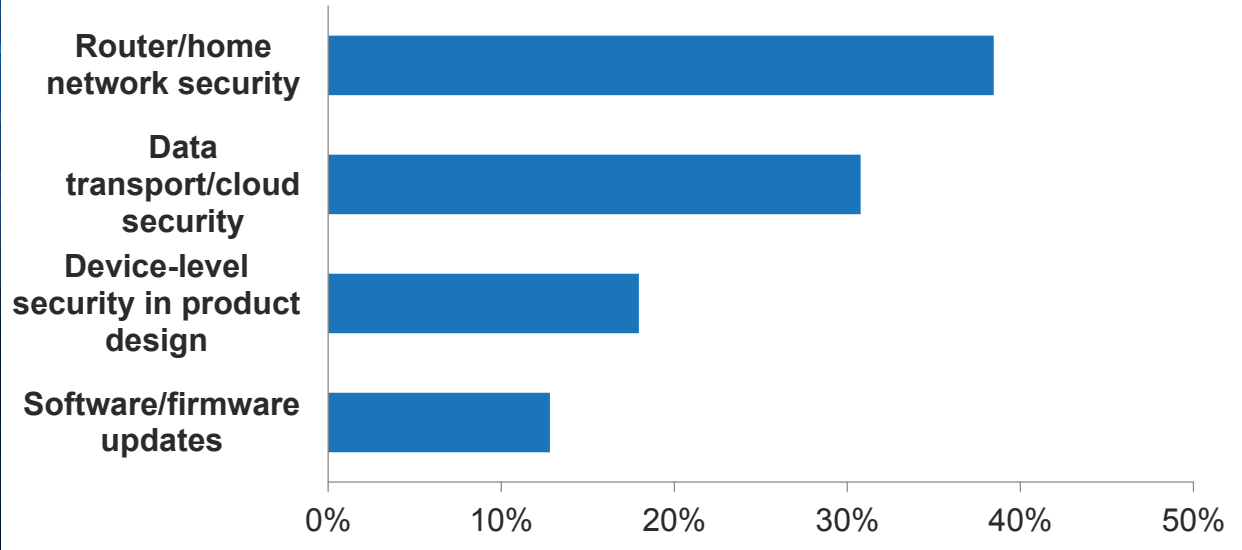


This session addressed the importance of tackling privacy concerns as the smart home enters the next stage of development. Panelists examined the biggest vulnerabilities, steps to implement protective solutions, and strategies to communicate these security measures to the consumer, including the role of the media.

The session featured two audience polls on data security and privacy issues. The following two charts show the results.

CONNECTIONS™ POLLING CHART

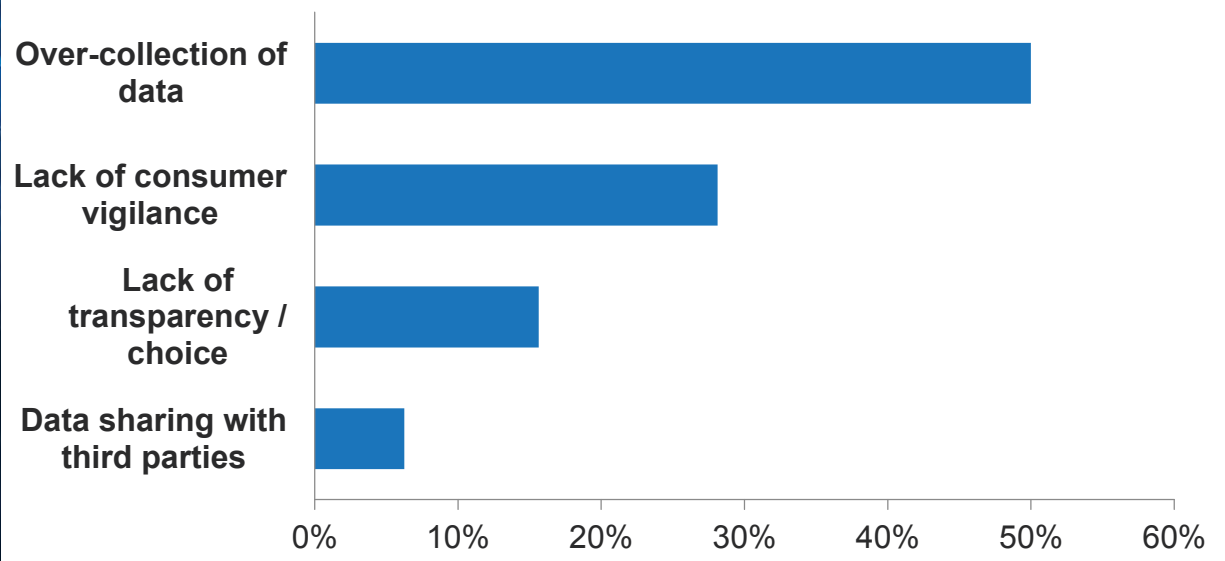
What data security issue causes you the greatest concern for the smart home?



© Parks Associates

CONNECTIONS™ POLLING CHART

What data privacy issue causes you the greatest concern for the smart home?



© Parks Associates

Speakers:

- Adrian Caceres, Co-Founder and CTO, **Ayla Networks**
- Jim Hunter, Chief Scientist and Technology Evangelist, **Greenwave Systems**
- Bruce Snell, Cybersecurity and Privacy Director, **Intel Security**

Moderator: Brad Russell, Research Analyst, **Parks Associates**

Key Points:

- Seventy-six percent of broadband households express concern about connected device security, which can be a barrier to the adoption of devices. There is no “silver bullet” solution; security is an arching system. Devices currently lack security, and the industry is just beginning to take responsibility for these issues.
- Safeguarding consumers is critical for the next stage of smart home adoption. However, with five new threats per second, there will never be a 100% accuracy in safeguarding.
- The way forward is to solve these problems before they become a legal issue. A “Verisign”-like protocol for IoT products is a way to create a standard, which is important to the success of IoT products. Such a protocol will have to be in place before customers begin to trust these products, and then with trust in place, the next obstacle would be to overcome the barrier to mass-market adoption.
- Security standards must change to accommodate changes to devices that have longer lifespans (i.e., connected ovens).
- Every connected device in the home is a potential rogue operator, coming from a security breach in a software update. These devices could cause a lot of damage, since 95% of consumers don’t know how to be secure, or think they don’t need to be secure.

WEDNESDAY, MAY 25

Connected Entertainment in the IoT

Parks Associates Research Directors opened Day Two with an overview of the connected entertainment ecosystems and the connections that make this sector part of the consumer-based IoT.

Speakers:

- Barbara Kraus, Director, Research, **Parks Associates**
- Brett Sappington, Sr. Director, Research, **Parks Associates**

Key Points:

Disruptions continue in the entertainment business. Virtual reality has the potential to have significant impact on many market sectors, particularly those that benefit from immersion and engagement. Despite the recent industry excitement around VR, overall consumer awareness of this technology is low, but retailers are selling out pre-orders of some VR headset models, suggesting that adoption could jump in the near term.

Five percent of U.S. broadband households say that they plan to buy a VR headset by the end of 2016. TV and movie producers, brands, and consumers are starting to create interesting virtual reality and 360-degree content, which will further drive interest, investment, awareness, and adoption. In this session, Parks Associates research directors highlighted the top 10 trends of connected entertainment in the IoT, with VR at the top of the list:

1. Virtual reality
2. Live streaming
3. Voice control
4. Pay TV as the new OTT
5. Devices as smart home controllers
6. Integrated discovery
7. Device makers and streaming services
8. 4K & HDR
9. Privacy and security of data
10. Redefining video game entertainment

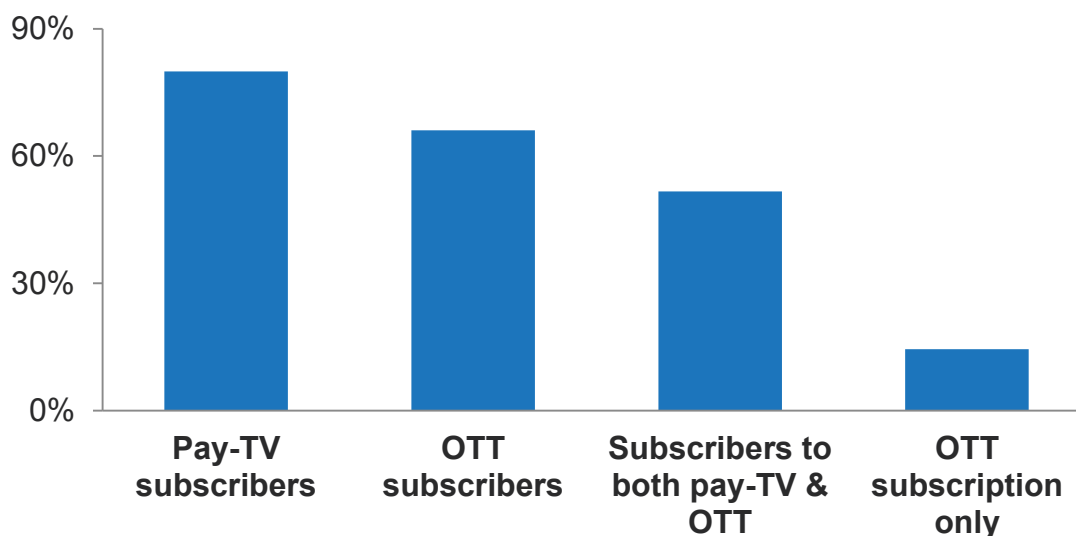
OTT and the Transformation of Pay TV

The number of OTT video services has increased substantially in North America, Western Europe, and other markets over the past year. The number of new services launched per year has accelerated since 2013. In 2015, the U.S. market experienced a 50% increase in the

number of new services introduced to consumers. The success and expansion of Netflix and other industry leaders have spurred additional competition rather than discouraged it.

Pay-TV providers feel the impact of OTT video services on both subscriptions and ARPUs. Penetration of pay-TV services in the U.S. market have declined slowly over the past few years as OTT subscription penetration has increased. A substantial percentage of consumers downgrading their pay-TV package claim that Netflix and similar services have influenced their subscription decisions. Several operators have responded with OTT video services of their own. Many introduced online versions of their pay-TV offering, ranging from a full replication online to a trimmed down version of their standard channel packages. This session examined trends and issues in the OTT/pay-TV space and assessed the future for the industry in 2016 and beyond. The following chart shows pay-TV and OTT penetration among all broadband households.

Pay-TV and OTT Penetration U.S. Broadband Households



© Parks Associates

Speakers:

- Andy Chambers, VP, Connected Home, **Assurant Solutions**
- Mike Fisher, Vice President, Product Strategy & Business Development, **BrightLine**
- Michael Hawkey, SVP & General Manager - Discovery Business Group, **Rovi**
- Arlen Marmel, VP of Marketing and Distribution, **Ellation**
- Elisabetta Romano, Vice President and Head of TV & Media, **Ericsson**

Moderator: Brett Sappington, Sr. Director, Research, **Parks Associates**

Key Points:

- Nearly one-quarter of millennials have an OTT subscription and no pay-TV service.

- There is an acceleration of services available in the market and a growing number of consumers dropping their pay-TV service in favor of only an OTT subscription.
- New media challengers include Twitter and the NFL. They have partnered to stream live football games, giving consumers more reason to drop pay-TV services.
- Pay-TV providers should not panic yet. Cable knows the cycle of disruption in this space because they were the original disruptors. Also, linear video has never been a hugely profitable industry.
- Technology itself is changing, moving from broadcast to unicast.
- Skinny bundles are a new selling strategy for providers, but they do not solve all of the problems for consumers in paying for only the content/channels they want.
- The technology today to search video catalogs, libraries, etc., is available; the key is finding a way to legally provide that content to the consumer.

KEYNOTE – Being the Service Provider of the Future

Speaker:

Rob Comstock, Executive Vice President, Operations, **Cablevision Systems Corporation**

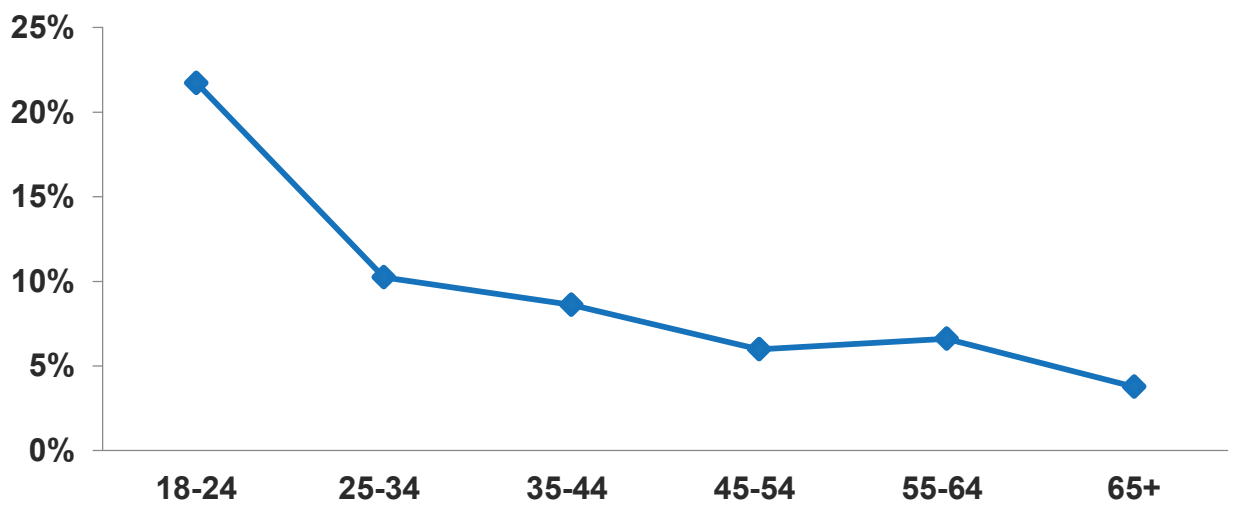
Risky Business: Piracy and Protecting Content in an OTT World

From BitTorrent to VPN use to sharing passwords, video piracy has evolved in the era of OTT video. Strict and compartmentalized DRM systems had to give way to device-agnostic multi-DRM systems in order to satiate a mobile consumer who is ever-hungry for more video to consume. Younger consumers report sharing passwords for OTT services at a disproportionately higher rate than older consumers, making it a demographic of high concern to content providers. However, the industry has done little to police password sharing, instead taking an attitude of tacit acceptance. As the premium video space expands to IP through network-provided apps and TV everywhere services, the industry may have more revenue than ever to lose from single-authentication credentials.

This session examined DRM systems, the prevalence of credential swapping, and piracy versus the value of a superior user experience.

The following chart shows the use of OTT service subscriptions paid by someone outside the home, by age of the user. The audience poll for this session, in the second chart, asked CONNECTIONS™ attendees about their habits when they miss a TV episode.

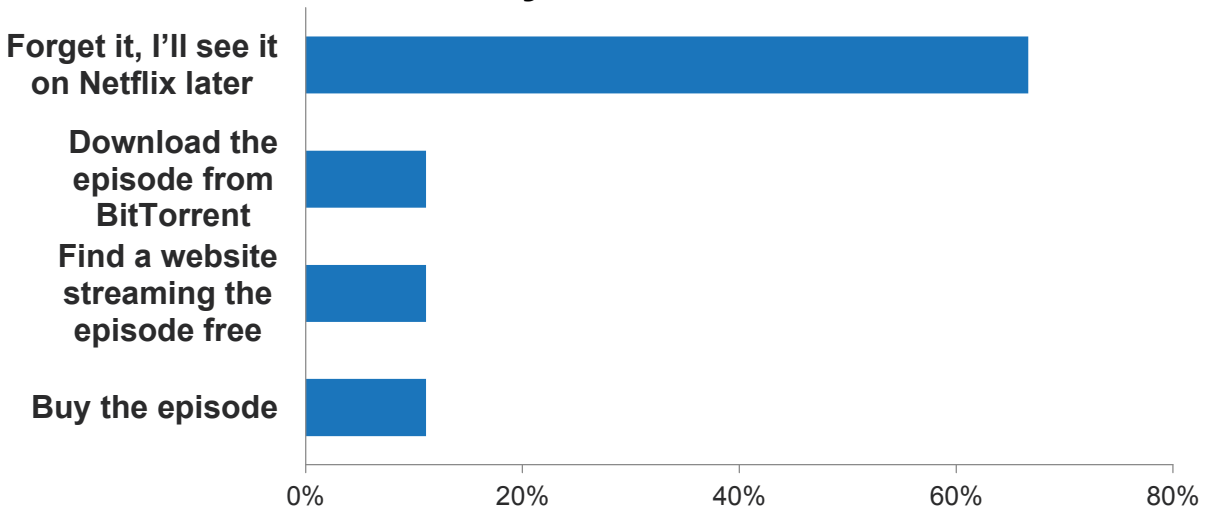
Use of OTT Service Subscription Paid by Someone Outside the Home



© Parks Associates

CONNECTIONS™ POLLING CHART

When you miss a current TV series episode, what do you do?



© Parks Associates

Speakers:

- Shane Keats, Director of Industry Marketing, Media and Entertainment, **Akamai Technologies**
- Paul Moroney, SVP Advanced Technology, **Arris**
- Petr Peterka, Chief Technology Officer, **Verimatrix**
- Mitch Singer, President, **Digital Entertainment Content Ecosystem**
- Robin Wilson, VP Business Development, **NAGRA**

Moderator: Glenn Hower, Research Analyst, **Parks Associates**

Key Points:

- The use of OTT service subscriptions paid by someone outside the home is far more prevalent among younger demographics.
- The technologies that make OTT services so popular today also make pirating much easier.
- Parks Associates estimates the potential revenue lost by piracy could reach \$550 billion by 2019.
- Audio watermarks that prevent a pirated movie from playing do exist, but watermarking in this way has not become a mainstream technology because services won't adopt it unless their competitors adopt it.
- The industry has a mixed approach towards password sharing. Some OTT providers restrict usage to a single stream per account, but others turn a blind eye in order to promote their service.
- Encryption efforts date back to 1998, but the industry has failed to stop piracy for three reasons:
 1. Legal: the U.S. has poor enforcement mechanisms overseas, so piracy sites set up in markets with lax regulations or little U.S. legal reach.
 2. Technology: the encryption we use today will be hacked by tomorrow's tools. To keep content from being pirated, we need to be 100% successful, and that's not possible.
 3. Behavioral: to combat piracy, we would need a big shift in consumer expectations away from the notion that online content should be free.
- The video industry needs to give consumers ways to access content legally, with the right balance of good pricing and good choices.
- The best approach to countering piracy is to encrypt all the way to the screen and to watermark certain pieces of content.

Seamless Interoperability: IoT and Smart Home

Changes in the interoperability landscape are heating up. Over the last year or so, a number of new technologies have entered the market, and new alliances have formed. ZigBee 3.0 has now been implemented, uniting the different application profiles under a common umbrella.

ZigBee also announced an alliance with EnOcean to implement energy harvesting technology. ZigBee has also agreed to offer the ZigBee application library to Thread devices.

In addition, announcements about Bluetooth Mesh and Bluetooth IP, and the Wi-Fi HaLow are adding another layer of complexity to the choice of networking protocol to implement. The decision is especially interesting for manufacturers of constrained devices (battery-powered products with little processing capability).

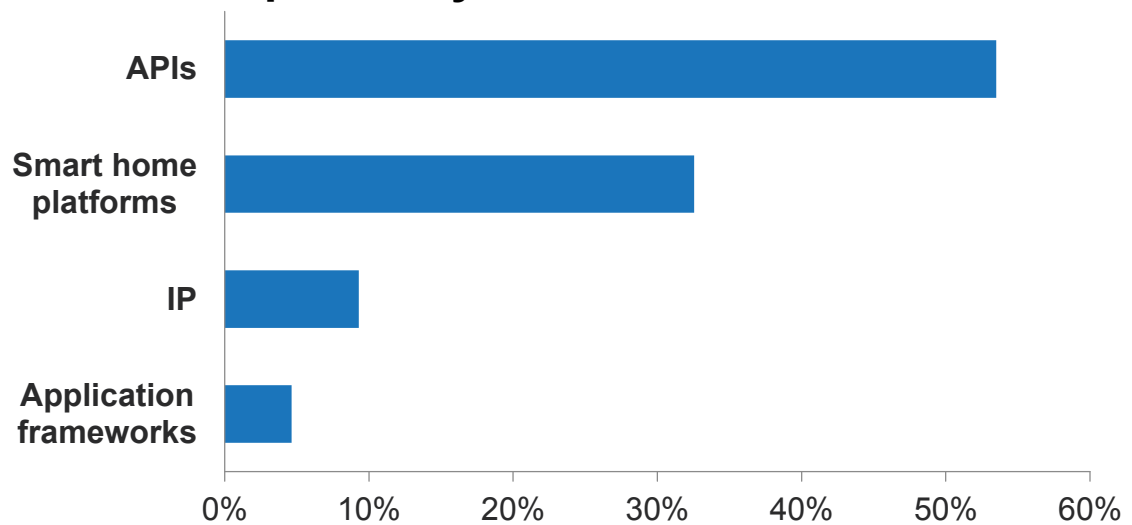
Concurrently, multiple companies are increasing interoperability in various ways:

- Apple HomeKit is adding partners
- Google announced Brillo and Weave
- Nest announced Nest Weave
- AllSeen Alliance and Open Interconnect Consortium have seen strong growth in membership

The following two charts show the results of CONNECTIONS™ audience polls regarding interoperability issues.

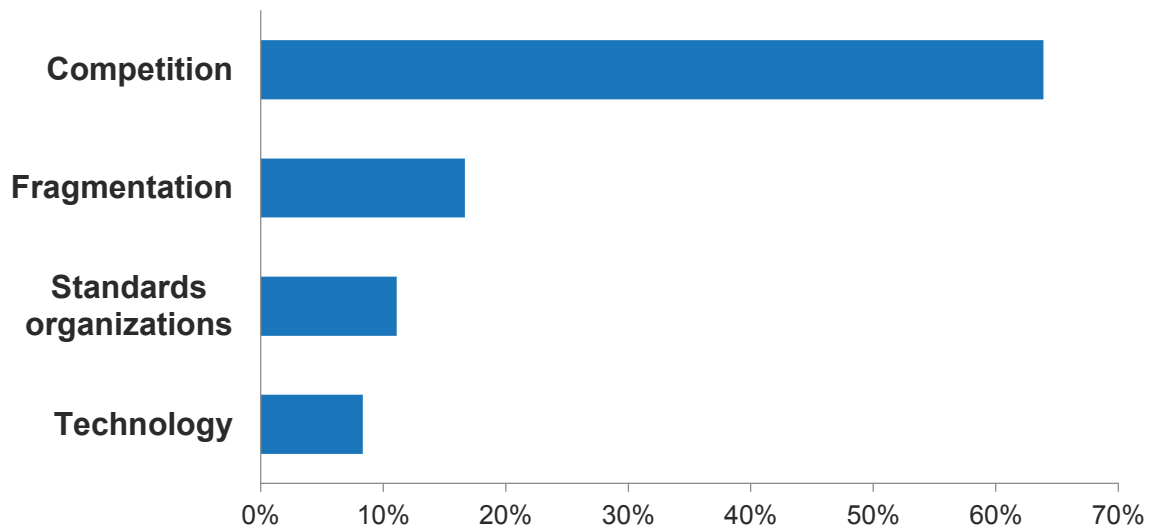


What will be the common layer that enables interoperability between networks?



© Parks Associates

Why is interoperability so difficult?



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This panel discussed the rapidly changing landscape of technology and application interoperability solutions, including the following items:

- Network layer competition – ZigBee 3.0, Z-Wave, DECT ULE, Thread, Bluetooth Low Energy, Wi-Fi HaLow
- The impact of application layer interoperability efforts on network layer competition

Speakers:

- Avi Barel, Business Development Director, **ULE Alliance**
- Mike Harris, CEO, **Zonoff**
- Daniel Moneta, Chairman of the Marketing Working Group, **ZigBee Alliance**
- Kevin Robinson, VP Marketing, **Wi-Fi Alliance**
- Bill Scheffler, Director of NA Sales and Business Development, **Sigma Designs / Z-Wave**

Moderator: Tom Kerber, Director, Research, Home Controls & Energy, **Parks Associates**

Key Points:

- The connected home landscape is getting more complex, and the true challenge is offering products that simply work together when purchased.
- In a session poll, the audience at CONNECTIONS™ 2016 indicated that APIs are the means for establishing interoperability.

- Competitive forces are the primary reason that companies have not already created more interoperability between products. Solutions are focused on end consumer needs. Since consumers have different needs, technology solution sets will vary, making it more challenging to create interoperability.

Smart Home Devices: Changing Business Models

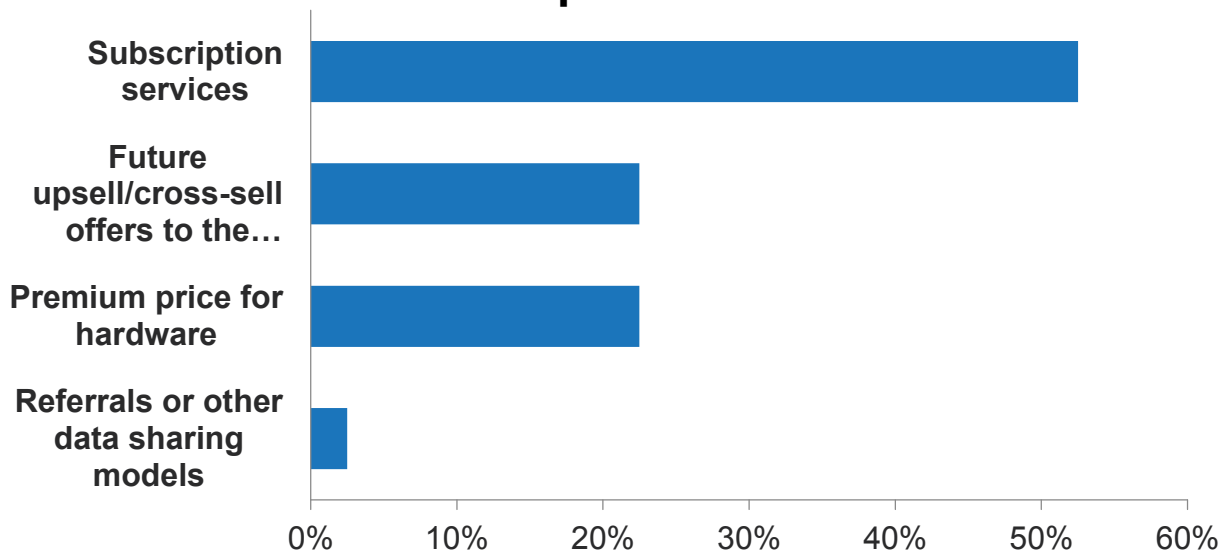
Smart home devices are taking a number of paths to market, namely as standalone devices, as elements of professional security systems, or as elements of smart home control platforms. As more options develop for integrating self-installed standalone devices with monitored security systems and smart control platforms, these paths for some devices may converge as they mature in the marketplace. Traditionally, business models have centered on hardware purchases or recurring monthly fees; now, the data generated by smart devices and the longevity of relationships with the consumer afforded by connectivity have opened up new revenue opportunities.

While the desire for peace of mind and personal safety has historically been the leading driver of smart home device purchases, consumer intentions for smart home devices they expect to purchase in 2016 are shifting somewhat. An increasing percentage of those intending to purchase a smart home device believe they will acquire their devices as part of a home *control* system, rather than as part of a home *security* system.

The following two charts show the results of CONNECTIONS™ audience polls for this session.

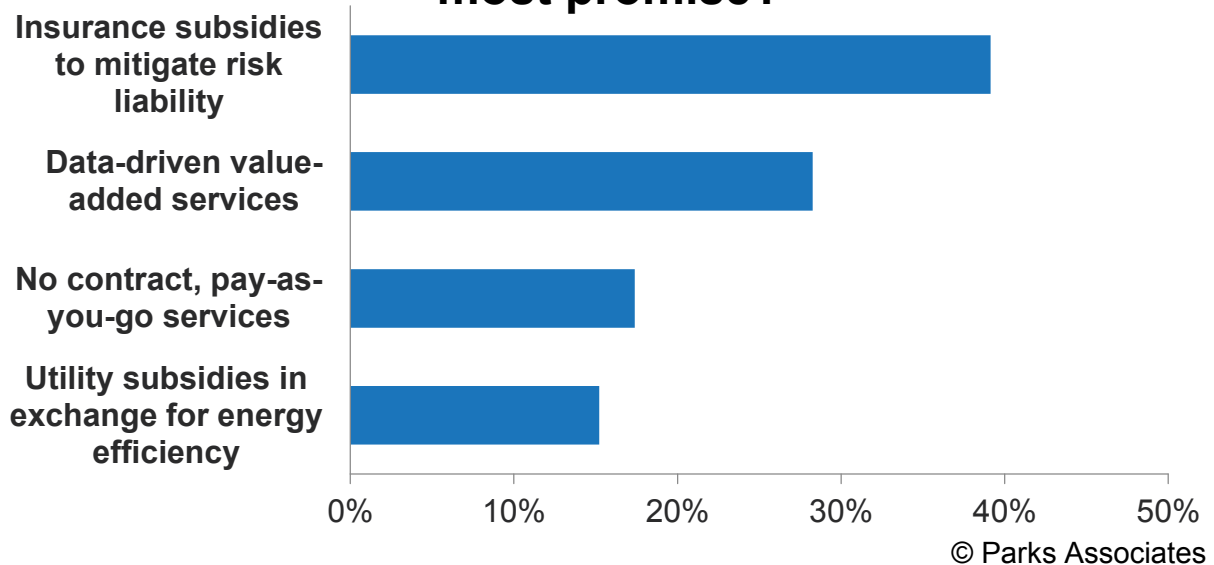


How is the added value of smart devices best captured?



© Parks Associates

Other than hardware purchase and recurring contract fees, what other business models offer the most promise?



Current owners of smart home devices purchase such devices when acquiring or upgrading a security system, more often than purchase intenders believe they may purchase them. For example, 62% of owners of door locks acquired them as part of a home security system. Among purchase intenders, however, only 32% plan to acquire door locks as part of a security system. This shift from home security to home control is likely influenced by the growing awareness of home control and self-installable products.

This panel examined the ongoing evolution of business models in security, controls, automation, and energy. Speakers discussed the various business model implications and opportunities for these paths to market.

Speakers:

- David Carter, Co-Founder and CEO, **WiZR**
- Duane Paulson, Senior Vice President Product & Market Development, **Nortek Security & Control**
- Brandon Ridenour, Chief Technology Officer, **HomeAdvisor, Inc.**
- Nate Williams, Chief Revenue Officer, **August Home Inc.**
- Brett Worthington, VP of Global Business Development and Partnerships, **SmartThings**

Moderator: Brad Russell, Research Analyst, **Parks Associates**

Key Points:

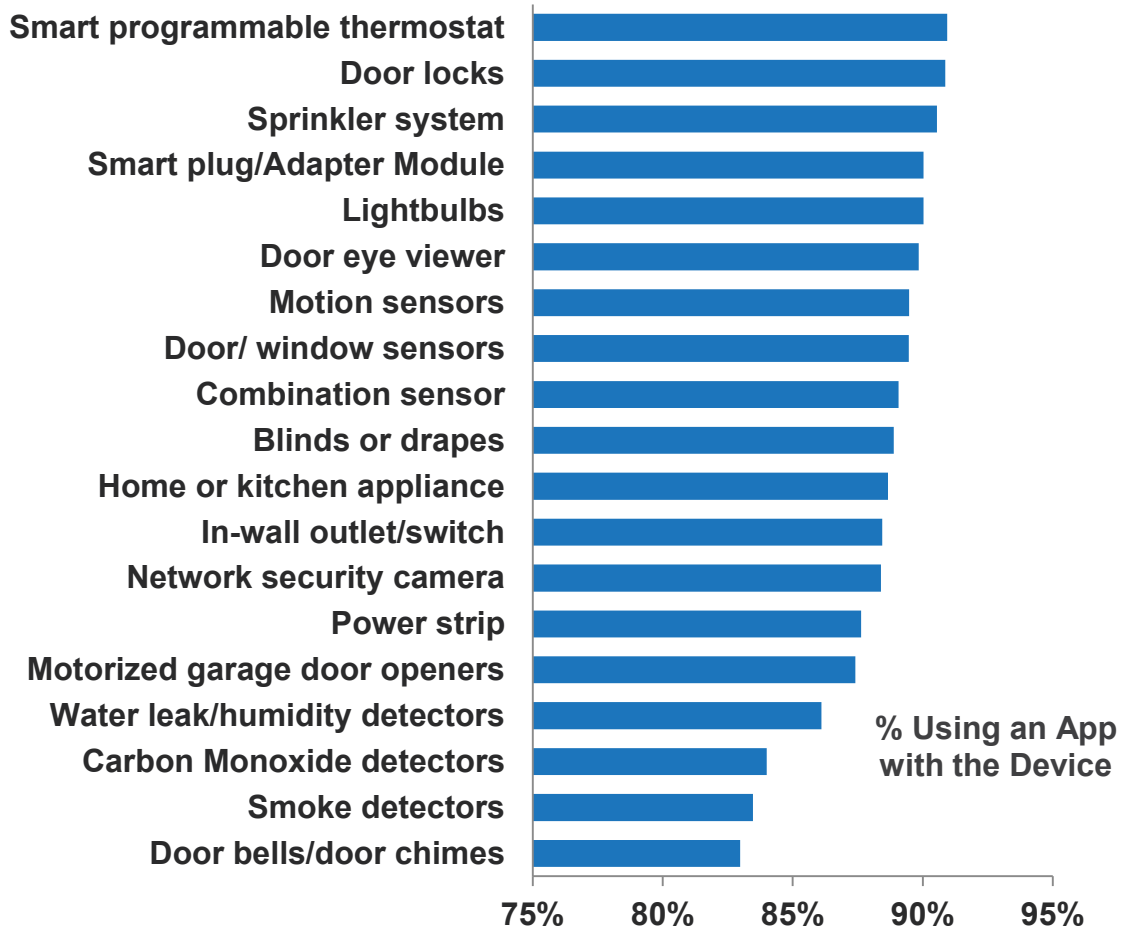
- IoT apps will be geared more towards interaction with connected devices rather than with people. Sensors are being deployed throughout the home, with about seven devices per home.
- Point solutions are now gaining traction through connected homes.
- A strong do-it-for-me (versus do-it-yourself) segment is emerging among U.S. households.
- The appealing use cases for the smart home are “save me money” and “keep me safe.”
- AAA expects driverless cars to impact the auto industry significantly over the next 25 years, so they, along with other insurance companies, are looking for other verticals to expand services and revenue beyond auto insurance.
- Creative business models and partnerships can help bridge the gap between early adopter and mass market, including:
 - Customer support services providing a level of handholding to stitch the pieces together while the technologies used in the industry are not perfect.
 - Industry players focusing on cost reduction vs. revenue enhancement.
 - Brands focusing on selling solutions, not the technologies.

Smartphone Apps and APIs: Lifeline for the Connected Consumer

The world already has more than two billion smartphone users, and in the U.S., more than 80% of households are smartphone households. These data bode well for adoption of connected devices that use an app as the main interface for user control and management of smart home devices.

Parks Associates' survey data shows that more than 80% of the smart home device owners who are also smartphone users already use an app to operate these devices, as detailed in the chart below.

Using Apps with Smart Home Devices Smartphone/Tablet Users Who Also Own Specified Smart Home Devices



© Parks Associates

However, the smart home market is still nascent and undergoing tremendous change and transformation. The growing interest in the smart home space has resulted in a large number of players entering the smart home ecosystem with their own devices, platforms, and solutions. This has led to a highly fragmented marketplace.

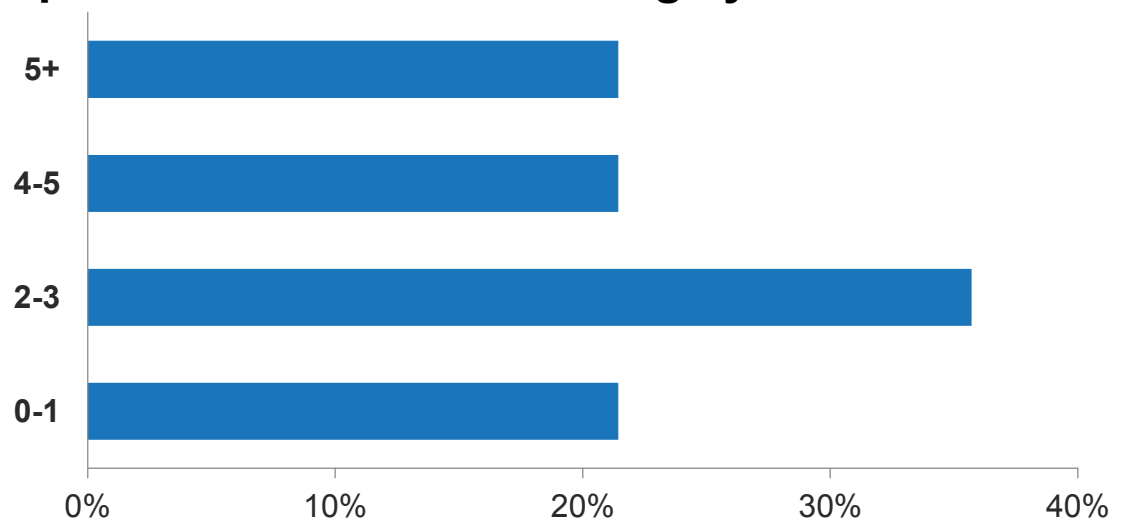
Most consumers start their smart home journey with a single smart device that addresses a specific pain point. Parks Associates believes that the value proposition of the smart home will evolve from point solutions to service-driven solutions over time. The app-enabled smart home user experiences would be an entry point in which smart home players could integrate service components with a device experience.

One of the key challenges to delivering a seamless, integrated, and cross-device smart home service experience is interoperability. It is imperative that connected devices can exchange data among themselves as well as with third-party applications and services, without being hampered by a bevy of communication protocols and data exchange approaches that do not integrate well.

Application Programming Interfaces (APIs) are a central enabler for a vast majority of these interoperability solutions. An API consists of a series of software codes that connect two different applications (hence the “interface”) to enable functions such as extracting data, displaying information, delivering services, and processing payments, among others. APIs allow creation of entirely new experiences by abstracting away the details of integrating devices and applications in a way that makes it easier to exchange data. APIs can connect one device to another, as well as let devices “talk” to applications and services. In addition, APIs can achieve these integrations with or without the use of a hub or gateway. The API has proven to be a disruptive force in other industry sectors, and promises to do the same in the smart home sector. The following chart shows the usage of smart home apps among CONNECTIONS™ attendees.

CONNECTIONS™ POLLING CHART

How many individual apps do you use on your phone to control and manage your home?



© Parks Associates

This session examined the consumer relationship with the smartphone and how apps, APIs, and smart home and connected entertainment solutions are adjusting to its ubiquity. Speakers discussed the growing control functionality of the smartphone and its integration into every ecosystem of the IoT.

Speakers:

- Kent Dickson, Co-founder and CEO, **Yonomi**
- Kimmo Ruotoistenmäki, CEO and co-founder, **Cozify**
- Matt Swatsky, Director of Product Management, **Lutron**
- Justin Wong, VP Business Development, **IFTTT Inc.**

Moderator: Harry Wang, Sr. Director, Research, Health & Mobile Product Research, **Parks Associates**

Key Points:

- Ultimately, end users want control over devices *virtually* in much the same way they do so *physically*. The industry needs to meet consumers wherever they are—voice, wearables, etc. By defining and detecting user intent, companies can develop APIs to provide specific context to what they're doing with the device.
- There's a real cost associated with partnerships, and the integration work that comes with it. Brands have to be selective with their partnership efforts.
- The smartphone combines computing power, communication radios, and sensors; smart home players should use the ubiquitous smartphone as an infrastructure for the smart home.
- Device makers likely have sensor data which is valuable to others in ways the manufacturer does not see. Device makers need to find the balance between publishing too much and too little data for use by others.

Security Innovations: Expanding the Smart Home Experience

Protection of loved ones and property consistently rank on top of the list of potential smart home value propositions. The security industry has been serving this market and addressing this core need for several decades.

The addition of connectivity, interactive services, and home control products has expanded the value proposition and is attracting new subscribers to the security market. The security market is experiencing strong growth in both RMR and subscribers as a result.

Connectivity also enables substitutes and alternatives. Lower-cost substitutes for security are entering the market in greater numbers. Individual products that provide peace of mind and address the root need for safety and security are opening the market, addressing the 70% of homes that will not be served by the security industry. The products are lower-cost because they are predominantly self-installed and self-monitored.

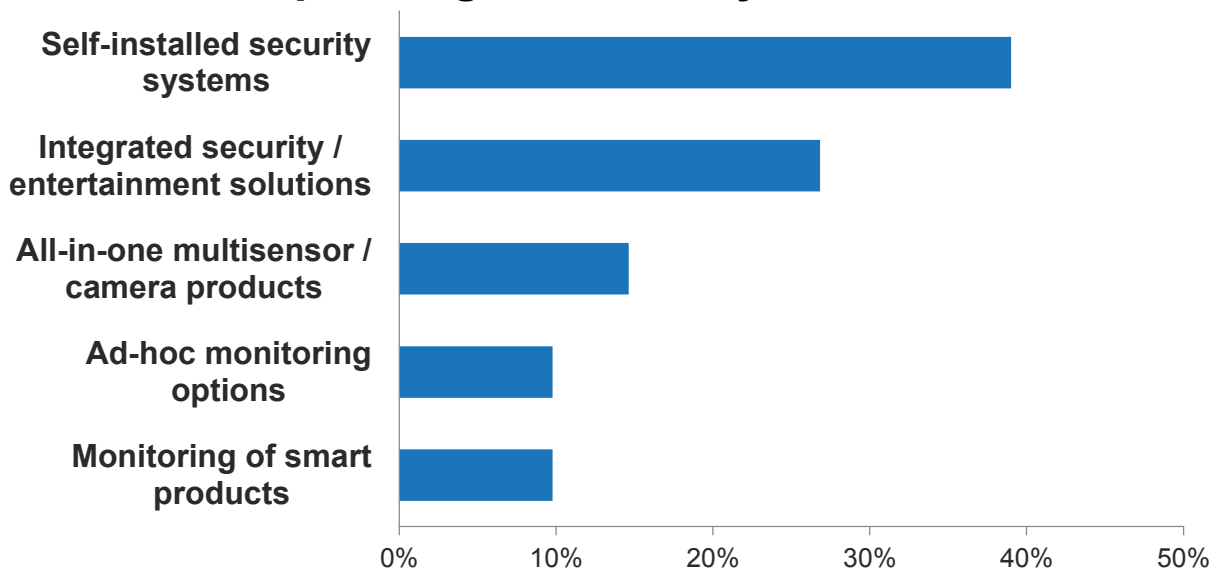
In addition, the security industry is experimenting with hybrid business models that include self-installed equipment and optional or ad-hoc professional monitoring services. In addition, ADT recently announced its Canopy service, which will allow smart products to be professionally monitored.

Innovation in the smart home industry is not limited to security-centric offerings. Broadband providers and home entertainment system manufacturers are offering solutions that bridge security and entertainment, leveraging customer premise equipment to deliver new use cases and value to consumers.

This session included three audience polls on the security market, innovations, and crossover opportunities. The results are in the following three charts.



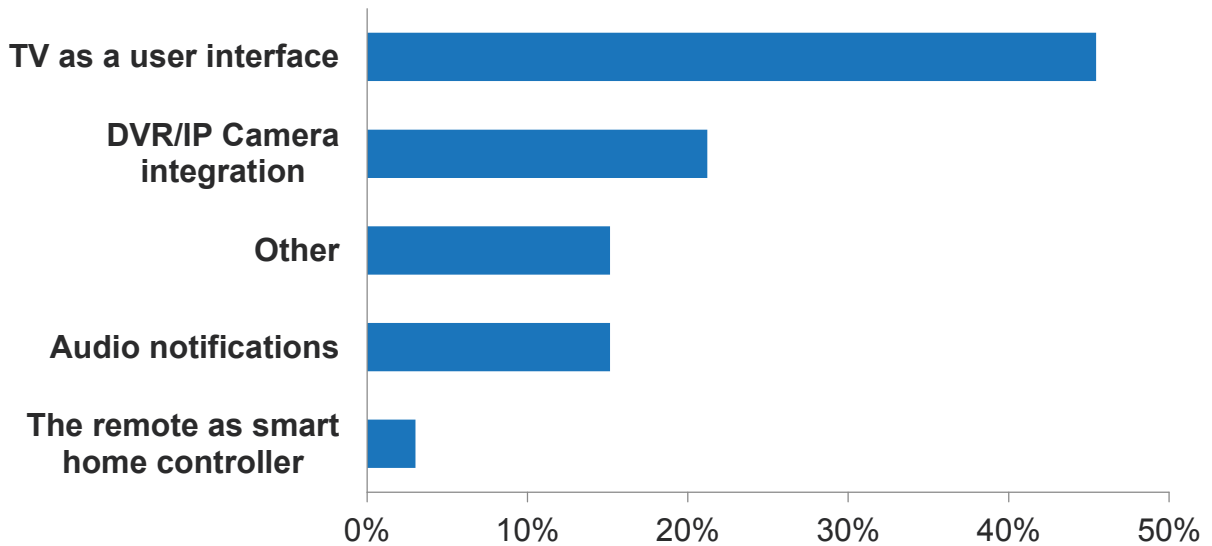
Which innovation will have the biggest impact on expanding the security market?



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CONNECTIONS™ POLLING CHART

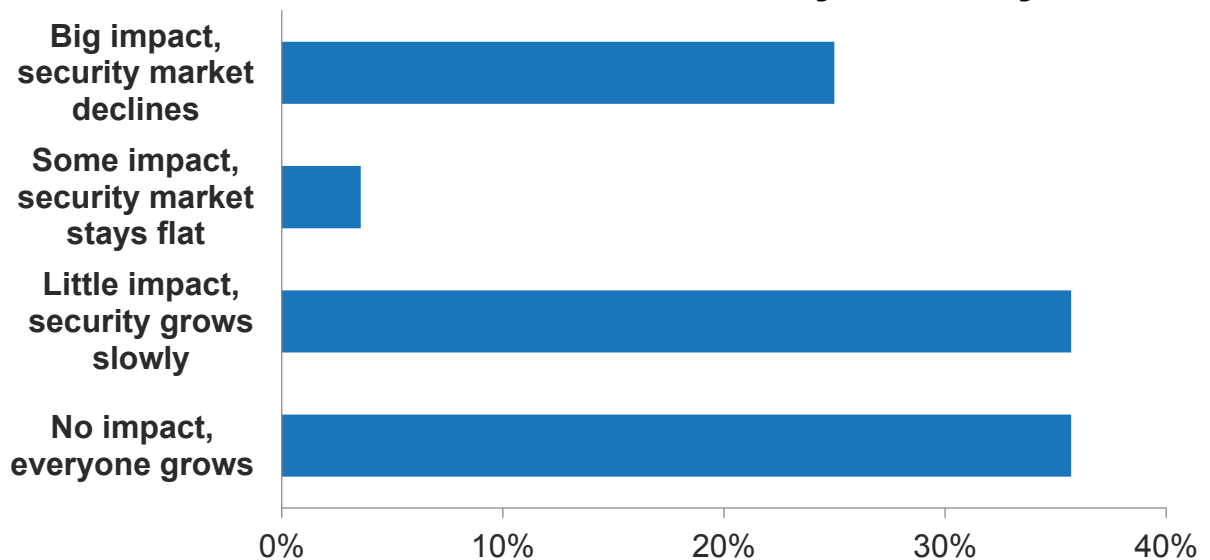
What are the biggest crossover opportunities between smart home and entertainment products?



© Parks Associates

CONNECTIONS™ POLLING CHART

What is the impact of security substitutes and lower-cost alternatives on the security industry?



© Parks Associates

This panel examined product and service innovations driving growth in the security industry and the smart home.

Speakers:

- Vincent Borel, Director of New Ventures, **Logitech**
- R.K. Gopinath, Executive Director, Products - Smart & Connected Home, **Cox Communications**
- Denis Noel, Lead Product Manager, IoT Security, **NXP Semiconductors**
- Chris Rill, Co-founder and CTO, **Canary**
- Larry Waxman, President & CEO, **leakSMART**
- Ohad Zeira, Director, Consumer IoT, **Verizon**

Moderator: Tom Kerber, Director, Research, Home Controls & Energy, **Parks Associates**

Key Points:

- Both self-installed security systems and systems that integrate security and entertainment will have the biggest impact on expanding the security market, according to the audience poll. Integrating these two technologies will create crossover opportunities, with the TV as a user interface.
- Security is still a small market. There are many paths that it could take in regards to smart home integration.
- Point solutions are key. Customers want to buy devices that solve problems and have those devices work together. They are not in the market for a “smart home” per se.
- On-demand security monitoring as an alternative business model risks some market cannibalization but will expand the market. Channels like insurance, real estate, and home services will also expand the market.
- Entertainment is engaging, so it is natural that that industry is looking for a smart home crossover—but consumers would have to find value in these kinds of crossover applications / use cases.
- Consumers buy smart home products for security but use them for lifestyle enhancement.
- Companies need to look beyond the home when thinking about security, to solutions that also provide personal, car, and community security.

Personalizing Connected Entertainment: Metrics and Big Data

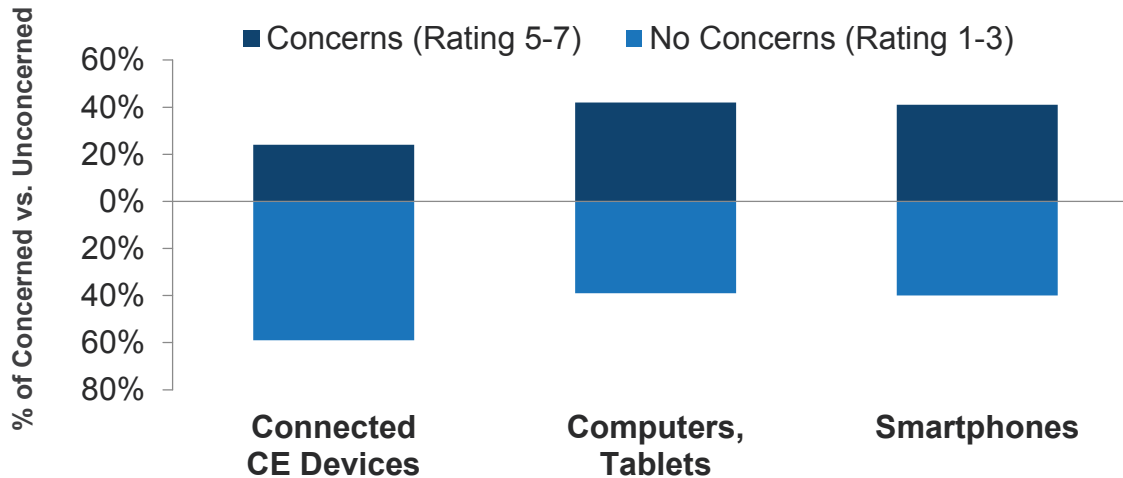
From video services to music services, social networking applications to mobile commerce, the digital living experience is becoming a unique and personal proposition to each individual user. The key to providing this unique experience is data collected every step of the way. Data drives content discovery, content valuation, monetization, and ensures a consistent yet personal user experience. In an age when video service providers are experimenting with business models, viewership data will drive how companies evolve video monetization. Service providers and their

partners have built trust with their customers to use collected data responsibly, and their reputation often lives or dies with that trust.

The first chart below summarizes the level of privacy and security concern, among U.S. broadband households, for different device categories. The second chart features the results of the audience poll for this session.

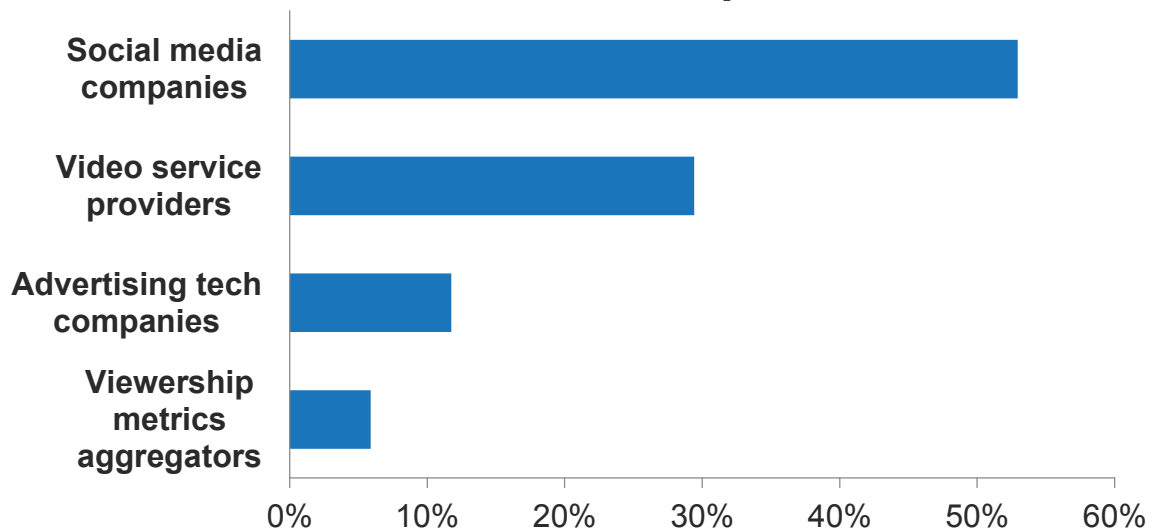
Level of Privacy & Security Concern by Device Category

U.S. Broadband Households



© Parks Associates

What companies can best drive personalization of the entertainment experience?



© Parks Associates

This session examined the role of big data in premium TV services. It detailed current successes and future strategies in using advanced metrics to make connections with consumers and examined ways to bridge the gaps between audience, content provider, and advertisers.

Speakers:

- Eric Anderson, SVP and General Manager of Video Personalization, **Gracenote**
- Mike Rich, Vice President, Emergent, **comScore, Inc.**
- Tim Schaaff, Chief Product Officer, **Intertrust**
- Tom Waters, Sr. Manager, Market Intelligence, **Jabil**

Moderator: Glenn Hower, Research Analyst, **Parks Associates**

Key Points:

- We are seeing a refocus on the living room. The TV is the critical screen for personalization.
- “Fingerprinting” is easier on mobile than on a TV because mobile devices are more personal
- Among consumers, affinity is more towards service provider and content provider, not a specific device, with the possible exception of Apple products and services.
- IoT data will have a huge impact on personalization; we will know what functions are actually happening, rather than what consumers report as happening. Privacy issues are still huge concerns with data collection.

- Personalization is one space where a lot of competitors need to work together. Personalization by use case is a more likely scenario than personalization by individual.
- The Pandora music model is a good one—“lookalike modeling” offers recommendations based on what people who like similar things are doing/watching/listening to.

Reinvention of the CE Industry

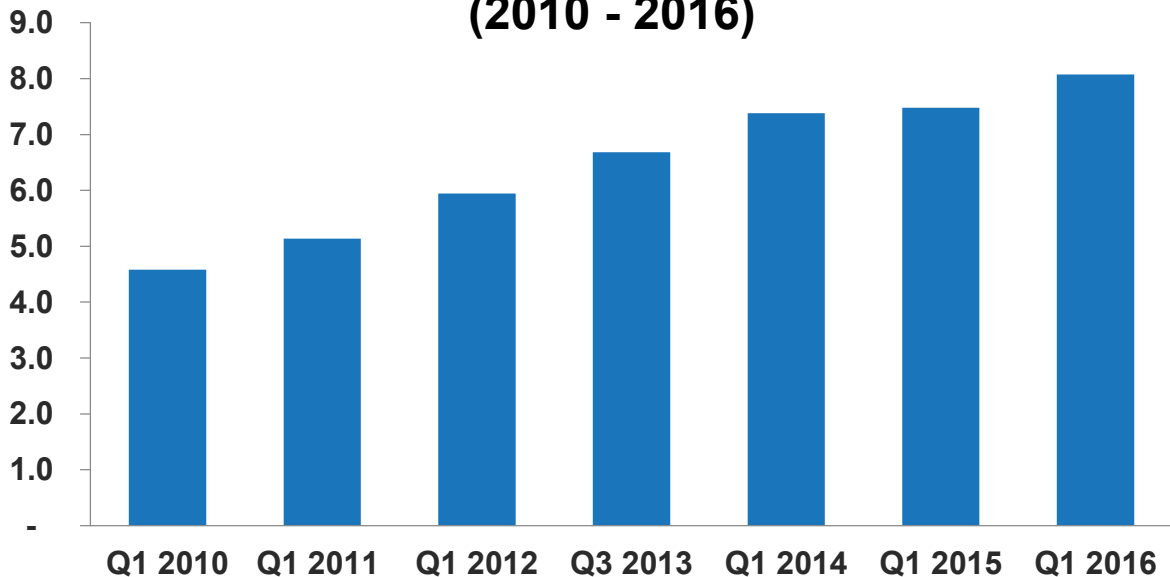
The CE industry has historically had expertise in form factor design, manufacturing, logistics, and supply chain; however, it has migrated from solely producing and distributing hardware to distributing content and services, incorporating artificial intelligence, leveraging advertising models, and collecting and analyzing data. This panel discussed the impact of the shift as well as industry progress in benefiting from the new business models.

This session assessed the transition from hardware to software in entertainment as more content is streamed from the cloud. Speakers addressed the impact on CE devices such as streaming media players and gaming consoles. While living room entertainment device connectivity continues to grow, with the exception of streaming media players, adoption is not increasing; it is decreasing or flattening for some devices.

However, new hardware devices are launching, such as drones, robots, and VR headsets, ensuring that hardware will maintain value in connected devices.

This next chart shows the average number of Internet-connected CE devices in a U.S. broadband household, based on Parks Associates' consumer research. This session also featured two audience polls, with results in the following charts.

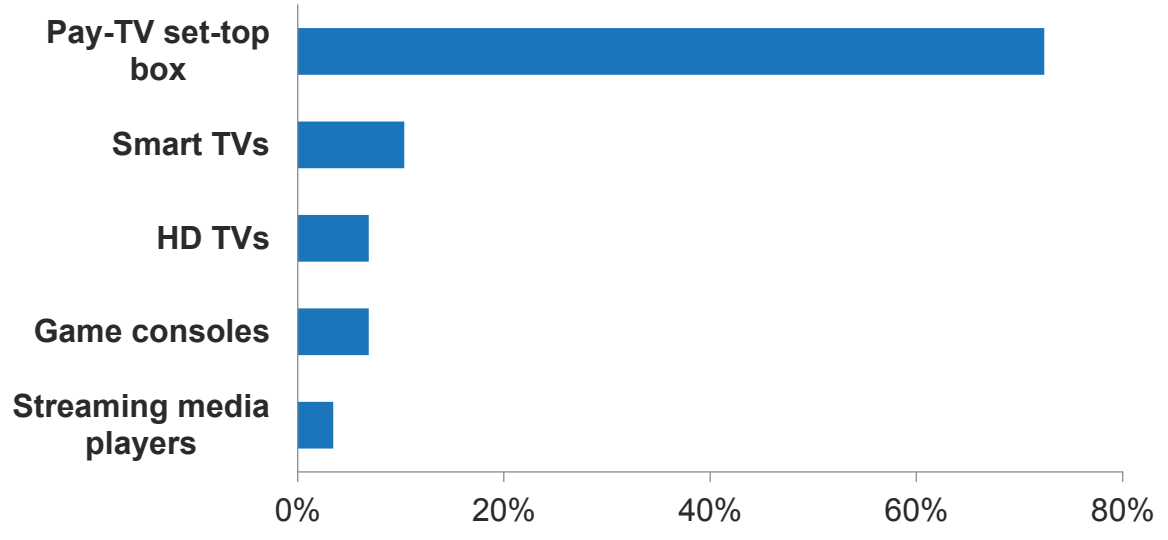
Average Number of Connected CE Devices Owned (2010 - 2016)



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POLLING CHART
CONNECTIONS™

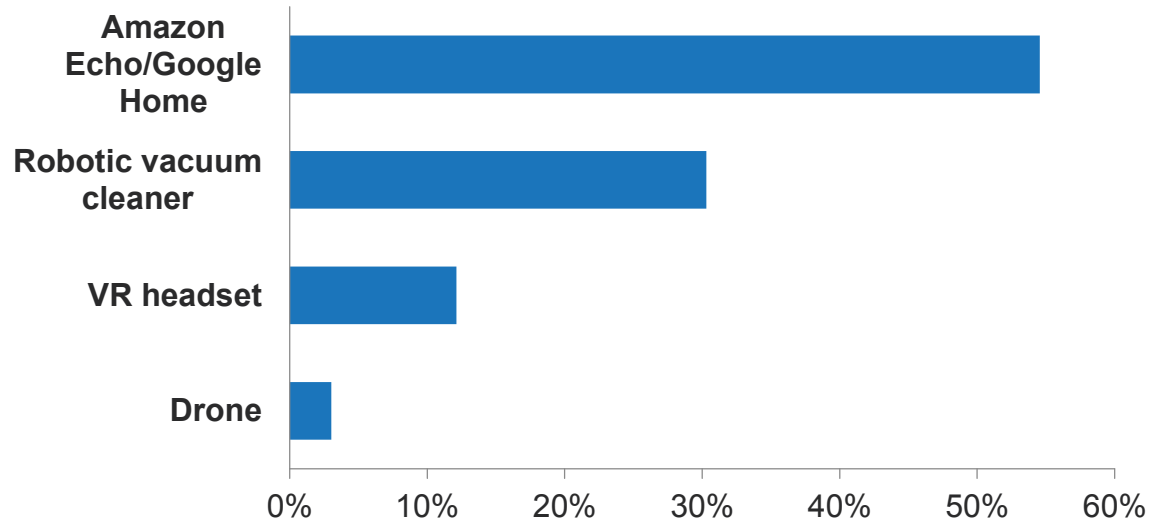
Which connected CE device is most likely to become obsolete?



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Which connected CE device would you most like to add to your home?



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This session also addressed the impact of content ecosystems on the device manufacturing industries and traditional business models. Panelists examined the mix of streaming services, software solutions, connected devices, and cloud services that are redefining the CE business model.

Speakers:

- Chris Jones, VP of Technology, **iRobot**
- Tom Love, VP of Consumer Insights, **Roku**
- Perry Weinstein, VP & General Manager North America, **Accedo**

Moderator: Barbara Kraus, Director, Research, **Parks Associates**

Key Points:

- The reinvention of CE is exemplified by smart products whose connectivity and intelligence enable new collaborations with other products and services. For example, Roomba vacuum cleaners are now connected with a mobile platform that covers the whole home, and they can share home-mapping and other sensor data. The Roomba's abilities to map and navigate the home can provide spatial context to other smart home devices.
- Whereas CE makers used to add as many features as possible to their devices (creating too much complexity), now they think about companion devices (such as smartphones and apps) that can offer more value without overcomplicating the CE device. Some TV makers, such as Samsung, want TVs to become the companion device, serving as the hub for smart home control.
- Today's CE makers allow consumer behavior to drive innovation, based on actual product usage and how consumers want to use the products. Software applications can be continuously iterated to respond to consumer behavior.
- Changing content consumption patterns, such as shifts from gaming consoles to streaming media players, are challenging the dominance of certain devices for certain kinds of content.
- For video content, any feature that enhances the user experience and enables the device makers to communicate with consumers offers great value. Universal search is crucial for the video experience. The shortest path to the content is the most useful for all participants.
- The industry has come full circle from moving content from the TV to mobile to now casting mobile content to the TV for a big-screen experience. This capability becomes more important when consumers pay for OTT content and want a higher quality experience.
- Business models are changing in a variety of ways. The great content unbundling of 2015 will result in the great re-bundling of 2016, such as skinny bundles for video content. Advertising is becoming a big revenue source with higher margins than device sales. Bots are increasingly automating the process of content and ad delivery.
- The long replacement cycle of TVs is an opportunity for streaming media players to stay relevant. Their lower cost means users can upgrade the content experience more frequently with new streaming media players, while still keeping their older TV sets.

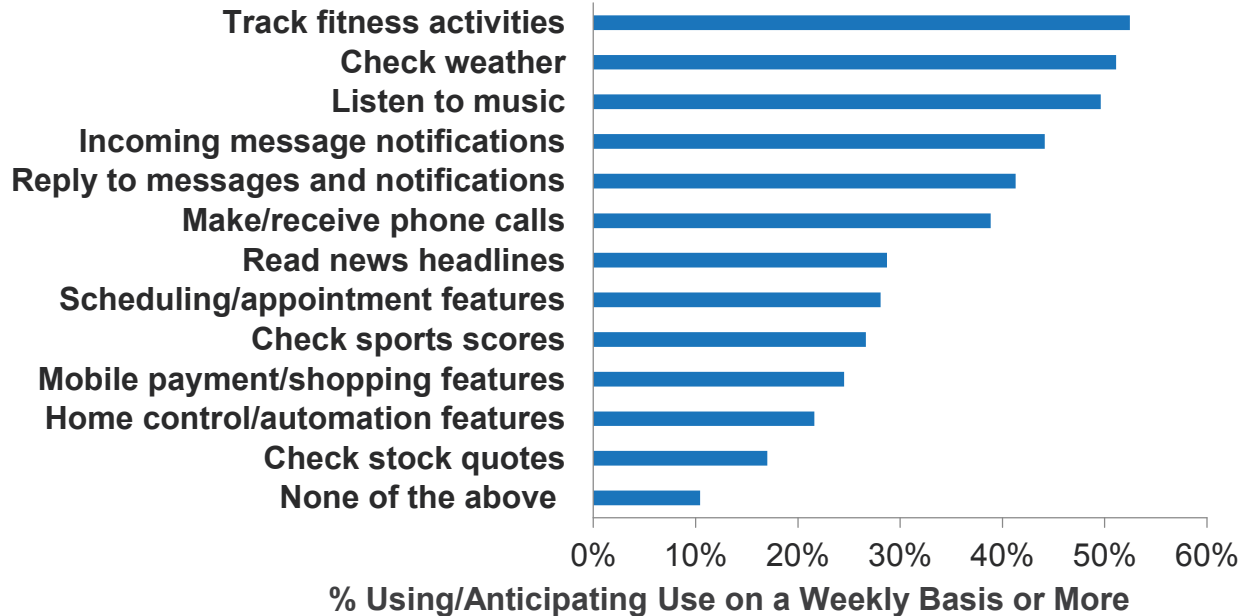
- It is very expensive to develop proprietary platforms. TV margins are razor thin, so TV OEMs prefer to use open platforms to avoid those high costs.

IoT: Wearables and Smart Home Use Cases

One in five consumers who own a smart watch or intend to buy one were interested in using their smart watch to perform home control and automation functions, according to Parks Associates 2015 consumer data. Fast forwarding to 1Q 2016, there is growing evidence that this kind of consumer interest is on the rise, along with smart watch ownership, up from 6% to 10%. Consumer preferences for different smart watch activities are shown in the chart below.

Preferred Smart Watch Activities

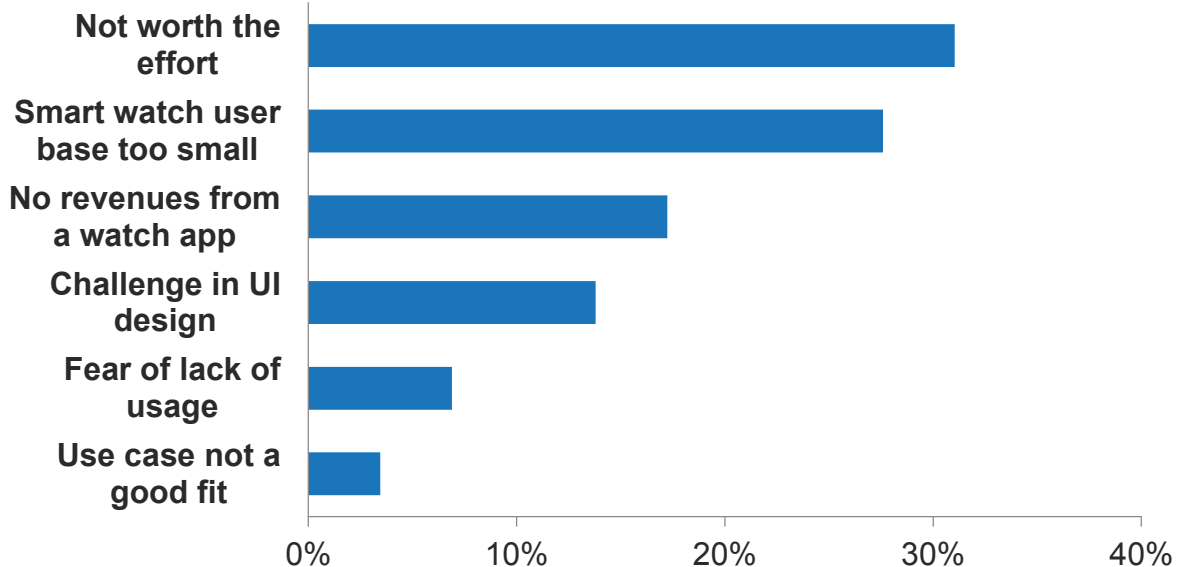
Smart Watch Owners or Purchase Intenders



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The next chart features the results of the session's audience poll, where the CONNECTIONS™ attendees were asked to identify the barriers to development of smart watch apps.

What prevents companies from building a smart home app for smart watches?



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The roles that smart watches and the broader wearable device category would play in the smart home are developing. At Apple's "Spring Forward" event in April 2015, Apple executives demonstrated how the Apple Watch could be used to remotely open a garage door. Subsequently, several watch apps were introduced from smart home players such as Withings (security camera), Philips (lighting), Honeywell (Lyric thermostat), Lutron (switches), Alarm.com (smart home platform) and DropCam (now Google NestCam).

In January 2015, Misfit, manufacturer of fitness tracking wearables, announced a series of partnerships with various home automation apps. Misfit was acquired by Fossil Group, a fashion designer of handbags and watches, in late 2015. The startup is now backed by a well-established watch maker.

Google did not sit idle. Its Android Wear platform received a makeover in mid-2015 along with Google's launch of Brillo smart home software platform. Smart home apps for Android Wear have trickled out since 4Q 2015, including Google's own Nest thermostat. Overall, however, Android Wear support by smart home players is far behind that which Apple receives.

This session addressed the market opportunities for wearables and the innovations that will increase consumer interest.

Speakers:

- Dave Evans, CTO, **Stringify**
- Francis Hoe, Operations Manager, **Misfit Wearables, a Fossil Company**
- Mark Prince, Vice President Consumer Business, **Withings**

Moderator: Harry Wang, Sr. Director, Research, Health & Mobile Product Research, **Parks Associates**

Key Points:

- The wearables market will introduce headphone technology with communication capability, new contextual apps with sensors, and geolocation technology that works with smart home devices.
- The market is moving from wearables to “awareables.” Successful wearables will have three elements: contact, connectivity, and context:
 - Contact: intimacy or how much it knows about you; it is in contact with you and can sense your vital signs
 - Connectivity: how connected the device is to other things in the world
 - Context: what are you doing—are you swimming, running, sleeping, in a meeting, or doing some other activity
- Devices at home can now interact with wearables, whether or not you are at home.
- A smart watch knows more about you than any other device around you. It knows where you are, what your heart rate is, your surface body temperature, your activity level, and more.
- The connected home industries are in the early stages of tapping into smart watches’ potential with wearables. There will be significant shifts in capabilities in the coming years.

KEYNOTE – Driving Mass-Market Adoption of the Smart Home

SmartThings’ mission has always been to deliver the easiest way to turn a home into a smart home, while building an open platform that enables innovation and collaboration across the industry. These two elements are key to driving mass adoption of the smart home, and SmartThings is working to deliver this on a global scale by enabling IoT technology everywhere from TVs to appliances to cars and more. Robert Parker, SmartThings’ SVP of Engineering, discussed best practices and strategy around expansion of the smart home market, including ways to drive consumer usage once these solutions are in the home.

Speaker:

- Robert Parker, SVP of Engineering, **SmartThings**

THURSDAY, MAY 26

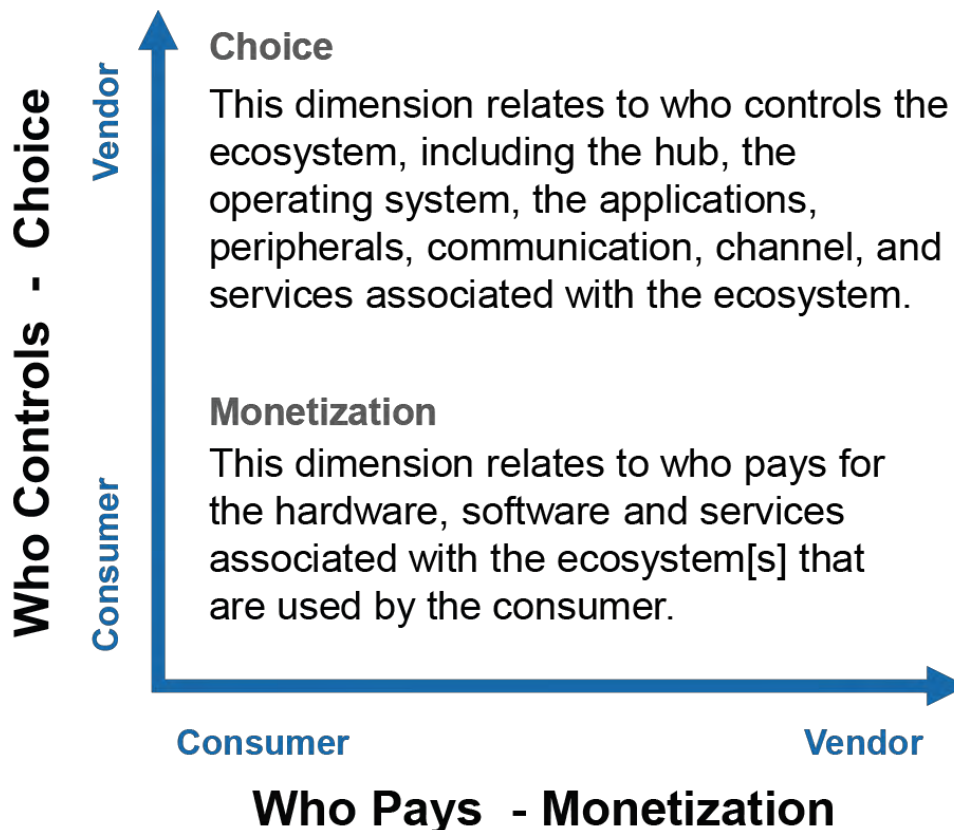
Energy, IoT, and Smart Home Partnerships

Smart home product and service providers are changing in many ways. Smart home controllers and smart home platforms are adding more networks, more intelligence, more data analytics, and more value-added services.

Today, smart home service providers control almost every aspect of their offering. Consumers make one choice—the service provider—and the service provider chooses everything else. The service provider determines what products work with the platform, what algorithms control those products, what the user interface looks like, and even how the system is installed. Products that work together are not available without a smart home controller or a smart home platform. Therefore, control over the ecosystem is one of the major competitive elements in the framework.

Smart home system vendors generally charge a recurring monthly fee for services. Smart product vendors charge an upfront fee in the form of a price premium for smart products. The business models used by different participants are a reflection of existing business models. However, connectivity creates new possibilities that use smart products to enhance the value chains of different industries, unlocking new value and enabling participation in new revenue streams that are not directly funded by the consumer.

The smart home market can be described using two axes, control of the smart home system and monetization of the smart home, as shown in the following image.



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The vertical axis describes the entity which controls the smart home system, how it is installed, what products, algorithms, apps, and user interface or interfaces are used. At the lower end of the vertical axis, the end user makes all of the decisions. Consumers get what they want and

how they want it. The consumer chooses what products to purchase, when they are purchased, how they are purchased, what apps or subsystem controllers control those products, and what smart home platform, if any, they want. Consumers may acquire connected products over time, as they replace legacy products with new, smart products. Some consumers may proactively replace some products if they find the value proposition compelling.

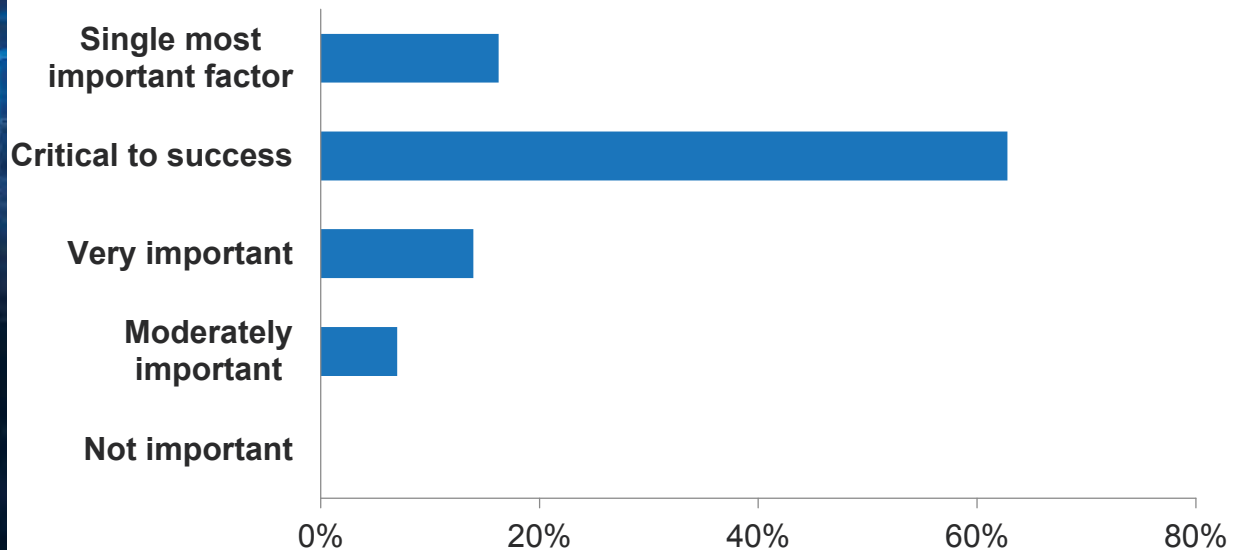
At the upper end of the vertical axis, the service provider makes all of the decisions. Most smart home systems on the market today are closed to both new products and third-party app developers. Smart home service providers tightly control the ecosystem to assure that the user experience is positive; nonetheless, they know that a system open to both apps and products will beat a closed system in the long term. Today, business rather than technology issues create friction and slow down integration. To be successful in the long term, smart home platforms must simplify business transactions and make integration more scalable.

Monetization is represented on the horizontal axis. On the left side of the scale, the consumer pays for products and services directly, either in recurring or upfront fees. On the right side of the scale, alternative business models allow manufacturers and smart home service providers to generate revenue indirectly from other industry players.

In the long run, non-consumer-funded options will win a significant market share. Smart products and systems with no recurring revenue fees appeal to a large segment of consumers. Recurring fees may be able to start markets, but without strong value propositions, most will yield to solutions with no fees. It is hard to charge for something that others are giving away.

This session examined the business partnerships and the groundwork necessary to achieve the vision of an IoT-enabled smart home. The session's poll, detailed in the next chart, asked the audience the gauge the importance of partnerships in the IoT space.

How important are partnerships to long-term success in the era of IoT?



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Speakers:

- Paul Campbell, VP Innovation / Head of Silicon Valley Innovation Center, **Schneider Electric**
- Corey Chao, Innovation Manager, Connected Home, **NRG/Reliant**
- Seth Frader-Thompson, Co-Founder and President, **EnergyHub**
- Carl Lenox, Solution Architect, **SunPower Corporation**
- Kevin Petersen, President, **AT&T Digital Life**

Moderator: Tom Kerber, Director, Research, Home Controls & Energy, **Parks Associates**

Key Points:

- Cameras are looking at a variety of dimensions (Trajectory, Pose, Gesture, Identity, etc.) to determine an action. Intelligent control is complex but will redefine the user interface when merged with voice control.
- APIs are the common layer that enables interoperability between networks. Models like EnergyHub will crop up throughout various ecosystems, creating the programming that links industries or roles together to allow seamless relationships. Business model innovation will encourage partnerships and true automation that solve customer problems.
- Automation is key. Value will come from the analysis of the data.

- Energy providers have a place in the market. They have trucks on the street and are making inroads into home services with solar. Reliant launched a security and smart home services solution.
- Consumers don't want to have to engage in any way to participate in demand response. This is where the smart home comes in. Smart homes can automate the DR process.
- Incentives and bill reduction matter for demand response but are not the most important thing. Consumers are much more responsive to messages around community and doing the right thing.

KEYNOTE – The Transition from Connected Home to Smart Home

The best consumer experience is one that anticipates your everyday needs and delivers an elegant, integrated solution. This keynote addressed how breakthrough user interfaces and intelligence combine to create the best user experience for consumers to create the smart home of the future.

Speaker:

- Matt Eyring, Chief Strategy and Innovation Officer, **Vivint Smart Home**

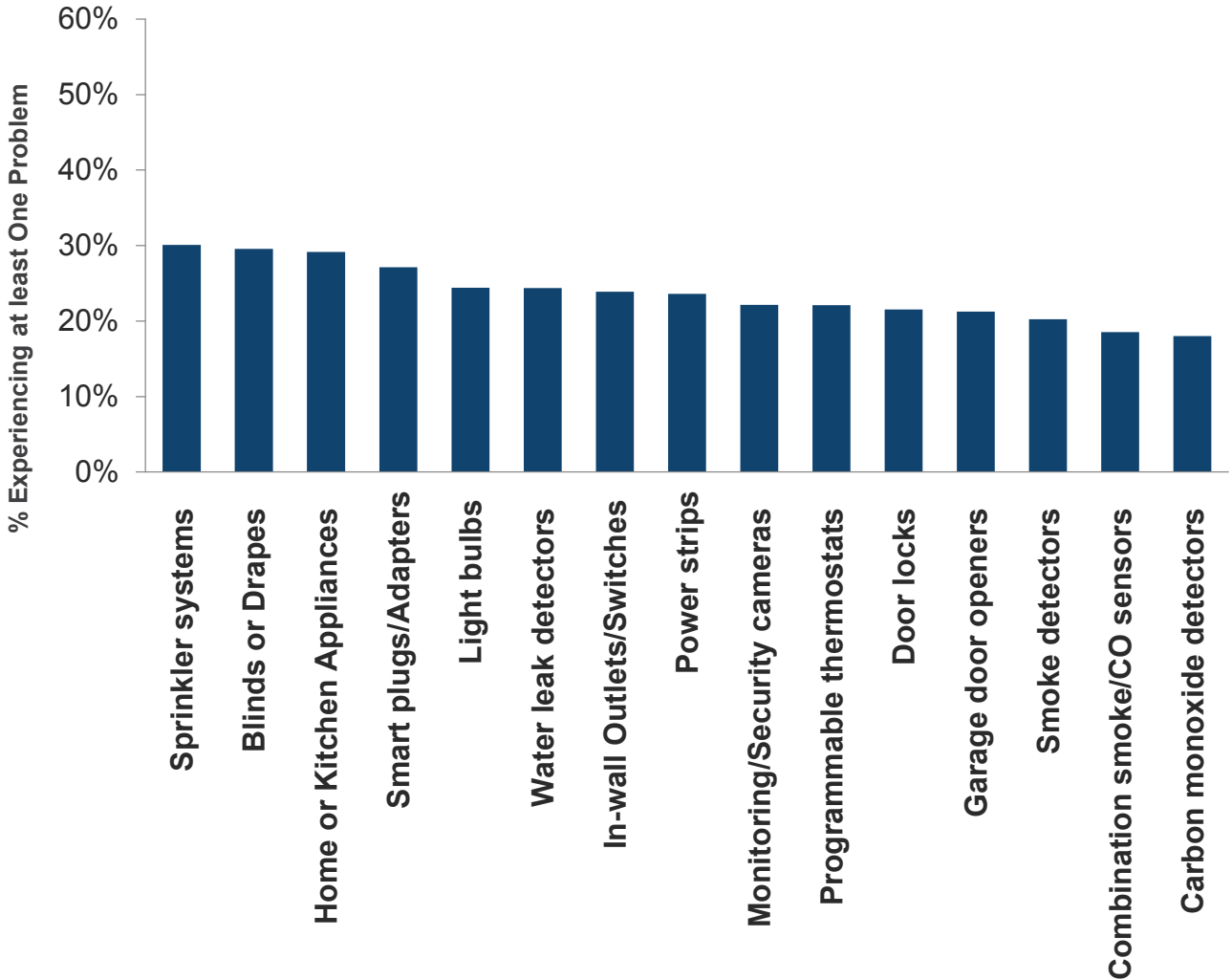
Support Strategies to Integrate Smart Devices in the IoT

The advanced capabilities of new connected devices are appealing to many consumers. As consumers embrace these products, however, immature technologies and a lack of industry standards often lead to problems and customer experiences that are less than optimal. Nearly one-third of smart home device owners report experiencing problems with their connected devices. The vast potential for problems means that brands in IoT markets must manage customers' experiences throughout the entire journey with their products. Ideal support for the smart home must, therefore, be automated and proactive, where the fewer problems that come to the attention of the consumer, the better. Until this is possible, reactive support must be readily available, efficient, and effective.

The following chart shows the frequency of problems among owners of specific smart home devices. The second chart features the results of the audience poll for this session.

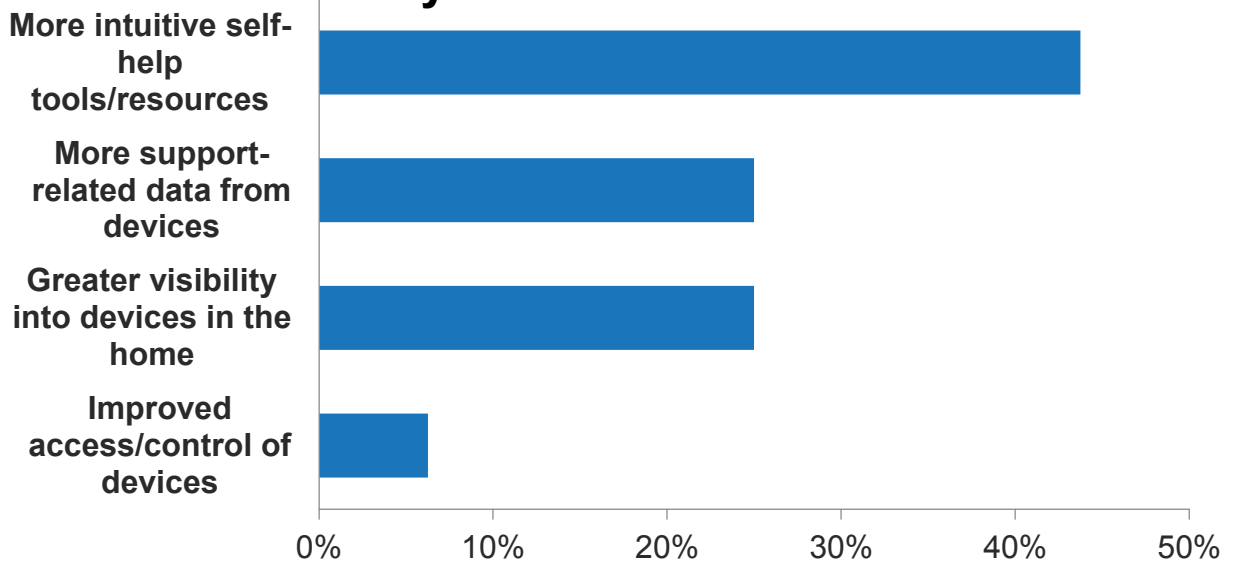
Smart Home Devices: Technical Problems Experienced

Smart Home Device Owners



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What would most improve your ability to support your customers?



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This session examined strategies for these companies as they enter this new territory and areas that need support, including communication protocols, gateways, control platforms, applications, and operating systems. Panelists also discussed the challenges for smart home and IoT providers and identify areas for partnership and profit.

Speakers:

- Peter Blanks, Vice President Technology, **Asurion**
- Autumn Braswell, Chief Operating Officer, Enterprise Solutions Organization, LinQ, **iQor**
- Emily Hosselman, Director of Marketing, **Centercode**

Moderator: Patrice Samuels, Research Analyst, **Parks Associates**

Key Points:

- The inconvenience of device setup for consumers has been declining, but this is still an area that needs improvement. Consumers are much more likely to purchase that same brand again if they experienced no setup problems on that initial purchase.
- DIY setup makes a lot of sense for the early adopters and the millennial market, but late adopters will need much more support.
- OEMs aren't looking at the diagnostics of devices and the reporting of data. Instead, they are more focused on interoperability.

- Analysis of data creates plenty of privacy issues, but it also provides many positive opportunities for providers. Businesses can use that data to find out why a consumer hasn't used a product in several days and see if they need help with anything before possibly returning the product.
- Companies are trying to reinvent support. Consumers generally have a negative opinion of support experiences due to long wait times, bad experiences with someone on the phone, and often not getting the problem solved.
- Customers are only going to be willing to pay for premium support for so long before they expect it to be complimentary.

New CE Experiences in Voice, Gesture, and Control

CE makers are looking to expand the value of their products by providing new and unique ways to interact with them. Options such as gesture control and facial recognition open new value propositions in ease-of-use and content discovery. This panel explores new form factors impacting the entertainment experience and alternate revenues emerging from innovative user interactions.

Amazon's Alexa, Apple's Siri, and Google are betting that voice will be the preferred communication method in the future. Their personal assistants, as well as Microsoft's Cortana and Facebook's M, are controlled by voice.

Voice is hands-free and intuitive, but is not ideal for every use case. Voice data can lead to privacy and security concerns among consumers. And, at least in terms of consumer electronics, while voice controls are growing, remote controls remain the most-used method of controlling CE entertainment devices while the smartphone is the most-used controller for smart home devices.

This session explored new form factors impacting the entertainment experience and alternate revenues emerging from innovative user interactions.

Speakers:

- Kenn Harper, VP, Devices & Ecosystem, **Nuance Communications**
- Peter Taylor, Vice President of Products, **WeMo/Belkin**
- Ali M. Vassigh, Director of User Experience, **EVA Automation**

Moderator: Barbara Kraus, Director, Research, **Parks Associates**

Key Points:

- Voice has the potential to evolve into a key method of interface among other devices in the home. Voice can provide more parameters and specificity than touch or gestures.
- When it comes to voice and gesture controls, the best form of interaction is whatever is most convenient at that place and time for the consumer. Developers need to remember that the preferred method to control a device is dependent on the task and situation.

- There are a lot of barriers for gesture controls: consumers do not want to look foolish making gestures to control devices; gesture controls are utilitarian – they have to work perfectly every time; and gestures are disruptive to the social environment.
- There is no universal set of gestures: if you asked 10 different people for a “hello” gesture, you would get 10 different gestures. As a result, gesture controls would require consumers to learn new movements in order to control the device. Unfortunately, there are no environmental cues to help them remember these gestures, and consumers can only remember 2-3 control gestures.

Consumerization of Healthcare: Trends and Technology

The U.S. health industry is undergoing significant changes and rising consumerism is a distinctive symbol of this transformation. Health consumerism is aided by the following trends:

Fixed & Mobile Broadband Adoption: In the U.S., the number of fixed broadband households has reached 95 million in 2015, representing a penetration of nearly 85%. Mobile broadband, led by the fourth-generation Long-Term Evolution (LTE) technology, has experienced even faster adoption. Parks Associates projects more than 200 million consumers will have access to LTE technology on their phones, and more than 250 million consumers will own and use a smartphone at the end of 2015. Access to these technologies makes remote care delivery much more feasible to patients from anywhere and at any time.

Rising OTC use of health monitoring devices: An aging population and a rising number of patients with chronic conditions have led to greater use of health resources; these resources include more medical device use at care facilities for diagnosis and treatment, as well as more personal health device use at home for self-care and health monitoring. The aging population is expected to place an enormous burden on the U.S. health care system. Care professionals will rely on new medical technologies to identify health risks at early stages and prevent age- and chronic condition-induced health complications from occurring. The need for both care professionals and patients to better understand underlying health conditions has spurred demand for both self-monitoring and professionally monitored health solutions. This, in turn, drives the adoption of more medical devices at point-of-care by doctors and by patients themselves through OTC solutions.

Adoption of digital health records: Government incentives and mandates, along with healthcare providers' interest in digital health services, have accelerated adoption of electronic medical records (EMR). Although there are still multiple challenges regarding EMR implementation—particularly with interoperability issues among proprietary EMR technologies—the broad adoption of EMR paves the way for the deployment of new clinical applications such as population health management, patient portals, and remote health monitoring capabilities. These new applications can bring significant benefits to seniors, including convenience and more effective care management programs.

Changes in Reimbursement: Reimbursement rules for telehealth and remote health management have gradually relaxed. The cost pressure has not only pushed payors to shift to pay-for-performance, but also incentivizes them to change reimbursement rules in favor of low-cost options that generally benefit home care and preventive care. For instance, Medicare approved home diagnostic tests/screenings for health conditions such as arrhythmia and sleep

apnea in 2007 and 2009, respectively, which opened the door for innovations in these two areas. Telehealth services in the form of virtual consultation also managed to win private payor endorsements, which spurred significant growth of telehealth vendors and solution providers since 2010.

New categories of connected devices entering broadband households present both a challenge and an opportunity for technical support services. The increase in the number of devices and the added complexity of devices are challenging brands' ability to provide unwavering support to customers. However, exceptional support can provide differentiation for a brand and gives the brand an opportunity to build customer loyalty in the highly competitive consumer electronics industry. In the context of the emerging IoT space, effective support services can minimize the current and anticipated challenges of IoT growth and promote adoption across various device categories.

Since 2010, the pace of innovation in the digital health and smart home markets has accelerated. Low-power sensors, wireless communications protocols, and low-cost yet robust cloud services coupled with the smartphone/app ecosystem, create an entrepreneur's dreamland for business innovation, particularly in areas where technology adoption has traditionally been behind the curve.

Going forward, as the market for digital health and in-home technologies becomes more mature and consumer awareness and comfort level improves, the end user market will migrate from an early-adopter one to a mass-market one.

This session addressed the shift towards a consumer-centric model and new opportunities for healthcare technology companies, service providers, and smart home players. Speakers discussed new business models using connected devices to engage consumers and strategies to target key consumer segments with IoT solutions.

Speakers:

- Chris Ely, Senior Manager, Industry Analysis, **Consumer Technology Association**
- Kyle Kline, Telemedicine Product Marketing Manager, **A&D Medical**
- Casey Pittock, President & CEO, **Tunstall Americas**
- Lisa Uhrmacher, Director of Strategic Partnerships, **Vodafone**

Moderator: Harry Wang, Sr. Director, Research, Health & Mobile Product Research, **Parks Associates**

Key Points:

- The Affordable Care Act (aka Obamacare) created benefits for doctors who track patient progress after discharge to ensure they are taking care of themselves and won't wind up back in the hospital or emergency room.
- Smartphones aren't effective in keeping people compliant with healthcare condition care.
- Self-care is no longer just for the high-risk, high-cost sector.
- To ensure accuracy of information, consumers must use connected health devices regularly and consistently. Strategies to encourage this consistent use are a key topic in connected

health. Many people will stop using a device once they determine that they don't have an "actual problem." Consumers need to be educated about the importance and benefits of continued use of healthcare devices.

- The healthcare industry is starting to shift to a more holistic perspective of treating conditions and symptoms and becoming more proactive upfront rather than reactive.
- The industry needs to focus heavily on the positive outcomes that consumers will experience with continued engagement/use of healthcare tracking/monitoring technology.

IoT Channel Strategies: A New Consumer Experience

The smart home is evolving along many paths. Connected products and services are being sold through multiple channels, using different business models, and are all converging in the smart home.

Consumers are gaining familiarity with smart home devices, which drives adoption. Parks Associates consumer research finds that in 4Q 2015, 19% of U.S. broadband households own a smart home device, many of which offer energy management capabilities and associated value-added services.

Lights, locks, thermostats, and networked cameras continue to be the most popular categories of smart products, but the breadth of connected devices continues to expand as multiple manufacturers launch numerous models of connected appliances, sprinkler systems, and ceiling fans.

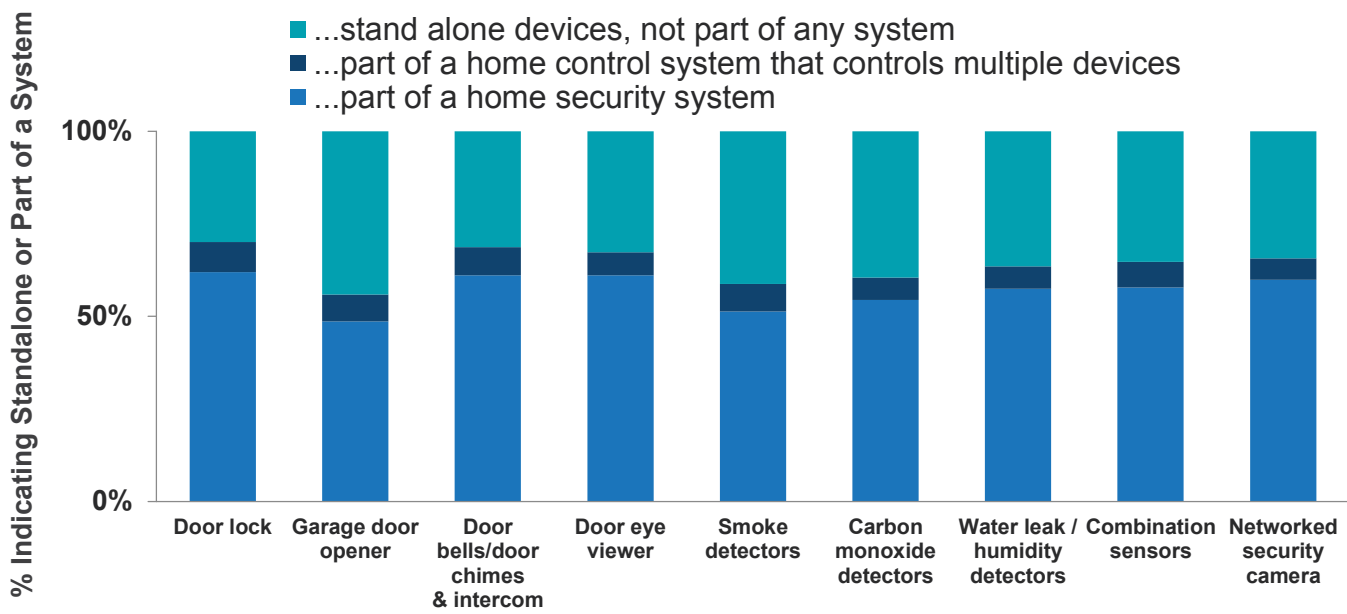
As a result in the growth of smart home products, multiple new channels are being tested. Many consumers purchase one smart device at a time to meet specific needs. Others purchase products through a service provider that offers a bundle of products and services. The security channel remains the leading channel for smart home services, yet recent announcements from Samsung to embed the SmartThings hub into new televisions will shift the adoption curve to home control systems that are independent of security.

Smart home device intenders (U.S. broadband households that plan to buy a smart home device in the next 12 months) report a much higher likelihood of purchasing desired devices as part of a home control system compared with current owners; current owners have more often purchased when acquiring or upgrading a security system.

The following chart shows the channel whereby owners acquired their smart home devices. The second chart features the results of session's audience poll, where CONNECTIONS™ attendees predicted the leading channel for smart home devices in 2018.

Safety & Security Devices: Standalone vs. Home Systems

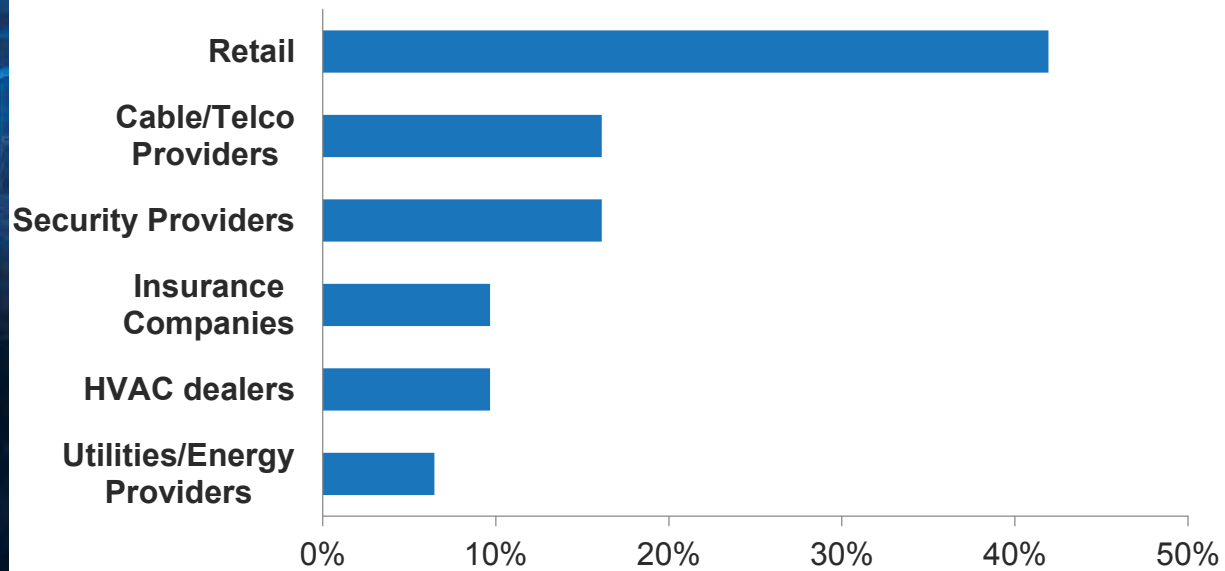
U.S. Broadband Households That Own Specified Devices



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CONNECTIONS™ POLLING CHART

In 2018, the top channel for smart home devices will be...



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This session explored the experience of buying connected home products and the implications for service providers, security providers, retailers, and DIY products.

Speakers:

- Derrick Dicoi, Senior Director of Product Management for Xfinity Home, **Comcast**
- V. Rory Jones, President and CEO, **PlanetEcosystems**
- George Land, General Manager, **Nexia, Ingersoll Rand**
- Kevin Meagher, SVP Business Development, **ROC-Connect**
- Dave Pedigo, Sr. Director of Learning & Emerging Technologies, **CEDIA**

Moderator: Jennifer Kent, Director, Research Quality & Product Development, **Parks Associates**

Key Points:

- The Internet of Things is disrupting all traditional business models.
- From the perspective of professional installers, it's unrealistic to believe that installation and security services will move the market from 20% to 40% adoption while maintaining the current reoccurring monthly revenues (RMR) models.
- The home is the most personal and unique place you can have. Because there are so many different devices, it is difficult to get everything to work well together.
- Every channel to consumers has to first establish reliability, from low-end to high-end, then the "cool" factor can follow. Services are in the strongest position when they can create value out of information and then automate the home, minimizing effort required by consumer.
- Customers still believe there is a lot of value in having someone in the home to set up the experience for the first time.
- There will always be multiple channels for consumers to purchase smart home devices. It will be up to them to do their own research and see what works with their platform and their already owned devices. A "works with" marketing strategy will make this process easier.
- There is still debate on the business models that will emerge for this space. Some argue that the business model will likely continue to be subscription based for monitoring and support. Others insist that data may become so valuable that warranties and support services will be offered for free to ensure ongoing customer relationship.

KEYNOTE – Powering “What’s On” In a New World

Michael Hawkey, senior vice president and general manager of the discovery business group at Rovi, explores the latest trends shaping entertainment discovery. Answering the simple question “What’s on?” has gotten increasingly complex with hundreds of channels, dozens of services, multiple screens, and a sea of apps to navigate. Consumer choice continues to increase with new skinny bundles, original content from streaming services, and premium channels selling direct to consumers. This keynote covered the evolution of discovery, took a closer look at

subscriber trends, and discussed the rising complexities of helping consumers find what they want to watch in today's world.

Speaker:

- Michael Hawkey, SVP and GM, Discovery Business Group, **Rovi**

Growth and Investing in the IoT and Smart Home

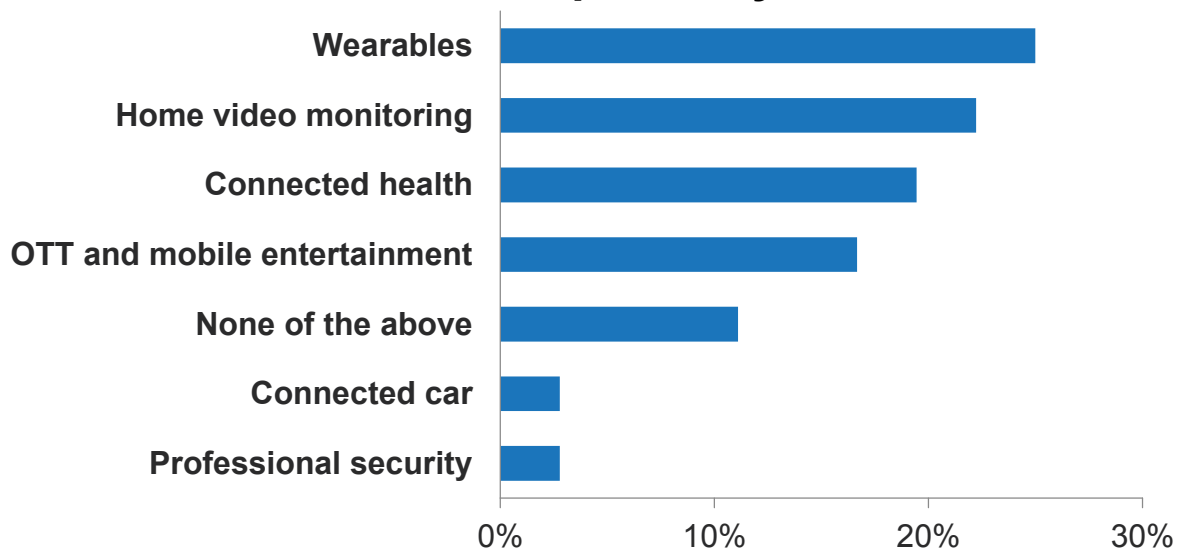
Today, several high-profile market disruptions are emerging as the Internet of Things influences every aspect of the broadband household and connected consumer. Consumers are standing on the threshold of a technology explosion and “post-app” era unlike anything we have seen before, and many industries are realizing new revenues generated through cloud-based services, OTT content, and new advertising models.

- More than two-thirds of U.S. broadband households have a connected entertainment device.
- Nearly one-fifth own a smart home device, with nearly 50% planning to buy one in the next 12 months.
- Smartphone ownership represents nearly 90% of all U.S. broadband households, and 58% own both a smartphone and a tablet.

This session highlighted the next areas of investment for the consumer IoT and the products and services that are exciting to investors and VCs. The following chart shows the results of the CONNECTIONS™ audience when asked about the market areas with the most start-up activity.



Which connected home area is the focus of most start-up activity?



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Speakers:

- Chris Avery, Managing Director, Investment Banking, **Maxim Group LLC**
- Amit Garg, Principal, **Samsung**
- Rexford Hibbs, COO / Co-Founder, **DreamFunded.com**
- Peg Jackson, Managing Director, **Mooreland Partners**
- Vineet Mehta, Principal, **Draper Fisher Jurvetson**
- Michael Yang, Managing Director, **Comcast Ventures**

Moderator: Stuart Sikes, President, **Parks Associates**

Key Points:

- Video services are more mature than other areas, so growth in OTT and entertainment is strongly influenced by ease of connectivity. Entertainment has been successful in keeping audiences engaged.
- Much startup activity has emerged around wearables, but it is too easy to lump wearables and health into one category. Wearables provide value regarding individual consumer activity, which is easily translatable to the health industry at large. Stakeholders in wearables must look into more discrete or higher value markets outside consumer channels, as that round of wearables investment sailed two to five years ago.
- Regarding interoperability, entrepreneurs overwhelmingly work with Wi-Fi and Bluetooth standards.
- Advice to startups:
 - Recognize the challenges early on. Seeking investors too early on will be met with skepticism toward market traction or strategic vision.
 - Differentiated technology makes traction and distribution easier than commoditized technology. If there are no clear differentiators, investors will be reluctant to fund what they fear will be a genericized product.
 - Know and understand the investment space. It is much easier to attract investors when you are in their neighborhoods, namely New York, San Francisco/Silicon Valley, and Los Angeles. Know which partners invest in your space, as they will understand the technology better. Consider durability and strive for long-term sustainability before entering the market.
- The connected home startup market was hot in 2013 and 2014 but has faded dramatically. The connected car industry, more specifically the autonomous car business, is probably still the hottest area for venture investment. Cars include more complex problems and harder science to solve. OTT is more mature and has seen some good exits. Wearables are becoming more challenging, as the first wave of exits and consolidations are done. Investment is moving away from devices up the stack to services.
- There's value in the smart home's ability to allow me to put my smartphone down without feeling disconnected to my life.

- Smart home products peaked in 2014 and early 2015. One venture capital firm received over 400 pitches from smart product startups in 2014. Many have failed, cleaning up the ecosystem and freeing people to move to other areas. Startups must show investors that they have a solid distribution channel and good sales. It used to be sufficient to sell 10k units before an exit or consolidation. Then the bar shifted to 100k units, and now the bar has moved to 1M units.
- Startups must be able to demonstrate clear differentiation or market leadership. Google was the 19th search engine to enter the market, but a simple user experience and powerful search algorithm clearly differentiated it. Without differentiation, companies must have distribution of cost advantages that provide a leadership position in the market.

IoT and Connected Home Industry Events

Parks Associates hosts five executive events a year focused on IoT and the Connected Consumer. Please join us at our next event!



CONNECTIONS™ is the premier connected home conference, the only event to focus on the use cases and emerging business models that will successfully engage consumers and grow revenues in the converging IoT industries - including smart home, connected entertainment, and mobile ecosystems.
www.connectionsus.com



Connected Health Summit: Engaging Consumers features Parks Associates' in-depth consumer research as well as industry perspectives on the impact of connected devices, mobile health services, and health reforms.
www.connectedhealthsummit.com



CONNECTIONS™ Europe is an executive summit featuring the latest consumer research on digital living technologies around the world. The event examines the impact of connected devices and services, including entertainment, controls, digital media, security, and cloud services, and offers insight into new and innovative business strategies and partnerships.
www.connectionseurope.com



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