Next Generation Support: Driving IoT Adoption

PARKS
ASSOCIATES

Next Generation Support: Driving IoT Adoption

The term Internet of Things (IoT) has several interpretations, ranging from smart home-related products to a universe of all connected devices. For the purpose of this paper, IoT is defined as the range of networked products that are capable of sending and receiving data. While this definition is broad, it reflects the diverse scope of devices and products that are now entering the consumer's connected home.

A combination of *pull factors* from consumers and *push factors* from CE manufacturers is driving IoT growth.

For consumers, the expanding use cases and new value of connected products are appealing.

For CE manufacturers, the business transformation opportunities enabled by adding connectivity to products are numerous. It improves efficiencies in product support, marketing and sales, and supply chain logistics. Data generated by connected products also guide product development efforts and help uncover new service opportunities that generate recurring revenue for the CE manufacturers.

While the pace of growth varies among different categories of devices, connected device penetration throughout the home is increasing steadily.

Average Number of Connected Devices for U.S. Broadband Households

2010 4.6 connected computing devices

2015 7.5 devices

© Parks Associates

All broadband households now have at least one computing device, and the market for these devices (computers, tablets and smartphones) is approaching saturation. Connected entertainment devices are the second most popular category of connected devices in broadband households and include gaming consoles, streaming media devices, Blu-ray players, and smart TVs.

Ownership of connected entertainment devices increased by 20% over the past couple of years.
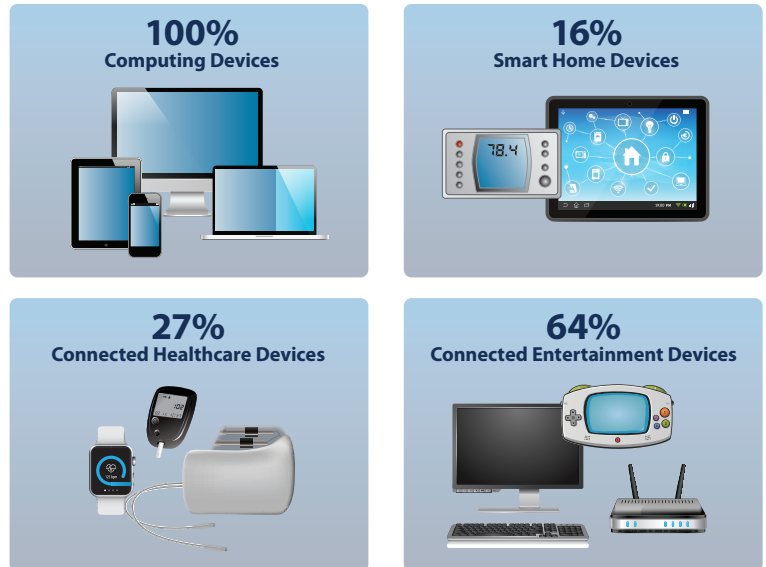
Connected healthcare and smart home devices are also a significant part of the landscape of many broadband households. The market for these devices is still relatively young, with 27% and 18% penetration in broadband households, respectively. As the penetration of some connected devices falter due to factors like market saturation or cannibalization of device functionality, new connected devices are constantly emerging. Connected appliances, robots, and cars are just a few of those being developed and embraced.

Through their connectivity to the cloud, IoT products and services allow consumers to remotely monitor and control device status. These capabilities are strong drivers for smart home device adoption as they expand consumer ability to maintain safety and security.
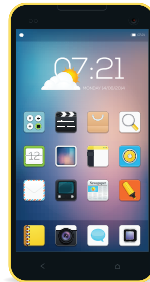
The ability to remotely manage products that significantly affect energy consumption is also a strong driver of IoT device adoption.

Connected Device Penetration
U.S. Broadband Households

100%
Computing Devices

16%
Smart Home Devices

27%
Connected Healthcare Devices

64%
Connected Entertainment Devices

© Parks Associates

Nearly
50% of U.S. broadband households
find it appealing if their connected sevices can alert them in the event of the following situations:
- A fire
- A carbon monoxide or gas leak
- A window or door is opened

© Parks Associates

More than 30% of U.S. broadband households find IoT use cases that help them to reduce energy consumption throughout the home very appealing.

Such use cases include the ability to monitor and program thermostats remotely and the ability to receive alerts when energy usage is abnormally high.

PARKS
ASSOCIATES

New Challenges

Enabling even simple IoT use cases involves high levels of technical complexity that can generate technical problems. Many smart home devices do not support the typical wireless technologies used throughout the home, particularly Wi-Fi or cellular/LTE. Connecting these devices to the Internet often requires the use of an intermediary device—often a hub—which acts as a gateway to connect the wireless protocols used in these devices to traditional LAN or WAN protocols in the home. Only after this connection is made to the home network are the devices then accessible in the cloud for control by mobile and other cloud-based applications.

When connected devices communicate with each other, it extends the value proposition offered by the devices beyond monitoring and control to creating convenience for device owners.

EXAMPLE Smart thermostats that detect when no one is home can be programmed to automatically adjust the status of appliances, like a refrigerator or stove, for either energy savings or to maintain safety.

The high levels of diversity among broadband households, however, challenges providers' ability to deliver this experience to consumers seamlessly. Devices in broadband households leverage a growing variety of device communication protocols, gateways, control platforms, applications, and operating systems.

INTEROPERABILITY AMONG DEVICES, OFTEN MADE BY DIFFERING MANUFACTURERS, REMAINS AN AREA OF COMPLEXITY AND SOURCE OF POTENTIAL PROBLEMS.

Immature technologies, which are common in emerging product areas such as IoT, compound the likelihood of technical problems. Though they often improve in reliability over time, immature technologies are generally more likely to be problematic. **Currently, more than one-half of smart home device owners experience problems with at least one device monthly.**

Smart home products and systems will generate just over seven million support requests in the U.S. in 2015 and ~ 11 million in 2019.

© Parks Associates

PARKS ASSOCIATES

Support Critical to Managing IoT Experiences

Along with the technical problems, a lack of consumer familiarity with new connected devices also challenges consumers' ability to have the desired experiences with connected products. This challenge drives increases in support needs among broadband households. Higher use of professional setup and installation services for smart home devices versus traditional devices (computing and entertainment) is a key indicator of this growing need for support.

> Eighty-five percent of consumers now set-up traditional connected devices on their own—only 15% use professional support.
>
> For smart home devices, only 60% set up new devices on their own, with 40% relying on professional support.
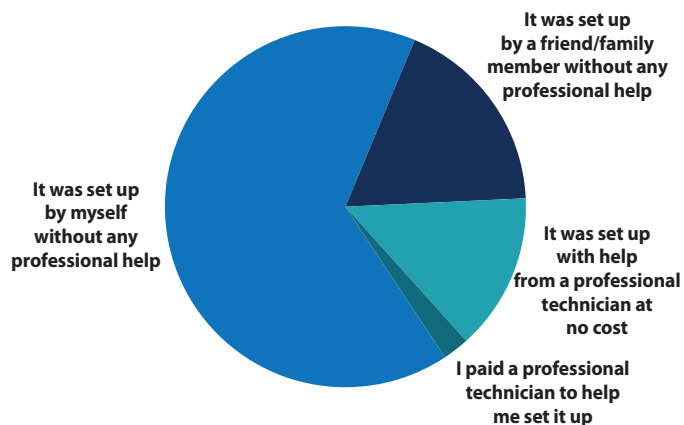>
> © Parks Associates

This contrast in the need for support is further highlighted when consumers had to rank the level of inconvenience experienced when setting up their devices. Of the consumers who set up traditional devices themselves, only 8% found the process to be inconvenient, whereas more than three times as many (28%) of the consumers who set up smart home devices themselves found the process to be inconvenient.
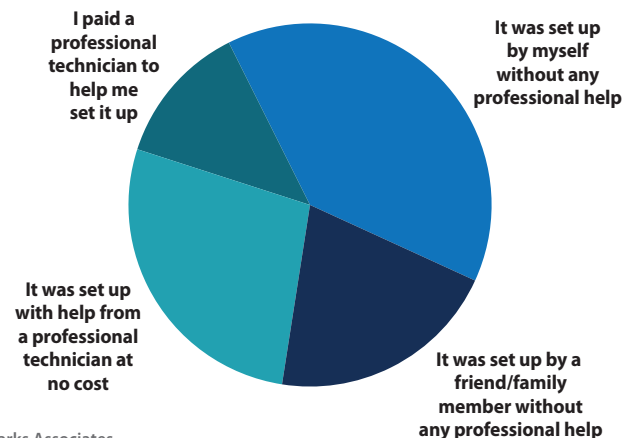
Traditional Devices
Method of CE Device Setup
U.S. Broadband Households who Set Up a Device

It was set up by a friend/family member without any professional help

It was set up by myself without any professional help

It was set up with help from a professional technician at no cost

I paid a professional technician to help me set it up

Smart Home Devices
Method of Smart Home Device Setup
U.S. Broadband Households with a Smart Home Device

I paid a professional technician to help me set it up

It was set up by myself without any professional help

It was set up with help from a professional technician at no cost

It was set up by a friend/family member without any professional help

© Parks Associates

PARKS
ASSOCIATES

Providing pre-purchase, onboarding support is necessary with IoT products and services.

The diversity in the technical composition of connected products and in the technical landscape of broadband households mean that not every product is a good fit for every household. Pre-purchase assistance helps consumers select the best products for their needs. A lack of pre-purchase assistance increases the likelihood of no-fault-found returns, which incur material costs to manufacturers and retailers in repackaging expenses.

A lack of guidance can also lead to missed opportunities. Customers might not purchase any products because they are overwhelmed with the options or fearful of making the wrong investment.

The new functionality and advanced capabilities of IoT devices also drive enablement needs. Enablement needs include usage and training support that will help consumers learn how to use device features and enable the desired use cases. This kind of support must be easily accessible to consumers who need it.

Without providing adequate enablement support, brands risk having complex problems develop from user error or having customers avoid future purchases because of poor experiences with their current products.

Brands providing innovative IoT products must be equally fervent about providing efficient support that helps consumers to have optimal connected home experiences. These solutions would promote faster market penetration of IoT products and services.

> The potential challenges to the IoT experience means that brands must manage their customers' experiences throughout their entire journey with their products.

IoT Enables Improved Support Strategies

Fortunately, some of the very features of connected devices that are driving complexity throughout the home are also giving brands the opportunity to serve customers better. In particular, device connectivity improves access to devices by support agents, while the large volumes of data generated by connected devices provide insight for diagnosis and guidance for support and product improvements.

Improved Access

Remote access and control have dramatically increased support efficiency for computing devices and can now be leveraged for support of other connected devices. Remote access improves support efficiency and the overall support experience for the consumer. Without remote access, agents rely heavily on consumers to make many of the observations necessary for diagnosis and to perform the steps involved in the resolution process. Remote access by agents removes this burden from the consumer.

Device connectivity also means that consumers can now access support directly on their device or through their cloud-based applications. Today's connected consumer wants to have options for receiving support. Parks Associates research shows that traditional support channels are still important to consumers even as they embrace newer channels.

PARKS
ASSOCIATES

Traditional Channels for Support

More than **50%** of consumers still prefer to contact a support technician over the phone, and one-third prefer to communicate face to face in a retail store.
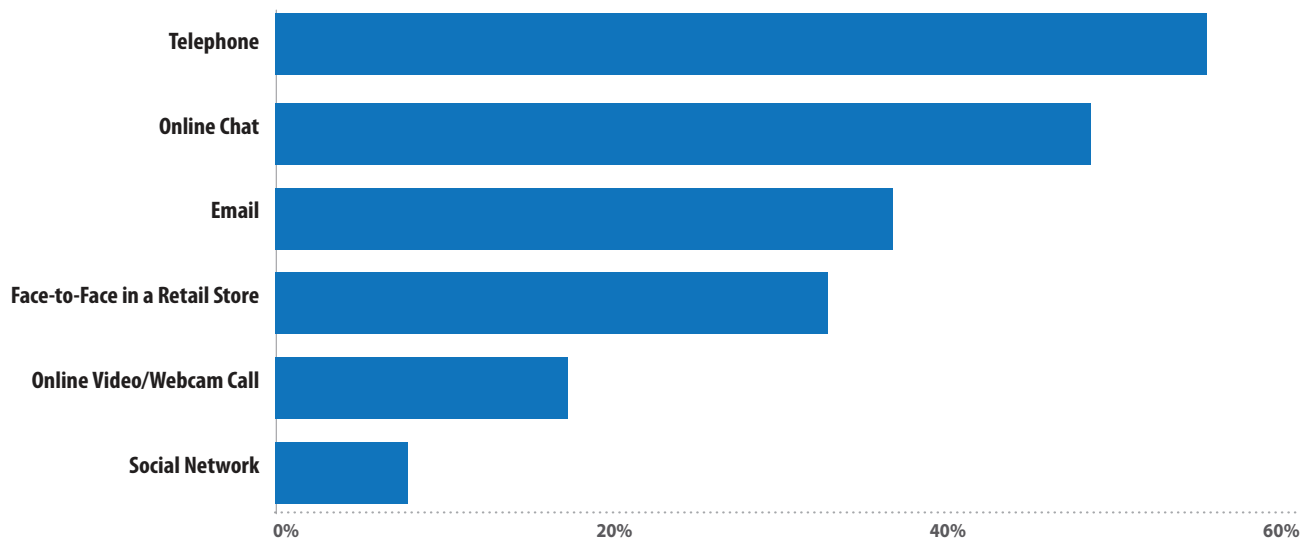
© Parks Associates

New Channels for Support

15% of consumers now indicate that video calling is a preferred method of communication for support. **19%** believe that they should be able to access support using social media sites such as Facebook and Twitter.

© Parks Associates

Making support available directly on a device not only expands channel options but also improves the support service initiation process. Customers typically do not have to navigate through lengthy call menus and endure long hold times when using these methods.

Preferred Method of Communicating with Tech Support Technicians
2014 Desktop, Laptop, tablet, and Smartphone Buyers

Method	
Telephone	~56%
Online Chat	~49%
Email	~37%
Face-to-Face in a Retail Store	~33%
Online Video/Webcam Call	~18%
Social Network	~7%

© Parks Associates

PARKS ASSOCIATES

Increased Data

Connected devices can communicate a wide variety of data, including information on device status: on or off, current settings, current mode of operation, app usage, and battery levels. The cloud-based applications of these connected devices may also retain historical information on the operation of the device, including operating time, power up cycles, time of day used, battery cycling data, setting history, and other information as desired. Collection of Big Data generated from these devices has the potential to revolutionize customer service.

Increase diagnostic efficiency

When leveraged in support situations, device-generated data can provide insight that creates dramatic improvements in diagnostic efficiency and accuracy. Consider, for example, the support challenges associated with user error, where difficulty identifying the steps that created a problem often slows the diagnostic process.

> The ability to capture the historical activities performed on a device before the problem emerged virtually eliminates the challenges stemming from user error, dramatically reducing the time and effort involved in resolving these technical problems.

Consider also the support challenges involved when smart home systems fail. For systems that involve device interoperability, the effort required to diagnose and resolve these situations is massive.

Take, for example, a smart home where the opening of a customer's garage door sets in motion a series of other setting changes, including changes to lighting and temperature. If any one of these settings aren't triggered, the diagnostic technician has to examine the entire ecosystem of connections that enabled these functions in order to determine where the problem occurred. The range of possibilities are broad and may include a device-specific problem, a break in the connection to the Internet of either device, or some other factor that prevented the thermostats or lights from receiving communication from the garage door. A multitude of observations are necessary to resolve issues with IoT applications that involve extensive interoperability.

> With increasing visibility into device and network activities, errors are more easily exposed, making the support situation more manageable and reducing handle time for the support providers.

PARKS
ASSOCIATES

Provide proactive support

Beyond providing visibility and insight into support situations, data captured about device problems over time arms brands with enough knowledge to prevent certain problems altogether. Large repositories of data, captured from devices, have been used in proactive support for traditional devices for some time. Device health checks are quickly becoming a standard part of most premium support provider strategies, where data repositories are used to assess the health of PCs and other computing devices by comparing elements of their status with normal performance in similar devices. Identified deviations from the norm are proactively identified and addressed.

> Device health checks, when performed at regular intervals, put providers in a position to proactively manage their customers' experiences and minimize device downtime.

As providers gather data about devices, their control platforms, and their interaction in IoT ecosystems—combined with the knowledge captured from support situations—they become even better equipped to automate the identification and resolution of problems in the connected home. Studying trends and patterns in this data over time gives support providers and brands more insight into where the potential for problems exists and the most effective resolution strategies. Support solutions that actively monitor real-time data generated from the connected home can prevent service disruptions and create a more seamless customer experience.

Even if integrated support solutions do not automatically detect an issue, support providers are still able to leverage improved access to provide customers with proactive support. If a problem experienced by one customer uncovers a fundamental device issue, the CE maker will be able to prevent other customers from experiencing similar problems by remotely pushing an update or fix out to similar devices, **potentially averting a number of support calls or device replacements.**

PARKS
ASSOCIATES

Optimize contact center operation

Highly complex technical events that cannot be completely automated, perhaps because they involve too many moving parts, also benefit from knowledge management solutions. These solutions can analyze data and provide a comprehensive and simplified synopsis of the problem that can guide agents towards the appropriate diagnosis and resolution. These systems can become more accurate over time as agents employ even more analytics about the usefulness of the support resource for a given context.

Improve self-help resources

Self-help support solutions have gained importance in customer support as many consumers are now comfortable resolving technical problems on their own.

> A significant challenge for brands is that only about one-half of consumers who use self-help tools are satisfied with them.

The vast amounts of device knowledge now being used to automate support can be utilized in some self-support tools. Self-help wizards, for example, that rely on data to guide consumers through resolving simple and routine problems will naturally become more effective and capable of addressing a broader range of problems.
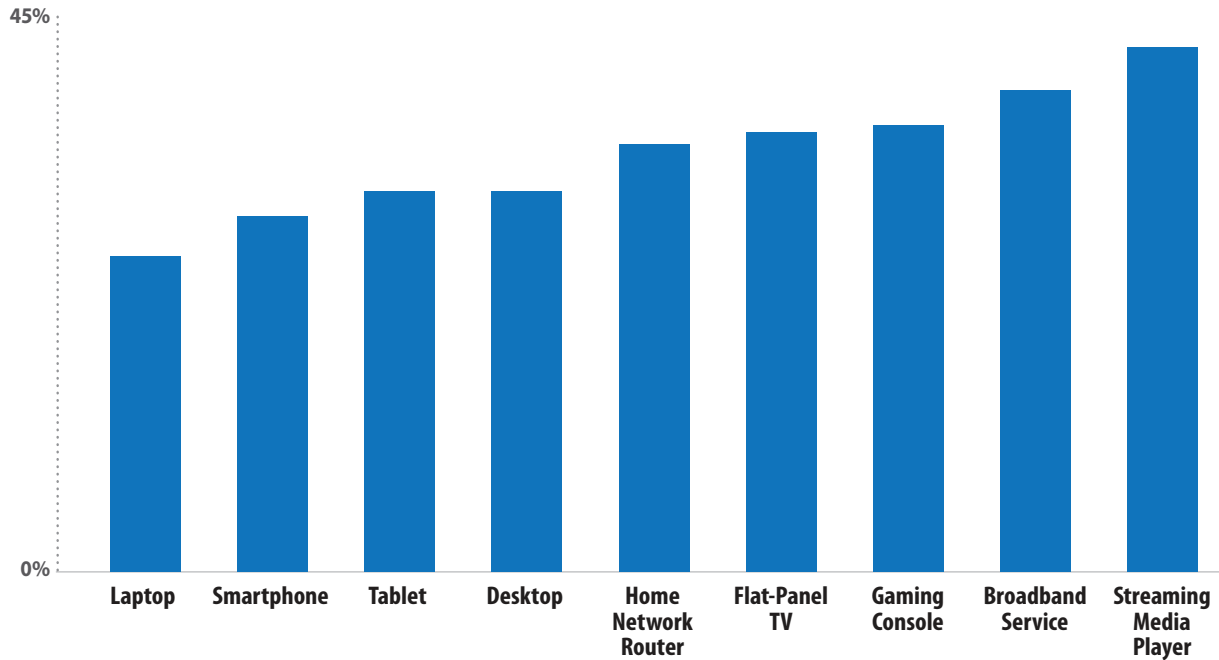
Even with more effective support tools, consumers will have to escalate complex problems to contact center agents. While the need for escalation varies by device type and support tool, nearly one-third of consumers need to escalate to professional help after using self-help tools.

Device connectivity makes this transition more seamless in two ways.

- **Consumers can connect with contact center agents directly from self-help applications, improving the support service initiation process.**
- **Historical activity captured by the device includes previous self-help efforts, giving support agents even more context for the diagnostics process.**

PARKS ASSOCIATES

Need for Professional Support After Using Self-Help Tools, by Device Needing Support

U.S. Broadband Households who have used Self-Help Tools

45%

0%

Laptop | Smartphone | Tablet | Desktop | Home Network Router | Flat-Panel TV | Gaming Console | Broadband Service | Streaming Media Player

© Parks Associates

Conclusion

Until IoT industries evolve to the point where the products are intuitive to consumers and connectivity and interoperability are seamless, **support must be a critical part of the brand strategy of any company in the space.**

Products and systems purpose-built with the right support integration to capture relevant data will be the most capable of providing the optimal customer experiences that will drive growth across industry verticals.

With so many potential challenges to the IoT promise, effective knowledge management solutions must be applied to drive support efficiency and to execute the best proactive strategies.

Intelligent tools that are adaptable to better resolution pathways and strategies will be the most effective and will provide higher ROI for providers than those that are more static in nature.

PARKS ASSOCIATES

SUPPORT.COM®

About the Whitepaper Sponsor

Support.com, Inc. (NASDAQ:SPRT) is the leading provider of cloud-based software (Nexus®) and services to deliver next-generation technical support. Support.com helps leading brands in software, electronics, communications, retail, Internet of Things (IoT) and other connected technology industries deepen their customer relationships. Customers want technology that works the way it's intended. By using Support.com software and services, companies can deliver a fantastic customer experience, leading to happier customers, a stronger brand and growing revenues.

For more information, please visit http://www.support.com/IoT or follow us @support_com.

PARKS ASSOCIATES

Parks Associates is an internationally recognized market research and consulting company specializing in emerging consumer technology products and services.

The company's expertise includes new media, digital entertainment and gaming, home networks, Internet and television services, digital health, mobile applications and services, consumer electronics, energy management, and home control systems and security.

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

About The Author

Patrice Samuels, *Research Analyst,* Parks Associates

Patrice Samuels studies digital home technical support services across global markets, with a focus on market trends, business models, and provider strategies. In addition to exploring events and disruptions in the technical support space, she examines pay-TV and broadband services in North America and Europe and digital media.

Patrice earned her MBA from Texas A&M University at College Station and BSc. in Psychology from the University of the West Indies in Kingston, Jamaica.

INDUSTRY EXPERTISE: Television Services, Broadband Services, Technical Support Services, International Markets.

Twitter ID: @PatriceatParks

PARKS ASSOCIATES