White Paper

Cisco Connected Home Experience Index

Understanding the Connected Home and Consumer Willingness to Pay for Broadband Applications

Contents

Research Highlights

- Seventeen to 23 percent of consumers are willing to pay $1.99/month for each application tested.
- Willingness to pay for additional applications increases proportionally with the number of Internet-connected devices in consumers' homes.
- Seventeen percent of broadband users experienced an Internet outage at least once per week.
- Fifty-four percent indicated that a positive or negative past experience with their service provider would affect their future decision to subscribe and pay for new services.
- Twenty-six percent indicated the Cisco Prime™ Home Consumer Portal application would make them less likely to end a relationship with their service provider, reducing churn.
- Seventy-one percent of consumers indicated that they would likely use the Cisco Prime Home Consumer Portal to troubleshoot and resolve home networking problems themselves rather than contact customer support.

Introduction

The increasingly competitive broadband market has service providers facing new challenges - as well as new opportunities - as they deliver services to today's Internet-connected home.

One challenge is delivering technical support for the rapidly increasing number of Internet-connected devices in the home. Instead of simply setting up one computer to access their broadband Internet connection, consumers are now connecting gaming consoles, cameras, network attached storage and other devices to their residential gateway, which then connects to their service provider.

Another challenge is the erosion of traditional revenue streams like landline telephone service, coupled with the expense and time required to roll out new services such as Internet Protocol television (IPTV). Finally, service providers are facing new competition from nontraditional video distributors, who use the Internet to deliver video "over-the-top" of traditional set-top boxes.

The Cisco Prime Home[1] application and device management platform helps enable service providers to address these challenges. Cisco Prime Home easily satisfies increasing customer support needs, while creating an application framework and user interface to deliver new revenue-generating services. Recently, an independent research firm conducted a nationwide survey of broadband users to assess the usability, demand, and willingness to pay for applications like Cisco Prime Home. The survey's results are presented here, in the first Cisco® Connected Home Experience Index. The index provides data and insights for service providers, as well as recommendations on how they can deliver and generate revenue from new, innovative consumer applications.

Methodology

A number of previous studies have approached the broadband applications market in an effort to quantify demand and interest levels, based on generic descriptions and "1-10 ratings" of customer interest. The overarching goal of this study was to reveal specific demand-driven price points based on specific capabilities of each application.

The Cisco Connected Home Experience Index study was conducted in two phases. The first phase consisted of a series of focus group discussions that centered on gathering qualitative data ahead of the analyst survey. These hour-long focus groups included 15 people per session.

[1] The Cisco Prime Home solution was formerly ClearAccess ClearVision. ClearAccess was acquired by Cisco in May 2012. The research referred to in this document was commissioned by ClearAccess in support of the original product.

The Cisco Connected Home Experience Index study stems from research conducted by Portable Insights through an online, 40-question survey of 414 random participants nationwide. Several thousand candidates were screened in order to get a balance of demographics and to help ensure that each candidate met the minimum requirements of having broadband service to his or her home and influence on the purchasing decisions in the household.

The online survey included a 90-second demonstration of the Cisco Prime Home consumer portal application. The demonstration was brief and informative in nature, and not a "sales pitch" so as to not influence the results. The questions covered a variety of key topic areas and were constructed by Cisco and Portable Insights.

Key Topics

The Cisco Connected Home Experience Index research addressed three focus areas:

- Consumers' willingness to pay and optimal pricing for additional applications beyond broadband service
- The customer support experience today and how additional tools might affect how consumers deal with home network problems
- How the relationship between the subscriber and the ISP affects future purchases

This study reveals that these three areas are closely connected and that, in fact, the support experience is directly tied to the ISPs' revenue opportunity to provide new, innovative applications to the home.

New Applications, Consumers' Willingness to Pay

The Cisco Connected Home Experience Index study delved into several consumer broadband applications and tested overall interest as well as willingness to pay at specific prices. Respondents were asked to specify if they would pay for the applications highlighted in the study. If so, they were asked to indicate the highest price per month they would pay for the various applications. They were also allowed to indicate if they would only be willing to pay a one-time fee.

The charts in this section demonstrate the willingness of subscribers to pay for the particular applications. Thus, somebody who selects $2.99 per month would also be willing to pay $1.99 or $.99. In fact, people may be willing to pay $4.99 per month for certain applications; however, the price point choices were limited for the purposes of this study.

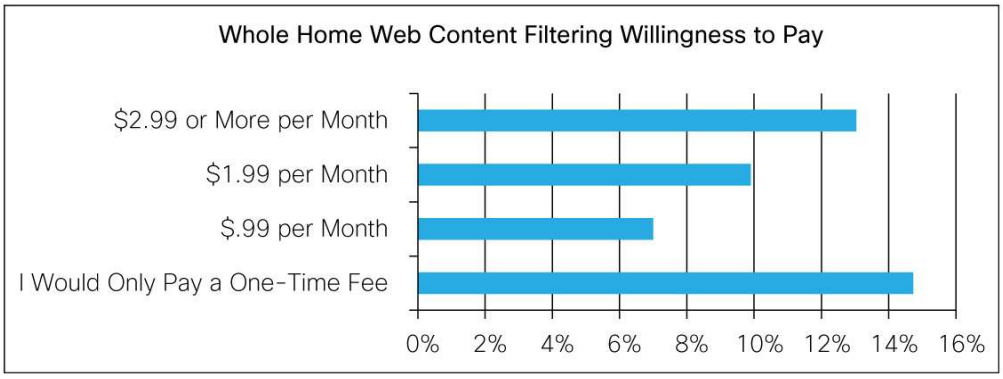
Parental Controls: Whole Home Web Content Filtering

Whole home web content filtering provides consumers the ability to create a specific list of websites that are allowed or blocked for each individual device in the home and to apply the list of allowed or blocked websites to new devices connected to the home network by default. Unique profiles (for example, kids, teens, adults) based on independent website content ratings can be assigned to each device in the home.

For instance, it would allow a parent to assign a "kids" identity to their children's computer, laptop or TV connected to the Internet and to set up filtering to block adult content from those particular devices.

Survey Findings: Cisco found that at least 17 percent of survey respondents would likely pay up to $1.99 per month to subscribe to a whole home content filtering service for the devices in their homes. For respondents with children under the age of 18, more than 50 percent would subscribe to a content filtering service. See Figure 1.

Figure 1. Seventeen Percent of Survey Respondents Would Pay Up to $1.99 per Month for Whole Home Content Filtering Service



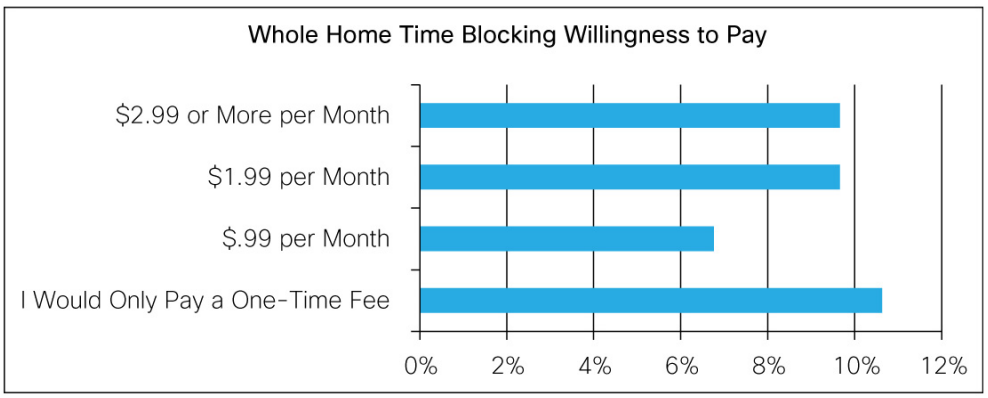
Parental Controls: Whole Home Time Blocking

This application allows consumers to specify periods of time during weeknights and weekends for each device to have access to the Internet. It also allows them to specify an amount of time per day each device can have access to the Internet. For example, the kids' PC could be limited to online access from 5 p.m. to 9 p.m. on weekdays, and 9 a.m. to 10 p.m. on weekends.

New devices can be automatically applied with a default setting and there is also an "add time" feature that allows parents to easily add additional time if the limits expire.

Survey Findings: Cisco found that at least 17 percent of survey respondents would likely pay up to $1.99 per month to subscribe to a whole home time blocking service. For respondents with children under the age of 18 more than 50 percent would subscribe to a time blocking service. See Figure 2.

Figure 2. Seventeen Percent of Survey Respondents Would Pay Up to $1.99 per Month for Whole Home Time Blocking Service



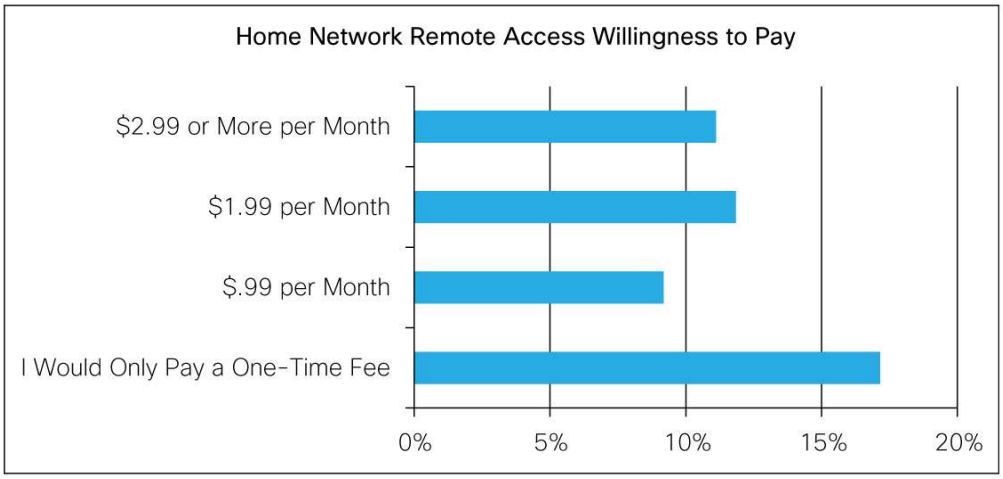
Home Network Remote Access

This application provides a simple dashboard for consumers to manage their home network settings and applications, such as parental controls, from anywhere in the world. This is useful if a parent is travelling and needs to remotely modify settings for content filtering or time blocking, or they need to see what devices are connected to their home network in order to troubleshoot a problem. This service also provides remote access to

the devices in the home network such as web cameras and network attached storage, and because it is browser-based, the application can be viewed on a PC or smartphone.

Survey Findings: Cisco found that at least 21 percent of survey respondents would likely pay up to $1.99 per month to subscribe to a home network remote access service. See Figure 3.

Figure 3. Twenty-One Percent of Survey Respondents Would Pay Up to $1.99 per Month for Whole Home Network Remote Access

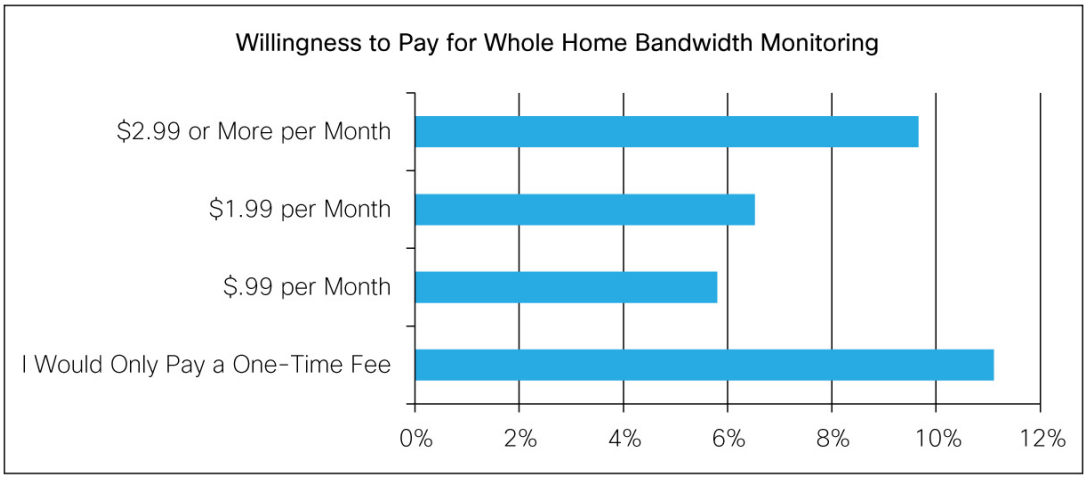


Whole Home Bandwidth Monitoring

As more Internet-enabled devices enter the home, users are competing for a limited amount of bandwidth. For example, sharing a single broadband link between devices for video downloads, file sharing, and business applications like VPN can slow downloads, cause interruptions in service, and create frustration for consumers. With whole home bandwidth monitoring, the user can view total bandwidth use in the home and the amount of bandwidth consumed by each individual device. They will also see this usage as it relates to the total bandwidth available, and see for example if a particular device is using 90 percent of their bandwidth.

Survey Findings: Cisco found that at least 13 percent of survey respondents would likely pay up to $1.99 per month to subscribe to a bandwidth monitoring service. For consumers with seven or more devices in their home, more than 40 percent would subscribe to the bandwidth monitoring service. See Figure 4.

Figure 4. Thirteen Percent of Survey Respondents Would Pay Up to $1.99 per Month for Whole Home Time Bandwidth Monitoring

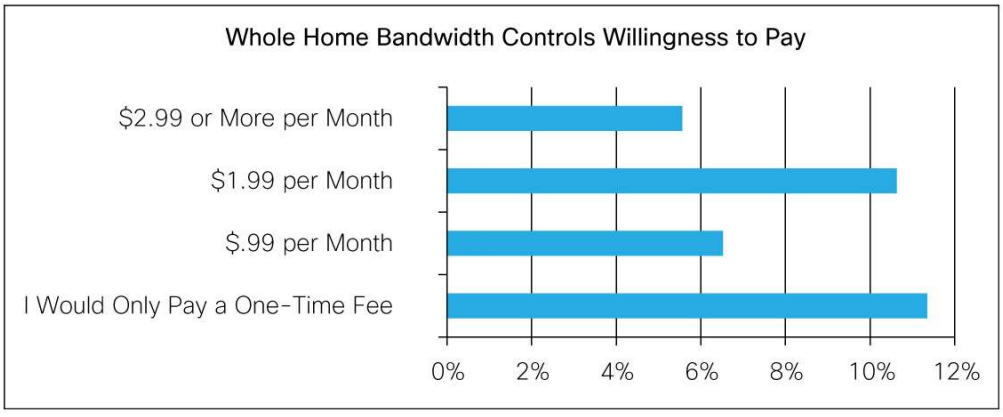


Whole Home Bandwidth Controls

Designed to work in conjunction with the bandwidth monitoring service, bandwidth controls help enable the consumer to specify the priority of different devices in the home. For example, a PC that is used for working from home and video conferencing could be given precedence over a gaming console or a device that is used for downloading movies. This priority is set by the user through the intuitive Control Panel application.

Survey Findings: Similar to bandwidth monitoring, Cisco found that at least 18 percent of survey respondents would likely pay up to $1.99 per month to subscribe to a bandwidth management service. For consumers with seven or more devices in their home, more than 30 percent would subscribe to the bandwidth management service. See Figure 5.

Figure 5. Eighteen Percent of Survey Respondents Would Pay Up to $1.99 per Month for Whole Home Bandwidth Controls

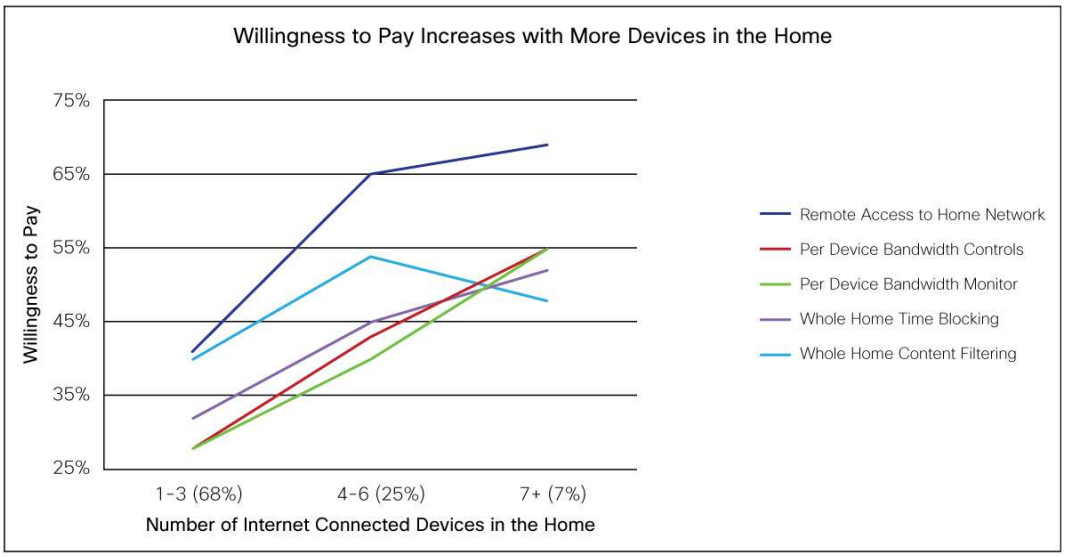


Demographic Trends and Willingness to Pay

A number of interesting trends contribute to this pricing analysis. First, it comes as no surprise that households with children under 18 valued the parental controls applications much more than other respondents. In fact, willingness to pay $1.99 for whole home time blocking and content filtering is 50 percent higher for those with children that for those without.

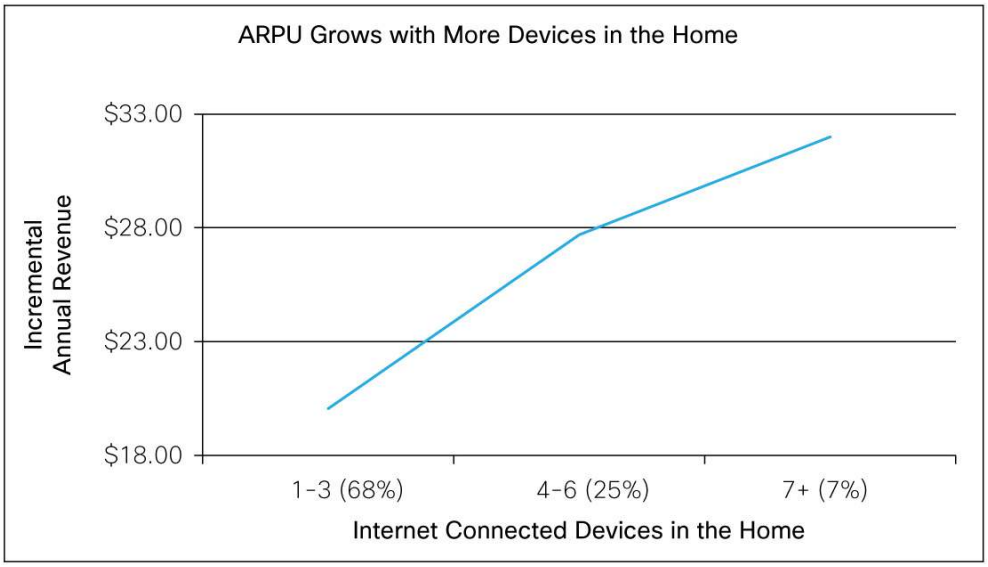
Another interesting trend is the impact of the number of devices in the home. Figure 6 shows how willingness to pay increases with more devices in the home. This data indicates consumer awareness that the problems of managing a large home network and resolving bandwidth contention grow as more devices are added.

Figure 6. Willingness to Pay Increases with More Devices in the Home



Building this into a service provider revenue model, we can see the overall impact to increase annual revenue per user (ARPU) spread across all broadband subscribers (Figure 7).

Figure 7. ARPU Grows with More Devices in the Home



To summarize overall, consumers showed a willingness to pay $.99-$2.99 on a monthly basis for these applications, at a 17-23 percent take rate. The optimal price for these applications is $1.99, though some consumers may be willing to pay higher prices for tiered product offerings.

Broadband Support and Troubleshooting

The research conducted by Portable Insights for Cisco also looked at the support experience. Respondents were asked to evaluate their current Internet provider, and indicate how they deal with home networking problems today. First, we established major trends in usage and overall satisfaction, as well as a breakdown among the major forms of broadband access, the results for which can be found in Figures 8 through 11.

Figure 8. Types of Wi-Fi Routers per Household

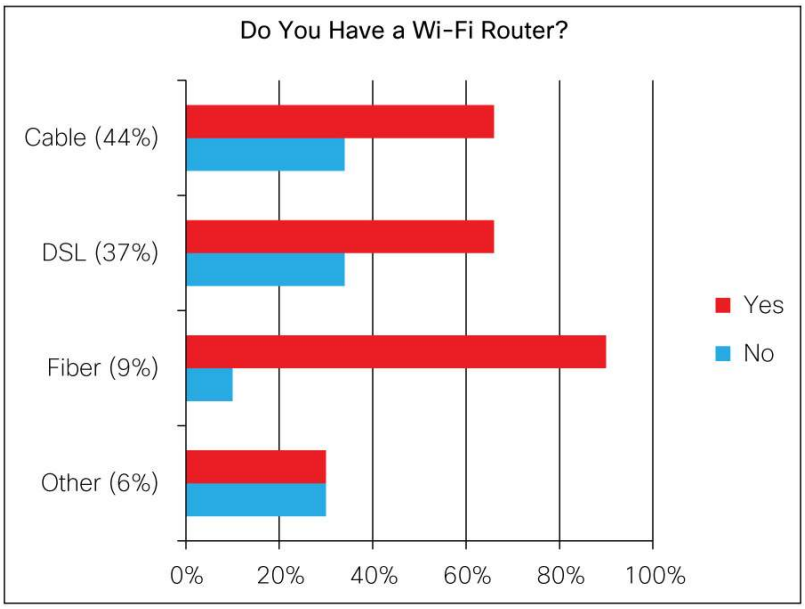


Figure 9. Sources of Wi-Fi Routers per Household

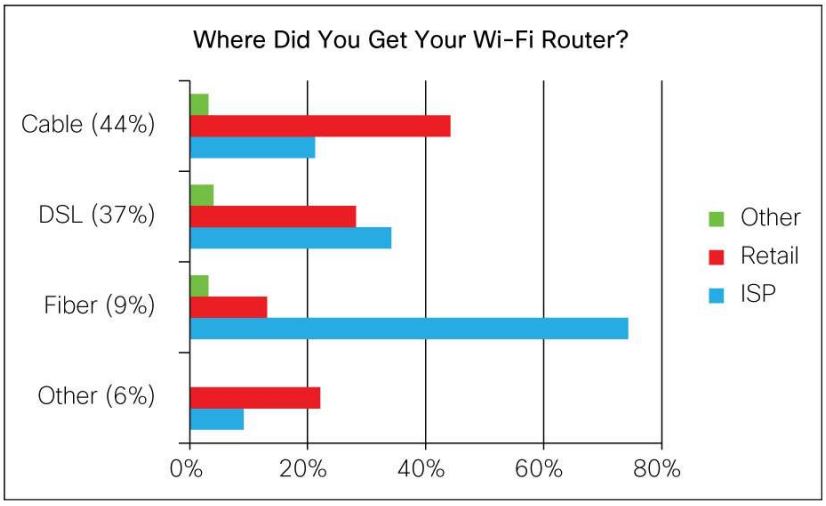


Figure 10. Internet Provider Satisfaction per Household

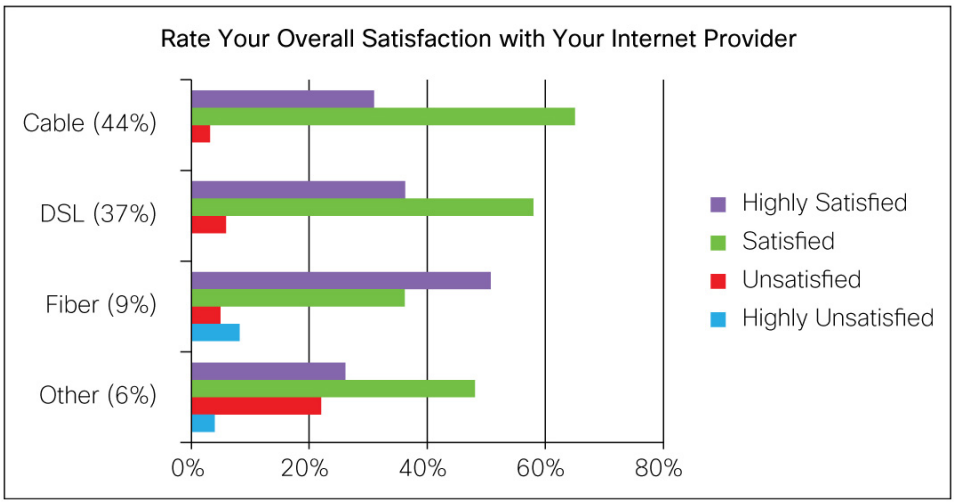
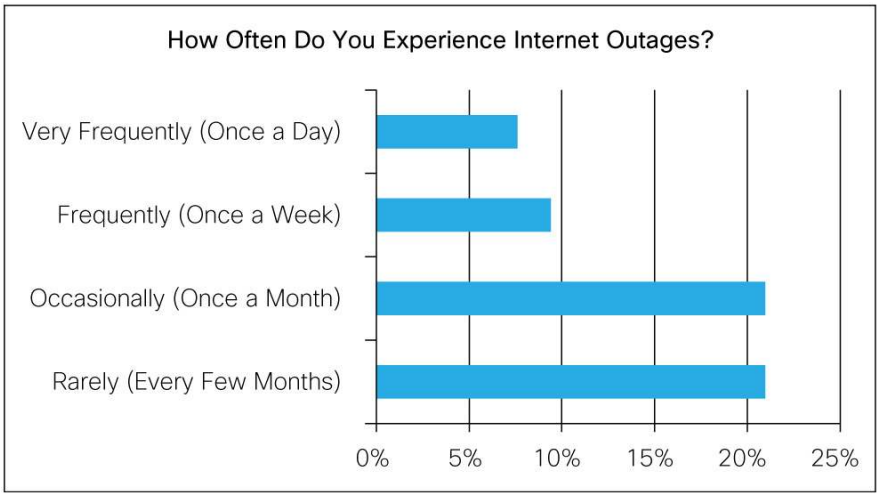
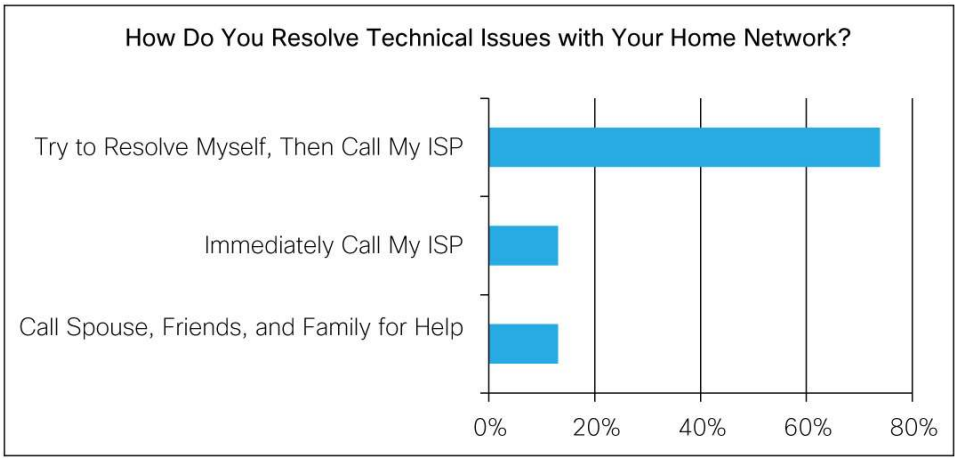


Figure 11. Internet Outages per Household



For troubleshooting, we asked respondents to indicate how they deal with technical issues (Figure 12).

Figure 12. How Respondents Handle Technical Issues with Their Home Networks



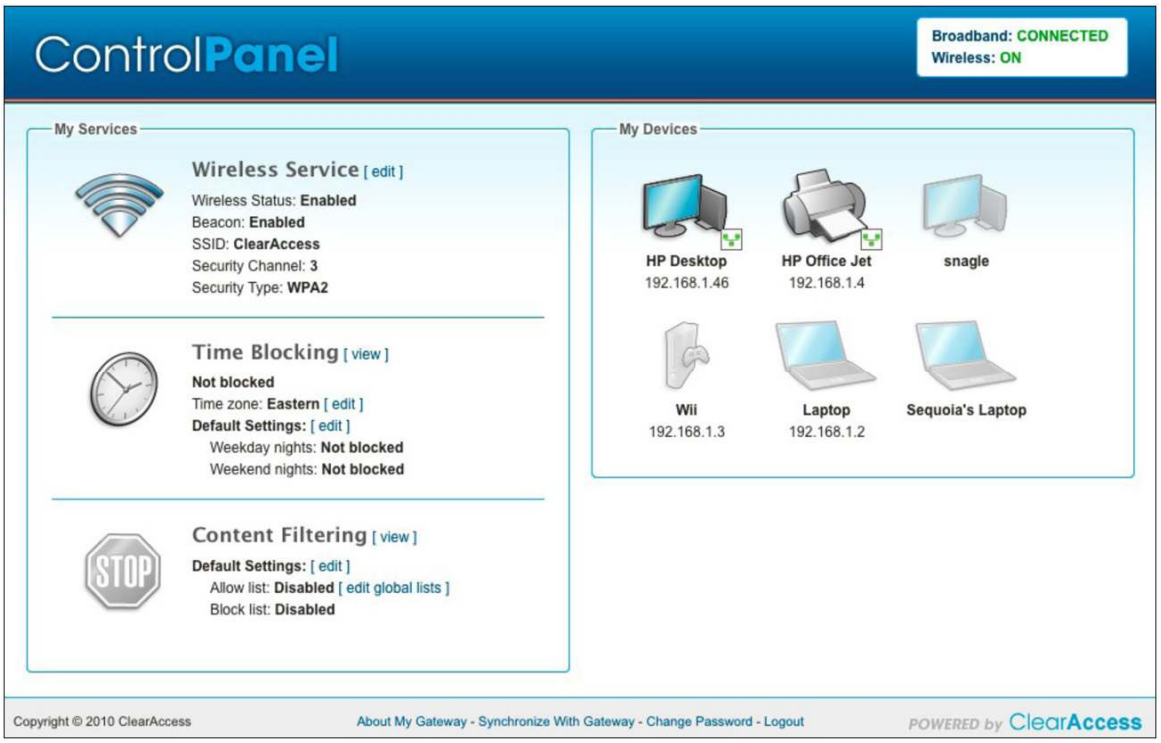
To summarize the findings for broadband support and troubleshooting:

- Overall customer satisfaction for cable and DSL is similar. Cable broadband service scored high for “more satisfied” customers, whereas DSL has the edge on “highly satisfied.” Fiber has the most highly satisfied and highly unsatisfied customers of all segments.
- Fiber users by far have the most WiFi penetration found in the survey, and these users’ WiFi routers were predominantly provided by their ISP. Cable customers have the highest penetration of retail purchased WiFi routers.
- Across all cable, DSL, and fiber consumers the rate of weekly or daily Internet outages is more than ı5 percent, and only 21 percent indicate they rarely experience outages.
- The general trend is that consumers still rely predominantly on the ISP and technically savvy friends to help resolve technical issues.

Cisco Prime Home Consumer Portal Impact on Support Experience

Having established some of the trends in support and troubleshooting, the survey audience was provided a brief demonstration of the Cisco Prime Home Consumer Portal, known as the Control Panel application. Respondents were shown how to use this tool to view the devices in their home and configure services such as WiFi and firewall. Figure 13 is a screenshot of the main screen during the Control Panel demonstration.

Figure 13. Cisco Prime Home Consumer Control Panel



After showing this application, we asked the survey participants to indicate how the Control Panel would affect their troubleshooting:

Would having the Control Panel make you more inclined to try to self-remedy home networking issues?	Yes: 71%
	No: 29%

For the segment that indicated they "immediately call the ISP," more than 50 percent indicated they would use the Control Panel to try to self-remedy instead of immediately calling the ISP.

Churn and Future Services

Finally, the research studied the connection between the support experience, customer churn, and future services purchases. Churn remains a key issue for ISPs, with 23 percent of all respondents indicating they switched broadband providers in the past 12 months (Figures 14 and 15).

Figure 14. Percentage Change in ISPs Over the Past 12 Months

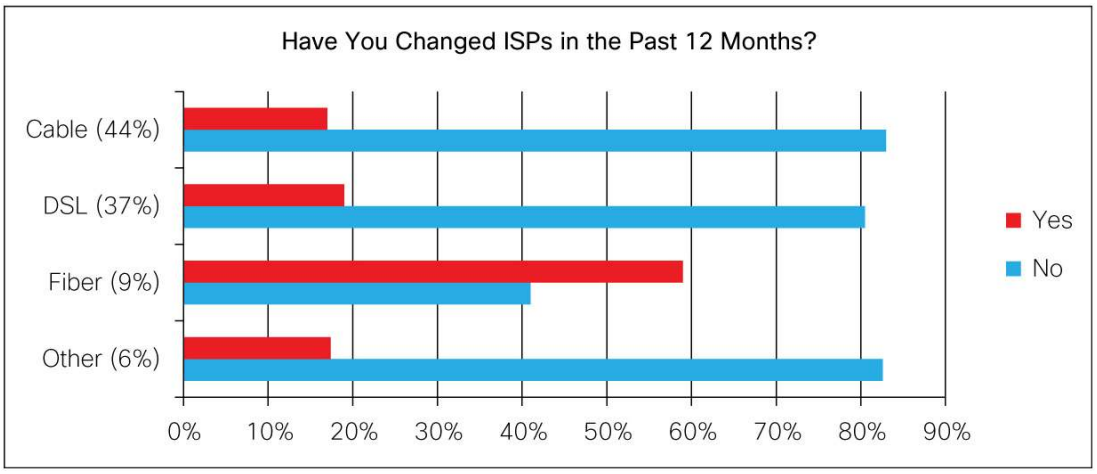
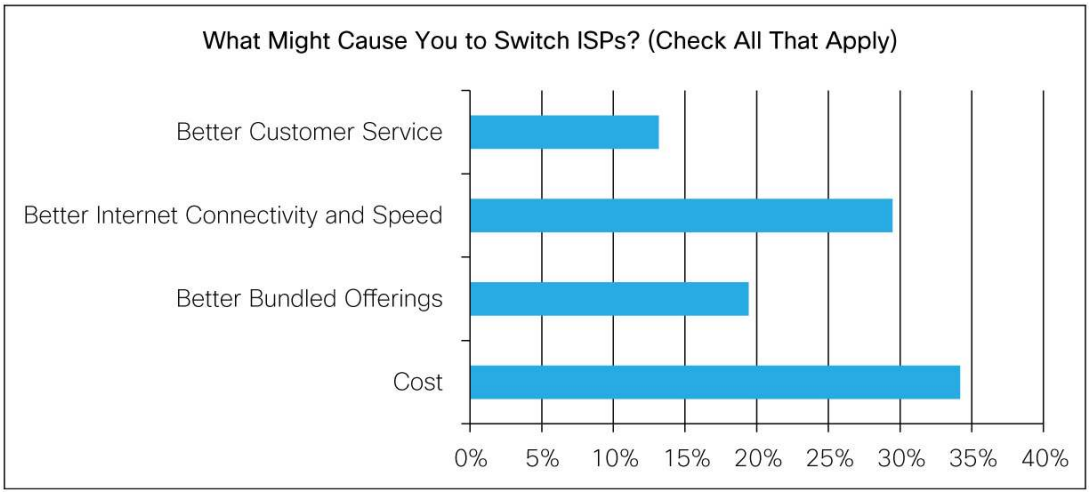


Figure 15. Reasons Respondents Might Switch ISPs



For DSL and cable, churn is roughly even, with fiber possibly taking in more net new additional subscribers. Among the reasons listed for switching, it comes as no surprise that cost leads the way, but better customer service and Internet connectivity were also important factors. From this we can assume that ISPs would benefit from improving metrics in reliability and customer service to reduce churn, as opposed to focusing solely on cost competitiveness.

Cisco Prime Home Control Panel Impact on Churn

Following on the previous chapter's discussion about the Control Panel, we asked respondents to indicate how having this tool would affect their decision to switch providers:

How would the Control Panel Affect Your Decision to Switch to an ISP That Does Not Have This Tool?	
It would affect my decision and I would be more likely to stay with my current Internet provider	26%
It might affect my decision but depends on my experience with it	51%
It would not affect my decision and I would switch regardless	23%

This demonstrates that providing consumers with tools that help enable them to better manage their home network and to troubleshoot problems themselves makes them less likely to switch providers and significantly reduces churn behavior.

Next, we turn to the impact on future purchases. For both cable and DSL subscribers, well over 50 percent indicated that their past experience affects future purchasing decisions. Taking the last two data points together, we see that:

- Having enhanced home network management capabilities positively improves the customer experience.
- A positive experience indicates future likelihood to buy additional services.

See Figures 16 and 17.

Figure 16. Effect of Respondents' Past ISP Experiences on Future Decisions to Buy New Services

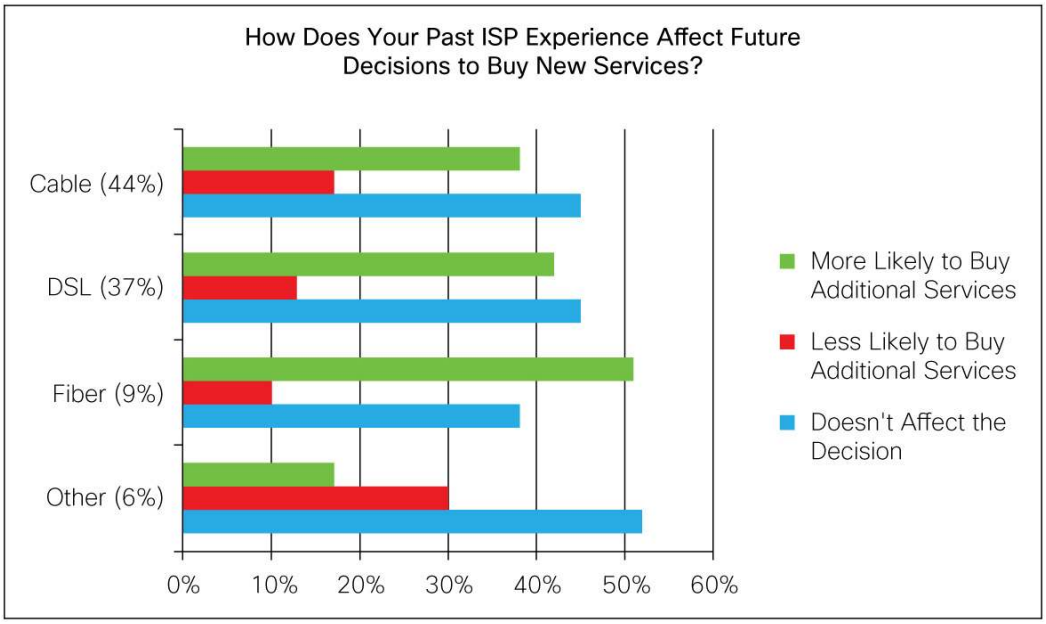
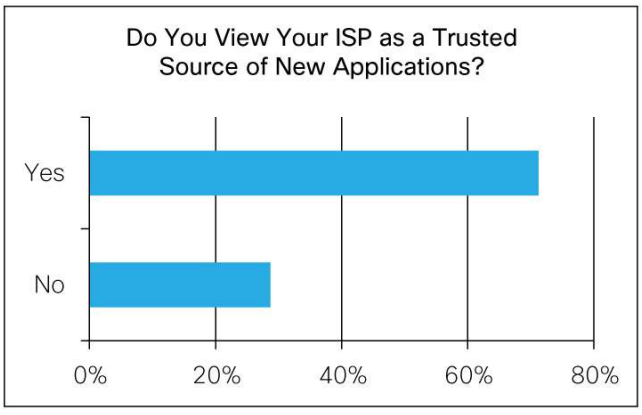


Figure 17. Respondents' Views of ISPs



To summarize, consumers are willing to pay recurring fees for additional services if (a) they see inherent value in that application based on their usage habits and (b) they view their ISP as a trusted source of applications and have had a positive support experience in the past.

Conclusions

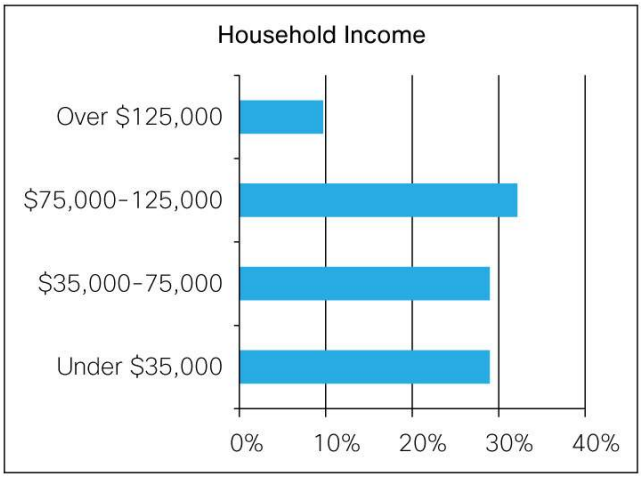
The Cisco Connected Home Experience Index study reveals not only what a service provider can expect to realistically build in terms of an applications revenue model for these base applications, but also the impact the troubleshooting and support experience may have on that model. This study revealed for the first time the actual per application pricing as indicated by consumers. With this information in hand, service providers can build realistic business models based on the rollout of these new revenue-generating services.

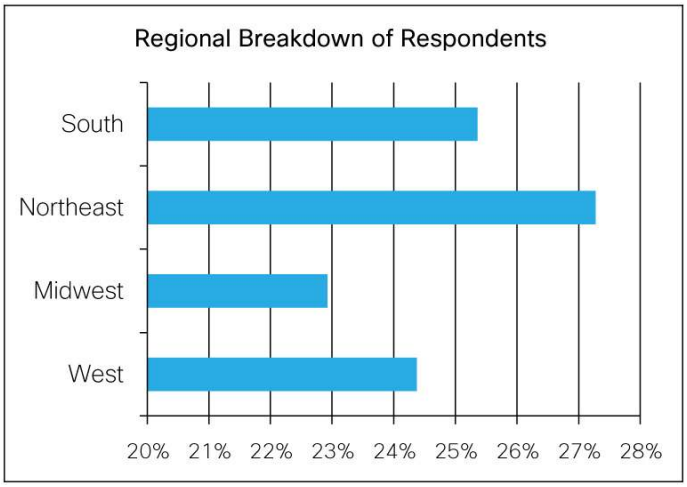
Finally, these results demonstrate the need to approach the managed applications market from the perspective of first ensuring a positive customer support experience, which in turn builds trust and the opportunity for selling additional applications. The conclusion is that these applications can have a meaningful influence on subscriber retention and revenue if properly deployed.

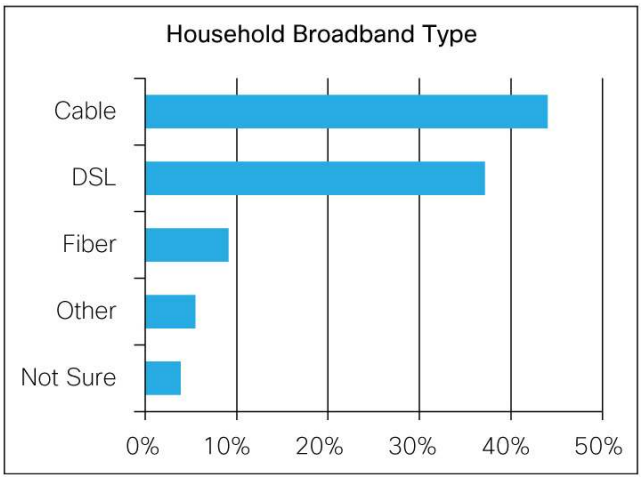
Appendix

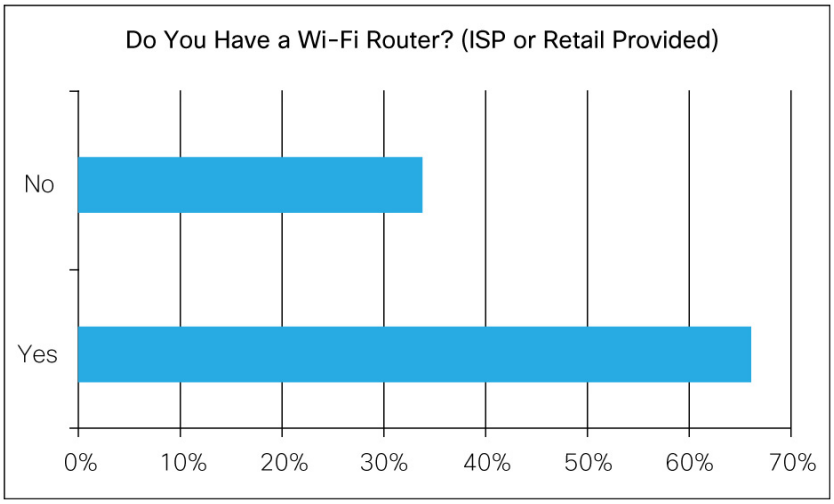
Demographic Distribution

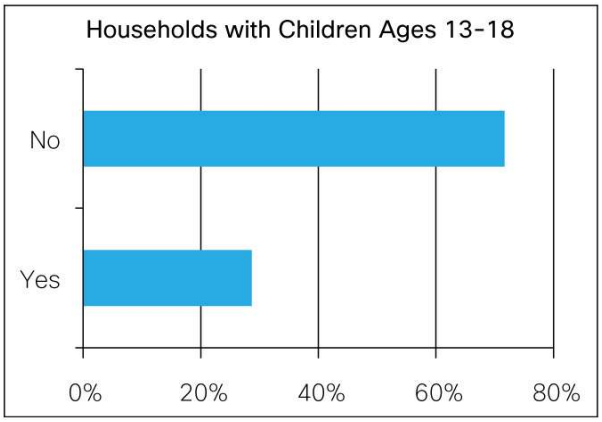
Below are the Cisco survey demographics.

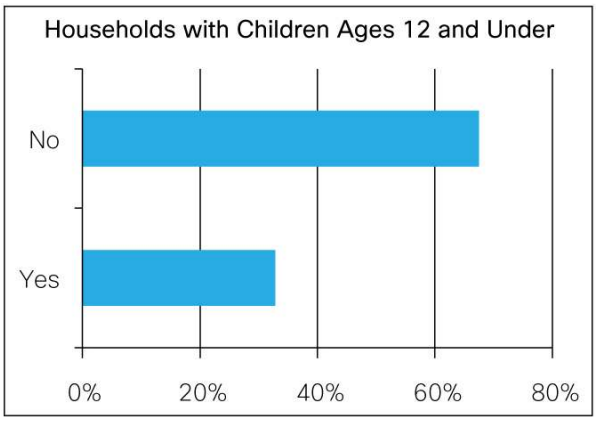












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