

# Building a Successful Smart Home Strategy

A guide for Communications Service Providers





# Introduction

Smart homes are no longer a technology of the future. They're here today, enabled by a wide variety of devices and services that consumers are embracing in growing numbers.

And that's bringing big changes—and challenges—for Communications Service Providers (CSPs) that have long offered standard, subscription-based bundles of voice, video, and data services to their customers.

Smart home technologies depend on fast, ubiquitous, and reliable connectivity. And with the emergence of WiFi 6, 6E (and 7 on the horizon), as well as Matter (the new connectivity standard for smart home devices) CSPs have to ensure they can support an increasing number of advanced devices.

If CSPs can deliver this connectivity along with new digital and cloud-based services for the next generation of smart homes, they can transform their current businesses, defend their market position in the face of new competition, and remain vital into the future.





# State of today's smart home tech

Over the past few years, many smart home technologies have gone from cutting-edge to mainstream.

Consider digital voice assistants, for example. Juniper Research<sup>1</sup> predicts we'll see 8.4 billion digital voice assistants—including smart TVs, wearables, and smart speakers such as Amazon Alexa and Google Home—in use around the world by 2024. That's an increase of 113% compared to the 4.2 billion devices in use at the end 2020.

A new study from global tech market advisory firm, ABI Research<sup>2</sup>, forecasts that by 2026, the global smart home market will reach \$317 billion, up from \$85 billion in 2020 and up 5% over pre-COVID-19 forecasts.

People with such technology in their homes won't have just one or two devices, either. Plume operates the WiFi networks in over 40 million homes and found that from 2016 through 2021, the average number of WiFi IoT devices per home increased from 4.2 to 12.5.<sup>3</sup>

More smart home devices are entering the market every day, with many more on the horizon. Among them: faster and smarter WiFi routers, health and sleep monitors, energy management systems, apps for monitoring emotional health, monitoring systems for the elderly, even smart toilets and smart paints. Until now, all of this growth has occurred in a very fragmented marketplace. Each of the major manufacturers (think Google, Amazon, Samsung, and Apple) has introduced its own system, and the systems don't interoperate. With the introduction of Matter, this is going to change. Matter is the new connectivity standard promising interoperability between devices from different manufacturers.

Many of these devices are also equipped with WiFi 6E, providing faster performance and increased bandwidth. According to Intel, there are now close to 200 types of WiFi 6E-capable<sup>4</sup> devices on the market. And of the 5.2 billion WiFi 6 products expected to ship by 2025, over 40% will likely support WiFi 6E.<sup>5</sup> These next-generation devices will become mainstays of the future of the smart home ecosystem (what some call Smart Home 2.0).

In fact, the demand for connected home applications and devices is expected to dominate the Internet of Things (IoT) market over the next few years, Cisco<sup>6</sup> reports. By 2023, it predicts the consumer segment will be nearly three times as big as the business segment. And the number of connected devices will be three times bigger than the number of people worldwide.



<sup>1</sup> "Number of voice assistant devices in use to overtake world population by 2024, reaching 8.4BN, led by smartphones," Juniper Research, April 2020

<sup>2</sup> "COVID-19 Cuts Smart Home Growth by US\$14 Billion in 2020, But Drives Future Change," ABI Research, August 2020

<sup>3</sup> "Intelligence and insights for the smart-home industry," Plume IQ, February 2022

<sup>4</sup> "Number of Wi-Fi 6E-capable devices and routers closing in on 200 types and models," Wi-Fi NOW, January 2022

<sup>5</sup> "Wi-Fi 6 shipments to surpass 5.2 billion by 2025," The Beacon, March 2021

<sup>6</sup> "Cisco Annual Internet Report (2018–2023)," Cisco, 18 February 2020



## Why this matters for CSPs

For established CSPs, all of these developments point to an inescapable conclusion: their customers' expectations are changing, and dramatically, accelerated by the pandemic-related lockdowns that began in 2020. Customers are discovering new ways to use networking and mobile services to monitor and safeguard their homes. They're using new kinds of devices to access voice, video, and data services. And they're rapidly adopting new technologies that will challenge the traditional business offerings of CSPs.

This creates new and heightened pressures for CSPs that have long operated in an environment where traditional barriers to entry and market boundaries have helped to keep would-be competitors at bay. That environment has enabled them to build sizable and relatively stable customer bases with reliable revenue streams.

However, in this emerging smart home landscape, as Accenture noted in a 2019 report, "incumbency is no longer an advantage"<sup>7</sup>.

The infrastructure that CSPs have built their service offerings on can't compete with cloud-delivered disruption, and cloud-delivered service is what big technology companies like Amazon, Apple, and Google do best. These companies are entering the smart home era with favorable tailwinds, while legacy CSPs face increasing headwinds.

So CSPs are at a critical moment. Rather than simply looking for ways to save costs and optimize existing services to maintain their market position today, they need to invest in strategies that can ensure their future growth and stability. This will require transforming their current business model to offer new digital products and cloud-delivered services that are ready for the smart home era.

Fortunately, they have a strong foundation on which to build this new approach. Their customers, their networks, their local brands and existing expertise—all these can help support a transition to new ways of doing business.

## Challenges for CSPs

While building a smart home strategy is vital, it poses several significant challenges for CSPs, especially independent ones with limited resources.

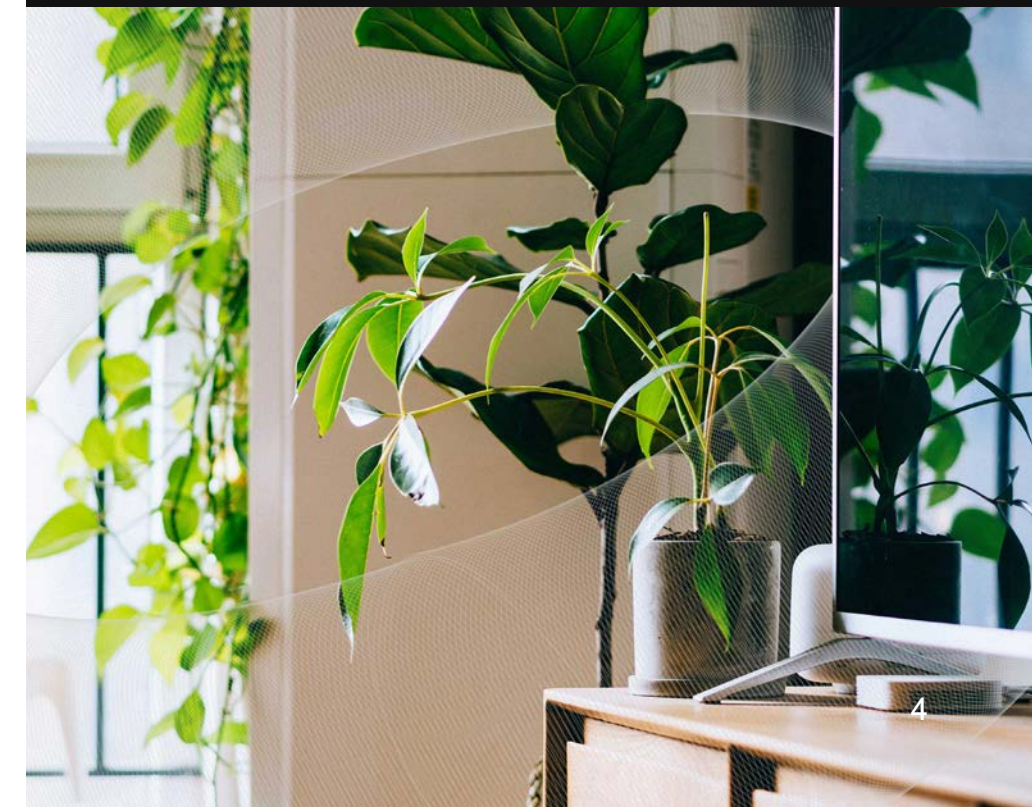
### LEGACY SYSTEMS

Traditional CSPs have built their businesses on hardware and infrastructure, with the bulk of their workforce focused on installing, maintaining, and repairing those physical systems. Smart home technologies, by contrast, rely on software and engineering. CSPs' physical systems can't scale like software-defined platforms can, and they're not as flexible or agile either. The traditional CSP workforce also tends to lack the digital skills needed to compete with the likes of Google or Amazon.

### THINK STRATEGICALLY

- Recognize that trust and familiarity make CSPs natural partners for customers who want to add smart services to their homes.
- Think beyond B2C and look for B2B opportunities as well. Digital disruptors like Amazon and Google have already tapped into such markets and are growing B2B revenues by as much as 30%–50% annually, according to Accenture research<sup>8</sup>.
- Beyond looking for new potential growth areas, also seek out ways to better monetize existing offerings.
- Focus on providing digital, customer-centric experiences driven by data that allows for hyper-personalization.

<sup>7,8</sup> "Trash the Rulebook," Accenture, February 2019





Meanwhile, customers are less interested in using legacy offerings such as landlines. In 2018, the National Health Interview Survey<sup>9</sup> found nearly 55% of homes in the US no longer had landline telephones. Those numbers were even higher among renters and 25- to 34-year-olds: 74.4% and 77.3%, respectively. The clear message is that CSPs must look for new services as a value add.

### **BUSINESS MODELS**

Another core CSP service—video, or cable TV—is also seeing declining adoption rates as more and more consumers “cut the cord” in favor of digital streaming services. Trends like this mean declining profitability for traditional service providers, who now find themselves struggling to offset lower revenues through cost-cutting measures.

At the same time, regulatory changes mean many CSPs no longer enjoy the protections that kept their service areas free of competitors. This makes it harder for them to maintain the physical presence that was once their strength. Instead, today’s business advantage goes to companies that excel at digital engagement.

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### **DISRUPTOR COMPANIES**

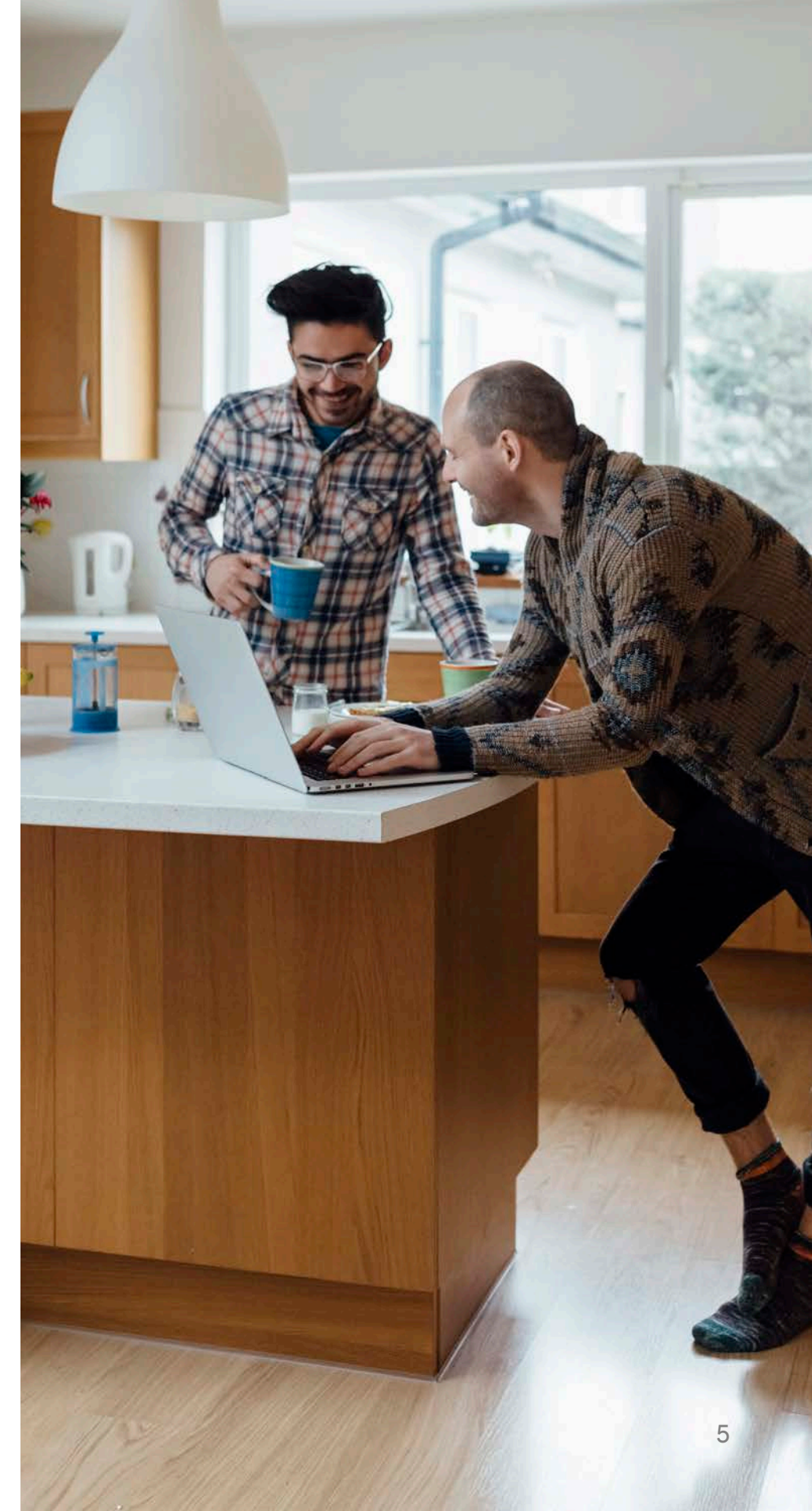
The digital engagement race is being led by big technology companies focused on software first. By building their services on software, these giants can scale quickly to meet the demands of thousands to millions of new customers. Their digital delivery model also makes it easier to quickly roll out new services on top of existing ones, enabling them to stay fresh and relevant for the modern consumer.

The tech giants have excelled at serving not just consumers, but businesses too. Their combination of B2B and B2C customers has helped to strengthen their market position even further compared to traditional CSPs.

And that has opened up new opportunities that they’ve been eager to exploit: streaming video services, voice-over-IP phone services, and a host of other new services that put them squarely in competition with legacy CSPs.

### **MATTER**

At present, interoperability between the device systems from different manufacturers is very poor—each is essentially a walled garden. The Apple HomeKit app on your phone will not conveniently control a “Works with Alexa” light switch. Similarly, a HomeKit-compatible electrical outlet cannot be controlled conveniently from an Alexa voice assistant. Matter is the solution to this fragmentation problem.



<sup>9</sup> “Wireless Substitution: Early Release of Estimates From the National Health Interview Survey, January–June 2018,” National Center for Health Statistics, December 2018



Matter is a standard created in the Connectivity Standards Alliance (CSA), and all the major players have committed to it. The initial rollout of the Matter specification (Sept, 2022) is expected to include 130 devices from 50 different companies. Given the number—and sheer scale—of the companies cooperating on Matter, these numbers are likely to grow very quickly and CSPs need to be ready. For better or worse, CSPs will be on the hook for making Matter work well in consumers' homes.

### WIFI 6E

CSPs have to keep up with ever-evolving WiFi versions if they want to provide their customers with truly seamless smart home experiences.

WiFi 6E, the newest iteration, offers reduced network interference and support for even more devices like video streaming sticks, gaming consoles, virtual reality headsets, and Internet of Things (IoT) equipment. It's set to be a game-changer for CSPs—especially as customers bring more bandwidth-hungry devices into their homes.

The issue here is that WiFi 6E requires advanced network management—much more than WiFi 5 and 6 did. Without the right tools to deliver these next-level connected experiences, CSPs only risk frustrating customers and costing themselves valuable time and resources.

### CHIP SHORTAGE

The U.S. Department of Commerce expects the chip shortage to persist at least throughout 2022<sup>10</sup>, severely impacting electronics production. Many industry executives even say the shortage will cause delays into 2025 as demand for hardware continues to rise but supply lags behind.

CSPs who rely too heavily on their hardware will be hit especially hard by this shortage. If every system update requires a fresh device to be shipped and installed, for example, consumers will be left impatiently waiting for their new features and services. And CSPs will have to eat the costs of losing frustrated customers.

Only with a cloud-based system can CSPs be more resilient amid a chip shortage. By remotely pushing all updates to existing devices throughout customers' homes, CSPs can extend the lifespans of their legacy hardware and continue upgrading consumer experiences despite slow chip production.

### CUSTOMER CHURN

Customer churn or turnover is a constant concern for CSPs. According to Statista, cable and telecom companies have two of the highest customer churn rates across U.S. industries<sup>11</sup>. Qualtrics also found that TV and internet service providers have the highest percentage of customers reporting bad experiences, which contributes to turnover<sup>12</sup>.

In fact, consumers who only subscribe to internet services—which many do these days—are likely to churn at a rate of roughly 30% each year, according to Adam Hotchkiss, cofounder and vice-president of customer solutions and integrations at Plume. CSPs must take strategic steps to improve customer experiences. For example, they should strive to deliver personalized services, proactive customer support, and widespread, uninterrupted internet connection. Otherwise, they risk losing customers and spending even more money trying to acquire new ones.

### IMPACTS ON CSPS

For CSPs, all of these challenges have brought shrinking customer numbers, declining earnings, lower returns on investment, and a continual battle to control costs and optimize existing business systems rather than to upgrade for the digital business age. The result, as Accenture has noted, is a "race to the bottom"<sup>13</sup>.

<sup>10</sup> "Biden Team Says Global Chip Shortage to Stretch Through 2022," Bloomberg, January 2022

<sup>11</sup> "Customer churn rate in the United States in 2020, by industry," Statista, March 2022

<sup>12</sup> "Which Industries Are Suffering Most from Poor CX?," Marketing Charts, January 2020

<sup>13</sup> "Trash the Rulebook," Accenture, February 2019



## Looking for solutions

A real solution to these business challenges requires new models and strategies built on digital, smart home thinking. Such an approach demands putting a priority on technologies that can achieve the following:

- Improved business efficiency and innovation.
- Transformation with a new focus on software-defined services.
- Flexible, network-agnostic technologies for smarter and more reliable connectivity.
- Data-driven insights into networks, devices, and customer usage.
- Personalization of products, services, and customer experiences.
- Open-source software that can scale rapidly across both deployed and new hardware.

Achieving these goals offers obvious and dramatic benefits for CSPs:

- Better efficiency means more resources for building the business, rather than simply maintaining existing market position.
- Digital business brings flexibility, agility, and scalability.
- A focus on software-defined services helps future-proof CSPs against chip shortages.
- Smarter connectivity makes services easier for customers to deploy and use.
- Remote deployment of services also yields more sustainable strategies, making CSPs less reliant on hardware.

- Data-driven insights allow CSP workforces to identify and resolve technical issues more quickly.
- More data on user behavior and usage patterns also allows companies to target customers with more tailor-made, personalized offerings.
- Flexible, open-source software gives CSPs the network management tools they need to support new WiFi iterations like WiFi 6E.

All of this enables CSPs to do more with less and to ease demands on customer service. At the same time, they can also improve customer satisfaction, reduce churn, and begin to grow revenues through new products, new services, and new customers.

Achieving these goals might have once been out of reach for companies without access to the newest digital technologies and the related in-house skillsets required for these.

However, thanks to the cloud and its many “as-a-service” possibilities, CSPs today have the potential to transform their businesses for the smart home age and be ready to compete with new models and disruptors.



# What Plume offers

Plume empowers CSPs to compete and win in the smart home ecosystem by enabling them to deliver an entire suite of world-class Smart Home Services at scale, and to continue adding the latest services almost instantly. Our Consumer Experience Management (CEM) Platform provides SaaS-based access to back-end analytics, machine learning and artificial intelligence capabilities, and user-friendly dashboards and support tools that enable rapid troubleshooting.

Here's how.

## HomePass

Plume HomePass, an award-winning suite of Smart Home Services, is managed by the Plume Cloud, a data- and AI-driven cloud controller currently running the largest software-defined network in the world.

With HomePass, CSPs are able to quickly and easily deliver a wide range of Smart Home Services to their customers:

- **Adapt.** Flawless, self-optimizing WiFi that responds to usage patterns.
- **Control.** Seamless guest access including custom passwords, parental controls, and the ability to freeze internet access when appropriate.
- **Guard.** AI-powered cyber-security that monitors online activity in real time, protecting against hacks, filtering suspicious data, and automatically blocking and quarantining suspicious content.
- **Sense.** Transforms network-connected IoT devices into home-based motion sensors.

Adapt provides the foundation for our Smart Home Services suite.

Unlike traditional mesh WiFi systems, Adapt is deeply distributed throughout the home, and delivered as a cloud service that continuously adapts to the needs of the home and its occupants. Powerful and self-optimizing, it provides continuous monitoring to avoid interference with other nearby networks and uses multiple channels for increased network capacity. Routing algorithms also help to balance network loads and optimize the performance of applications on every device, in every room of the house.

## THINK OPERATIONALLY

- While looking for cost-saving opportunities, make it a priority to re-invest savings in strategies that drive future growth.
- Seek ways to introduce more competitive cost structures that increase both flexibility and profits.
- Look for opportunities to reduce support costs by investing in proactive technologies that can resolve service issues before customers call.
- Think about platform economics and flexibility while making investment and capital allocation decisions.

As a cloud-based service, HomePass can deliver new features and upgrades to subscribers as soon as they become available. And our APIs mean that Plume can integrate seamlessly with existing CSP systems for operations, inventory management, billing, reporting, and other tasks.

The HomePass mobile app makes it easy for customers to get set up and enables them to monitor and control their home network and devices remotely. CSPs have the option to distribute Plume pods as advanced WiFi access points, or to deploy from their existing hardware through an open-source integration called OpenSync.



## OpenSync

OpenSync is open-source software that operates across devices like modems, routers, extenders, IoT hubs, smart speakers, and other smart home hardware. Since OpenSync is based in the cloud, CSPs can use it to seamlessly manage customer networks, collect real-time data, and deliver personalized services at scale.

Created by Plume and partners like Samsung, Comcast, Bell Canada, and Liberty Global, OpenSync is already used by over 250 CSPs to power more than half of homes in the U.S. and Canada, and roughly 40 million homes across the globe.

Here's a closer look at what OpenSync offers to CSPs:

- **Control and flexibility across platforms.** CSPs can break free from the old model of network management and use the cloud to run services across devices and access points.
- **Compatibility with different chips.** OpenSync is integrated with all major chip set vendors, so CSPs can deliver uniform experiences regardless of each customer's hardware.

- **Sustainable outcomes.** CSPs can reduce their environmental footprint and electronic waste by extending the lifetime of their hardware and up-cycling the devices that customers are already using.
- **Built-in support for WiFi 6 and 6E.** OpenSync is the most broadly adopted cloud framework for WiFi 6 and 6E, giving CSPs the tools they need to manage consumers' increasingly device-filled home networks.

## Haystack

CSPs gain access to comprehensive support for managing HomePass services through Haystack.

Haystack is a comprehensive back-end monitoring solution catered to Support, Engineering, and Operations teams. The Frontline application provides insights for Tier-1, -2, and -3 Support and Engineering personnel, coupled with Panorama dashboards to monitor the operational aggregate health of the network. Signal, a predictive analytics system, pinpoints unhappy customers and proactively generates outbound customer care contact to reduce calls and increase customer satisfaction, an industry first.

## Harvest

Finally, with Harvest, customer device trends, usage behavior, and application patterns are captured with the ability to create and filter cohorts of your customer base. Network analytics help drive marketing, promotional, and product decisions to take advantage of network trends and customer purchasing decisions.

All of this helps CSPs to overcome the many challenges facing them and to transform into smart home-ready digital service providers.



### SMALL BUSINESSES CAN BE SMART, TOO.

Plume helps CSPs better serve small business customers with WorkPass, an enterprise-grade network management platform built just for small businesses.

More than just a strong WiFi signal, WorkPass provides:

- Fast, reliable connectivity that adapts to each business.
- An easy-to-use WorkPass app for managing on the go.
- AI-powered cyber-security services to protect data and devices.
- Real-time productivity and customer insights for business growth.



## The results

By gaining the ability to offer their subscribers a wide range of new services, and to track service issues with real-time monitoring and data analytics, Plume's partners have reported dramatic benefits, including:

- Up to 30% reduction in churn.
- Average revenue increase of up to \$15 per customer.
- As much as 50% reduction in support calls.
- Reduced truck rolls by up to 67%.
- Up to 67% increase in services rollout velocity.
- Up to 60-point increase in NPS.

Deploying Plume's full suite of Smart Home Services is fast too: partners can go from contract to live service in as few as eight weeks.

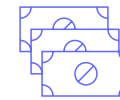
With our comprehensive solution, CSPs have access to all the tools and services they need to digitally transform and build a successful business strategy for the smart home era:

- Cloud-based software for agility and scalability.
- Network-agnostic technology for reliable customer connectivity.
- Dashboards for real-time insights into network performance and services.
- Integrated support and access to continuous upgrades and new services for customers.

And, importantly: a reliable, knowledgeable partner that's ready to help them become competitive for the digital business age.



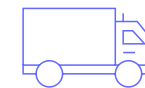
Churn reduced  
by up to  
**30%↓**



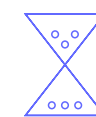
ARPU increased  
by up to  
**\$15↑**



Support calls  
reduced by up to  
**50%↓**



Truck roll rates (TRR)  
reduced by up to  
**67%↓**



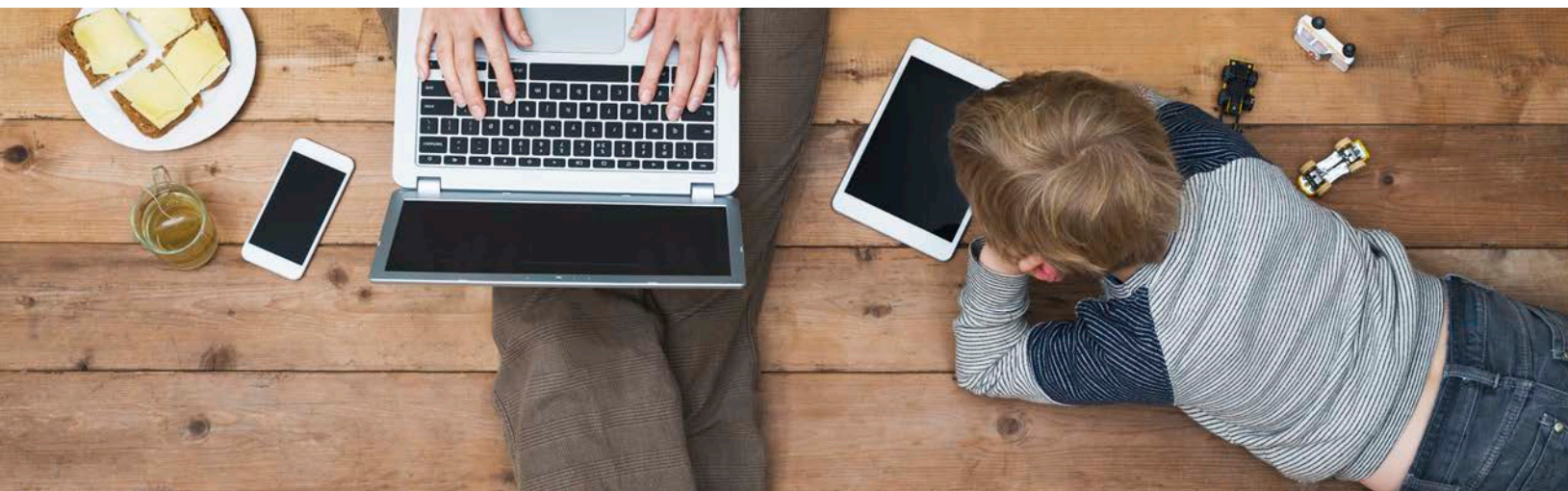
Services deployment  
timelines reduced  
by up to  
**67%↓**



NPS increased  
by up to  
**60pts↑**

## THINK TECHNICALLY

- Look for open platforms, network-agnostic devices, and easy-to-deploy technologies that help overcome customer concerns about confusing devices or incompatibility.
- Make network quality, reliability, and speed a priority, as these create the foundation for future Smart Home Services.
- Focus on products that are software-driven and can be launched rapidly to meet customer expectations and demands.
- Employ robotic process automation, artificial intelligence, chatbots, and other technologies to improve customer service and agility.
- Enable transformation of costs and customer experiences through data-driven insights, orchestration, and software-defined solutions.
- Keep management of legacy infrastructure lean and efficient while also pursuing new digital offerings.





# Conclusion

For CSPs, the time to digitally transform and become providers of Smart Home Services is now.

Consumers are embracing diverse smart technologies and increasingly moving away from the traditional voice, video, and data offerings that once dominated the market, especially as Matter-compatible, WiFi 6E devices emerge. They're also increasingly willing to change who they do business with to obtain the services they want if their current providers don't deliver.

The solution for CSPs is to partner with a company that can support their transformation quickly, seamlessly, and cost-effectively. Plume's cloud-based CEM Platform, HomePass Smart Home Services suite and app, flexible hardware options, robust support, and broadly adopted OpenSync software make that possible.

**To learn more, email us at [partner@plume.com](mailto:partner@plume.com) or visit [plume.com](https://plume.com) today.**





