Maximizing WiFi 6E: How to Embrace the 6 GHz Spectrum—and the Future—Now

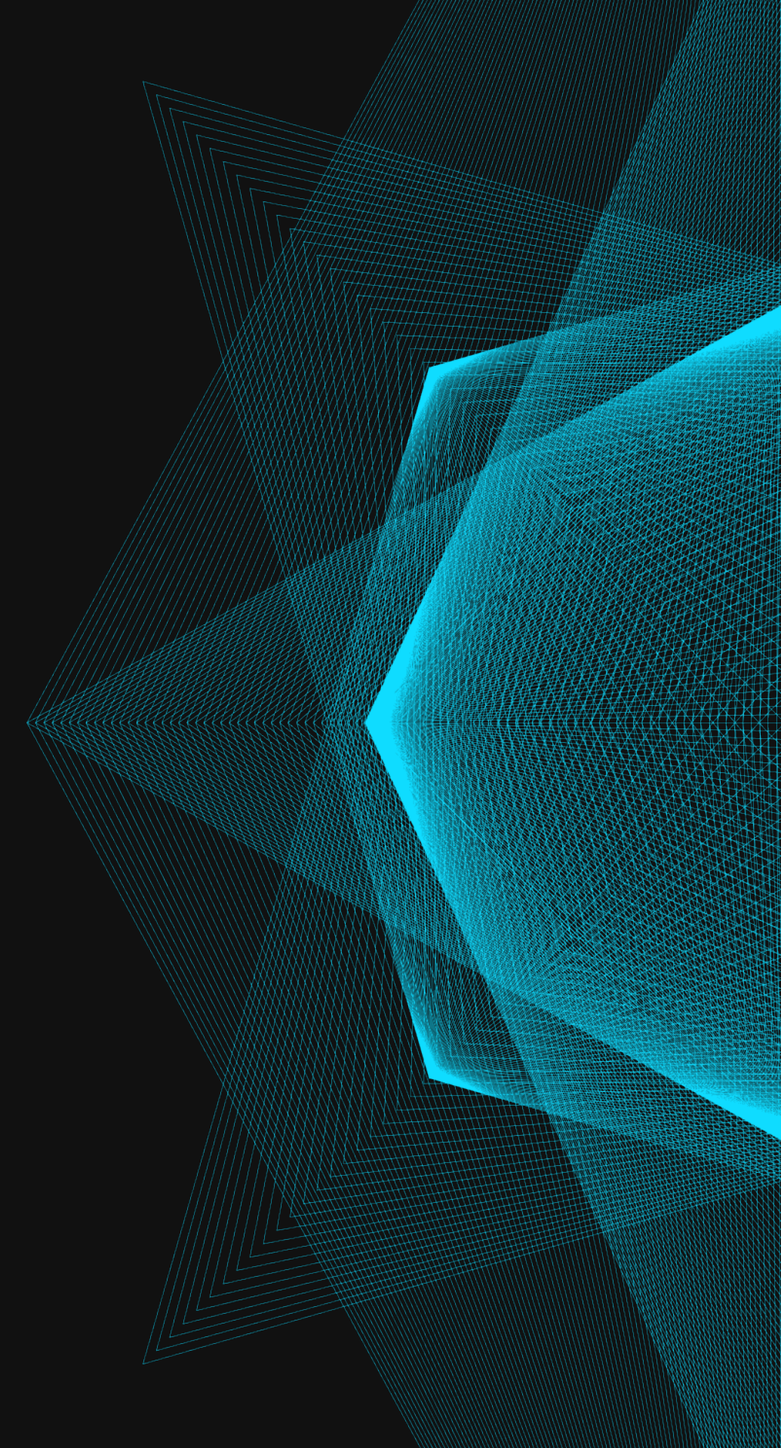

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Table of contents

Executive summary

Extending the transformative features of WiFi 6 to the 6 GHz spectrum, WiFi 6E promises a new era of innovation. Together with WiFi 6, 6E will bring more capacity than all the other bands combined while delivering faster speeds to consumer homes and enterprises.

Forecasts show that both WiFi 6 adoption and the use cases it supports—such as augmented reality and virtual reality—will grow rapidly. Already, momentum is strong as regulators across the world allocate the 6 GHz spectrum to unlicensed use and as industry players—from chipset makers to device manufacturers—start to roll out WiFi 6E products.

Communications Services Providers (CSPs) need to start planning now for the new services that WiFi 6E will enable, and that customers will expect. Deploying the technology is not without challenges, as WiFi 6E requires more intelligent management and optimization than previous WiFi generations.

Adopting a new business model based on cloud-delivered services not only prepares you for WiFi 6E but will also future-proof service delivery and help you revitalize your current infrastructure. Only an intelligent, cloud-based consumer experience platform delivers the sophisticated management that today's smart homes require—while providing CSPs with better choice, flexibility, and control.

Introduction

In the last few years, WiFi has become an essential component of the global digital infrastructure. As the backbone of the digital economy, WiFi connectivity is embedded into the way we live and work. But the technology is just getting started.

With WiFi 6 adoption now in full force, the industry expects the technology's improvements to fuel new innovation, especially in areas such as the Internet of Things (IoT), augmented and virtual reality, and high-definition video streaming. As a result, the global economic value of WiFi will increase from $3.3 trillion in 2021 to $4.9 trillion by 2025, the Wi-Fi Alliance estimates.[1]

One of the drivers behind the growth in economic value is the 6 GHz spectrum allocation to unlicensed use, which will reduce congestion and significantly boost speed. WiFi 6E extends the WiFi 6 improvements such as increased capacity and throughput to the 6 GHz band—positioning this new generation of WiFi to meet the surging demand for connectivity and more advanced use cases.

For CSPs, these developments bring an opportunity to grow portfolios with new offerings for the smart home. If you want to lead the market, you need to prepare now to take advantage of all the industry innovations.

To develop services that capitalize on the full potential of WiFi 6E, it's time to redefine your business model. Traditional models that bind software with hardware cannot keep up with the rapid changes in smart home technology and digital lifestyles. As consumers look to upgrade to the new generation of WiFi, they'll expect CSPs to deliver not only on the higher throughput of WiFi 6E but also on improved quality of experience.

Estimated increase of the global economic value of WiFi:

[1] "Global Economic Value of Wi-Fi, 2021-2025," Wi-Fi Alliance, February 2021

The growing momentum behind 6 GHz

WiFi adoption has exploded in the past decade. With this continuing expansion, preventing congestion has gained more urgency. The industry has been advocating for additional band allocation for some time—and in April 2020, U.S. regulators blazed the trail by opening up 1200 MHz of spectrum in the 6 GHz band to unlicensed use.

Since then, many regulatory bodies have followed suit. Some, like South Korea, Canada, Chile, and Brazil, opened the full 1200 MHz of spectrum. Others, including the European Union, have made available only the lower 500 MHz of that spectrum. In all, more than 40 countries have allocated 6 GHz to unlicensed use and many others are considering it.[2]

In opening the 6 GHz spectrum, the U.S. Federal Communications Commission (FCC) said it envisioned "new innovative technologies and services that will deliver new devices and applications to American consumers."[3] Other countries expressed similar sentiments, with the UK's communications regulator Ofcom stating that "further development of WiFi services has the potential to deliver significant benefits for UK consumers and businesses."[4]

Even before regulators took action, Broadcom became the first chipset maker in early 2020 to announce a WiFi 6E chip for mobile devices.[5] Others, including Intel and Qualcomm, soon caught up. The rest of the industry reacted with much enthusiasm to WiFi 6E, calling it "a game-changer" for consumers and enterprises, a "major step forward," and "the best thing to happen to WiFi since its inception."[6]

Intel Corp.'s Eric McLaughlin, vice president of the Client Computing Group and general manager of Wireless Solutions Group, summarized the industry feelings best: "New WiFi 6E capability represents one of the single most important advancements in recent wireless history and is critical to helping address the growing demand for capacity, broadband access, and new usages."[6]

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>
> — *Eric McLaughlin,*
> *VP Client Computing Group*
> *GM Wireless Solutions Group*
> *Intel Corp.*

[2] "Quarterly update: Wi-Fi 6E devices driving technology innovation," Wi-Fi Alliance, July 7, 2021

[3] "FCC Opens 6 GHz Band to Wi-Fi and Other Unlicensed Uses," US Federal Communications Commission, April 24, 2020

[4] "Improving spectrum access for Wi-Fi," UK Ofcom, July 24, 2020

[5] "Broadcom Announces World's First Wi-Fi 6E Chip for Mobile Devices," Broadcom, February 13, 2020

[6] "Wi-Fi Alliance® delivers Wi-Fi 6E certification program," Wi-Fi Alliance, January 7, 2021

In January 2021, the Wi-Fi Alliance introduced interoperability certification for WiFi 6E devices as part of its Wi-Fi CERTIFIED 6 program. As of mid-November 2021, the alliance has certified about 40 different devices, primarily access points (APs), phones (including Samsung's flagship Galaxy S21 and the popular foldable Galaxy Z Fold 3), and routers.[7]

Other notable certifications include:

- The first 8K TV (Samsung), banking on interest from gaming enthusiasts.
- Windows 11, enabling OEMs to deliver new WiFi 6E-ready Windows PCs.
- Enterprise-grade APs from vendors like Aruba, bringing WiFi 6E to the commercial sector.

The momentum behind WiFi 6E opens the door for CSPs to develop and begin offering services that take advantage of the 6 GHz band availability. But there's a lot more to it than simply offering gigabit speeds. In the complex, increasingly congested home network, WiFi 6E presents a host of decisions that need to be made, and is bound to present problems—the solution will require advanced network management.

WiFi 6E = WiFi 6 + 6 GHz spectrum

	US		EU	
	5 GHz band	**6 GHz band**	**5 GHz band**	**6 GHz band**
Total bandwidth for WiFi (MHz)	560	1200	380	500
Number of 160 MHz channels	3	7	2	3
AP Tx power no AFC (dBm EIRP)	30/36	27	23/30	23
AP Tx power with AFC (dBm EIRP)		36		NA
STA Tx power no AFC (dBm EIRP)		21		23
STA Tx power with AFC (dBm EIRP)		30		NA

9 dB more Tx power in 5 GHz band = 2.8x distance in free space, ~2x in home

Industry forecasts[8]

More than

338 million

WiFi 6E devices were expected to enter the market in 2021.

It is estimated that close to

20%

of all WiFi 6 device shipments will support 6 GHz by 2022.

By 2025,

41%

of the 5.2 billion WiFi 6 products forecasted to ship will be WiFi 6E devices.

[7] Data aggregated from the Wi-Fi Alliance, last accessed November 12, 2021

[8] "Wi-Fi 6 shipments to surpass 5.2 billion by 2025," Wi-Fi Alliance, March 31, 2021

Key WiFi 6E benefits for customers

WiFi 6E inherits the benefits of WiFi 6, which has tremendous potential to transform the home network. Viewed as a new era of WiFi connectivity, WiFi 6 brought many transformative improvements to the 20-year-old technology.

Designed to better handle different types of traffic simultaneously from different users, WiFi 6 introduced key changes such as:

- More than 2x higher throughput in environments with low congestion.
- Improved power savings capabilities.
- Greatly improved efficiency when supporting large numbers of devices requiring modest throughput (e.g. IoT devices).
- Improved Quality of Service through time and frequency reservations.

The new features and capabilities are welcome improvements for connected environments, including the smart home—which now handles not only more connected devices but also more bandwidth-hungry applications.

WiFi 6E extends the low latency, high capacity, and gigabit speeds to the 6 GHz spectrum, adding up to seven superwide 160 MHz channels and 14 channels that are 80 MHz wide. In addition to greater capacity and performance, WiFi 6E also brings less interference due to the large number of channels available, few deployed devices, and elimination of legacy modes of operation.

Top use cases

As the Wireless Broadband Alliance (WBA) notes, WiFi 6 and WiFi 6E together provide "more capacity than all the other WiFi bands put together and deliver connections with speeds equivalent to the new advanced 5G mobile."[9] This will unleash a flurry of innovation for products and services that rely on bandwidth-intense connectivity.

The primary use cases that WiFi 6E will support include:

- Broader adoption of IoT, both by consumers and enterprises.
- Multigigabit video streaming, such as 4K and 8K video.
- New generations of augmented reality and virtual reality technology.

While a good deal of innovation spurred by WiFi 6E will take place in the commercial and industrial sectors, consumer adoption won't be far behind. Cisco, for example, forecasts that connected home applications—including smart appliances, security and video surveillance, and home automation—will represent nearly half of all the machine-to-machine connections (used by IoT devices) by 2023.[10]

In addition to preparing for the rapid rise of connected home devices, CSPs need to be ready for the smart home evolution. One such evolution is the self-optimizing, adaptive home of the future—which learns from and adapts to consumers' lifestyle patterns and behaviors.

[9] "Wi-Fi 6E Trials," Wireless Broadband Alliance, last retrieved November 12, 2021

[10] "Cisco Annual Internet Report (2018–2023) White Paper," Cisco, updated March 2020

The opportunities for CSPs

WiFi 6 and WiFi 6E are expected to bring drastic changes for consumers and enterprises alike. These developments are exciting, but they will challenge CSPs' ability to ensure service delivery supports the new use cases.

Consider, as one example, extended reality, which includes augmented reality, virtual reality, and mixed reality. One estimate showed the market size was $18.6 billion in 2019 and will grow at a compound annual growth rate of 48.3% in the next decade.[11] While the COVID-19 pandemic boosted the market due to more virtual meetings and training conducted from home, it's the gaming industry that's expected to grow the fastest between 2020 and 2030.

Already, an estimated 58.9 million US consumers use VR, and 93.3 million use AR at least once a month (representing about 18% and 28% of the population, respectively).[12] Although the lack of in-person experiences during the pandemic boosted some of those numbers, new trends, such as the metaverse, will continue to push the market toward innovation and the consumers toward adoption.

CSPs can ride the popularity of these kinds of trends by offering upgrades and new services that improve the quality of experience even as consumers add these bandwidth-hungry applications to their already congested home network. By leveraging the power of cloud computing and artificial intelligence—and uncoupling their service delivery from hardware—CSPs can optimize the home network connectivity and enable their customers to benefit fully from the speed and capacity of WiFi 6E.

EXTENDED REALITY NUMBERS

$18.6 billion	Estimated market size in 2019[11]
48.3%	Estimated compound growth rate in the next decade[11]
58.9 million	Estimated number of US consumers who use VR[12]
93.3 million	Estimated number of US consumers who use AR at least once a week[12]

[11] "Extended Reality (XR) Market Research Report," Prescient & Strategic Intelligence, August 2020

[12] "US Virtual and Augmented Reality Users 2021," eMarketer, April 15, 2021

WiFi 6E implementation requirements

WiFi 6E shares the 6 GHz spectrum with point-to-point microwave links. The US has about 100,000 microwave links that are used by public safety agencies, mobile carriers, and commercial entities.[13] To avoid interference with nearby microwave systems, WiFi 6E devices must either operate at a low power level or implement an automatic frequency control (AFC) system.

AFC

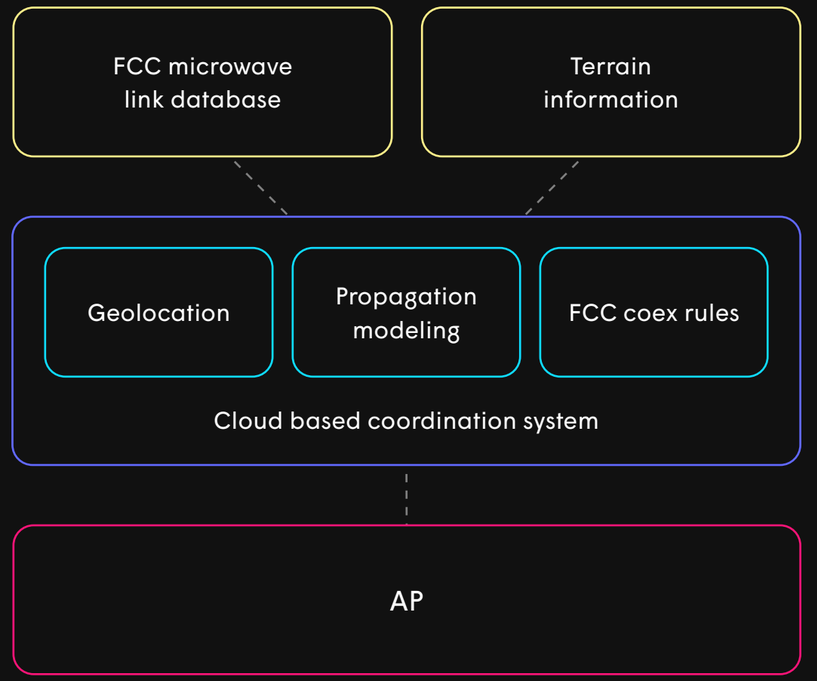
By avoiding a frequency channel used by nearby microwave links, the AP and its clients can operate at a high-power level, enjoying full range and data rates. The AFC system is complicated, requiring cloud interaction and management to communicate with a smart controller that could look up the FCC database, factor in geodata, calculate interference, and deliver instructions back to the AP.

However, the FCC isn't expected to approve any AFC systems before the third quarter of 2022. That means WiFi 6E devices will have to operate on low-power transmission for at least the first year.

Low power mode

Operating at approximately 1/10th the power levels allowed with AFC (10dB less transmitted power), this mode produces a weak signal, which can't transmit as far or at as high a data rate for a given distance. Compensating for the significantly shorter range requires an optimization system that can figure out multi-AP configurations with many parameters that are optimal for the specific environment.

For either AFC or low-power mode, the control system needs to consider the client types, loads, and capabilities before allocating the network's radio resources. The 6 GHz band can be a great benefit, but if used incorrectly, it can degrade performance. An effective network needs to know where, when, and for which links the 6 GHz band should be used.



The AFC system

- is complicated.
- requires cloud management.
- has not been approved by the FCC yet.

[13] "What you should know about Wi-Fi 6 and the 6-GHz band," Test & Measurements Tips, June 2019

Managing WiFi 6E

As noted earlier, WiFi 6E extends WiFi 6 capabilities to the 6 GHz spectrum. These include, among others:

- **160 MHz channel bandwidth**—the wider the channel used, the higher the data rate, and thus the data speed. Technically this is not a new feature, but few WiFi 5 devices supported channel bandwidth greater than 80 MHz.
- **OFDMA**—a marquee feature, uplink and downlink orthogonal frequency-division multiple access, or OFDMA, improves efficiency and capacity by subdividing the channel into smaller frequency allocations (resource units) transmitted from one AP in parallel.
- **Resource unit reservations**—the smaller frequency slices that OFDMA operates with can get allocated to particular clients, guaranteeing Quality of Service (QoS) to those clients.
- **Target wake time**—by scheduling specific times for each client to be awake and reserving that time, this feature improves battery life for devices that are transmitting only occasionally or at a low-duty cycle.
- **BSS color**—Basic Service Set (BSS) color allows more efficient airtime usage between overlapping networks that are on the same frequency channel.

While these features provide various advancements, they also have drawbacks and limitations. To achieve full potential, avoid interference, operate efficiently, and maintain QoS, WiFi 6 APs require more rather than less optimization than previous WiFi generations, and performance will depend on the system controlling it. WiFi 6E, in turn, needs even more sophisticated management than WiFi 6, particularly in two categories:

- **Topology**—the selection of frequency channels, channel bandwidths, and interconnections between APs.
- **Steering**— the selection of the AP that each WiFi client should connect to, and the frequency band for that connection.

Topology management

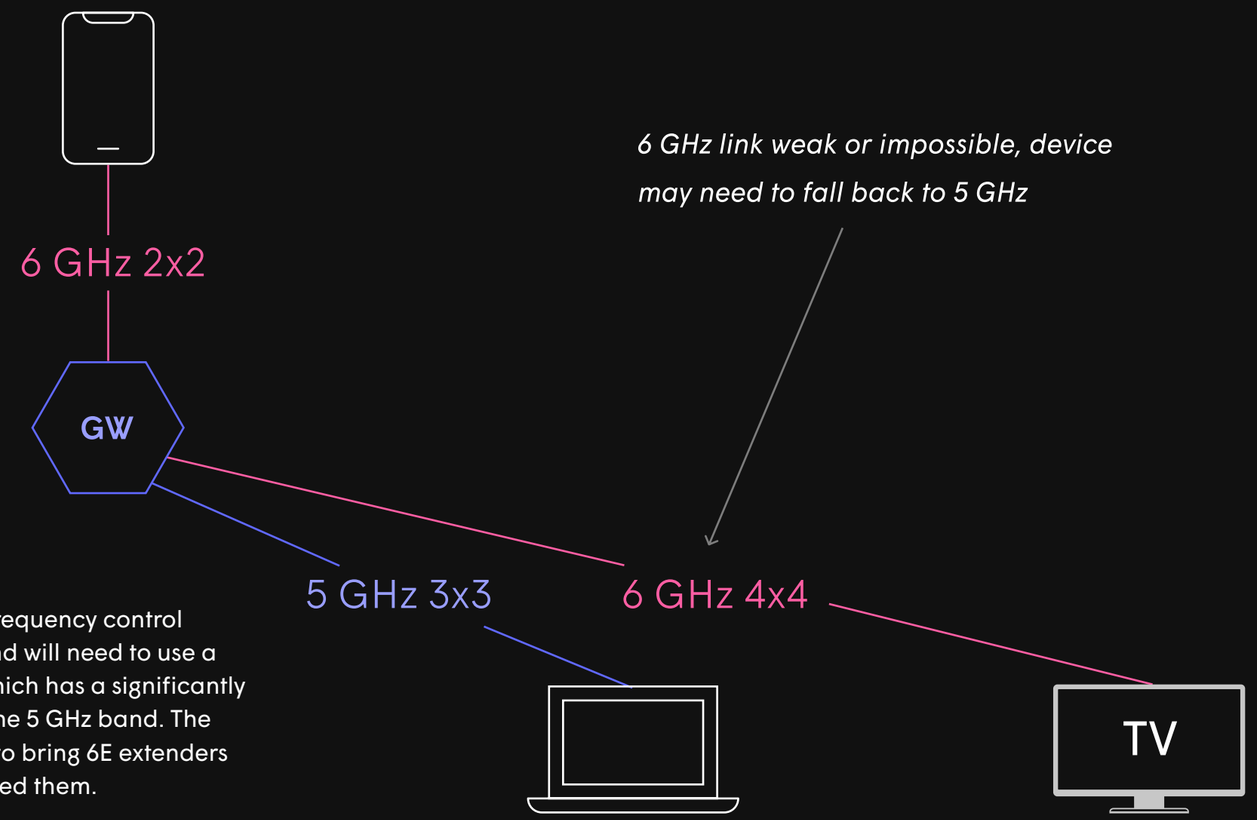
Without proper management, the 6 GHz band can quickly turn into a burden rather than a benefit. To compensate for the lower signal strength, many homes will require 6E extenders for extra coverage, and there will be a large number of potential configurations. With so many potential configurations, a lot can go wrong—and configuring each environment for optimal performance is not a simple task.

For example, placing all backhaul links between APs on a 6 GHz channel may sound logical given the relative lack of interference and availability of wide channel bandwidths. But this means deploying even more extenders than for WiFi 5, resulting in self-interference between the multiple hops in the home as the data moves through them. With three hops, for instance, the net throughput is only a third on a given hop, which more than negates the speed advantage of the 6 GHz band.

Forcing the backhaul to the 5 GHz channel in this scenario is not a good solution either since that creates vulnerability to interference from neighbors—not to mention underutilizing the 6 GHz band. Another downside is that the wide 5 GHz channels require radar detection, which could send the network scrambling to get out of the way and disrupt service—not only from real radar events but also other events that look like them.

The wrong way to configure an environment for optimal performance:

#1. Not allowing for extenders



Without automatic frequency control (AFC), the 6 GHz band will need to use a low-power mode, which has a significantly shorter range than the 5 GHz band. The optimum solution is to bring 6E extenders to the homes that need them.

To achieve that, you need a system that can:

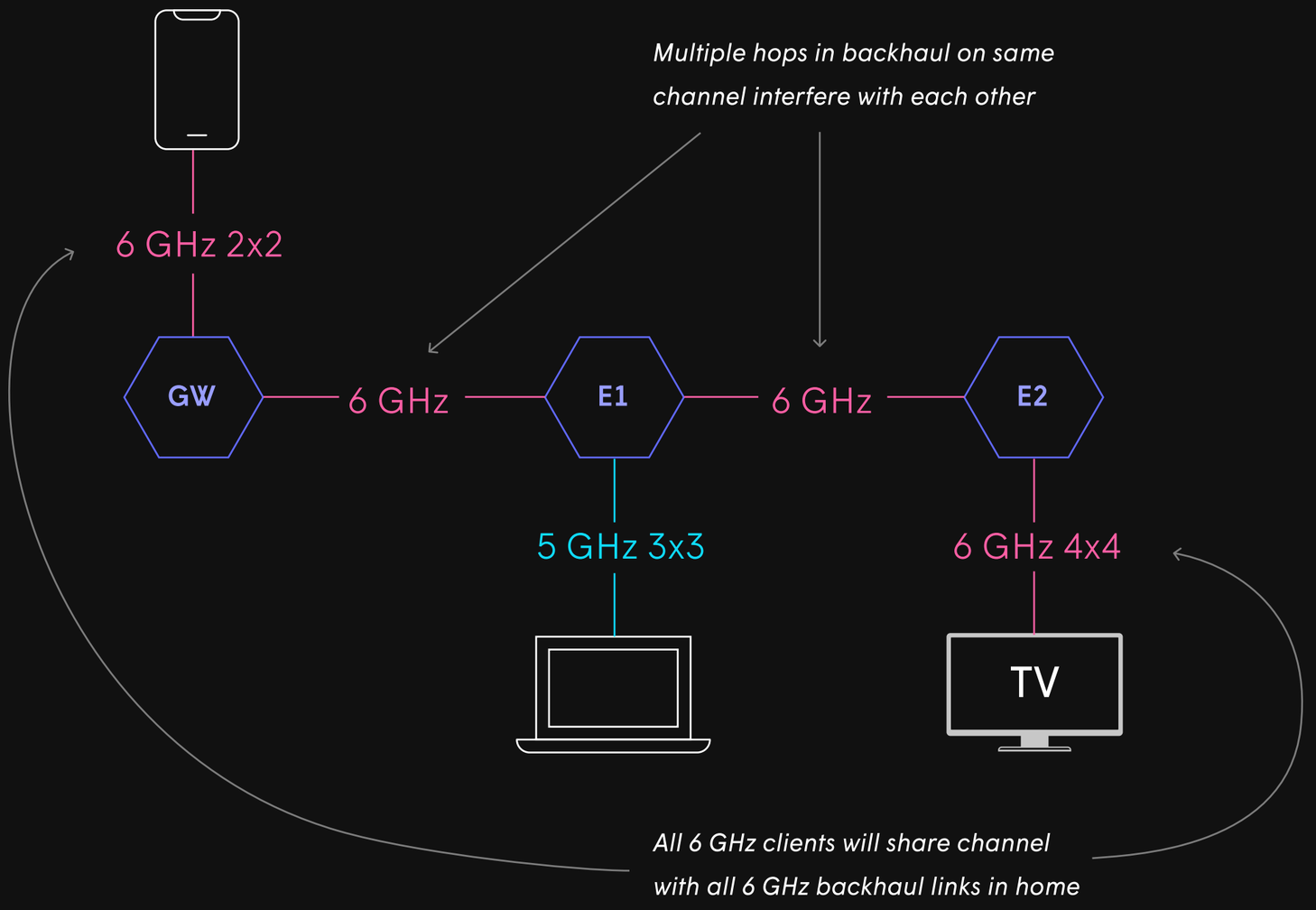
- Identify homes with coverage problems
- Intelligently manage homes where extenders are added

The wrong way to configure an environment for optimal performance:

#2. Locking the backhaul to 6 GHz

It seems logical to use the 6 GHz band for the backhaul between access points (APs) in the home. But, simply placing all backhaul links on 6 GHz is not so wise. Why?

- You might need to deploy even more extenders in homes than you did for 5 GHz WiFi.
- As data travels through the multiple hops in a home, all on the same 6 GHz channel, the self-interference between hops divides the throughput down by the number of hops.



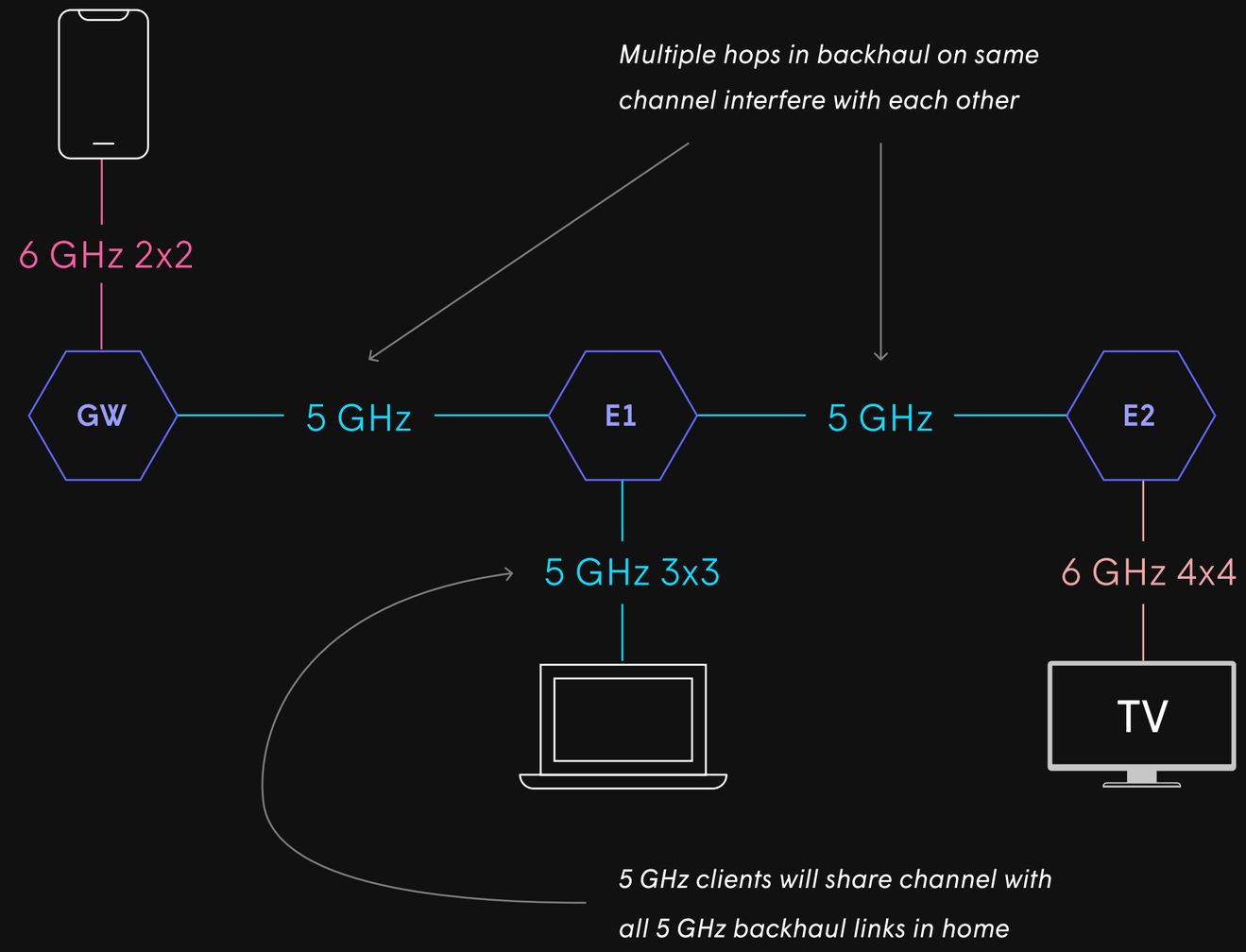
The wrong way to configure an environment for optimal performance:

#3. Locking the backhaul to 5 GHz

Fixing all the hops in the 5 GHz band incurs some of the same problems. In particular, as there are more hops, self-interference again reduces throughput.

There are two additional downsides to this approach:

- Having the backhaul loaded only on a 5 GHz channel makes the system more vulnerable to interference from neighbors.
- The wide 5 GHz channels all require radar detection and radar events are more common than you might imagine. Along with real radars, a variety of interference scenarios, including from overlapping WiFi networks, can trigger what looks like radar, sending the network scrambling to get out of the way and disrupting service.

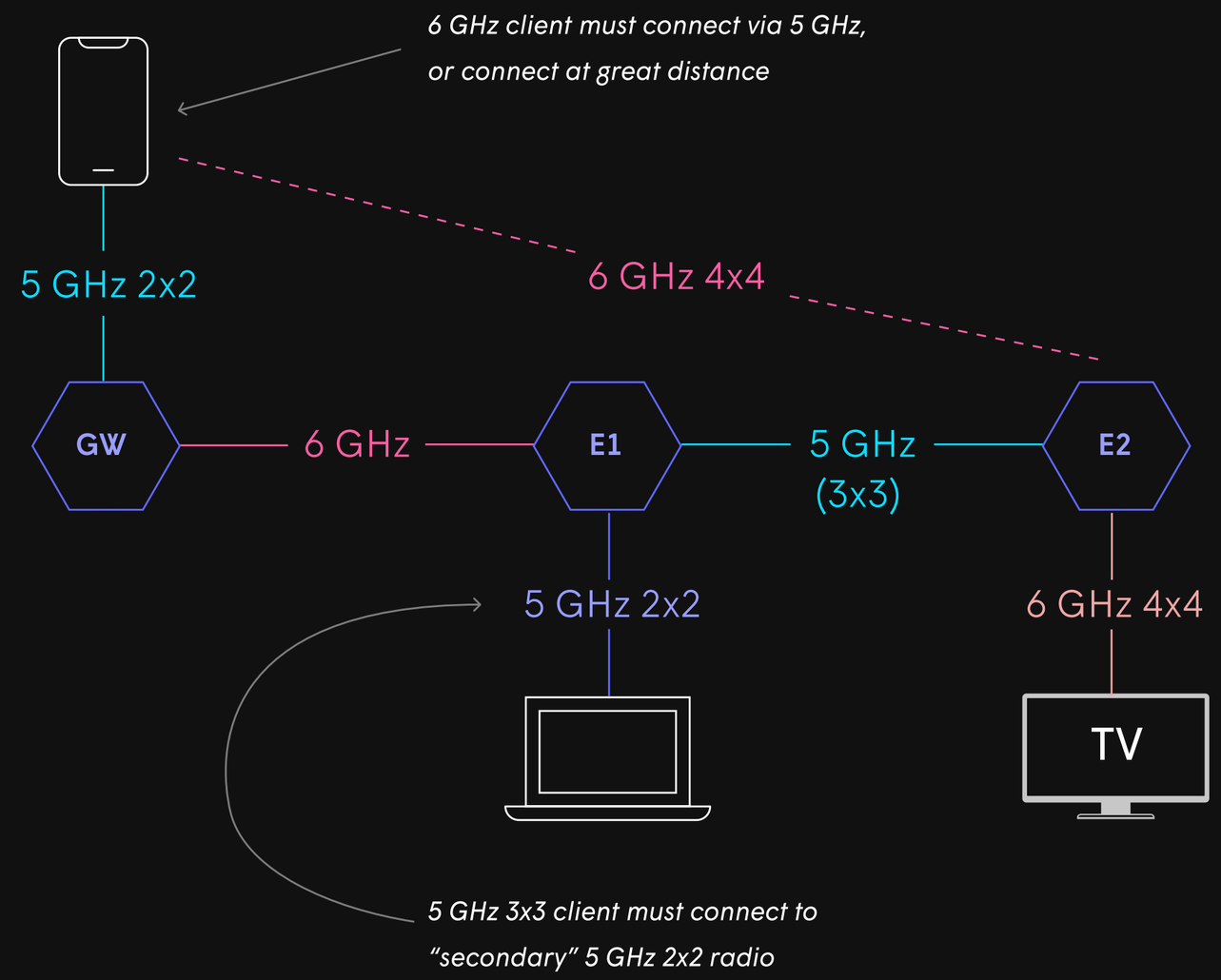


The wrong way to configure an environment for optimal performance:

#4. Barring clients on backhaul channels

Many of today's multi-AP systems strictly segregate the connections between APs (backhaul) and connections to your customers' devices (fronthaul). This means that:

- If 6 GHz is being used for the connection between two APs, clients will not be able to connect to either of those APs in the 6 GHz band.
- The same problem occurs when using 5 GHz channels to connect APs in a segregated system.



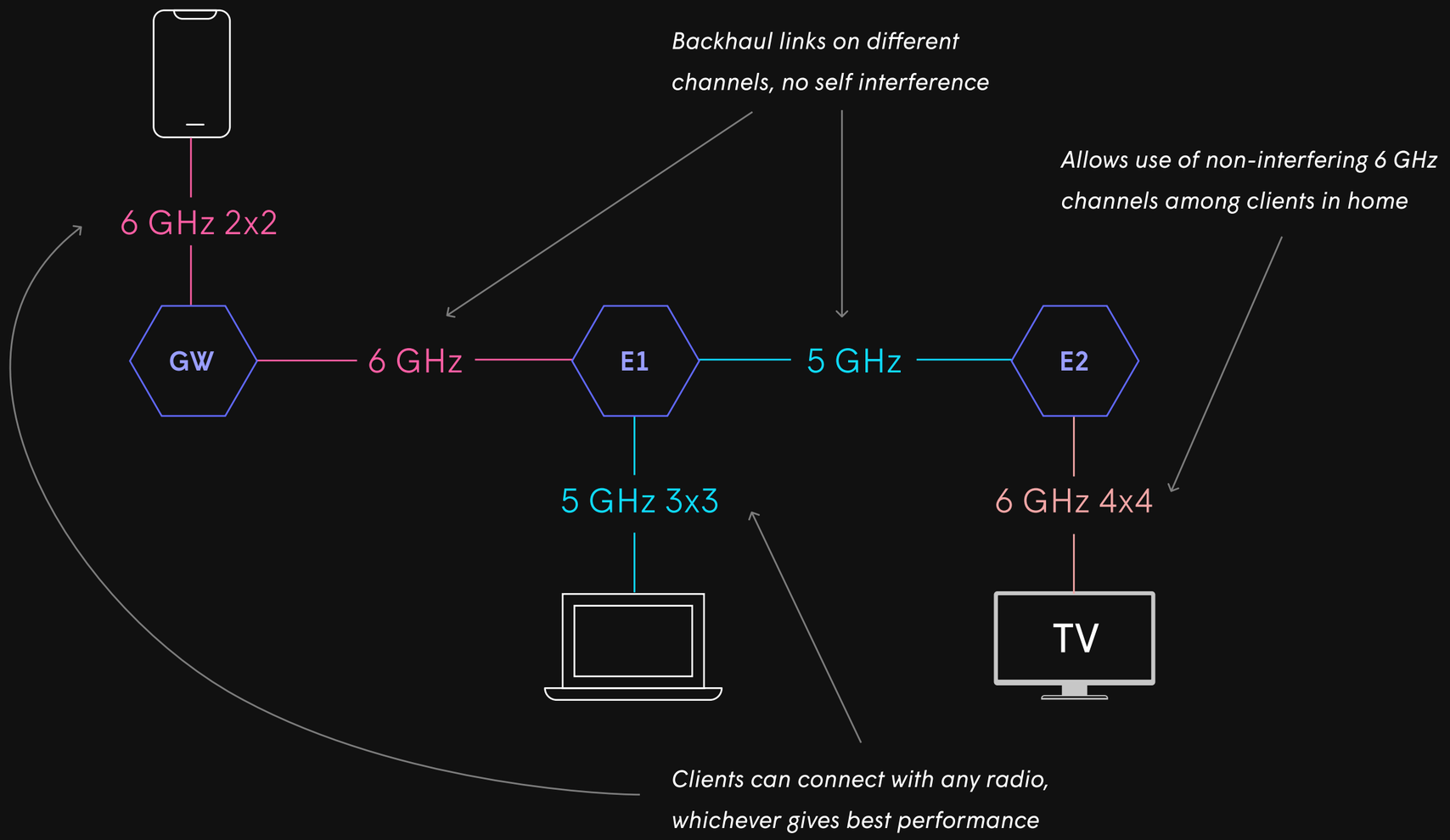
So what's the solution? Using a mixture of 5 GHz and 6 GHz band links for the backhaul, and allowing clients to connect on the same channel as the backhaul when appropriate. This results in:

- Reduced self-interference.
- Greater flexibility in avoiding interference and radar events.
- Clients attaching to any of the APs using their best band of operation.

The best way to achieve this optimal configuration is with sophisticated cloud controls. A cloud-based system can quickly search the huge space of potential configurations and choose the one that's best for the environment.

The right way to configure an environment for optimal performance:

A flexible and intelligent solution



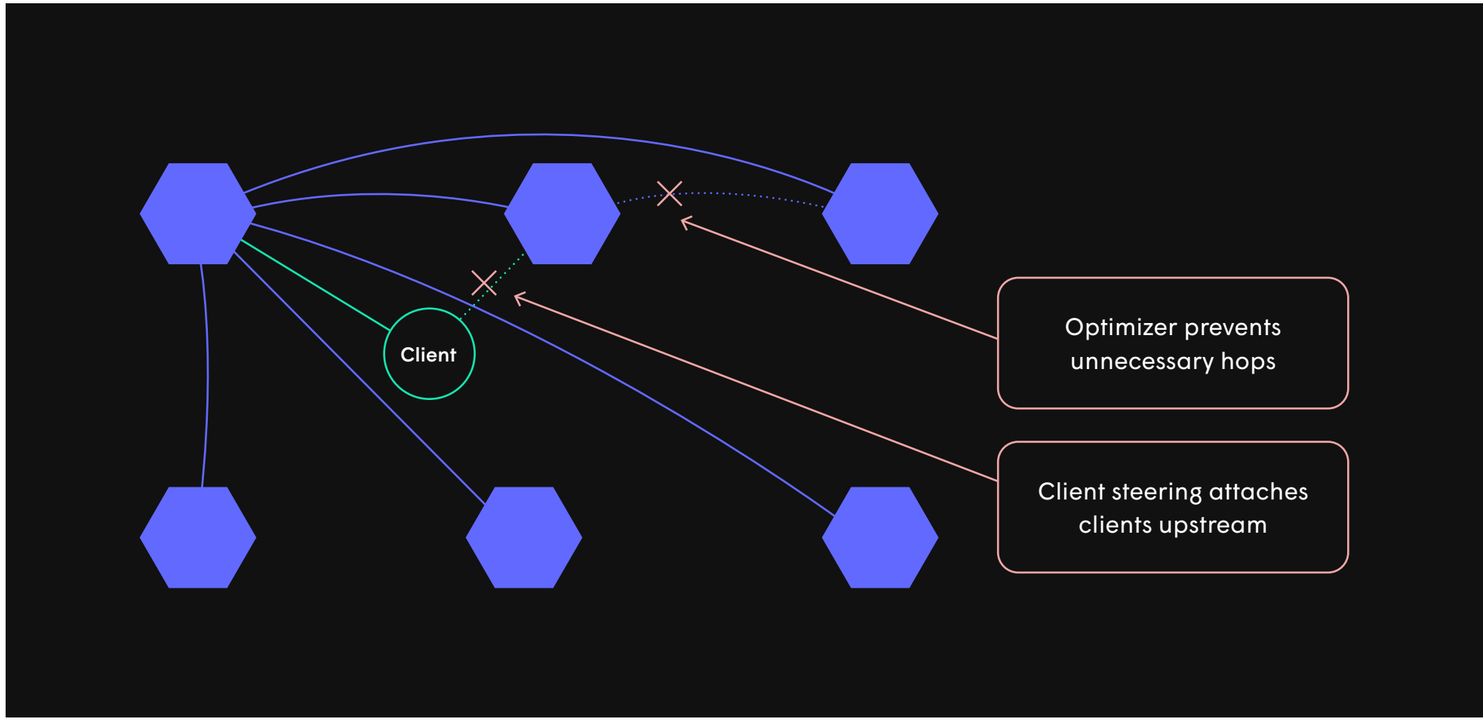
Client steering

The purpose of steering is to connect client devices on the band that will maximize their performance, regardless of whether the home has one or multiple APs. Although many clients can make the connection decision autonomously, historically the selection algorithms have not worked well.

Steering clients from the infrastructure side is generally complicated. But prior to WiFi 6E, at least the decision of which band the client should connect on was relatively simple. Typically 5 GHz has a huge advantage in throughput and interference over 2.4 GHz. With 6 GHz, this decision gets trickier because there are more choices, and the race between 5 GHz and 6 GHz is often a close one. For example, 6 GHz might have less interference, but because of the lower allowed transmit power it might achieve a lower data rate.

The decision about the best option for the highest throughout must take into consideration a variety of factors, including:

- Supported Tx power levels in the two bands on both the client and AP.
- Traffic load in each of the bands.
- Interference levels in the bands.
- The multiple input/multiple output (MIMO) configuration of both the client and AP in each band.
- The condition and channel of all of the hops that may be required to traverse from the AP to the internet, as subsequent backhaul hops may interfere with the hop from the client to the AP.



Even more complications arise in a home that has a mix of WiFi 6E and legacy devices because WiFi 6E requires stronger WPA3 security whereas previous WiFi devices may have supported only WPA2. When devices roam or are steered between systems with inconsistent security (e.g., from WPA3 to WPA2), customers typically experience significant disruption in service. This would especially be the case when streaming video (whether they're watching content or are in the middle of a business video conference).

Solving this generational problem requires proper topology configuration and appropriate steering decisions. And, as with topology management and band steering, optimal usage of the capabilities of different generation devices in a mixed network can be achieved with an intelligent platform that analyzes the different capabilities and applies dynamic controls and rigorous optimization to the home network.

Future-proofing now with intelligent management

While topology management and band steering are critical to the initial launch of WiFi 6E to the subscribers' homes, CSPs should plan now for augmenting with additional management capabilities in the future.

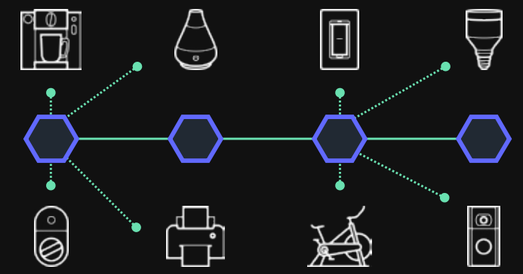
By planning for additional capabilities now, CSPs can make the right choices that will future proof their service delivery as WiFi 6 becomes more sophisticated. When the FCC eventually approves AFC systems, CSPs will want to obtain the higher transmit power levels. As noted earlier, this will inherently involve a cloud-control system to communicate with and configure the APs. With a central management system in place now, you'll be ahead of the pack in preparing the networks for that moment.

One mistake is to think of WiFi 6E as something that comes after WiFi 6. In reality, it's a checkpoint along the path of WiFi 6. Features such as OFDMA, BSS color, target wake time, and time/frequency slot reservations for high-priority traffic are in the early days of implementation—and all of them need centralized management. WiFi 6E networks will benefit from the management of these same features.

There's some discussion in the industry about whether it makes more sense to postpone any upgrades until the expected arrival of WiFi 7 in 2024. While it may be tempting to not commit to any changes until then, riding out the developments for the next four years would be a mistake. If you do so, you'll be left behind and will need to catch up later.

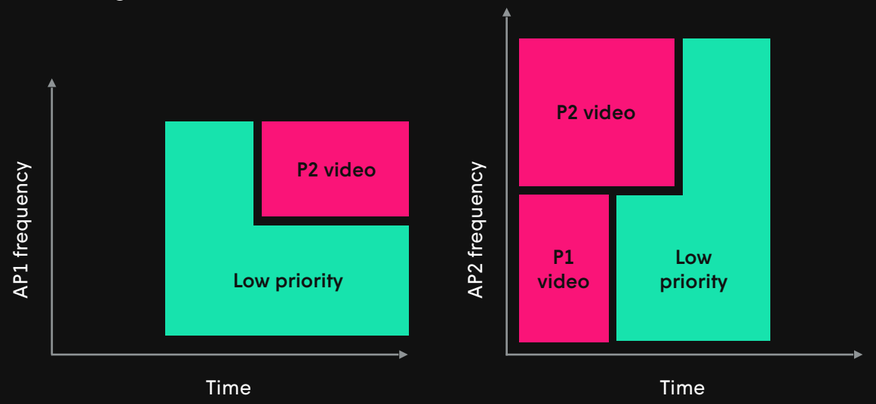
Additionally, implementing a centralized system now will make 2.4 and 5 GHz bands work better—revitalizing your existing infrastructure. WiFi 6E adoption will not result in the immediate replacement of legacy devices. Not only do those devices still have a long life in the field, but the silicon shortage will delay your ability to roll out upgrades to your entire customer base. In the meantime, a software upgrade that can achieve a significant portion of the benefits of WiFi 6E could be very attractive.

OFDMA aware steering



BSS color

Time alignment

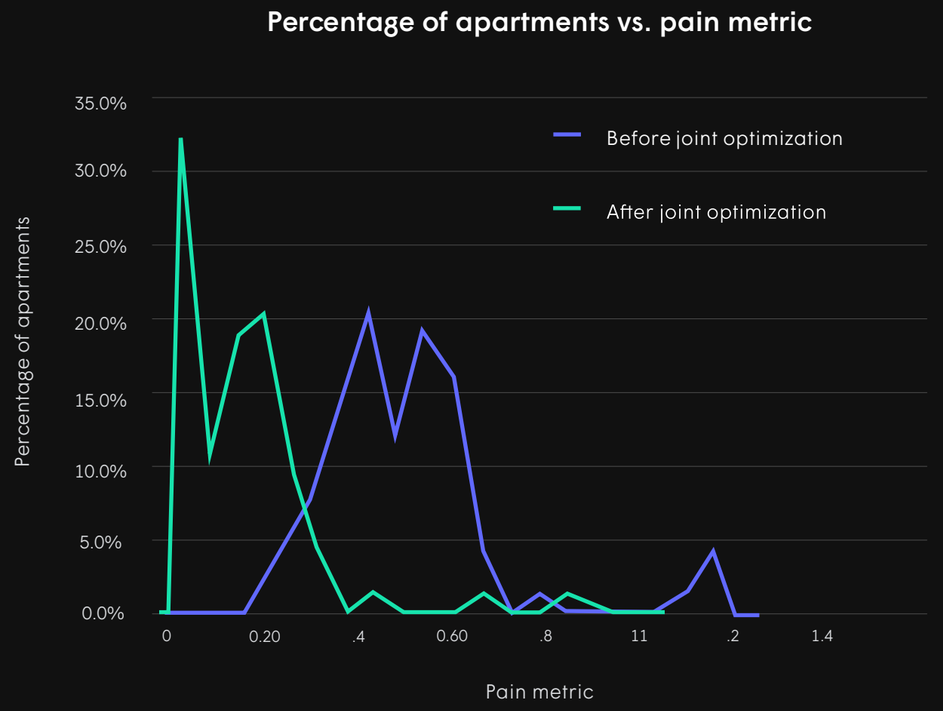


Two other benefits of revitalizing the infrastructure now are radar event avoidance and interference mitigation in dense environments such as multi-dwelling units (MDUs). While MDU optimization and radar event avoidance can't replace all the benefits of the 6 GHz spectrum, they can substantially improve the performance of both legacy networks and 6E networks in the 2.4 and 5 GHz bands.

Long Term Radar Rate Per DFS Channel Per AP (Aggregate Learning from July-2021)

Location ID	(AP) Node ID	52	56	60	64	100	104	108	112
58bbb63798c6eff642b1d1a2	EM7F60018C	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01
5fbd3b8b66b7453aa7b48808	EM7F300045		0.10	0.10		0.00	0.00	0.01	0.00
5f933d571f6ecf4457c695f0	EM7F600049	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	EM7F600065	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	EM7F600083	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00
	EM7F600097	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5f9f8d1a4a576e734d231590	EM83A00143				0.49			0.04	0.04
57f3193f3ce0d96ed09d0217	EM7F60014C	0.00	0.00	0.00		0.06	0.06	0.06	0.21
5f920576bfddfc59ee6dd846	EM7F60007B			0.00	0.00			0.00	
	EM7F600024	0.01		0.00	0.00	0.00		0.00	0.00
	EM7F600054					0.00	0.00	0.00	0.00
	EM7F600064	0.00	0.00	0.00	0.00	0.03	0.03	0.03	0.10
57f489f83ce0d96ed09d6570	EM7F6000C1		0.00	0.00	0.00	0.00	0.00	0.00	
	EM7F300006	0.00	0.00	0.00	0.00				
	EM7F300040	0.03	0.03	0.05	0.00		0.00	0.00	
	EM7F600119		0.00	0.00		0.00			
60480b07328add3166edda7d	EM7F30001D	0.00	0.01	0.01				0.00	0.00
	EM7F30004D		0.00	0.00	0.00	0.00	0.00	0.00	0.00
	EM7F300001	0.02	0.07	0.07	0.06				
60391ea536d7902c9a44a93c	EM7F6000C6	0.01	0.01	0.01	0.01	0.00	0.00	0.02	0.02
	EM7F6000D8	0.00	0.02	0.03	0.01	0.02	0.04	0.03	0.04
	EM7F60012B	0.00	0.01	0.01	0.00	0.00	0.01	0.01	0.00

Observed rate of radar events across homes and APs by frequency channel, expressed as events per hour, observed over 1 month. Radar events are unevenly distributed so can be avoided with sufficient intelligence.



Sample result from optimizing frequency channels across an entire apartment complex. The pain metric factors both the level of interference and traffic load in a particular apartment. Pain indexes above 0.5 result in stuttering video streaming and teleconferencing.

Intelligent network management with Plume

Powered by the silicon-to-cloud OpenSync framework, Plume's innovative Customer Experience Management (CEM) Platform enables CSPs to reinvent their residential services. Plume's adaptive, cloud-managed solution for smart home networks offers CSPs flexibility, choice, and control. The foundation of OpenSync and the CEM Platform creates an agnostic approach that allows multiple devices from different device makers to coexist as part of a home ecosystem.

The most broadly adopted cloud framework for WiFi 6 and 6E, OpenSync supports a comprehensive and expanding range of WiFi 6E silicon chips and CPEs. The Plume SuperPod with WiFi 6E is just one of the APs that come pre-integrated with OpenSync for sophisticated cloud management. The SuperPod with WiFi 6E is a particularly compact and elegantly designed AP which achieves the highest levels of WiFi 6E performance.

Plume's innovative platform provides WiFi operational enhancements that optimize the home network's connectivity to achieve better speed and capacity. OpenSync enabled WiFi 6E APs, coupled with the Plume cloud, address the demand for the added intelligence necessary to get the most out of your WiFi 6 enabled devices. Plume's cloud-based, AI-driven algorithms learn from data collected across millions of networks and clients to identify the best steering techniques, predict interference, and perform complicated analyses to apply dynamic controls and rigorous optimization to networks with multiple APs or in MDUs.

In addition to its WiFi-management capabilities, OpenSync enables cyber-security, parental controls, access control, and WiFi motion detection. These additional services can be used by CSPs to generate additional revenue and create a deeper connection with their customers, thereby reducing churn.

Getting ahead of the curve

Although WiFi 6E adoption is in its early stages, CSPs should act now. In today's extremely competitive market where connectivity speed is no longer a differentiator, customers want a lot more from their providers.

As emerging technologies such as AR/VR and 8K video streaming take off, consumers will expect to benefit from the full potential of WiFi 6E. Providers that get ahead of the curve will emerge as the market leaders. Getting there requires smart planning—and that means jumping into the fold early while competitors are still on the fence.

To learn more about Plume, visit our website or contact us today.