



Broadband Insights Report (OVBI)

2Q21

Introduction

As the world teeters between pandemic recovery and resurgence, broadband usage is itself at a crossroads. The accelerated growth of the past year has given way to resumption of historic usage patterns, albeit at higher levels; at the same time the seeds of future consumption increases are likely being planted by subscribers' migration to faster speed tiers.

The 2Q 2021 OpenVault Broadband Insights report notes the continuation of year-over-year growth rates in subscriber usage, even amidst slight seasonal declines from 1Q21. The report also includes a detailed analysis of how changes in both speed tiers and total usage have been aligned in recent years; notably, 2Q21 marked the first time that two benchmark categories – power users consuming 1 TB or greater and subscribers provisioned for 1 Gbps or faster – both were above 10%.

As with all editions of the OpenVault Broadband Insights Report (OVBI), this 2Q21 version uses data points from millions of individual broadband subscribers, aggregated from OpenVault's SaaS technology solutions to pinpoint usage patterns as well as the differences between two key categories: subscribers on flat-rate billing (FRB) plans that offer unlimited data usage and those on usage-based billing (UBB) plans, on which subscribers are billed based on their broadband consumption.

OpenVault analysis highlights the continued acceleration of both bandwidth usage growth and broadband speed tiers. The correlation between these two factors presents distinct opportunities for network operators.



Key findings from the 2Q21 OVBI include:



Usage

The monthly weighted average data consumed by subscribers in 2Q21 was 433.5 GB, up 14% from 2Q20.



Key ARPU Insight

UBB operators had 39% more higher ARPU gigabit subscribers than FRB operators.



Power Users

Normal seasonal patterns for the second quarter show modest sequential declines from 1Q21: a 13% decline for power users consuming >1 TB and an 18% decline for extreme power users (>2 TB).



Key Bandwidth Usage Insight

The annual growth rate of median usage increased 64% more than the growth rate of average usage, highlighting that consumption is continuing to increase across the board, not just among a few power users.



Speed Tiers

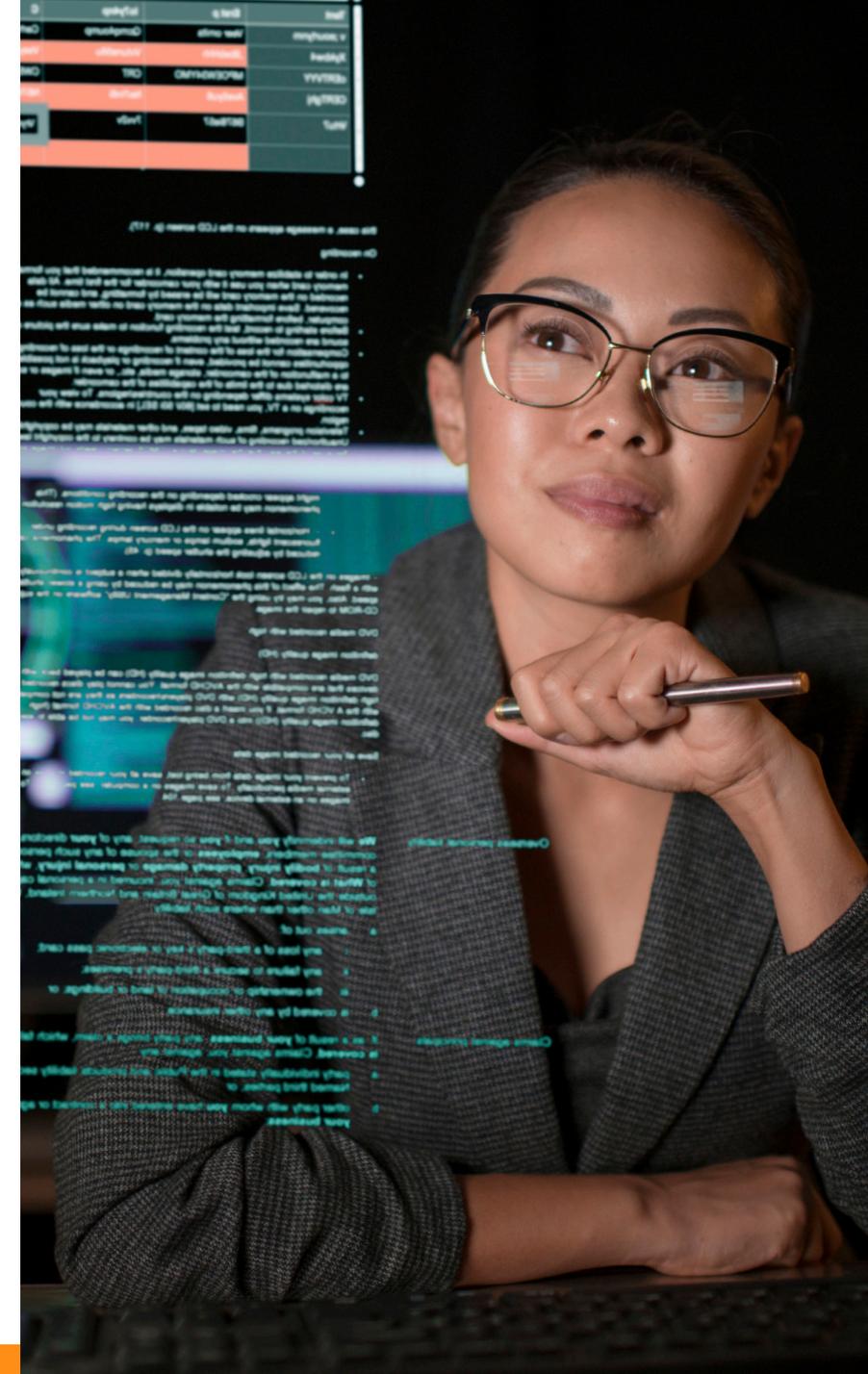
The gigabit subscriber tier exceeded 10% (10.5%) of all subscribers for the first time in 2Q21, more than doubling from 4.75% in 2Q20.



Key UBB vs FRB Insight

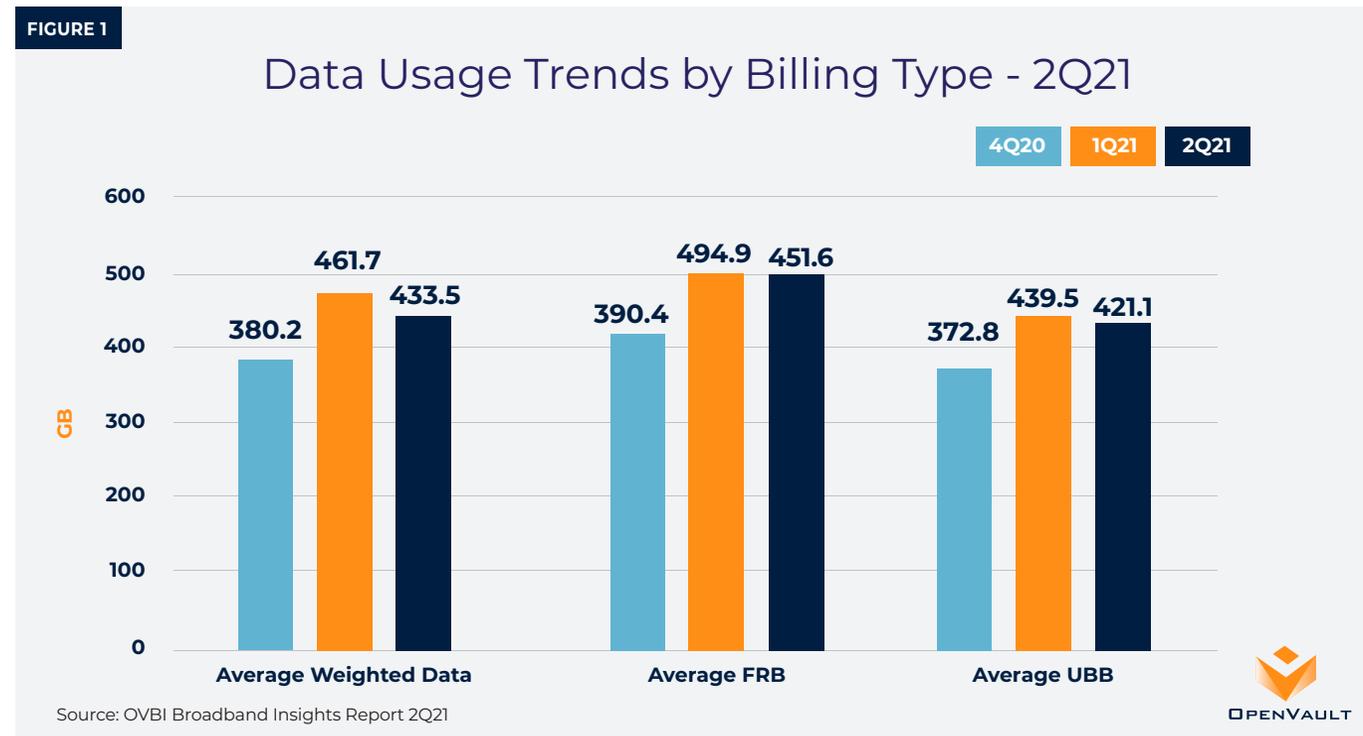
The growth rate of extreme power users (>2 TB) is 31% less in systems with UBB plans than it is in systems with FRB plans.

Through analysis of this data, OpenVault has uncovered a growing opportunity for network operators to identify speed tier upgrade candidates among their current subscribers that will help improve the customer experience and grow ARPU.



2Q21 Broadband Usage Key Findings

The following broadband usage trends were observed in 2Q21.



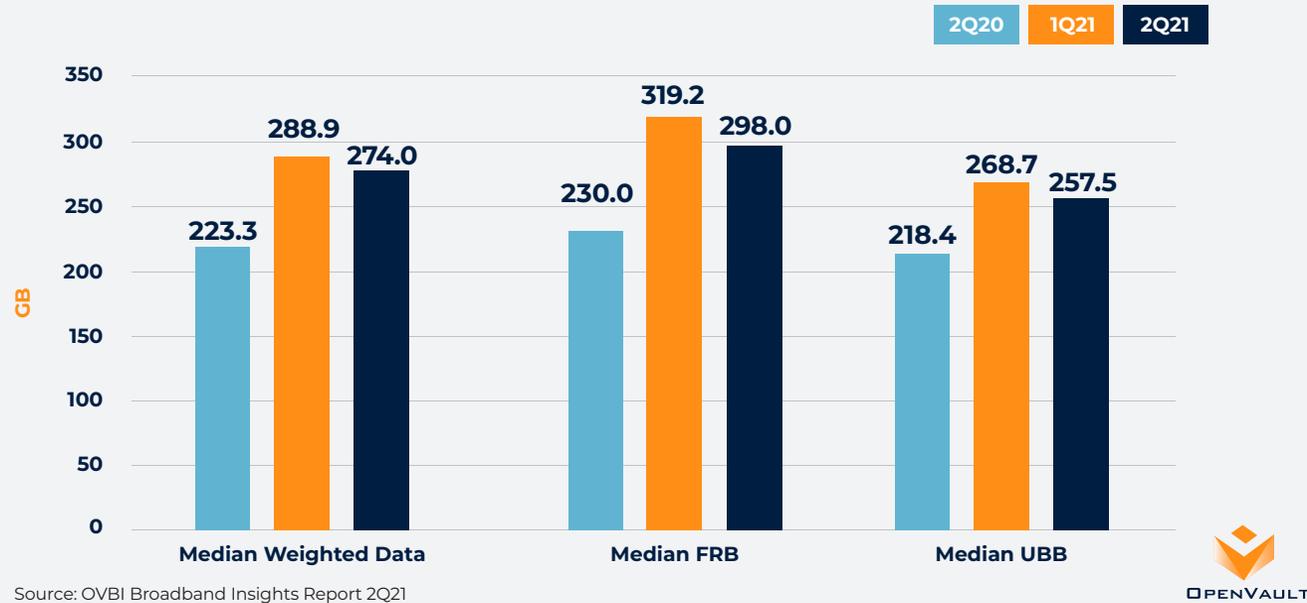
- The monthly weighted average data consumed by subscribers in 2Q21 was 433.5 GB, up 14% from 2Q20's weighted average of 380.2 GB, and down 6% sequentially (quarter-over-quarter) from 1Q21. This is in line with historical second quarter seasonal patterns. Weighted average data usage represents data usage trends for both flat-rate billing (FRB) and usage-based billing (UBB) subscribers.
- Annual upstream growth continues to outpace downstream growth; in 2Q21 upstream usage increased 18% vs. 14% in the downstream.
- While year-over-year growth for both FRB (16%) and UBB (13%) subscribers was observed, the 9% quarter-over-quarter reduction in UBB subscriber usage was more than double the 4% rate for those on FRB (or unlimited usage) plans.

The use of UBB is slowing the growth trajectory of data usage on the network, as compared to FRB, in the new post-pandemic reality.



FIGURE 2

Median Usage Trends by Billing Type - 2Q21

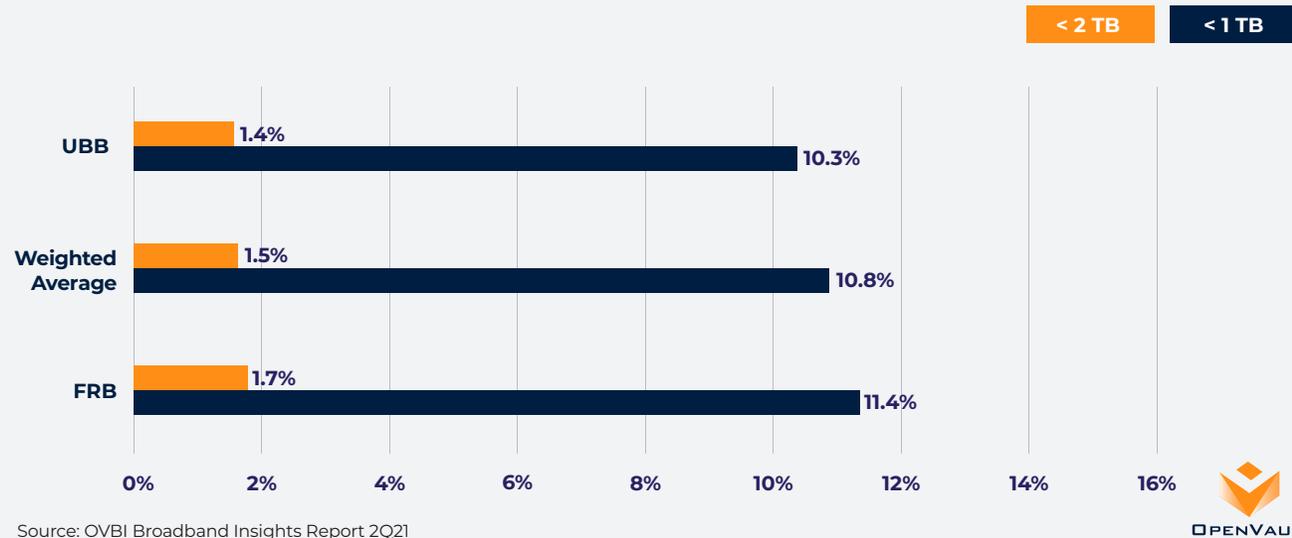


- The median monthly weighted average usage in 2Q21 was 274 GB, up nearly 23% from 223 GB a year ago (2Q20), and down 5% sequentially from 1Q21's median of 289 GB.
- The year-over-year growth of median usage (23%), >64% more than the growth rate of average usage (14%), indicates a broad increase in usage across the entire subscriber base.
- Year-over-year median usage growth for FRB providers (30%) is roughly 67% higher than that of UBB providers (18%).



FIGURE 3

Power Users Monthly Consumption - 2Q21



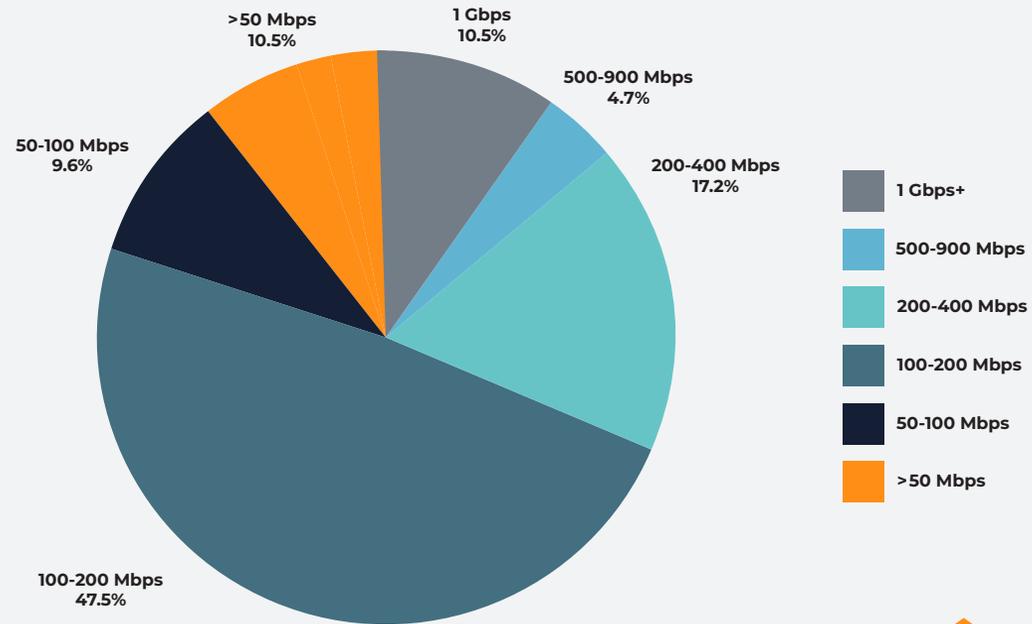
- At 10.8%, the percentage of power users 1 TB or more grew nearly 24% from 8.7% in 2Q20.
- The percentage of subscribers who are extreme power users of 2 TB or more reached 1.5% in 2Q21, up 50% from 1% in 2020, but down 18% sequentially from 1Q21 (1.8%).
- UBB plans appear to be impacting growth of extreme power users when compared to FRB network operators, with an annual growth rate that is 31% less.

FRB network operators had 20% more extreme power users (2 TB or more) on their network than UBB network operators.



FIGURE 4

Provisioned Broadband Speeds - 2Q21



Source: OVBI Broadband Insights Report 2Q21



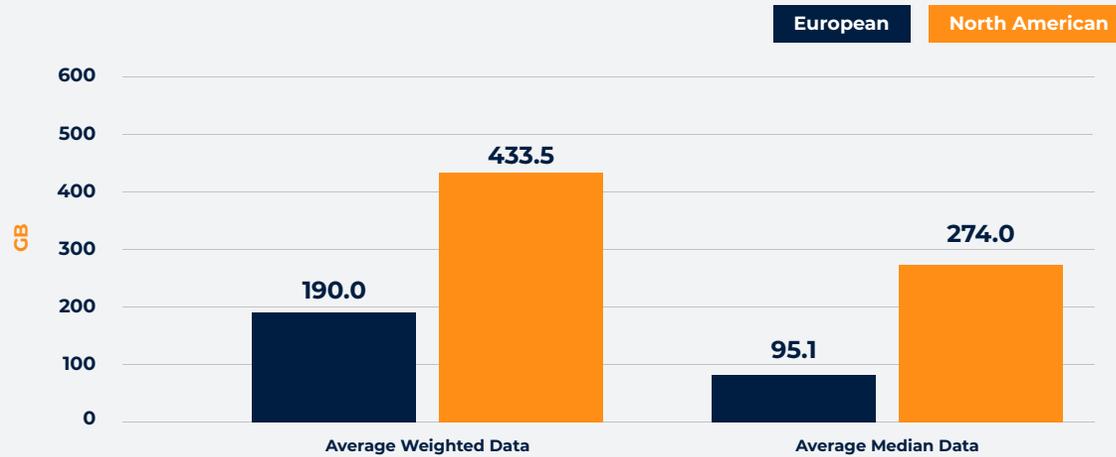
- The gigabit subscriber tier exceeded 10% (10.5%) of all subscribers for the first time in 2Q21, more than doubling from 4.75% in 2020.
- 80% of subscribers have chosen a speed tier of 100 Mbps or faster, with more than half of them (47.5%) subscribing to a 100 to 200 Mbps tier.
- The 50 – 100 Mbps speed tier saw the largest annual decline, down 56% to 9.6% from 21.7% in 2020.

Over the past year, broadband subscribers have embraced moving into higher speed tiers, with the speed tiers of less than 100 Mbps declining by nearly 50%.



FIGURE 5

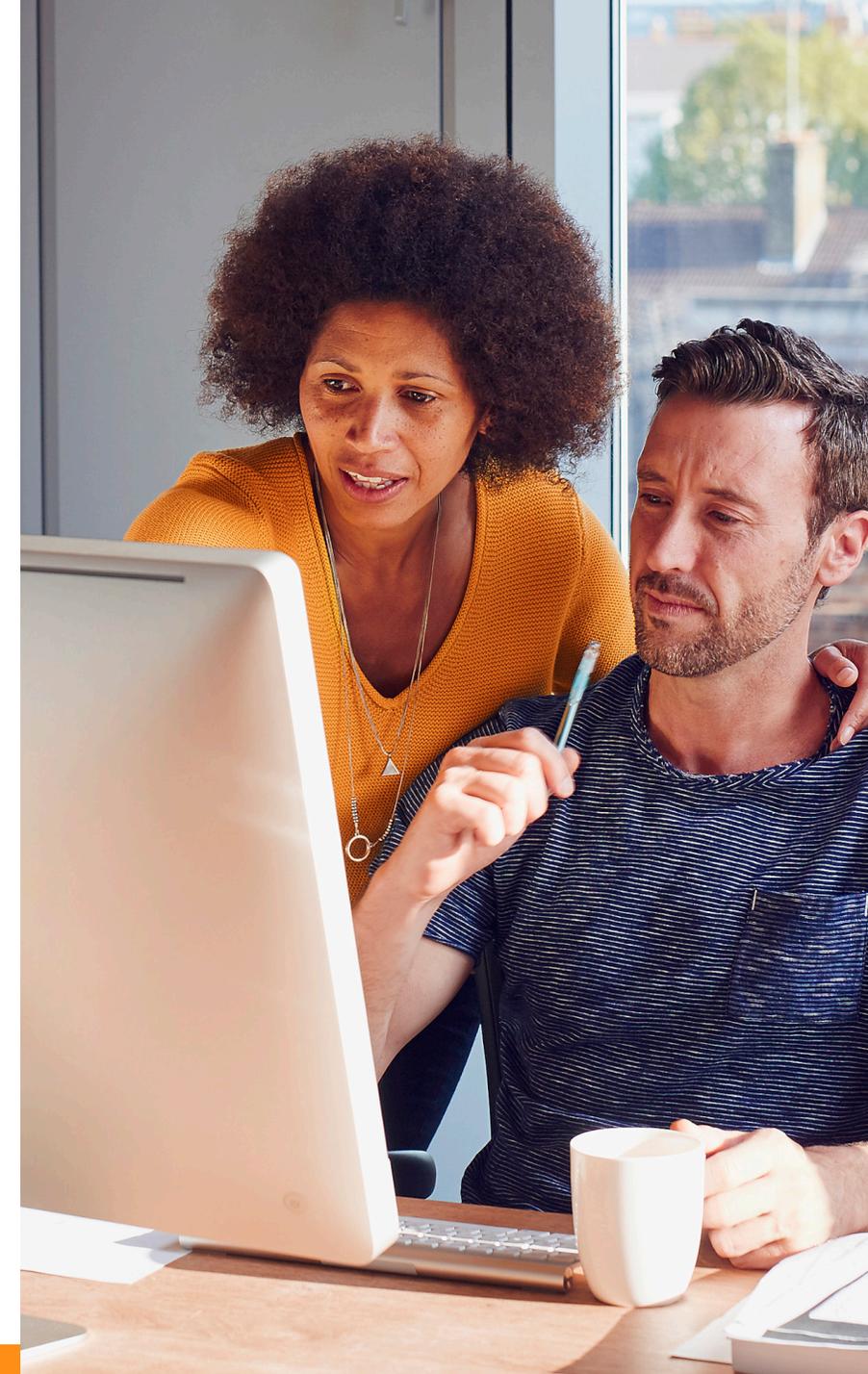
European vs. North American Data Usage - 2Q21



Source: OVBI Broadband Insights Report 2Q21



- North American average data usage (433.5) is over 2.25x that of European average usage (190 GB).
- European average median data usage is 95.1 GB.

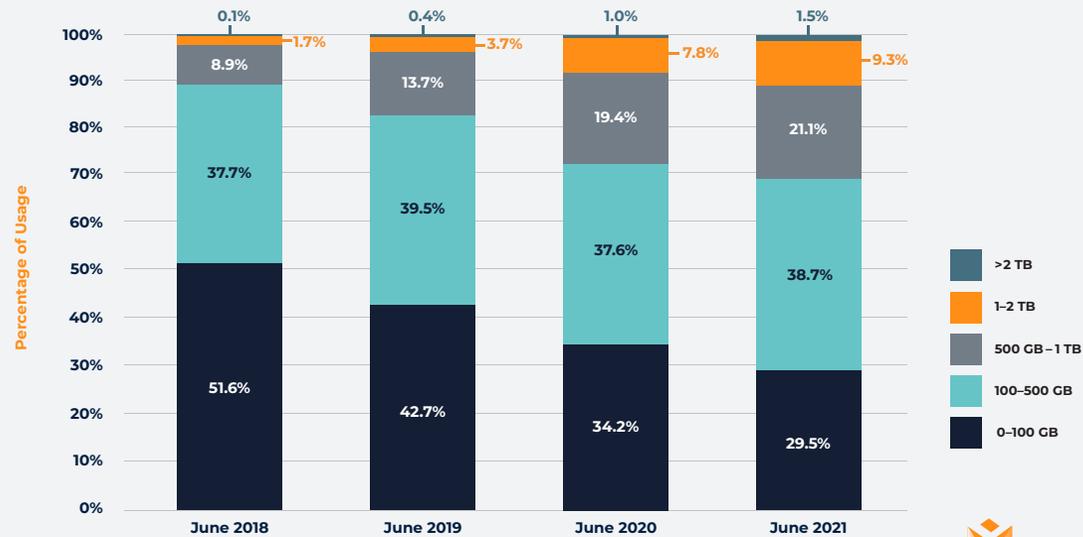


Accelerating Bandwidth Usage and Speed Tier Growth

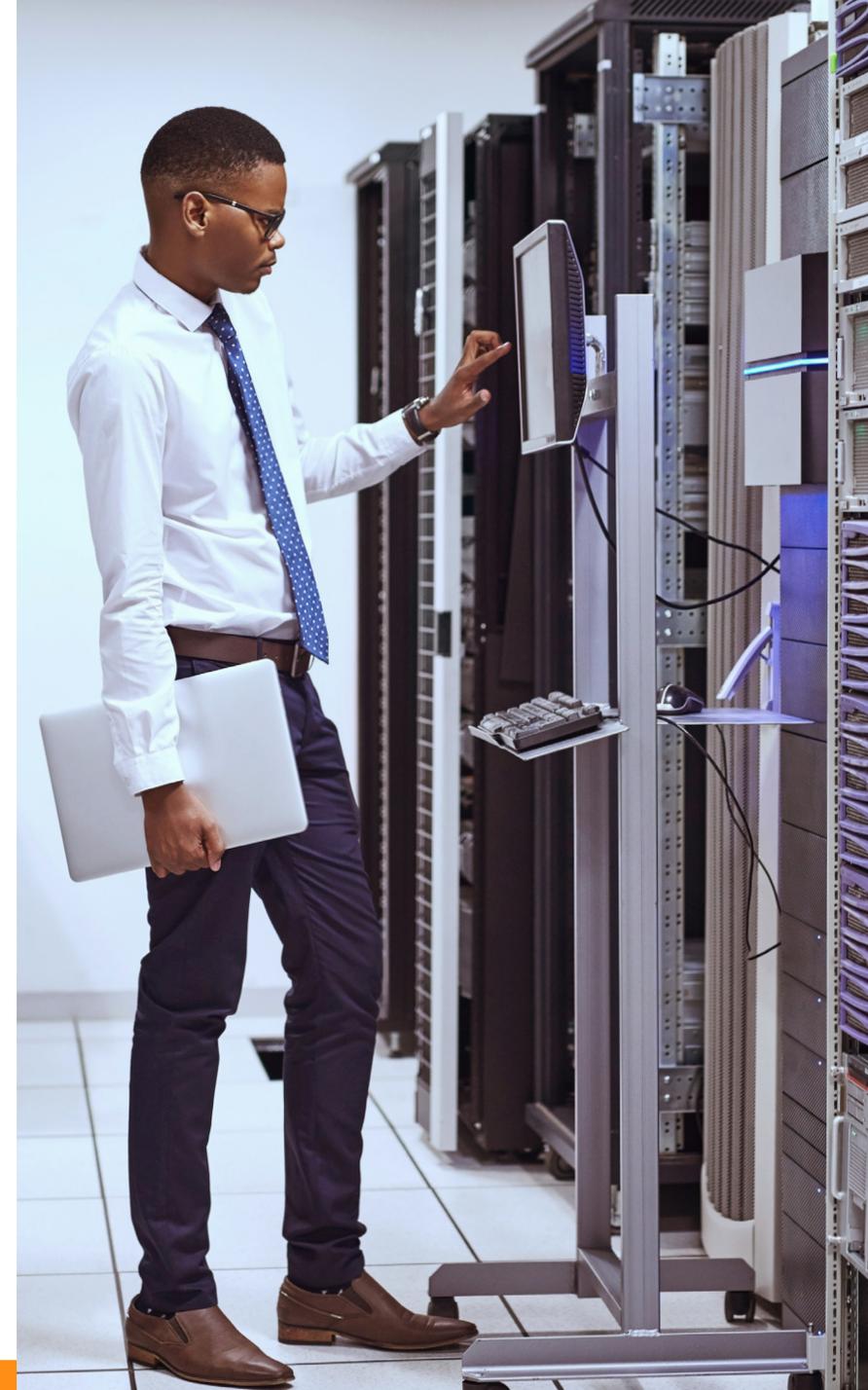
The period 2020 – 2021 witnessed a bandwidth usage spike, driven primarily by the pandemic. But OVBI data over the years has highlighted that elevated data usage trends were already present. The pandemic may have accelerated higher levels of bandwidth consumption, but the trend was in place well before the pandemic, as Figure 6 illustrates. Over the past four years, the percentage of subscribers in smaller usage tier categories has continued to shrink, while the percentage of the largest usage tiers has been growing much more quickly.

FIGURE 6

Bandwidth Usage Tier Growth 2018–2021

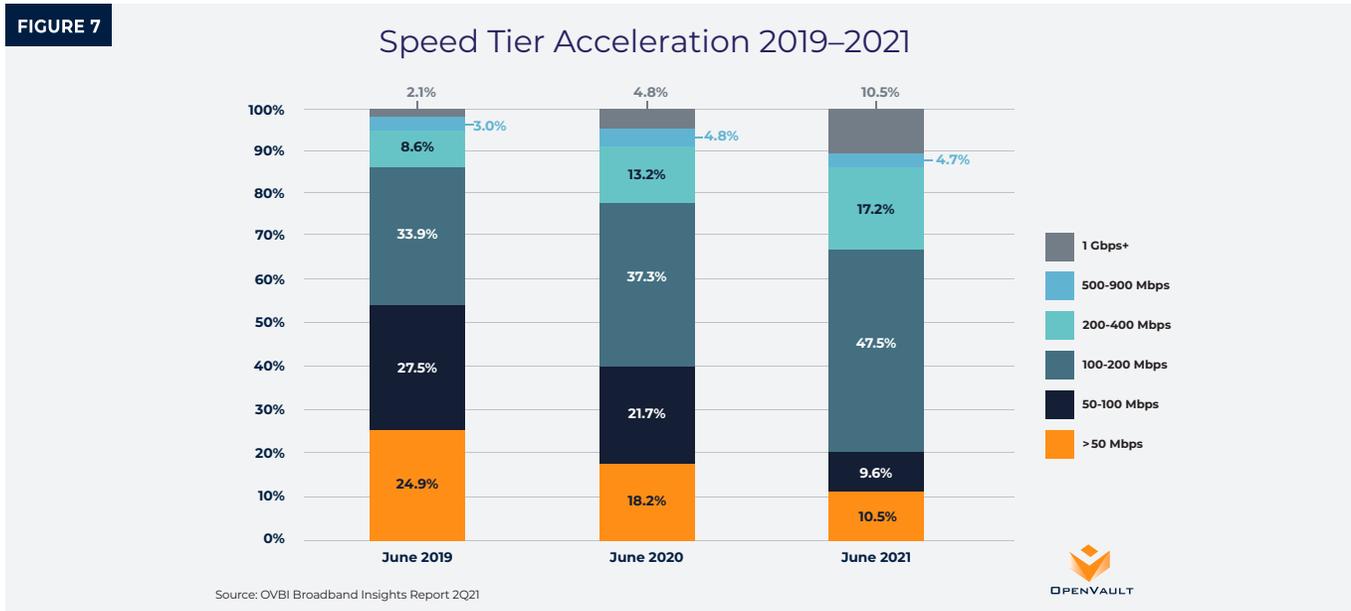


Source: OVBI Broadband Insights Report 2Q21



The lowest usage tier (100 GB or less per month) declined 43%, from 51.6% to 29.5%, between 2018 and 2021. The highest terabyte (TB) tiers have grown from less than 2% to close to 11%, an increase of over 568%. During the same period, the 500 GB – 1 TB tier grew at a rate of 237%.

Elevated bandwidth usage levels correlate with accelerating speed tiers, highlighted by Figure 7. As subscribers upgrade their speeds, they tend to consume more bandwidth.



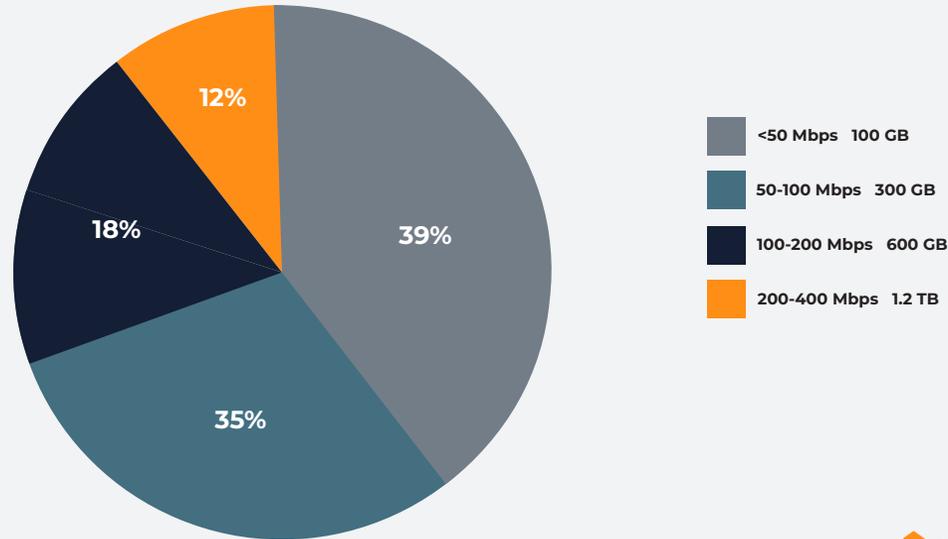
The lowest speed tiers (<50 Mbps) have declined dramatically since 2019, when they comprised roughly a quarter of all subscribers. Today that number is just 10.5%, a decline of 58%. The same percentage (10.5%) of subscribers is now represented in the fastest tier of 1 Gbps or more, which has grown by 500% in the same time period. In 2019, over half of subscribers (52.4%) were in tiers of 100 Mbps or less. Today, only 20% are.



Identifying Speed Upgrade Candidates

FIGURE 8

Percentage of Speed Upgrade Candidates



Source: OVBI Broadband Insights Report 2Q21



The correlation between bandwidth consumption and speed tiers represents an opportunity for network operators to identify speed upgrade candidates among their current subscribers. As subscribers consume more bandwidth, their need for higher speed tiers becomes apparent. If network operators can proactively identify these subscribers, they have an opportunity to recommend a speed upgrade, increasing ARPU and providing a better customer experience as a result.

By analyzing the usage behavior of millions of subscribers, OpenVault has identified the most appropriate upgrade threshold at each speed tier, based on bandwidth consumption. A poor customer experience can be present for subscribers who routinely hit these thresholds for their current speed tier category. The thresholds include monthly usage of 100 GB for the 50 Mbps speed tier, 300 GB for the 50 – 100 Mbps speed tier, 600 GB for the 100 – 200 Mbps speed tier, and 1.2 TB for the 200 – 400 Mbps speed tier.

On average, based on bandwidth usage, roughly 40% of subscribers in the <50 Mbps speed tier are hitting the 100 GB threshold and consequently are good ideal candidates to approach for speed upgrades. Similarly, 35% of subscribers in the 50 - 100 Mbps speed tier category likely would benefit from speed increases. On average, OpenVault data analysis suggests that close to 22% of all subscribers are good candidates for speed upgrades.



Usage Implications



Over the past four years, the percentage of subscribers in smaller usage tier categories continues to shrink, while the percentage of the largest usage tiers is growing much more quickly.



UBB providers are slowing the growth of extreme power users compared to FRB network operators, with an annual growth rate that is 31% less.



The 2Q21 annual growth of median usage, at over 64% more than the growth rate of average usage, highlights that consumption continues to increase across most subscribers, rather than just a few power users.



Annual upstream growth for 2Q21 (18%) continues to outpace downstream (14%) growth.



On average, OpenVault data analysis suggests that close to 22% of all subscribers are good candidates for speed upgrades.

Speed Implications



80% of subscribers enjoyed a speed tier of 100 Mbps or faster, with more than half of them (47.5%) subscribing to a 100 to 200 Mbps tier.



The Average Broadband Household

A snapshot of the average U.S. broadband household.

OVBI Average Broadband Household Index – 2Q21



433 GB

Average Bandwidth Usage



405 GB

Average Downstream Usage



231.1 Mbps

Average Downstream Speed



4 per household

Average Number of Streaming Services*

*The Wrap 6/21



28 GB

Average Upstream Usage



17.01 Mbps

Average Upstream Speed



25 per household

Average Number of Connected Devices*

*Reuters 6/21



Conclusion

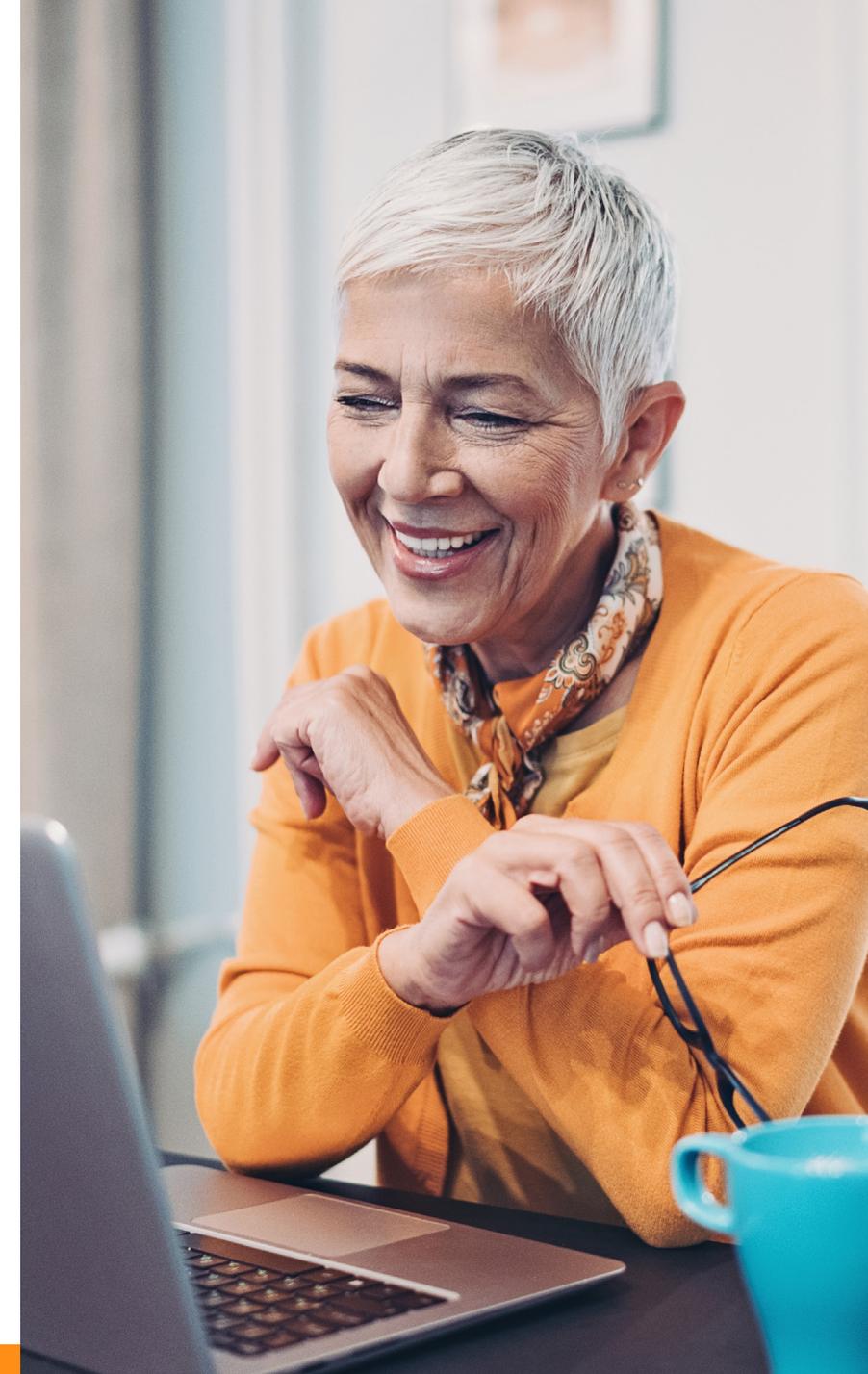
The broadband industry appears to have settled into normal usage patterns, but at historic levels of bandwidth consumption and accelerated speed tier demand, with 80% of subscribers now in the 100 Mbps or faster speed category and 32% of subscribers now consuming over 500 GB of data per month.

With both median usage growth exceeding average usage growth and upstream usage growth exceeding downstream usage growth, the impact on the network is far reaching and not driven by just a few subscribers or just by applications like streaming alone. Network operators will continue to be challenged to manage their

networks as they strive to balance higher usage with better customer experiences.

The correlation between elevated usage and accelerating speed demand creates an opportunity for network operators to be proactive in the pursuit of the best customer experience for all subscribers. By identifying and approaching subscribers who are the best candidates for speed upgrades, network operators not only can improve the customer experience, but can generate higher ARPU as well. OpenVault encourages all network operators to leverage all the tools required to know and understand these factors so they may make the most informed decisions for their network and business operations.

By analyzing the usage behavior of subscribers on an individual network, OpenVault data analysis can point to the most appropriate upgrade threshold at each speed tier, giving network operators critical business intelligence metrics that help drive an improved customer experience and better financial results.



OpenVault Solutions Informing the 2Q21 OVBI Outcomes

OpenVault is the world's only solutions provider focused exclusively on optimizing networks and driving revenue for cable, fiber and wireless broadband operators. Our SaaS solutions improve network management, grow ARPU and increase customer satisfaction for more than 150 service provider engagements across four continents. Leveraging specific subscriber usage data within broadband provider's networks, we're able to gain unique insight into how subscribers consume broadband services and then deliver solutions that unlock the power of that data. Key findings within this OpenVault Broadband Insights Report point to the need for broadband providers to consider offering UBB plans, targeting at-risk subscribers for rightsizing and upgrade opportunities, and introducing proactive customer care.

The following OpenVault solutions allow providers to address these challenges and are selected from our full suite of value-improving network solutions.



Revenue Generation

Our revenue-driving solution uses near real-time data as actionable information that allows providers to: grow their subscriber base with the flexibility to create new packages based on segments of the market; enhance value and ROI on existing infrastructure; decrease inbound call volume and truck rolls due to self-selected upgrades for rightsizing; better understand product mix selected by subscribers and create new plans targeting new market segments; and quickly identify power users to ensure they are subscribed to the appropriate product.

[Learn More](#)



UBB Modeling and Deployment Tools

OpenVault has been deploying UBB programs for broadband providers since 2012 with UBB-enabling solutions deployed on three continents for operators with a few thousand subscribers to over one million generating over \$150 million in incremental revenue annually. Our rapid deployment approach allows providers to analyze and model the optimum package and associated revenue; create product definitions; educate subscribers on how to adapt as well as prepare customer care for support; and then launch the UBB package with ongoing metrics to gauge success.

[Learn More](#)



Distance Diagnostics & Remote Care

OpenVault swiftly developed and introduced this solutions suite to support providers facing pandemic-induced heavy network usage and increased customer care demand. Distance Diagnostics & Remote Care provides actionable information for the troubleshooting of home network problems. With this solution in place, broadband providers can: remotely ID, diagnose and resolve subscribers' network issues; keep their field techs focused on plant servicing outside the subscriber's home; provide quality service to subscribers without rolling trucks and direct physical interaction; identify and proactively address node congestion, usage abusers and household-specific WiFi load issues; and reduce costs from fewer disconnects, truck rolls and customer calls.

[Learn More](#)



About OpenVault

OpenVault is a market-leading source of broadband technology solutions and data-driven insights into worldwide broadband consumption patterns. OpenVault's cloud-based, SaaS solutions and tools help service providers optimize network performance, increase revenue and improve subscriber satisfaction. OpenVault aggregates and analyzes the resulting market data to provide unparalleled granular views of consumer usage that can be used to anticipate residential and business broadband trends.

For more information, please visit openvault.com or contact us directly:

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