



# OV Broadband Insights Report

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OVBI • 3Q24



# Introduction

When it comes to broadband usage growth rates, downstream is down and upstream is up.

While the total volume of downstream and upstream usage continues to climb, the 3Q24 edition of the OpenVault Broadband Insights (OVBI) report indicates a continuation of a trend that OpenVault analysis has identified throughout the modern broadband era: With the exception of the pandemic year of 2020, downstream growth rates have slowed each year, while the rate of increase in the upstream has trended steadily upward.

The latest edition of the OVBI notes that the growth rate for the downstream slid to 6.8% in the third quarter of 2024 – the lowest figure since OpenVault began breaking out downstream and upstream data. Upstream growth moved higher to 13.9%, a rate of increase that is more than double that of the downstream, despite upstream constraints within the DOCSIS environment. Overall growth was 7.2%, OpenVault's lowest year-over-year rate recorded.

Upstream strains on broadband capacity are driving the need for providers to focus on network health to maintain Quality of Experience (QoE). This report focuses on the metrics that are driving that shift; it also includes a first-ever examination of differences in monthly average data consumption and provisioned speeds across select demographic groups—including household income, household size, community type, and county political affiliation.

As with all editions of the OVBI, this one uses data points from millions of individual broadband subscribers, aggregated from OpenVault's software-as-a-service (SaaS) technology solutions to pinpoint usage patterns that can affect network performance, operator revenue, and customer satisfaction.



# Key findings from the 3Q24 OVBI include:

## Usage



The monthly average data consumed by subscribers in 3Q24 was 590.1 GB, up 7.2% from 3Q23's average of 550.2 GB.

## Power Users



The category of Super Power Users consuming 2 TB or more per month increased by 25% year-over-year.

## Speed



Average downstream speed was 564 Mbps, an increase of 13.2% from 3Q23. Average upstream speed was 31 Mbps, up 11% from 3Q23.

## Extreme Power Users



Extreme Power Users consuming 5 TB or more per month increased by 44% since 3Q23.

## Key Bandwidth Usage Insight



Monthly average upstream data usage growth, up 13.9% from 3Q23, was more than double average downstream usage growth (6.8%) during the same period.

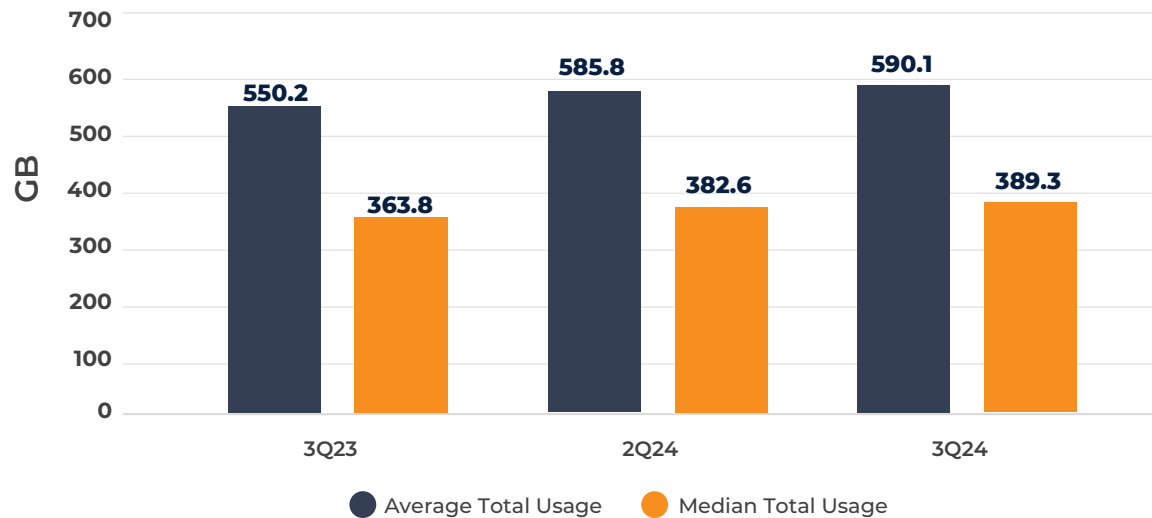


# 3Q24 Broadband Usage Key Findings

The following year-over-year and quarter-over-quarter trends were observed in 3Q24:

FIGURE 1

## Data Usage Trends — 3Q24 Monthly Average and Median



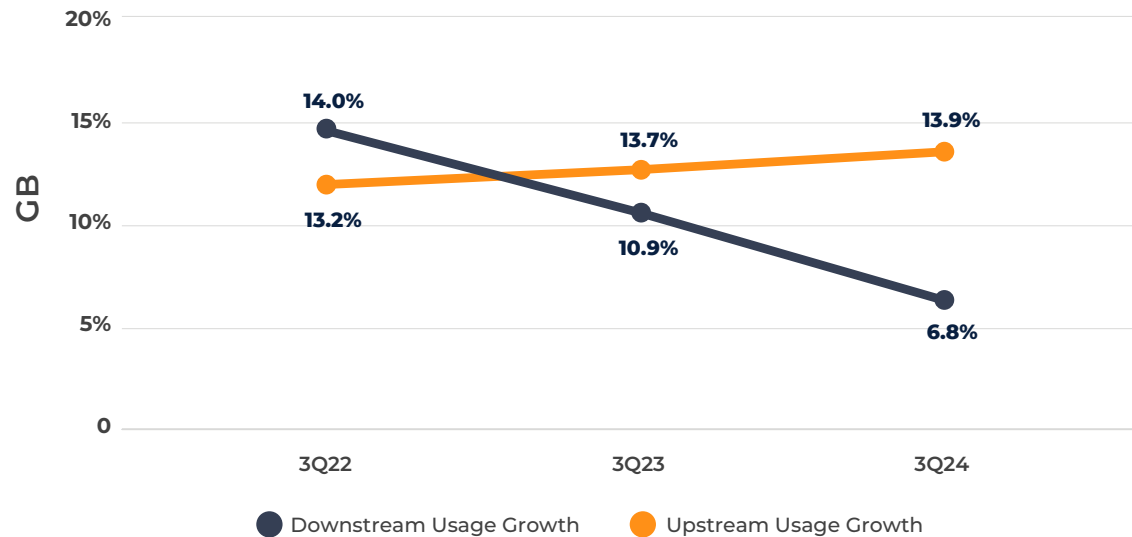
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- The monthly average data consumed by subscribers in 3Q24 was 590.1 GB, up 7.2% from 3Q23's average of 550.2 GB. This is the lowest year-over-year growth rate observed since OpenVault began reporting. Average data usage is nearly flat (up less than 1%) from the 585.8 GB observed in 2Q24, consistent with historical seasonal patterns.
- The monthly median usage of 389.3 GB was up 7% from a year ago (363.8 GB) and up 1.7% from 2Q24 (382.6 GB).



FIGURE 2

## Upstream vs. Downstream Data Usage Growth Trends — 3Q24



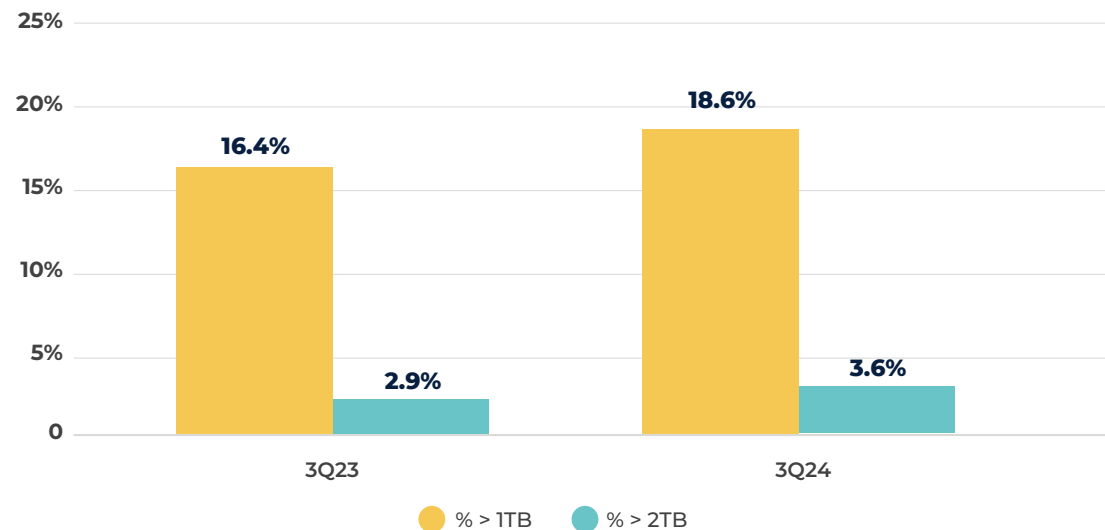
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- The rate of growth in the upstream continues to outpace that of the downstream. Upstream data usage was 40.9 GB, up 13.9% over the 35.9 GB observed in 3Q23. Downstream growth declined from 10.9% a year ago to 6.8% in 3Q24.
- Upstream usage of 40.9 GB remained nearly flat in 3Q24 compared to 2Q24's 41.5 GB, while downstream traffic of 549.2 GB increased by less than 1% from 544.3 GB in 2Q24.



**FIGURE 3**

## Power User Consumption Trends — 3Q24



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- Power Users consuming 1 TB or more per month in 3Q24 was 18.6%, a year-over-year increase of 13.2%.
- Super Power Users consuming 2 TB or more per month increased 24.6% year-over-year, from 2.9% to 3.6%.
- Extreme Power Users consuming 5 TB or more of data per month grew 44.2% in 3Q24, compared to one year ago (Note: This data is not represented in the chart above).

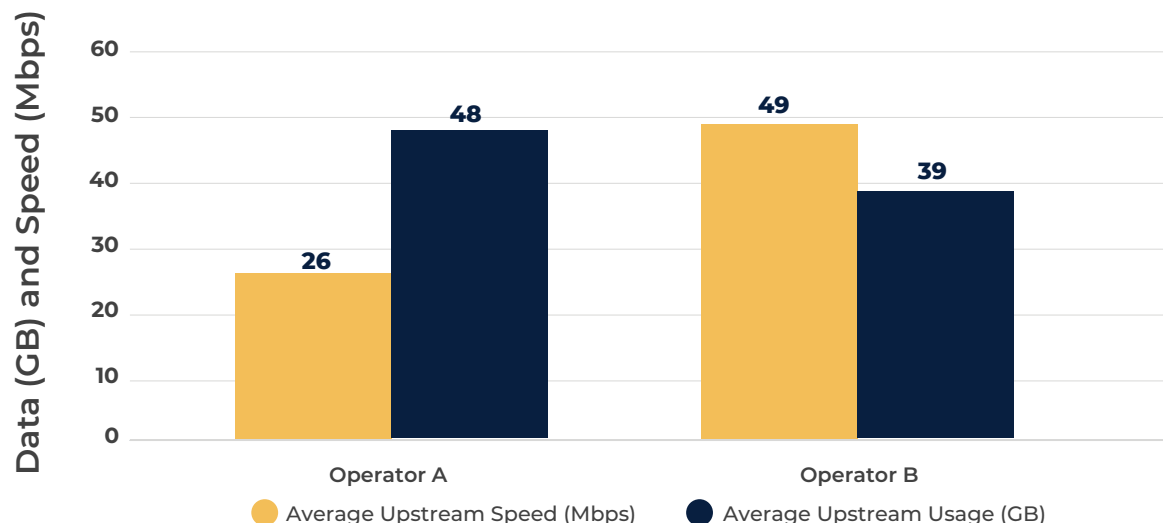


# Example of Upstream Data Congestion

In the 2Q24 edition of the OVBI report, we presented a sample comparison of two providers. One had observed significantly higher downstream data usage than the other, but they experienced far fewer impediments to Quality of Experience despite being provisioned at a slower average downstream speed.

FIGURE 4

## Average Upstream Data Usage vs Average Upload Speed — 3Q24



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A similar pattern is occurring in the upstream. As seen in Figure 4, Operator A's subscribers' average upstream usage was 23% greater than that of Operator B, yet they experienced no upstream network congestion.

Operator B, on the other hand, experienced congestion on 22% of the upstream portion of their network, indicating a need for solutions that would enhance network performance. This congestion contributed to less upstream data consumption per subscriber, despite the faster average speeds.

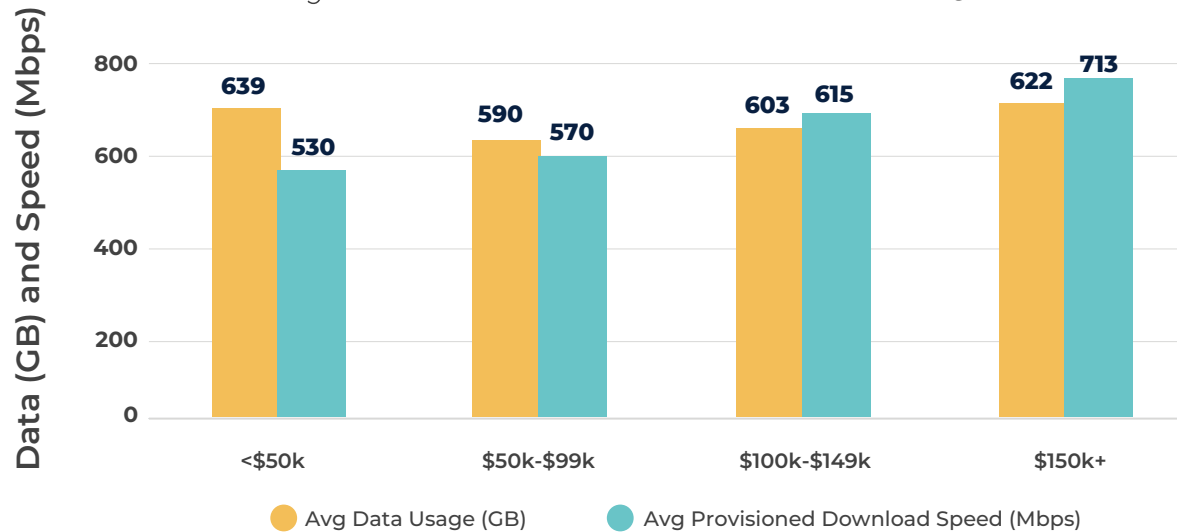


# Demographic Differences in Average Monthly Data Usage and Provisioned Speeds

For the first time, this edition of the OVBI report looks at differences in monthly average data consumption and provisioned speeds by select demographic groups, using U.S. Census Bureau data. These groups include annual household income, number of people residing in the same household, community type/size, and county political affiliation.

FIGURE 5

## Average Data Usage & Speed by Household Income — 3Q24



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Our analysis reveals notable differences in data usage and speeds by household income. Households with incomes under \$50k have the highest average data usage at 639 GB. However, these same lower-income households experience the slowest average internet speeds (530 Mbps).

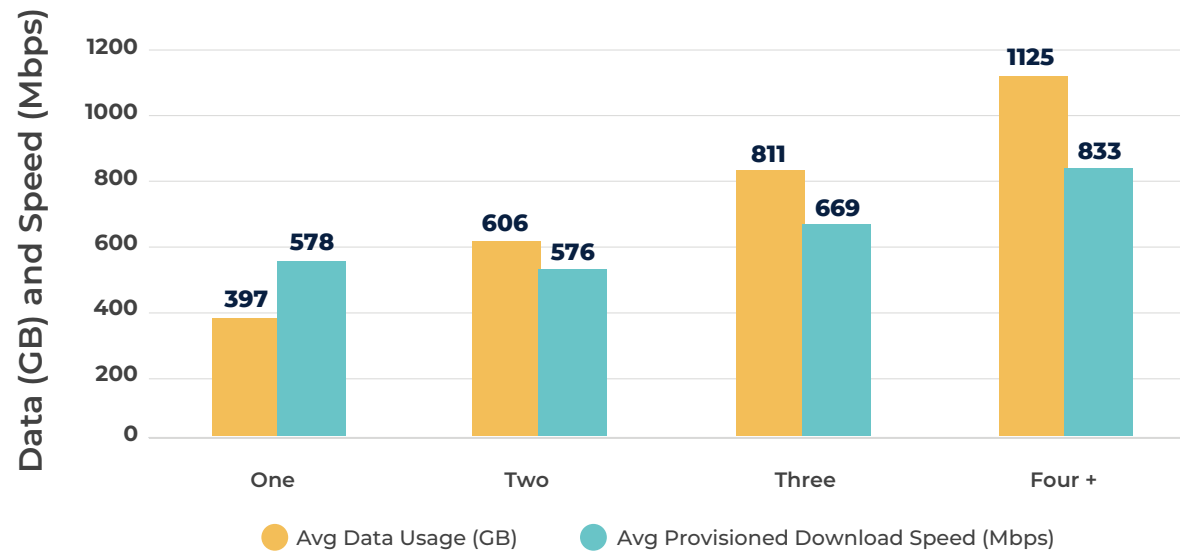
In contrast, households in the highest income bracket benefit from the fastest speeds, averaging 713 Mbps.



Figure 6 illustrates a clear trend: as household size increases, so do data usage and internet speed adoption. Single- and two-person households average monthly data usage of 606 GB or less, with provisioned speeds at or below 578 Mbps. Meanwhile, households with four or more members consume over a terabyte of data on average and enjoy speeds exceeding 800 Mbps.

**FIGURE 6**

### Average Data Usage & Speed by Number of Household Members — 3Q24



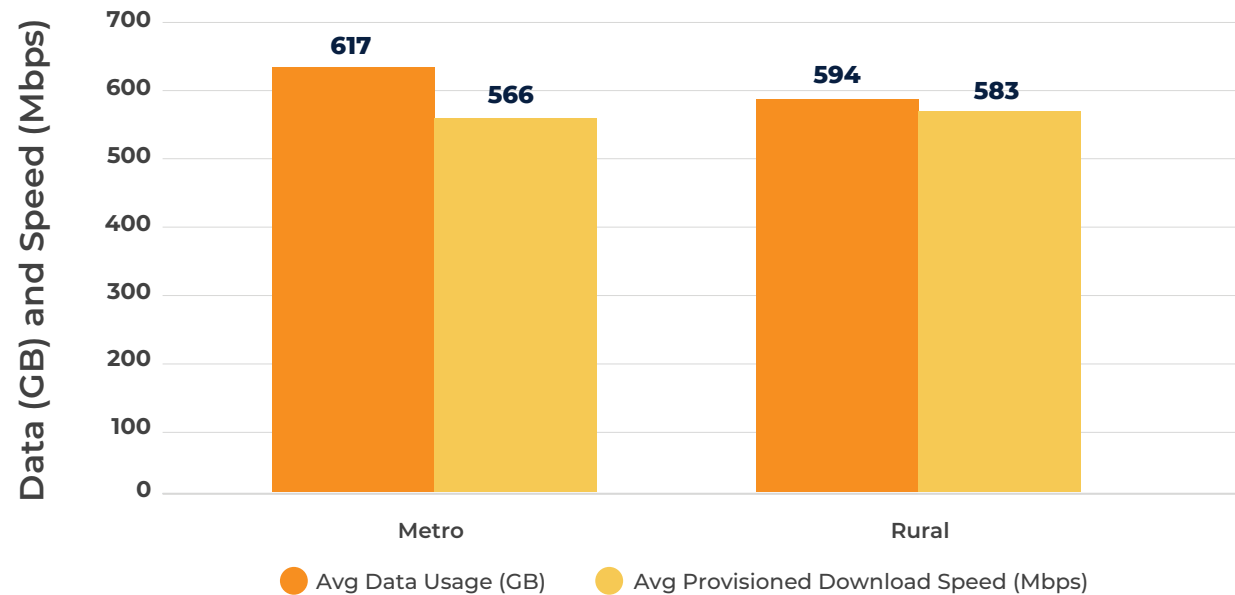
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The data shows similar usage and speed levels when comparing urban vs. rural households. The findings are somewhat surprising, as one might expect rural areas to have more limited options for faster speed tiers and data plans. This demonstrates that operators serving rural areas have invested heavily in upgrading their networks to be able to provide speeds on par with more urban networks, and that subscriber behavior is consistent between those cohorts.

FIGURE 7

## Average Data Usage & Speed by Community Type/Size — 3Q24

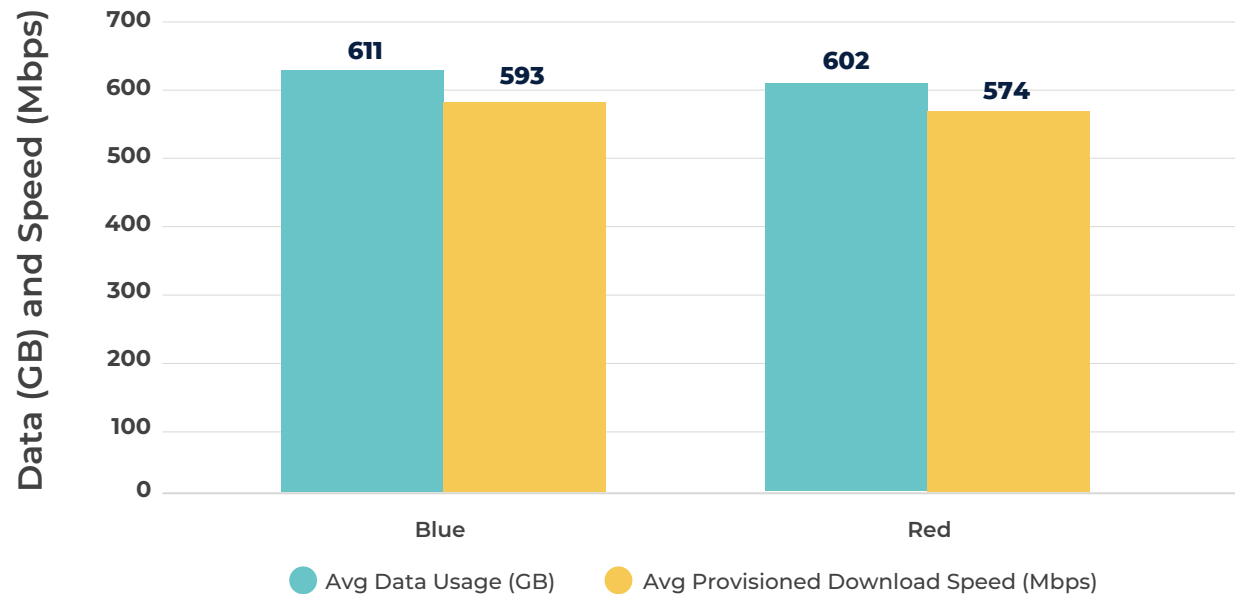


Like the similarities between urban and rural populations, internet data usage and speed patterns are similar between counties with Democratic (Blue) and Republican (Red) affiliations.

**FIGURE 8**

## Average Data Usage & Speed by Home County Political Affiliation — 3Q24

*(based on 2020 county level voting results)*



# Industry Observations

Below are recent milestones or data equivalences that put the observations noted in this 3Q24 OVBI report into perspective.



**67 Million**

Viewers tuned into the second presidential debate

Source: Nielsen



**170%**

Increase in WNBA regular season viewership compared to last season

Source: WNBA



**150 Million**

Paid by Netflix to the NFL to livestream two Christmas day games through 2026

Source: Forbes



**14.2 Million**

Viewers tuned into the Packers-Eagles game held in Brazil, doubling prior viewership on Peacock for a regular season game

Source: NBC Sports



**5.3 Million**

Viewers of *The Penguin* over its first four days streaming on HBO/MAX

Source: Variety



**23.5 Billion**

Minutes streamed by Peacock subscribers during the Summer Olympic Games in Paris

Source: NBC Universal



# OpenVault's Average Broadband Household Index — 3Q24

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



**590.1 GB**

Average Bandwidth Usage



**549.2 GB**

Average Downstream Usage



**40.9 GB**

Average Upstream Usage



**564 Mbps**

Average Downstream Speed



**31 Mbps**

Average Upstream Speed



# Conclusion

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This report highlights key shifts in broadband usage that underscore the increasing importance of robust upstream capacity and proactive network management. With upstream data usage now growing at more than twice the rate of downstream usage, the need for ongoing monitoring and network adaptability to maintain high Quality of Experience (QoE) amid rising demand is crucial. Addressing upstream constraints within the DOCSIS environment will be essential as subscriber behavior evolves, putting added pressure on networks.

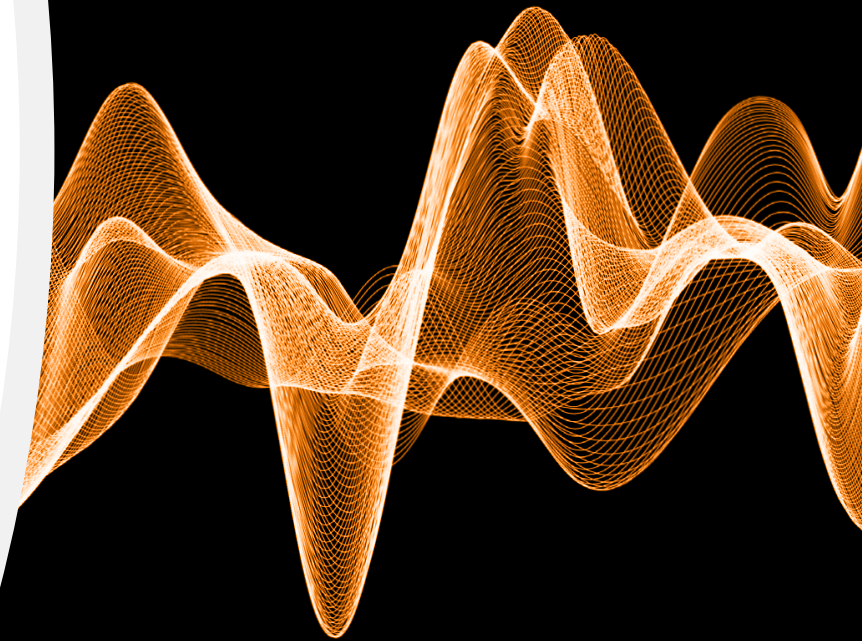
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**3Q24 OVBI report data indicates that broadband providers should take steps to improve network health in the face of continued pressure on the constrained upstream plant.**

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The report also illustrates how higher demand from Power Users, Super Power Users, and Extreme Power Users continues to impact network infrastructure. This growing user segment, along with demographic factors like household size and income, signals that broadband providers will need to refine their network strategies to anticipate congestion points and ensure consistent QoE for all subscribers.

By investing in advanced network monitoring and leveraging insights from usage patterns, broadband providers can address network vulnerabilities and balance the needs of diverse user groups. These proactive measures will be crucial for sustaining service quality as data consumption continues to evolve and intensify.



# OpenVault Solutions to Address This Report's Insights

OpenVault is the world's only solutions provider focused exclusively on optimizing networks and driving revenue for broadband operators.

Offering a full suite of analytic and proactive solutions, OpenVault applies its deep domain knowledge to address the significant challenges providers face, as indicated in this OVBI.

OpenVault's unique cross-section of data can identify, measure, and solve problems that impact network performance and subscriber experiences. OpenVault's tools can measure and boost QoE in many new ways:

► **Congestion:** One Extreme Power User can account for 90% of total usage during a peak weekend hour and impact the experience of hundreds of other subscribers on the network. OpenVault offers tools to quickly identify heavy utilization, isolate and adjust bandwidth for the heavy user, and ensure a balanced and high QoE for all subscribers on the network.

► **Speed Clipping:** When subscribers reach the maximum speed of their service plan, they can experience slow loading speeds, choppy video streaming, etc. More often than not, customers need more speed than they originally signed up for. OpenVault offers a tool to identify subscribers who are using (or approaching) the maximum speed available to them. This allows the operator to generate proactive upgrade campaigns, resulting in higher ARPU and a greater QoE for the subscriber. In one example, this tool identified more than 2,400 subscribers of one network operator who were using at least 80% of their maximum service plan speed for a portion of a month.

► **Impairment Impacts:** Network impairments like loose connections or outside influences from weather, water, or rodents can impact network performance. OpenVault can identify impairment issues and prioritize bandwidth around the impairment to optimize network performance until the problem is resolved.



# OpenVault Product Information

OpenVault is the industry leader in providing products designed specifically to optimize new generations of DOCSIS 3.1 and DOCSIS 4.0 networks. These include:



## OV Advanced PMA™ (Profile Management Application)

**A closed-loop, automated, data-driven, vendor-agnostic solution that dynamically creates bandwidth without human intervention.** Through persistent analysis of data from each CM and CMTS, OpenVault's industry-leading Profile Management Application (OV Advanced PMA™) learns the state of the system and creates optimized profile sets tailored to the unique real-world environment of each OFDM/OFDMA channel, opening up more usable bandwidth. Providers can realize the full benefit of their investment in their DOCSIS 3.1 network by improving performance and resiliency without incremental capital investment.



## OV PNM (Proactive Network Maintenance)

**Swiftly detect and locate RF impairments, optimizing resource allocation for precise issue resolution.** OpenVault Proactive Network Maintenance (OV PNM) enhances subscriber quality of experience while minimizing workforce-related costs. The user-friendly interface is well-suited for plant technicians, facilitating seamless adoption across large-scale deployments. With its intuitive design, OV PNM enables technicians to quickly identify RF impairments, reducing repair times and the potential for system outages. It serves as a versatile tool for both proactive and reactive maintenance needs, adaptable to various situations.

### ► Features

#### OV ADVANCED PMA™

- **Dynamically control** network resources to alleviate congestion
- **Enhance** overall network capacity by up to 40%
- **Improve** the resiliency of DOCSIS 3.1 modems by ensuring they use the OFDM/OFDMA channels in the presence of impairments

#### OV PNM

- **Detect** and analyze noise impairments in the upstream RF plant with Upstream Triggered Spectrum Capture (UTSC) Analyzer, which provides enhanced upstream monitoring capabilities tailored for Distributed Access Architecture (DAA) deployments
- **Combine** service assurance processes, field force management, and field find-and-fix capabilities into a single pane of glass
- **Optimize** truck roll efficiency, minimizing Mean Time to Repair (MTTR) and Operational Expenditure (OPEX)
- **Identify** in-home vs. outside-plant impairments

In addition, by combining PNM and PMA tools, cable operators can proactively identify and mitigate impairments, provide optimal bandwidth to customers, and schedule necessary repairs to enhance the overall network performance and customer experience.

Learn more about these and other revenue-increasing and network management solutions at [OpenVault.com](https://www.openvault.com).





# 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. This data analysis drives a suite of actionable and automated solutions, providing operators with tremendous value through software and avoiding the need for large-scale infrastructure spending.

For more information, please visit [OpenVault.com](https://www.openvault.com) or contact us directly:

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