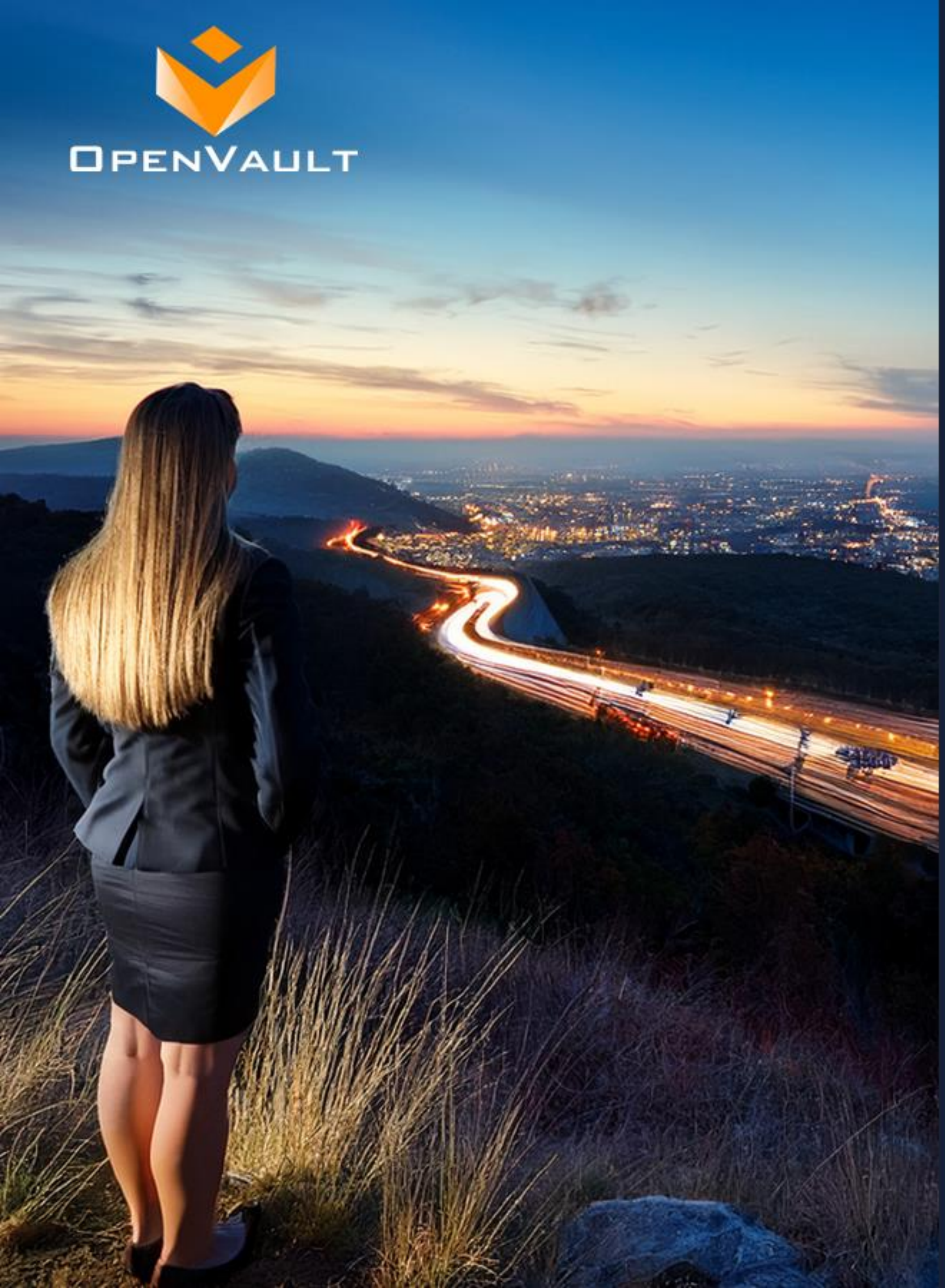


2Q25 Report

Picking Up the Pace in Usage & Upstream

OpenVault Broadband Insights

Introduction

After several years of post-pandemic uncertainty, broadband growth is showing strong signs of a comeback. According to this edition of the OpenVault Broadband Insights (OVBI) report, average per-subscriber data usage increased for the second consecutive quarter in 2025. Even more telling, the year-over-year growth rate in 2Q25 was higher than any seen in the second quarter in the past three years.

Using data collected by OpenVault's network management and optimization solutions, the 2Q25 OVBI documents a rise in average per-subscriber usage to 664.2 GB – a small increase of 1.0 GB over the 663.2 GB recorded in 1Q25 but a significant metric given historical declines in average usage from the first quarter to the second. The increase in average usage over 2Q24's 585.8 GB was 13.4%, the largest since a 14.0% rate of growth in 2021.

This OVBI details 2025's shifting consumption trends, including distinct growth patterns within specific tiers of service, as well as the continued impact of growing upstream usage. The report also leverages findings from deployments of OpenVault's Profile Management Application (Vantage PMA) and the OpenVault Proactive Network Management (Vantage PNM) tools to explore network metrics that are critical to maintaining performance and subscriber Quality of Experience (QoE).

As with every OVBI edition, this report analyzes data from millions of broadband subscribers, aggregated through OpenVault's data collection solutions, to uncover usage patterns that impact network performance, operator revenue, and customer satisfaction.

Key findings from the 2Q25 OVBI include:

Usage

Monthly average consumption in 2Q25 was 664.2 GB, a 13.4% increase over the 585.8 GB recorded in 2Q24.

Upstream

Upstream usage grew 17.9% in 2Q25. With the exception of the pandemic-fueled 55.8% increase in 2020, 2Q25 marked the fastest second-quarter upstream growth on record.

Speed Tiers

Speed tiers of 500Mbps and higher experienced significant year-over-year increases in average subscriber usage.

Network Health

Profile Management Application (PMA) technology is improving network resource optimization and more efficient DOCSIS 3.1 utilization. The percentage of total channels reporting more than half of their modems in partial-service mode was 3.1% after the implementation of PMA, vs. 11.6% prior to PMA deployment.

Key Bandwidth Usage Insight

The average monthly total consumption increase of 1.0 GB from 1Q25 to 2Q25 breaks the historical pattern of Q1-to-Q2 usage declines.

A Quarter-over-Quarter Growth "First"

Fueled in part by the second consecutive quarter showing an annual increase of more than 17% in upstream usage, average monthly total broadband consumption surged by 13.4% year-over-year for 2Q25, underscoring both shifting consumer behaviors and sustained demand (*Figure 2*).

FIGURE 1

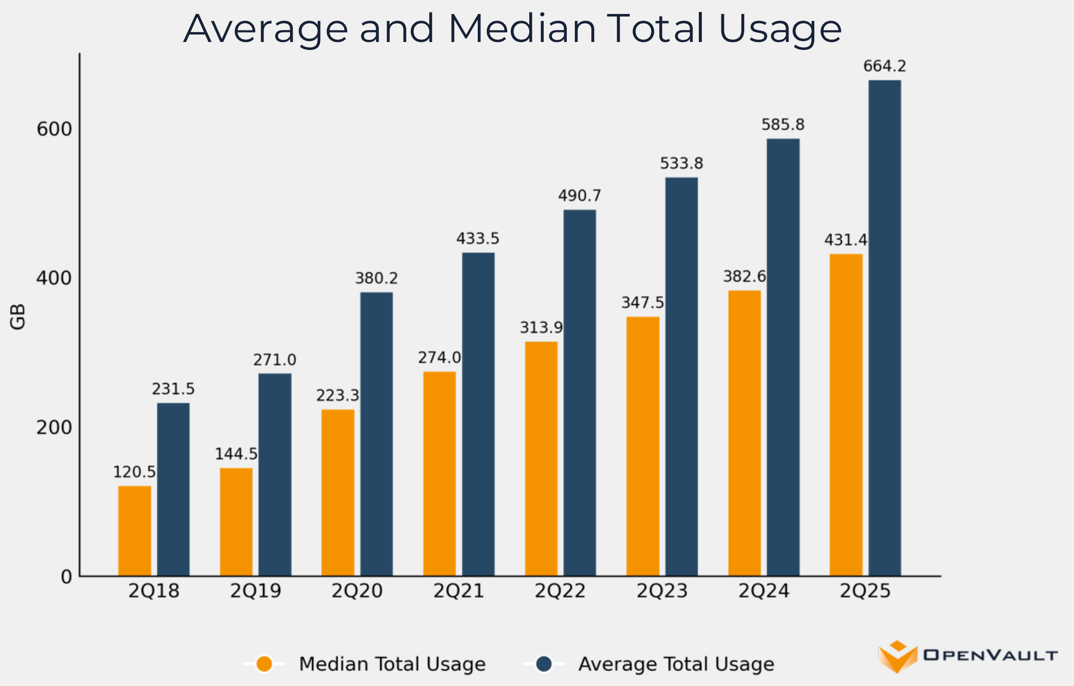
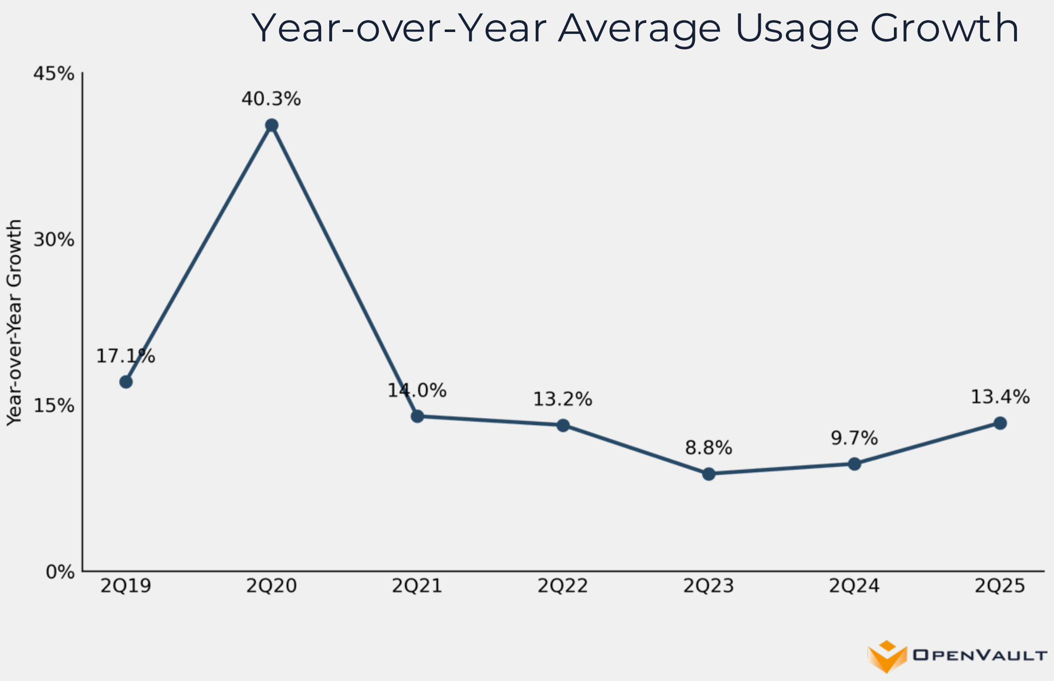


FIGURE 2



A Quarter-over-Quarter Growth "First"

Upstream consumption rose 17.9% (*Figure 3)* in the second quarter to 48.9 GB, eclipsing even the 17.6% increase that OpenVault systems identified in 1Q25. At the same time, downstream usage continued to intensify, growing by 13.1% to 615.3 GB. The percentage of Super Power Users consuming 2 TB of data or more per month rose to 5% in 2Q25, up from 3.7% in 2Q24 *(Figure 4).*

FIGURE 3

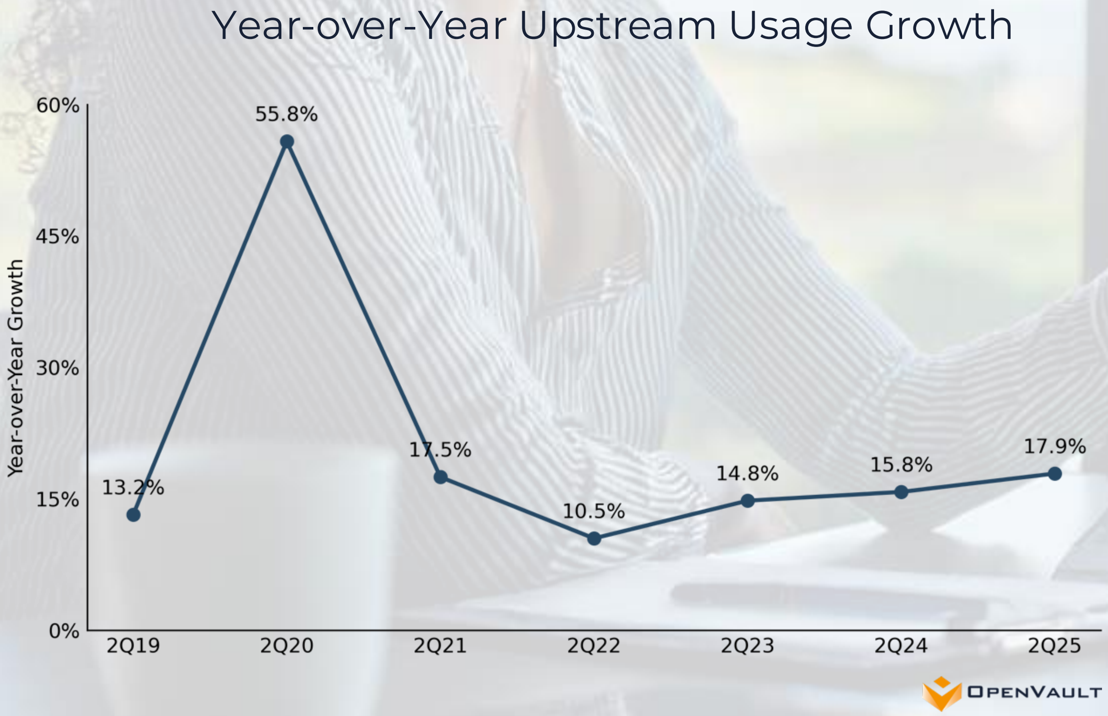
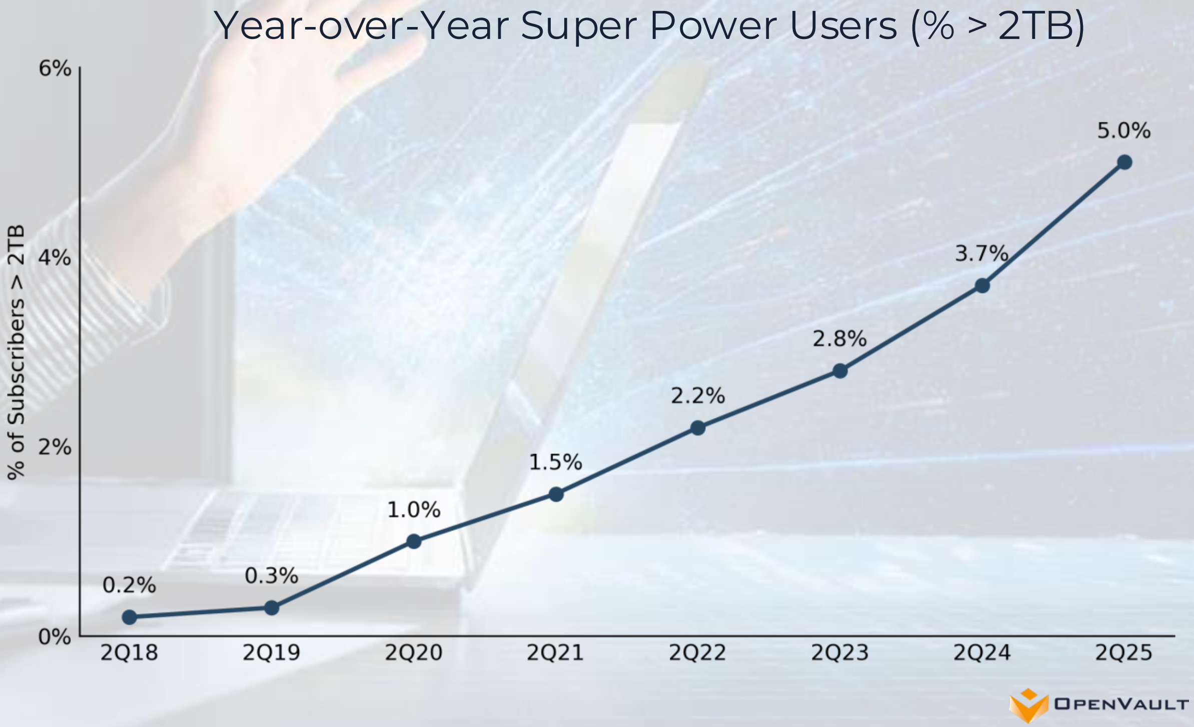


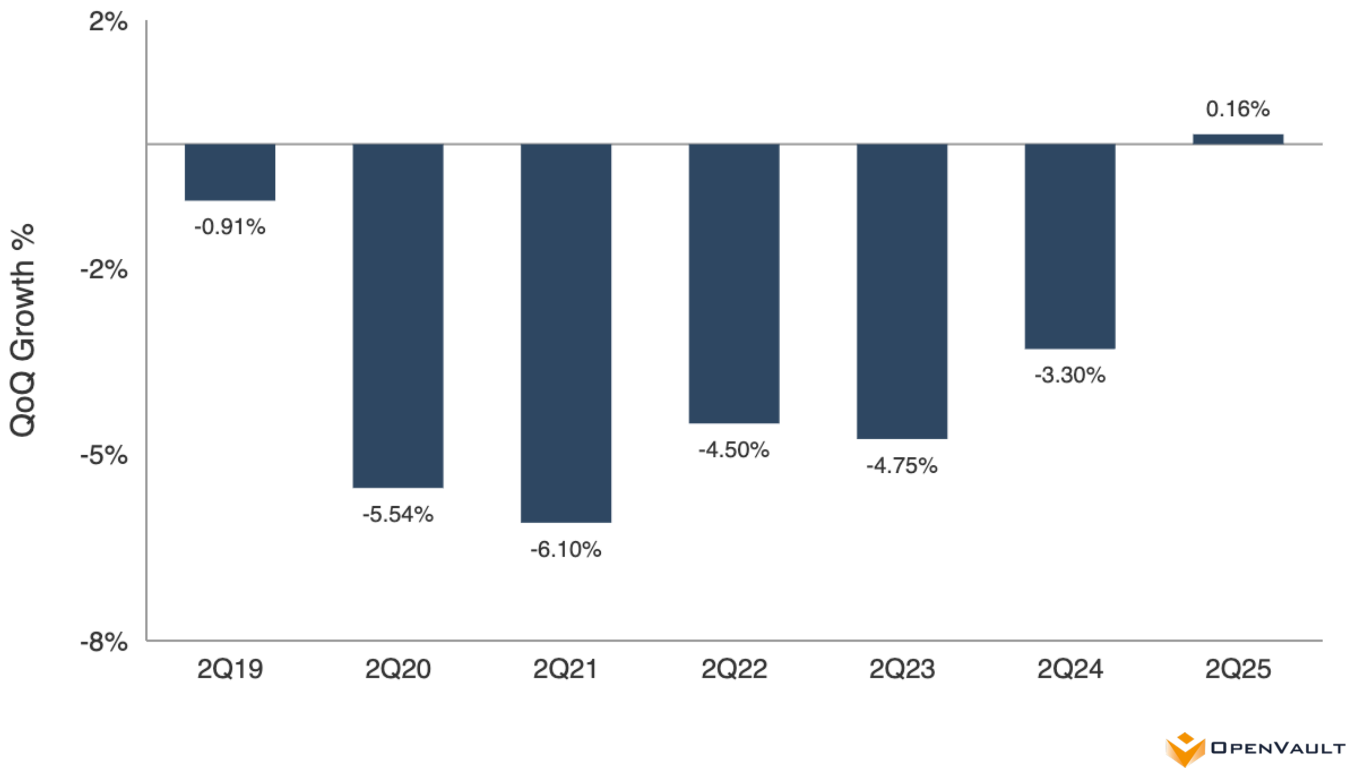
FIGURE 4

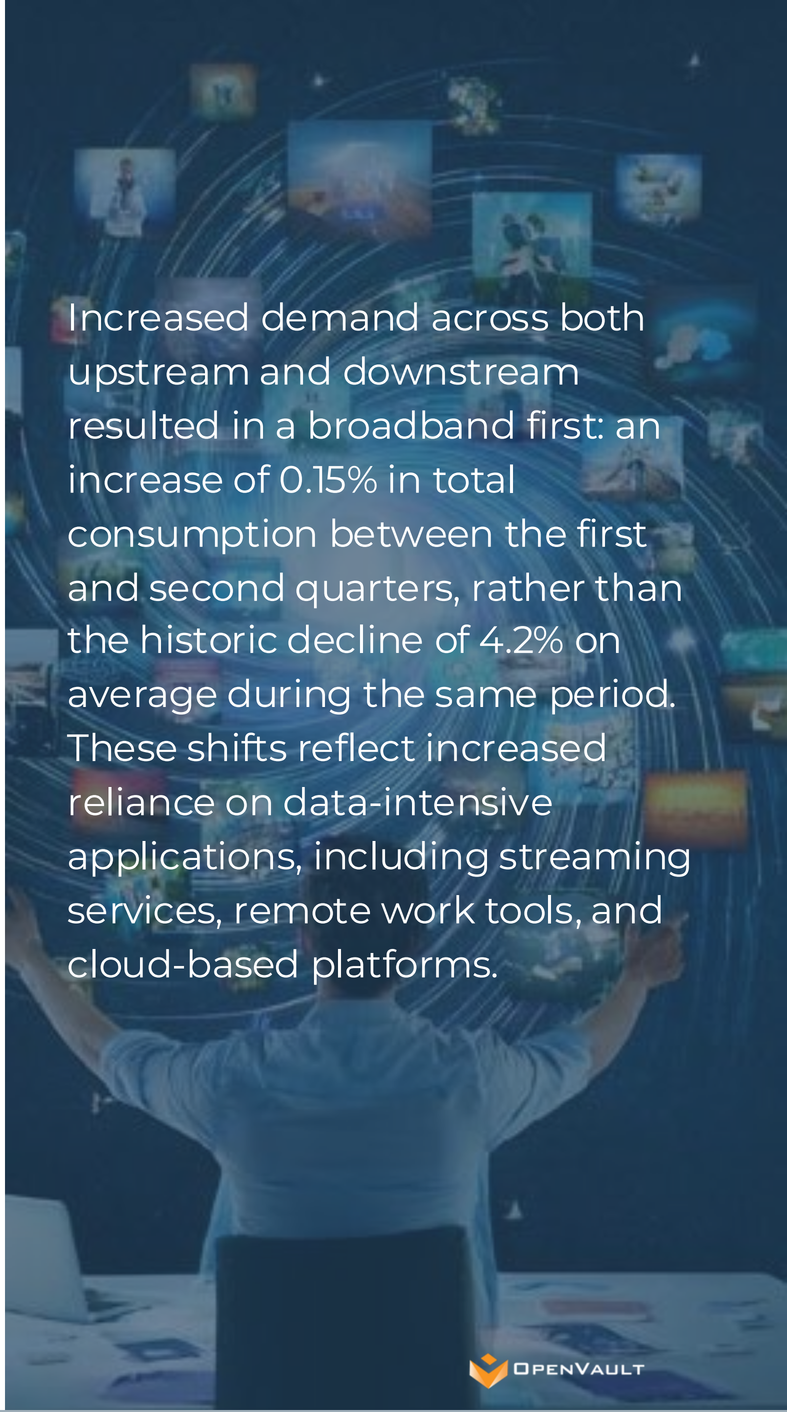


A Quarter-over-Quarter Growth "First"

FIGURE 5

Quarter-over-Quarter Average User Growth





Increased demand across both upstream and downstream resulted in a broadband first: an increase of 0.15% in total consumption between the first and second quarters, rather than the historic decline of 4.2% on average during the same period. These shifts reflect increased reliance on data-intensive applications, including streaming services, remote work tools, and cloud-based platforms.

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Fast Growth for Fast Speeds

As consumers continue to migrate to faster speeds, they are shaping a new usage landscape favoring top-tier speed plans while phasing out lower-speed options.

- Subscribers with speeds of 1 Gbps or higher continued to close in on 1 TB of downstream data in 2Q25: their 955.0 GB average downstream usage was up 14.4% over the 834.8 GB registered during the same period in 2024.
- Subscribers on 500-900 Mbps plans recorded the highest average downstream usage growth; their 590.3 GB average consumption represented an 18.8% increase over the 496.9 GB in 2Q24.
- Conversely, usage by subscribers in the 50-100 Mbps bracket fell 9.2% to 247.5 GB.
- For those at the sub-50Mbps level, the falloff was drastic – a decline of 55% to 117.4 GB.

This should not be surprising as operators are often proactive in identifying heavy users on low bandwidth plans to get them upgraded to faster speeds. Those heavy users then contribute to the growth in usage at the fastest speeds while no longer contributing to the averages at the slower speeds.

These insights emphasize the importance for broadband providers to continually evaluate tier offerings and manage capacity to keep pace with evolving subscriber demands.

Fast Growth for Fast Speeds

FIGURE 6

Average Downstream Usage by Speed Tier

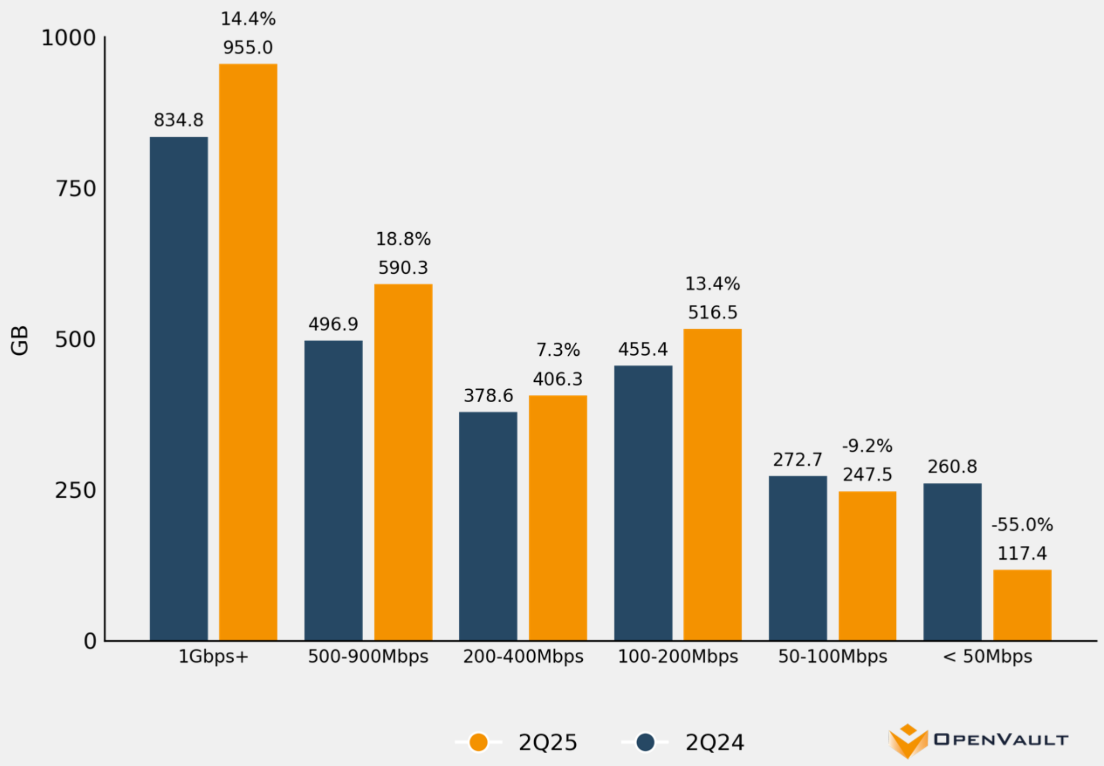
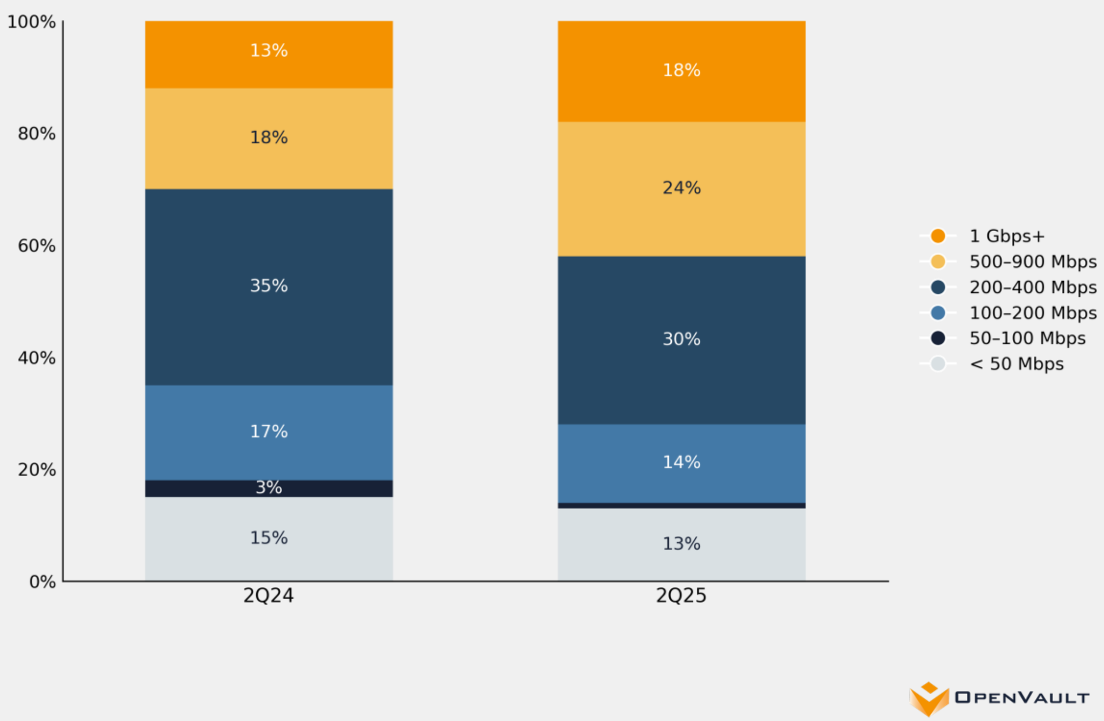


FIGURE 7

Speed Tier Distribution



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DOCSIS 3.1 Network Health Metrics

With the broadband industry's increased focus on Quality of Experience (QoE), this edition of the OVBI introduces a new set of critical network health metrics. As with all data presented in our OVBI reports, actual network data collected and aggregated by OpenVault's network health solutions are leveraged to derive these metrics – in this case the data is collected by OpenVault's Profile Management Application solution (Vantage PMA) for DOCSIS 3.1 and higher networks as well as its Proactive Network Maintenance solution (Vantage PNM).

Vantage PMA optimizes modulation profiles used by DOCSIS 3.1 cable modems on OFDM/A channels. It then routinely monitors and adjusts these profiles based on changing RF impairments, to ensure that subscribers receive the best possible service quality. This results in improvement of up to 40 percent in overall network capacity and bolsters the resilience of DOCSIS 3.1 modems, particularly in the presence of impairments.

DOCSIS 3.1 Network Health Metrics

The following is a comparison of upstream network health metrics before and after implementation of PMA :

Category	Explanation	Before PMA	After PMA
% of Channels >50% Partials	Low percentage indicates greater optimization of network resources and more efficient DOCSIS 3.1 utilization, rather than fallback to less robust SC-QAM networks.	11.6	3.1
Active Modems Percent	Indicates the percentage of DOCSIS 3.1-enabled modems utilizing the OFDM/A channel and not falling back to SC-QAM.	71.6	82.4
Weighted Average Bits/Hz (WA Bits/Hz)	This approaches the CableLabs requirement of 10 Bits/Hz or 1024 QAM for an OFDM/A channel; however, most vendors and modems support 12 Bits/Hz or 4096 QAM on OFDM/A and many operators are now deploying 4096 QAM on OFDM/A.	6.7	8
QoE Score	This combination of modem registration status (active modems %) and spectral efficiency (Bits/Hz) indicates overall subscriber experience.	6.4	7.5
% of Channels <=6 QoE	Indicates improvement areas for enhanced performance	36.8	15.7

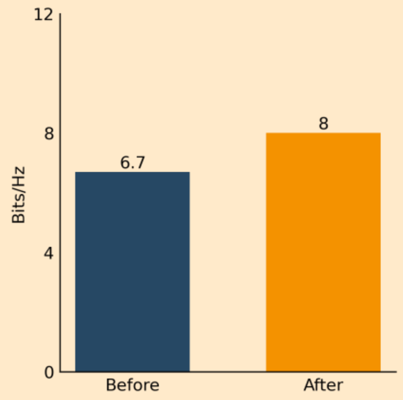
DOCSIS 3.1 Network Health Metrics

Operators can use these figures to compare their network performance, fostering proactive management practices and optimized subscriber QoE.

Capacity Gain by Weighted Bitz/Hz

19.7%

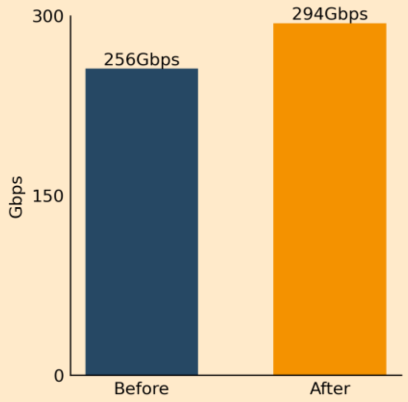
Weighted Average Bits/Hz



Throughput (% Change)

19.3%

Total Throughput

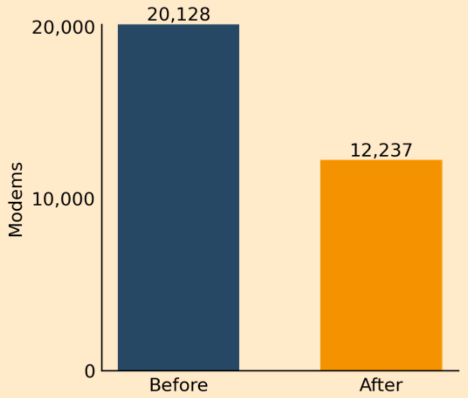


Partial Service Modems (% Change)

-37.8%

Partial Service Modems

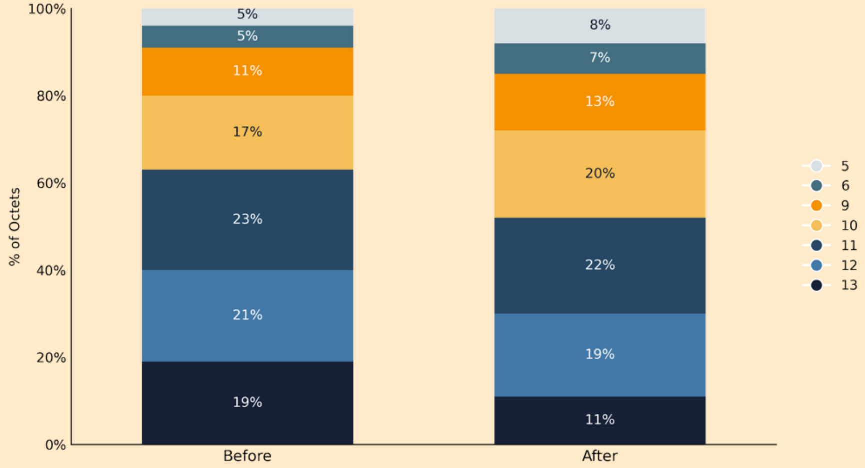
3.1 Enabled modems dropping OFDM(A)



Traffic on IUC 13 (% Change)

-41.8%

Daily Traffic by IUC



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Modem Health Networks

This report also includes the first aggregated modem telemetry from broadband providers across North America, revealing continued progress in network performance, but also identifying critical areas for operational attention.

Network Modem Health Index — Q2 2025

Comprehensive modem performance and health monitoring metrics.

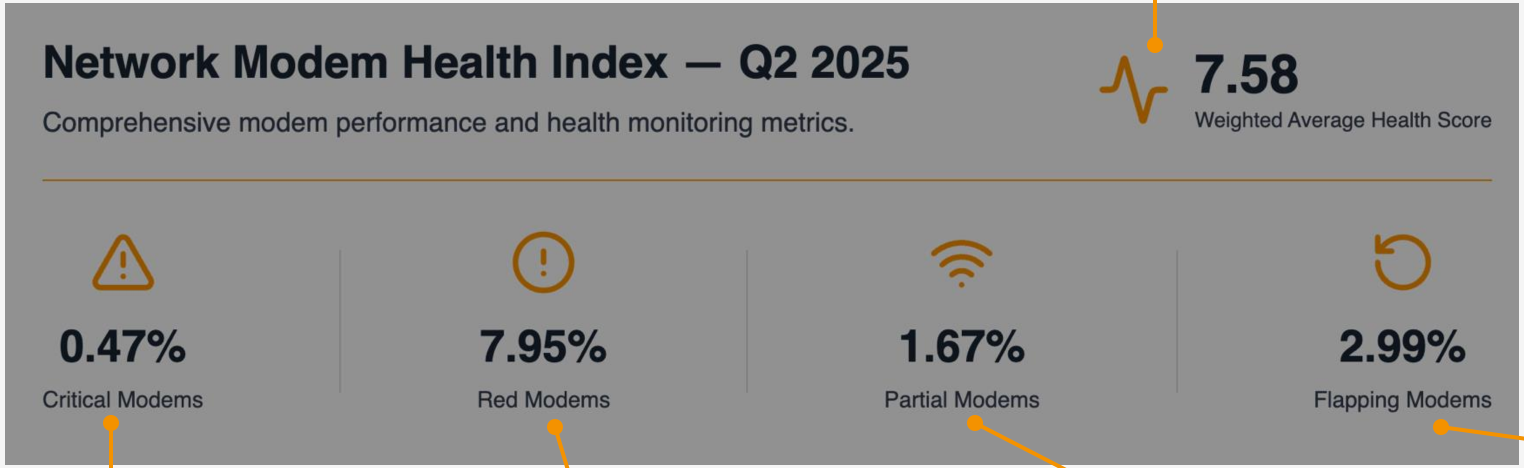
7.58
Weighted Average Health Score

0.47%	7.95%	1.67%	2.99%
Critical Modems	Red Modems	Partial Modems	Flapping Modems

Modem Health Networks

OVERALL HEALTH

The Weighted Average Health Score for Q2 2025 was 7.58. This index, which evaluates upstream plant health on a 1–10 scale, accounts for the ratio of Red, Yellow and Green modems on each CMTS, with Red modems weighted more heavily. A score above 8.0 is typically associated with reduced return path ingress and improved subscriber Quality of Experience (QoE). A score below this threshold, while not alarming, suggests that there are still opportunities for optimization at the node or CMTS level.



CRITICAL MODEMS

These devices are significantly impaired, with main tap compression (MTC) values exceeding 0.5, often indicating aggressive equalization and a high risk of dropped channels or complete loss of connectivity. Each critical modem poses a direct risk to service reliability.

RED MODEMS

These modems are experiencing moderate impairments—often precursors to critical issues. High Red modem counts are an early signal of degradation and can lead to subscriber dissatisfaction if not addressed.

PARTIAL MODEMS

A modem enters "partial service" when one or more upstream/downstream channels become unusable. While some subscribers may not immediately notice a difference in performance—especially on DOCSIS 3.0 networks—these conditions are often due to physical layer issues either in the home or in the outside plant. Clusters of partial modems typically point to impairments in the coaxial network, while isolated incidents are often linked to in-home wiring faults. Left unresolved, partial service can lead to diminished throughput, especially during peak usage times.

FLAPPING MODEMS

Flapping modems—those frequently going offline and re-registering—are a leading contributor to poor QoE and unnecessary truck rolls. High flap rates often result from intermittent upstream impairments or RF issues that standard monitoring systems may miss.

Modem Health Networks

WHY THIS MATTERS

These metrics are not just operational—they have real financial and customer satisfaction implications:

- Higher counts of Red, Critical, and Flapping modems are directly tied to increased call center volumes, truck rolls, and churn.
- Improving plant health scores reduces noise and interference, leading to fewer customer complaints, longer modem uptime, and more efficient upstream utilization.
- Identifying clusters of partial modems enables targeted maintenance efforts, ensuring operators can focus resources on areas with the greatest impact on subscriber experience.

By aggregating these indicators, OpenVault empowers operators to transition from reactive to proactive network maintenance, improving performance, reducing costs, and ultimately enhancing customer satisfaction.

Industry Observations

Below are recent milestones or data equivalences that put the observations noted in this 2Q25 OVBI report into perspective.

20 Years

YouTube turns 20 this year with 2 billion logged-in visits each month globally

Source: Cablefax

63.9 Million

Homes (48% of occupied homes) that have no paid big bundle of linear TV channels

Source: nScreenMedia

44.8%

Percentage of total television viewing that streaming accounts for, slightly higher than cable/broadcast

Source: Nielsen's The Gauge

29.61 Billion

Hours Watched across all major Livestreaming platforms in 2Q25

Source: StreamCharts

NETFLIX

26%

Surveyed said Netflix was the first streaming service they turn to when wanting to watch something

Source: Hub Research

$3.5 Trillion

Global entertainment & media revenue projection by 2029

Source: PwC

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OpenVault's Average Broadband Household Index — 2Q25

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

664.2 GB
Average Bandwidth Usage

615.3 GB
Average Downstream Usage

48.9 GB
Average Upstream Usage

568.3 Mbps
Average Downstream Speed

35.4 Mbps
Average Upstream Speed

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Conclusion

The **unprecedented increase in usage** from Q1 to Q2, the **resurgence of downstream consumption**, and the continued **growth of upstream traffic** all signal that broadband is entering **a new phase of expansion**.

As they've done throughout the broadband era, operators are strengthening infrastructure and rolling out new generations of DOCSIS to stay ahead of demand.

In this evolving environment, **agility is essential** — providers must leverage detailed insights and advanced tools like PMA to build resilient networks capable of supporting rising and increasingly dynamic consumer usage.

Solutions from OpenVault that address the issues uncovered in this report:

OpenVault's Modular Solution Suite

Automated Actions to Improve Broadband Network Performance

VANTAGE

Broadband's **Only** Ready-to-Deploy and Integrated PNM, PMA & Congestion Management Solution

AI-Powered • Vendor-Agnostic • Closed-Loop • Alarming Functionality

50%+
REDUCTION IN TRUCK ROLLS

40%+
REDUCTION IN CALLS TO CUSTOMER CARE

Vantage PNM

UP TO
40%
IN CAPACITY GAINS

Vantage PMA

SAVE
CAPEX
BY AVOIDING NODE SPLITS

CONGESTION MANAGER

OPENVAULT

VANTAGE

OpenVault's Modular Solution Suite

Vantage PMA

An automated, vendor-agnostic tool that dynamically creates bandwidth by analyzing data from every cable modem and CMTS to optimize profile sets and unlock usable capacity without extra capital spending.

Vantage PNM

Detects and locates RF impairments swiftly, improving Quality of Experience and reducing operational costs with tools like the Upstream Triggered Spectrum Capture Analyzer (UTSC), service assurance, and field force management.

Together, PMA and PNM enable proactive impairment identification, optimal bandwidth allocation, and timely repair scheduling, enhancing overall network performance and customer satisfaction.

Congestion Manager

Congestion Manager quickly identifies heavy utilization, isolates and adjusts bandwidth for heavy users, and ensures balanced Quality of Experience (QoE) across the network. This enables operators to maintain optimal performance even during peak usage.

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About OpenVault

Market Leader in Broadband Analytics

OpenVault and OpenVault Europe GmbH are market-leading sources of broadband technology solutions and data-driven insights into worldwide broadband consumption patterns. Using the companies' solutions, service providers can optimize network performance, increase revenue, and improve subscriber satisfaction.

Actionable Data Intelligence

OpenVault and OpenVault Europe aggregate and analyze the data collected from broadband networks to provide unparalleled granular views of consumer usage and network health. This data analysis drives a suite of actionable and automated solutions that dramatically improve subscribers' Quality of Experience, providing operators with tremendous value through software while avoiding the need for large-scale infrastructure spending.

Contact Us

For more information, visit OpenVault.com or contact sales@openvault.com. Phone: 201-677-8480. Address: 111 Town Square Place, Suite 1180, Jersey City, NJ 07310. Discover how OpenVault's solutions can optimize your broadband network and enhance subscriber QoE.

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