

LUMEN RECEIVES THE 2023 CUSTOMER VALUE LEADERSHIP AWARD

*Identified as best in class in the United States MPLS
VPN services industry*

Best Practices Criteria for World-Class Performance

Frost & Sullivan applies a rigorous analytical process to evaluate multiple nominees for each award category before determining the final award recipient. The process involves a detailed evaluation of best practices criteria across two dimensions for each nominated company. Lumen excels in many of the criteria in the MPLS VPN services space.

AWARD CRITERIA	
Business Impact	Customer Impact
Financial Performance	Price/Performance Value
Customer Acquisition	Customer Purchase Experience
Operational Efficiency	Customer Ownership Experience
Growth Potential	Customer Service Experience
Human Capital	Brand Equity

Vast Network Footprint and Advanced Services Portfolio Facilitate Customer Acquisition

Enterprises prefer private connectivity between site locations that transmit sensitive data to curb the growing network security threats. Along with private connectivity, enterprises need additional features, such as bandwidth provisioning, visibility, control, and reliability, to support the changing business needs.

Lumen’s MPLS VPN service delivers on all these attributes. MPLS VPN is the traditional workhorse of enterprise networking, a high-performance, reliable network technology built to handle critical enterprise workloads.

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– Amrit Singh,
Senior Industry Analyst

Lumen offers MPLS VPN services leveraging its global network, which consists of 150,000 on-net buildings and approximately 400,000 route miles of fiber optic globally. The company is one of the largest network service providers worldwide. Its extensive terrestrial and subsea fiber optic long-haul network spans North America, Europe, and Asia-Pacific and connects to its metropolitan fiber networks. The company operates in more than 60 countries in these regions and connects its customers via fiber to 292 Lumen data centers and over 2,200 third-party data centers. Lumen continues

to invest in expanding its network infrastructure to deliver high bandwidth connectivity. For instance, in December 2022, the company announced it is investing in 12 million fiber miles, with 6 million installed and 6 million expected to be installed by the end of 2026.

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Flexible Networking Options Enhance the Customer Ownership Experience

Enterprises prefer to engage with one service provider that can fulfill their connectivity and networking requirements for easy management. In addition, the right network solution and architecture can power enterprises' IT strategy. Lumen's adaptive networking solution is more than a product or service. It is a set of tools that leverages various technologies to elevate network performance. Lumen's Adaptive Networking considerably improves site provisioning speed, application performance, and network uptime while improving network security and operational cost savings. A manufacturing firm cited that implementing adaptive networking supported its connected supply chains, augmented reality, virtual simulations, industrial internet of things, smart sensors, and predictive analytics.

Lumen's high-capacity and ultra-low loss network is another key differentiator that powers adaptive networking solutions to provide dynamic connectivity, network security, and scalability. The company also offers services that complement its MPLS VPN services, including software-defined wide area network (SD-WAN), adaptive virtual, ethernet, professional, and managed services; cloud connect; dedicated internet access; fiber-based internet; and content delivery solutions.

Sophisticated Customer Portal Supports the Customer Service Experience

Enterprise customers prefer network solutions that offer visibility into their services. They require a self-service portal that provides network management capabilities, where they can monitor network performance, increase/decrease connectivity bandwidth, troubleshoot, and have 24x7 technical support, among other features. Lumen's control center portal allows enterprise customers to configure and control their MPLS VPN services. Customer benefits include near real-time visibility into applications via

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performance analytics, email alerts for network utilization, and self-service capabilities to manage dynamic bandwidth capacity.

Enterprises increasingly embrace hybrid and multi-cloud environments to support their digital transformation initiatives. The prerequisites for connecting to cloud environments include low latency, flexible bandwidth, security, and reliable uptime. Lumen's Cloud Connect solution makes cloud migration simpler. Cloud Connect offers secure, virtual networking functionality to connect to leading public

and private clouds, such as Amazon Web Services, Microsoft Azure, Google Cloud, IBM Cloud, and Oracle Cloud Infrastructure. It supports multiple network protocols, including MPLS VPN, wavelength, and ethernet, offering customers flexible connectivity options. Furthermore, software-defined networking (SDN)-based capabilities allow customers to set up or delete cloud connections in near real-time via a self-service portal. Frost & Sullivan notes that Lumen's support for multiprotocol connectivity choices to connect to cloud environments is a distinctive feature in the market.

On-demand Bandwidth Options Provide a Flexible Customer Purchase Experience

Bandwidth-on-demand and application-aware networking functionalities give customers more control over their networks and enable bandwidth optimization. Lumen's IP VPN Dynamic Connections capabilities address the on-demand bandwidth needs of businesses for cloud and data center networking. The company evolved its offering with SDN-based capabilities to provide dynamic capacity, enabling clients to instantly scale bandwidth on-demand up to 3x with predictable billing. Additionally, dynamic connections and self-service functionality allow clients to quickly add or remove connections, improving customers' digital experience significantly. Frost & Sullivan recognizes that this approach is another crucial aspect differentiating Lumen from its competitors.

A Cohesive Customer Strategy Optimizes MPLS Growth Potential and Customer Retention

Although MPLS continues to claim a significant portion of enterprise network spending, in the last three years, MPLS VPN services growth has been negatively impacted by the growing SDN adoption, which enables customers to swap out high-cost MPLS circuits for lower-cost internet or wireless access at certain locations. To address the decline, Lumen has adopted a customer strategy that optimizes MPLS revenues while ensuring customer needs are met for complex, hybrid networking environments. Lumen has equalized MPLS VPN rates with DIA service rates and offers a MultiService Port that allows for both public and private traffic over the same access loop, allowing customers to select the network that's best suited to their needs.

MPLS remains a significant player in hybrid networks. Enterprises increasingly deploy these networks, comprising a combination of ethernet, MPLS VPN, and internet, to cater to specific application requirements. Hybrid network implementation is important to address complex but diverse network requirements. In Frost & Sullivan's 2021 SD-WAN survey analysis of the United States, MPLS was among enterprises' top five network service choices when deploying SD-WAN. In the survey, 40% of respondents indicated they currently use a combination of MPLS and mobile when deploying SD-WAN, while 31% indicated they plan to use the same combination in the next two years.

Lumen's MPLS VPN services support multiple private networks, allowing customers to segregate their workload by applications and locations. Understanding that security is the top enterprise priority, Lumen's IP product portfolio has an integrated secure key management tool that strengthens the security of its services. Available built-in threat protection, proactive network monitoring, complete network visibility, and 24x7 support from Lumen's network operations center are available to customers.

For customers that choose to decrease their dependence on MPLS, Lumen offers a program that allows its existing MPLS VPN customers to migrate to alternative technology. Customers find this a valuable option since they can migrate within Lumen's network and avoid network management issues, which may occur when migrating to another service provider.

Conclusion

With growing technological advancements, enterprises prefer to adopt cost-effective, secure, flexible, and scalable technologies with ease of management to support their digital transformation initiatives and cloud-first strategies. Leveraging its expansive network footprint, Lumen offers MPLS VPN services supported by complementary services, including SD-WAN, cloud connect, adaptive networking, dynamic connections, and professional and managed services. In addition, Lumen's control center portal supports these services, allowing enterprise customers to configure and control their MPLS VPN services.

With its strong overall performance, Lumen earns Frost & Sullivan's 2023 United States Customer Value Leadership Award in the MPLS VPN services industry.

What You Need to Know about the Customer Value Leadership Recognition

Frost & Sullivan's Customer Value Leadership Award recognizes the company that offers products or services customers find superior for the overall price, performance, and quality.

Best Practices Award Analysis

For the Customer Value Leadership Award, Frost & Sullivan analysts independently evaluated the criteria listed below.

Business Impact

Financial Performance: Strong overall financial performance is achieved in terms of revenues, revenue growth, operating margin, and other key financial metrics

Customer Acquisition: Customer-facing processes support efficient and consistent new customer acquisition while enhancing customer retention

Operational Efficiency: Company staff performs assigned tasks productively, quickly, and to a high-quality standard

Growth Potential: Growth is fostered by a strong customer focus that strengthens the brand and reinforces customer loyalty

Human Capital: Commitment to quality and to customers characterize the company culture, which in turn enhances employee morale and retention

Customer Impact

Price/Performance Value: Products or services provide the best value for the price compared to similar market offerings

Customer Purchase Experience: Quality of the purchase experience assures customers that they are buying the optimal solution for addressing their unique needs and constraints

Customer Ownership Experience: Customers proudly own the company's product or service and have a positive experience throughout the life of the product or service

Customer Service Experience: Customer service is accessible, fast, stress-free, and high quality

Brand Equity: Customers perceive the brand positively and exhibit high brand loyalty

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- **ROI & Margin:** Implementation Excellence
- **Transformational Growth:** Industry Leadership



The Innovation Generator™

Our 6 analytical perspectives are crucial in capturing the broadest range of innovative growth opportunities, most of which occur at the points of these perspectives.

Analytical Perspectives:

- Mega Trend (MT)
- Business Model (BM)
- Technology (TE)
- Industries (IN)
- Customer (CU)
- Geographies (GE)

