FROST & SULLIVAN

BEST PRACTICES



2026 NORTH AMERICAN EDGE SOLUTIONS

COMPANY OF THE YEAR

LUMEN®

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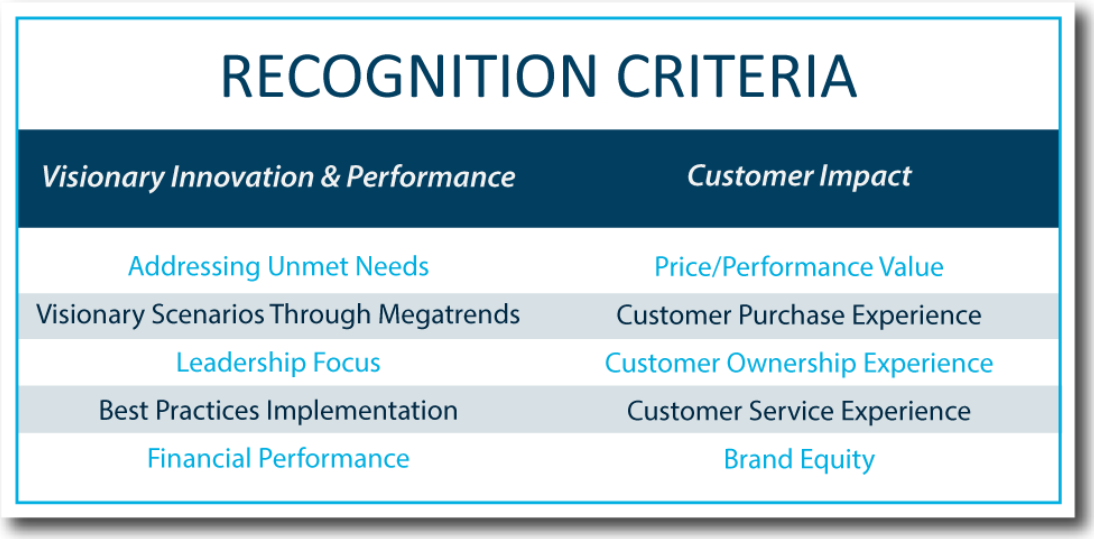
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Best Practices Criteria for World-Class Performance

Frost & Sullivan applies a rigorous analytical process to evaluate multiple nominees for each recognition category before determining the final recognition 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 edge solutions space.



The Transformation of the Edge Solutions Industry

Edge Solutions

Edge computing pushes intelligence, data processing, analytics, and communication capabilities to where the data originates: at network gateways or endpoints. The aim is to reduce latency, ensure highly efficient network operation and service delivery, and improve user experience. By extending processing closer to the data source, edge computing enables latency-sensitive computing, offers greater business agility through better control and faster insights, lowers operating expenses, and results in more efficient network bandwidth support.

Telecommunications operators and system integrators worldwide are deploying edge solutions in partnership with cloud providers and establishing smaller data centers at the network edge, closer to customers, or on-premises, to enable compelling use cases and optimize application performance. These ecosystems are underdeveloped in most attractive vertical markets, such as manufacturing and mining. Thus, implementing edge solutions often requires a heavy initial capital investment.

Lumen is a global telecommunications company that offers a range of network solutions, from metro connectivity and long-haul data transport to edge computing solutions, security, managed services, and digital platforms. The company tailors these solutions to meet the needs of different verticals and business sizes. For example:

- Low-latency trading, regulatory compliance, and branch intelligence are key use cases for edge solutions in financial services.

- Real-time control, rural connectivity, and predictive maintenance are the key use cases for manufacturing.
- For the media and entertainment vertical, live event streaming, remote production, and content delivery enablement benefit from edge solutions.

As a value proposition, Lumen combines its edge computing solutions with its global fiber network to support next-generation applications closer to where the data is generated. The company's managed edge services are differentiated primarily by their network-native architecture rather than a cloud-extended model. The edge platform is embedded directly within Lumen-owned fiber backbone and metro infrastructure, designed to support low-latency performance, often below 5 milliseconds in supported deployment scenarios. This structural advantage is increasingly significant as enterprises seek predictable data paths for latency-sensitive workloads, particularly real-time AI inference, distributed analytics, and performance-critical applications where transport variability can reduce service quality.

Therefore, Lumen has a mature, production-grade platform on which enterprises already run mission-critical workloads at scale. This operational maturity, combined with carrier-grade network assets and a proven enterprise delivery track record spanning multiple technology cycles, positions Lumen competitively relative to many emerging edge providers that have yet to demonstrate comparable scale, reliability, or sustained customer trust.

From a financial performance perspective, Lumen has demonstrated meaningful commercial traction across the Strategic Business portfolio that includes Edge Computing, AI Connectivity, Security, and Network-as-a-Service (NaaS) offerings. During the second quarter of 2026, Strategic Business revenues grew 14.1% year over year and accounted for more than 50% of total Business segment revenue, reflecting a successful shift toward higher-growth digital infrastructure services. At the same time, the company's NaaS platform exceeded 3,000 customers, with quarter-over-quarter customer additions increasing 22%.

Managed Edge Computing Solutions Portfolio

To deliver flexible business models to its enterprise customers, Lumen designed a portfolio of 4 edge computing solutions: Managed Edge Services, Edge Bare Metal, Edge Private Cloud, Network Storage. Lumen Edge Bare Metal is a dedicated, on-demand, pay-as-you-go bare metal server, hardware as-a-service backed by Lumen's fiber network to deliver ≤ 5 ms, which offers single-tenancy servers and a unified platform to run applications and workloads.

Edge Private Cloud is a managed infrastructure-as-a-service (IaaS) offering with optional Kubernetes. The solution is highly customizable with options per host, such as 16–56 cores, 256 GB–1.5 TB RAM, and 5 TB–35 TB usable storage (SSD). This configuration range gives customers the flexibility to size infrastructure for workload-specific performance and capacity requirements. Based on software-defined data center (SDDC) technology, Edge Private Cloud is available for over 2,200 public and private on-net data centers globally. In May 2026, Lumen upgraded this service with VMware Cloud Foundation 9, introducing platform-level capabilities that are directly relevant to enterprise resilience and operational efficiency. The service now includes ransomware recovery, guided workflows, and clean-room validation

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> ***– Carina Gonçalves, Industry Principal***

environments. Lifecycle automation was enhanced through management and planning tools. In addition, workload mobility was improved across cloud environments.

Network Storage is a fully managed multi-protocol storage service with self-service provisioning. Powered by NetApp ONTAP and StorageGRID, the solution has a consistent feature set in all locations: Lumen Edge, third-party colocation, managed hosting, customer premises, and public cloud. The solution also includes private storage nodes dedicated to each customer for maximum security and performance, as well as file and block storage built on All-Flash.

Data Protect, a fully managed data protection service, is an immutable backup solution for recovering critical business data from ransomware and complying with regulatory requirements. The solution includes on-site backups combined with cloud storage and off-site backups with multiple copies of data. Self-service access to managed backup services is also available.

In manufacturing environments, for example, Lumen's edge architecture supports real-time data processing for robotics, industrial IoT, and predictive maintenance applications, helping organizations analyze operational data closer to the point of creation while reducing the latency associated with centralized cloud processing.

Compared with telecom competitors, whose edge portfolios are increasingly integrated into broader connectivity offerings, Lumen maintains a more explicitly segmented managed-edge portfolio spanning bare-metal, private cloud, storage, and data protection services.

Full Lifecycle Ownership

Lumen's edge platform is positioned as a managed IaaS and managed private cloud offering, allowing enterprises to consume distributed edge capacity without maintaining dedicated data center operations teams or specialized engineering staff in each metropolitan market. The company assumes operational responsibility across the full infrastructure stack. It provisions and scales capacity across distributed edge locations, enabling enterprises to align compute and storage consumption with workload demand without over-provisioning at individual sites.

Lifecycle management covers orchestration, version control, patching, and platform maintenance of the virtualized layer. Collectively, this managed-service model converts what would otherwise be a fragmented, capital-intensive edge build-out into a single, operating expenditure (OPEX)-oriented subscription in which the carrier assumes the operational complexity. This approach is well aligned with enterprise buying behavior, as IT and line-of-business leaders increasingly prioritize consumption-based commercial models, reduced operational overhead, and single-vendor accountability for distributed infrastructure. The depth of Lumen's operational ownership across network, bare metal, virtualization,

storage, and security represents an important differentiator relative to providers that offer edge compute as a loosely coupled or co-managed capability.

With optimized network performance management, advanced security, and simple integration capabilities, Lumen is preparing itself for the next generation of cloud and edge applications that will scale in the coming years.

AI Infrastructure Enabler

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Lumen positions edge computing as a core component of its broader AI infrastructure strategy, enabling low-latency inference, distributed data processing, and performance-sensitive applications closer to end users, devices, and data sources. The portfolio is designed to meet the AI economy's growing needs for localized compute capacity, secure data handling, and consistently low network latency, where network architecture, workload placement, and geographic proximity support these service levels.

Traditional telcos are transforming into technology companies (techcos), with a strong emphasis on adopting AI for network operations automation, productivity gains, improved customer experience, and new revenue streams. According to Lumen, AI will go through 3 phases: training models based on an AI network backbone, inferencing with models based on AI applications, and implementing AI rings that communicate over fiber rings. Lumen is positioning its network as an AI-ready infrastructure platform, balancing capacity and utilization to meet the growing hyperscale and enterprise demand.

Lumen's network architecture is a key competitive differentiator because of its dense, distributed metro network reach, enabling diverse and tailored high-bandwidth access solutions. In an interview with Frost & Sullivan, Lumen stated that its edge footprint with 55 edge locations reaches areas representing approximately 97% of US enterprise demand. By August 2025, the company connected more than 163,000 commercial buildings with its network and featured more than 125 optical cloud on-ramps, providing direct private connections to major hyperscale cloud providers such as Amazon Web Services (AWS), Microsoft Azure, Google Cloud, Oracle, and IBM. Worldwide, Lumen had over 340,000 route miles of optical fiber, delivering dedicated connectivity services of up to 400 Gbps. The company's large on-net building footprint and substantial peering capacity ensure traffic delivery from origin to destination, helping support low-latency traffic delivery.

Integrated Solution Bundles

Lumen's value proposition centers on converging connectivity, edge computing, and cloud/platform interconnection into an integrated service model. By combining high-performance network services, distributed computing capacity, and direct access to cloud environments, the company offers businesses a solid, cohesive foundation for latency-sensitive, data-intensive, and AI-enabled workloads.

Edge compute can be directly integrated with Lumen's broader portfolio of connectivity, software-defined wide area network (SD-WAN), secure access service edge (SASE), and security services. Unlike architectures that rely on third-party transport or loosely coupled cloud regions, this model embeds computing within the same network fabric that transports enterprise traffic, data, and applications. Most competitors build these layers through partnerships or on disparate platforms, introducing architectural discontinuities that can complicate operations, accountability, and service-level consistency. Lumen's tighter vertical integration supports a more coherent operational model and a single point of contact across the network-to-workload continuum, an attribute enterprises value when seeking to reduce vendor complexity.

More recently, Lumen has strengthened its edge platform's architectural resilience by embedding immutable storage and integrated backup-and-recovery capabilities directly into its managed offering, reflecting a broader industry shift toward cyber resilience by design rather than resilience as an add-on security layer.

Partner-Centric Ecosystem

Lumen's edge strategy is strengthened by integrations with major hyperscale cloud platforms, including AWS, Microsoft Azure, and Google Cloud. These capabilities provide enterprises with streamlined connectivity and cloud on-ramps at the edge, supporting hybrid and multicloud architectures that require localized processing while maintaining access to centralized cloud services, data repositories, and AI platforms.

In parallel, Lumen's Connected Ecosystem and independent software vendor (ISV) partnerships expand the portfolio's solution breadth through pre-integrated offerings from established software and platform providers. By reducing integration complexity and accelerating deployment, this ecosystem-led model can improve time to value for customers pursuing edge-based AI inference, real-time analytics, and distributed application workloads. Unlike many market participants that rely on a combination of third-party colocation, cloud-provider edge resources, or partner-managed infrastructure, Lumen controls a significant portion of the underlying network assets and service delivery framework, enabling greater operational consistency across customer deployments.

Conclusion

In the North American edge solutions market, Lumen is positioned around the integration of owned network infrastructure, edge compute, cloud connectivity, and managed operations. Its network-native architecture and metro footprint can support low-latency, performance-sensitive workloads, including AI inference, real-time analytics, and distributed applications. The company's ability to combine connectivity, bare-metal and private-cloud resources, storage, and security under a unified management and service-level framework reduces deployment and operational complexity for enterprise customers.

For its strong overall performance, Lumen is presented with Frost & Sullivan's 2026 North American Company of the Year Recognition in the edge solutions industry.

What You Need to Know about the Company of the Year Recognition

Frost & Sullivan's Company of the Year Recognition is its top honor and recognizes the market participant that exemplifies visionary innovation, market-leading performance, and unmatched customer care.

Best Practices Recognition Analysis

For the Company of the Year Recognition, Frost & Sullivan analysts independently evaluated the criteria listed below.

Visionary Innovation & Performance

Addressing Unmet Needs: Customers' unmet or under-served needs are unearthed and addressed to create growth opportunities across the entire value chain

Visionary Scenarios Through Megatrends: Long-range scenarios are incorporated into the innovation strategy by leveraging megatrends and cutting-edge technologies, thereby accelerating the transformational growth journey

Leadership Focus: The company focuses on building a leadership position in core markets to create stiff barriers to entry for new competitors and enhance its future growth potential

Best Practices Implementation: Best-in-class implementation is characterized by processes, tools, or activities that generate consistent, repeatable, and scalable success

Financial Performance: Strong overall business performance is achieved by striking the optimal balance between investing in revenue growth and maximizing operating margin

Customer Impact

Price/Performance Value: Products or services offer the best ROI and superior value compared to similar market offerings

Customer Purchase Experience: Purchase experience with minimal friction and high transparency assures customers that they are buying the optimal solution to address both their needs and constraints

Customer Ownership Excellence: Products and solutions evolve continuously in sync with the customers' own growth journeys, engendering pride of ownership and enhanced customer experience

Customer Service Experience: Customer service is readily accessible and stress-free, and delivered with high quality, high availability, and fast response time

Brand Equity: Customers perceive the brand positively and exhibit high brand loyalty, which is regularly measured and confirmed through a high Net Promoter Score®

Best Practices Recognition Analytics Methodology

Inspire the World to Support True Leaders

This long-term process spans 12 months, beginning with the prioritization of the sector. It involves a rigorous approach that includes comprehensive scanning and analytics to identify key best practice trends. A dedicated team of analysts, advisors, coaches, and experts collaborates closely, ensuring thorough review and input. The goal is to maximize the company's long-term value by leveraging unique perspectives to support each Best Practice Recognition and identify meaningful transformation and impact.

		VALUE IMPACT	
STEP		WHAT	WHY
1	**Opportunity Universe**	Identify Sectors with the Greatest Impact on the Global Economy	Value to Economic Development
2	**Transformational Model**	Analyze Strategic Imperatives That Drive Transformation	Understand and Create a Winning Strategy
3	**Ecosystem**	Map Critical Value Chains	Comprehensive Community that Shapes the Sector
4	**Growth Generator**	Data Foundation That Provides Decision Support System	Spark Opportunities and Accelerate Decision-making
5	**Growth Opportunities**	Identify Opportunities Generated by Companies	Drive the Transformation of the Industry
6	**Frost Radar**	Benchmark Companies on Future Growth Potential	Identify Most Powerful Companies to Action
7	**Best Practices**	Identify Companies Achieving Best Practices in All Critical Perspectives	Inspire the World
8	**Companies to Action**	Tell Your Story to the World (BICEP*)	Ecosystem Community Supporting Future Success

*Board of Directors, Investors, Customers, Employees, Partners

About Frost & Sullivan

Frost & Sullivan is the Growth Pipeline Company™. We power our clients to a future shaped by growth. Our Growth Pipeline as a Service™ provides the CEO and the CEO's growth team with a continuous and rigorous platform of growth opportunities, ensuring long-term success. To achieve positive outcomes, our team leverages over 60 years of experience, coaching organizations of all types and sizes across 6 continents with our proven best practices. To power your Growth Pipeline future, visit Frost & Sullivan at http://www.frost.com.

The Growth Pipeline Generator™

Frost & Sullivan's proprietary model to systematically create ongoing growth opportunities and strategies for our clients is fueled by the Innovation Generator™.

Learn more.

Key Impacts:

- **Growth Pipeline:** *Continuous Flow of Growth Opportunities*
- **Growth Strategies:** *Proven Best Practices*
- **Innovation Culture:** *Optimized Customer Experience*
- **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:

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

