

FROST & SULLIVAN

LUMEN

2022
ENABLING
PLATFORM
LEADER

UNITED STATES
NEXT GENERATION 911

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 Next Generation 911 (NG911) space.

AWARD CRITERIA	
<i>Technology Leverage</i>	<i>Customer Impact</i>
Commitment to Innovation	Price/Performance Value
Commitment to Creativity	Customer Purchase Experience
Stage Gate Efficiency	Customer Ownership Experience
Commercialization Success	Customer Service Experience
Application Diversity	Brand Equity

Commitment to Innovation & Creativity

The next generation of data intensive public safety applications will require a new architecture to accommodate high performance connectivity, distributed computing, embedded security, multi-cloud

“As the public safety sector evolves to a more data intensive environment, and applications become more sophisticated, a ‘platform-centric’ approach will emerge as the optimal architecture to support digital transformation. In this environment, Lumen is uniquely positioned to embrace the next generation of public safety with a transformational platform designed to support technology advancements and visionary innovation.”

**- Brent Iadarola,
Vice President, Frost & Sullivan**

orchestration, and the ability to support a cloud native digital experience. In contrast to the legacy voice-centric enhanced 911 (E911) network, NG911 supports a more diverse set of Internet protocol (IP)-based communications that will enhance the speed, accuracy, and preparation of first responders.

NG911 represents an industry transformation that proactively enhances public safety by acknowledging and catering to the rapidly evolving demands, products, lifestyles, and technologies of citizens. Frost & Sullivan anticipates that the rapid growth of distributed computing will accelerate the speed of Internet of Things (IoT) deployments, generating a staggering 12.7 billion connected devices in the United

States by 2026. With the proliferation of IoT, the volume of connected data, the variety of data types, and

the velocity at which data must be processed has the potential to overwhelm the capabilities of existing public safety systems. This presents both challenges, as well as opportunities, for the public safety sector.

As the public safety sector evolves to more data intensive environment, and applications become more sophisticated to manage the myriad of new data sources, Frost & Sullivan believes a 'platform-centric' approach, that enables reliable performance, flexibility, and effective data management, will emerge as the optimal architecture to support public safety's digital transformation journey. In this environment, Lumen has developed a public safety grade NG911 platform that enables differentiated solutions to transform the way public safety answering points (PSAPs) and first responders monitor, manage, react, and respond to emergency events. In contrast to competitors that offer 'siloed', 'built-when-sold' solutions, Lumen provides an integrated platform which supports existing and emerging applications that optimize data management, enhance incidence intelligence, accelerate emergency response times, and drive efficiency for public safety entities. In particular the Lumen Platform enables:

- The integration of new data sources and innovative applications with the public/private cloud;
- End-to end security across the ecosystem; and
- Systems visibility at all layers of the ecosystem.

Stage Gate Efficiency

As networks and technologies advance, the ability to provide a platform that enhances the stage gate process for launching and integrating new applications (apps) and solutions is critical to the next generation of public safety. While stand-alone innovative apps and compelling use cases often generate the most powerful marketing 'buzz', it is ultimately the underlying platform that creates an environment to enable, support, control, and enhance high performance apps. The Lumen Platform provides a framework to seamlessly support and/or integrate future technology advancements, while the cloud architecture enables customers to rapidly deploy new apps leveraging these technologies.

Frost & Sullivan believes the following critical enabling technologies should be inherently, embedded capabilities in an optimal 'next generation' NG911 platform:

- Connected Security
- Cloud /Edge Computing
- Adaptive Connectivity/Networking
- Collaboration/Big Data & Analytics
- Artificial Intelligence (AI)/Machine Learning (ML)

The Lumen Platform addresses these key requirements providing embedded security, cloud/edge computing, adaptive networking, analytics and collaboration capabilities. Importantly, the platform provides the flexibility to customize distinct technology and functionality requirements, allowing public safety customers to assemble solutions that best meet their unique needs.

Customer Ownership/Service Experience

NG911 deployments generally involve a primary service provider partnered with a Next Gen Core Services (NGCS) provider. For example, an integrator often holds the NG911 contract and licenses technology from a specialized NGCS provider to support the Emergency Services IP Network (ESInet). ESInet deployments can be categorized into 3 groupings along their NG911 journey:

- ESInets providing IP connectivity only, with no transitional element or core services;
- ESInets with Request For Assistance Interference (RFAI) transitional elements;
- ESInets with NENA i3 transitional elements and/or core services.

As a network operator, Lumen has an inherent advantage over NG911 competitors with respect to connectivity. Whereas most competitors must independently purchase connectivity and bundle it into their NG911 offerings, Lumen owns network assets and can offer customers managed connectivity, multi-cloud diversity, embedded security, and voice/collaboration tools in one comprehensive platform.

A recurring theme over the course of Frost & Sullivan's NG911 research indicates states generally do not have the resources, expertise, or desire to manage the complexities of NG911 in-house. Frost & Sullivan research indicates a clear trend in the NG911 market is the move away from owning equipment, to a managed, 'as a service' model. Agencies are increasingly asking for 'one stop shop' NG911 solutions.

"Whereas most NG911 competitors must independently purchase connectivity and bundle it into their offerings, Lumen owns network assets and, consequently, can seamlessly provide customers with managed connectivity, multi-cloud diversity, embedded security, and collaboration tools in a single, integrated platform."

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The burden of recurring security/hardware upgrades is a key reason NG911 administrators prefer a managed services model versus owning/managing infrastructure themselves. The Lumen Platform provides comprehensive, managed security embedded across the various layers of the ecosystem including network security, device management, and threat detection/intelligence, and remediation services. Ultimately, Lumen has embraced a forward-thinking, platform-approach that is pre-configured with

customizable building blocks, whereas much of the competition offers a 'built when sold' systems integration approach that leases infrastructure.

Brand Equity & Proven Deployments

There has been significant momentum in the number of state-wide awards over the last 18 months. Frost & Sullivan research suggests the NG911 land grab is closing rapidly as approximately 70.5% of the population is now covered by contracts. While competition remains fierce for the remaining 29.5% of the country not currently under contract, contesting incumbents for contract renewals will be the next key battleground to increase market share.

State directors and 911 administrators are looking for vendor stability, proven deployments, and compliance with industry standards. Lumen's NG911 platform complies with all national i3 standards established by the National Emergency Number Association (NENA). Lumen has consistently

demonstrated a commitment to NENA i3 standards, a flexible design approach (recognizing that one size does not fit all), and public safety grade security and reliability.

Lumen's one-stop shop, managed as-a-service business model has resonated with customers and proven to reduce the complexity of deployments. Successful deployments, coupled with momentum in capturing new state contracts, is a testament to Lumen's customer purchasing and ownership experience. In April 2022, New Jersey awarded Lumen a 7-year NG911 contract with two 1-year optional renewals. The contract supports New Jersey's transition to NG911, establishing a statewide ESInet that will serve the state's 248 PSAPs across 21 counties and cover approximately 8.9 million residents. Lumen also has secured primary state-wide NG911 contracts in Nebraska, North Dakota, South Dakota, Colorado, and Minnesota; and has direct contracts in various counties in North Carolina and Florida. Moreover, Lumen is the regional provider for Southern California (89 PSAPs) covering a population of approximately 11.5 million.

Conclusion

New technologies have fundamentally changed the way we live, communicate, and interact, ushering in an array of new requirements and opportunities for public safety entities. In this environment, Lumen has developed a visionary platform designed for the next generation of public safety. Frost & Sullivan believes Lumen's unique platform-centric, 'as-a-service' approach to NG911 provides a robust foundation to support innovative applications and compelling future use cases.

For the second consecutive year, Frost & Sullivan acknowledges Lumen's strong overall commitment to innovation and creativity in public safety, and recognizes Lumen with the 2022 Enabling Platform Leadership Award in the United States NG911 market.

What You Need to Know about the Enabling Platform Leadership Recognition

Frost & Sullivan's Enabling Platform Leadership Award recognizes the company that applies its platform in new ways to improve existing products and services and elevate the customer experience.

Best Practices Award Analysis

For the Enabling Platform Leadership Award, Frost & Sullivan analysts independently evaluated the criteria listed below.

Technology Leverage

Commitment to Innovation: Continuous emerging technology adoption and creation enables new product development and enhances product performance

Commitment to Creativity: Company leverages technology advancements to push the limits of form and function in the pursuit of white space innovation

Stage Gate Efficiency: Technology adoption enhances the stage gate process for launching new products and solutions

Commercialization Success: Company displays a proven track record of taking new technologies to market with a high success rate

Application Diversity: Company develops and/or integrates technology that serves multiple applications and multiple environments

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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Frost & Sullivan's proprietary model to systematically create on-going growth opportunities and strategies for our clients is fuelled 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 six 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)**

