



LUMEN Recognized for

2021

Enabling Platform Leadership

2021 United States Next
Generation 911 Industry
Excellence in Best Practices

LUMEN[®]

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 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

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. In contrast to the legacy voice-centric enhanced 911 (E911) network, NG911 supports a more diverse set

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Frost & Sullivan**

of internet protocol (IP)-based communications that will enhance the speed, accuracy, and preparation of first responders.

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. This presents both challenges, as well as opportunities, for the public safety sector.

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. For example, Frost & Sullivan anticipates a surge in IoT initiated 911 calls by connected homes, security systems, vehicles, buildings, smart city infrastructure, and other connected assets. As the public safety sector evolves to more data intensive environment, and applications become more sophisticated, a ‘platform-centric’ approach, that enables reliable performance, flexibility, and effective data

management, has become the optimal architecture to support digital transformation.

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 a 'siloe'd' solutions design, Lumen provides an integrated platform approach which enable solutions that optimize data management, enhance incidence intelligence, accelerate emergency response times, and drive PSAP productivity.

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

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

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 to best meet their unique needs.

Stage Gate Efficiency

The ability to provide a platform that enhances the stage gate process for launching new products and solutions is critical in the next generation of public safety. While stand-alone innovative applications and compelling next generation use cases often generate the most powerful marketing 'buzz', it is ultimately the underlying platform that is enabling these applications. While the Lumen platform provides a framework to seamlessly support and/or integrate future technology advancements, the cloud architecture enables customers to rapidly deploy new applications.

Exhibit 1.0 Lumen NG911 Platform Architecture

Customer Ownership/Service Experience

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', managed, 'as a service' NG911 solutions. A theme over the course of Frost & Sullivan's recent research indicates states generally do not have the resources, expertise, or desire to manage the complexities of NG911 in-house.

The trend toward managed, 'as-a-service' platforms has been driven by not only the complexity of the overall systems integration, but also accelerating security concerns and requirements. Raised standards for security are evident in many recent NG911 RFPs. In particular, cybersecurity and hacking concerns

were consistently cited as top issues for customers. The burden of recurring security/hardware upgrades was cited as a key reason NG911 administrators preferred a managed services model versus owning/managing infrastructure themselves.

Lumen's 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 provides a systems integration approach that often leases infrastructure and is 'built when sold'.

Brand Equity & Proven Deployments

Significant momentum is being seen in the number of statewide and local NG911 RFPs as standards have become clearer. Frost & Sullivan expects the next 12 months to be a critical period for state and local

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911 administrators that have not yet deployed NG911 to identify and secure the appropriate partners for their NG911 implementations.

State directors and 911 administrators are generally not risk takers. They are looking for vendor stability, proven deployments, and compliance with industry standards. Vendors that can showcase successful existing deployments, demonstrate best practices, ensure comprehensive security, and offer end to end managed services are best positioned to win NG911 contracts.

Lumen has already secured primary state-wide NG911 contracts in Nebraska, North Dakota, South Dakota, Colorado, Utah, and Minnesota; along with direct

contracts in various counties in Arizona, North Carolina, and Florida. Moreover, Lumen is the regional provider for southern CA (89 PSAPs) covering a population of approximately 11.5 million. Lumen has demonstrated a commitment to NENA i3 standards, solution flexibility, and public safety grade security and reliability.

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 approach to NG911 provides a robust foundation to support innovative applications and compelling future use cases.

With its strong overall commitment to innovation and creativity in public safety, Lumen earns Frost & Sullivan's 2021 Enabling Platform Leadership Award in the 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

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 Engine™

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

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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)**

