

FROST & SULLIVAN

LUMIGO

2022 TECHNOLOGY INNOVATION LEADER

*EUROPEAN AND ISRAELI
SERVERLESS OPERATIONS AND
ARTIFICIAL INTELLIGENCE 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. Lumigo excels in many of the criteria in the serverless operations and artificial intelligence space.

AWARD CRITERIA	
<i>Technology Leverage</i>	<i>Business Impact</i>
Commitment to Innovation	Financial Performance
Commitment to Creativity	Customer Acquisition
Stage Gate Efficiency	Operational Efficiency
Commercialization Success	Growth Potential
Application Diversity	Human Capital

Serverless Computing Proliferates, Providing Business Agility in a Post-pandemic Marketplace

Agility has become a critical discriminator in the post-pandemic marketplace, paramount in companies' race to survive and thrive. With business software moving more and more to the cloud, enterprises increasingly adopt tools and architectures that simplify and speed application (app) development and deployment. Frost & Sullivan recognizes that advanced technology solutions provide a competitive edge,

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**- Dr. Tiran Rothman,
VP and Head of Israel operations**

allowing organizations to embrace the changing market conditions. Serverless computing, in particular, is a fast-growing app deployment architecture that enables businesses to create, deploy, and scale apps rapidly. The term "serverless" indicates that code is deployed on a server only as and when needed, without requiring a technician to allocate or manage the server capacity. Hence, businesses can run snippets of code automatically, based on "triggers" coded into other apps or microservices.

Compared with alternative architectures, the serverless model can be more cost- and labor-efficient, especially for dynamic apps. It delivers distinct benefits such as:

- **Lower cloud infrastructure costs:** Serverless apps cloud infrastructure is provisioned as needed and charged for actual usage per request.
- **Reduced operations staff costs:** Employees spend fewer hours deploying, scaling, and tearing down apps.
- **High availability of apps:** Serverless functions are built to scale infrastructure on demand. This means app performance and availability remain consistent, regardless of the number of requests.
- **Faster time to innovation:** Serverless computing architectures free developers from mundane and repetitive tasks associated with infrastructure deployment. It also streamlines testing and improves the quality of app deployments by enabling flaws to be identified, isolated, and fixed more quickly. As such, businesses can hasten the launch of new apps into the market and add innovative features more rapidly and economically.

Despite the advantages of auto-deployment of infrastructure, businesses (and developers) often find that serverless platforms do not match complex business app architectures unreservedly.

Lumigo Meets Real-World Client and Market Needs

Founded in 2018, Lumigo helps organizations adopt serverless observability via distributed tracing with an artificial intelligence engine natively architected for the serverless world. The company enables complete visibility and traceability of serverless apps, including third-party services. The platform also

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**- Riana Barnard,
Best Practice Research Analyst**

helps prevent service disruptions before they occur by providing actionable alerts based on user and entity behavioral analytics.

The founders, Erez Berkner and Aviad Mor, were very methodical and calculated in their decision to start Lumigo. Previously working as executives for an Israeli-based cybersecurity company, Check Point, they applied their in-depth knowledge and expertise to identify the market needs and opportunities. During the last few years, the fast uptake of serverless operations gained tremendous momentum. However, regardless of the benefits of serverless, developers are dealing with

increasingly complex and highly distributed architectures, coupled with many dependencies across internal and third-party services. Therefore, developers struggle to know what is happening inside their apps and face challenges determining the root cause of an issue, such as a bug or performance problem. Lumigo provides the capabilities to cut through the complexity. By presenting a holistic view of what is happening in an app, Lumigo enables developers to resolve issues efficiently.

Commercial Success of Lumigo's Troubleshooting and Monitoring Platform

Lumigo employs a developer-focused go-to-market strategy. The company caters to the enterprise persona with a strong security posture and a commitment to the highest security and privacy standards, including ISO 27001 certification and Health Insurance Portability and Accountability Act compliance. At the same time, the solution aims at a developer persona with outstanding user experience, easy onboarding, and full self-serve capabilities. The platform's visual debugging feature allows developers to find the root cause of issues; it provides a precise breakdown of each component's execution duration to prevent performance bottlenecks. Also, intelligent alerts (i.e., notifications on issues even before they impact performance) add tremendous value.

Sonos: A Use Case¹

When the pandemic shifted more consumer sales directly to its website, Sonos, a leading sound experience company, chose a serverless architecture for its new online store using Amazon Web Services (AWS) Serverless Computing and AWS Lambda to run code. The flexibility brought by serverless enabled Sonos to innovate faster and speed up time to market, but the vastness of their technical stack, including an array of third-party tools, made it complex and time-consuming to monitor the many small microservices that make up Sonos' applications.

For greater visibility and more effective resolutions, Sonos required additional monitoring and looked to Lumigo to detect and resolve issues across Sonos' serverless ecosystems. After a simple onboarding to add Lumigo to its Lambda library, Sonos' development teams were able to observe the entire technical stack, from Lambda services that interact with backend systems to 3rd parties like Salesforce Commerce Cloud. With its notification channels connected to Lumigo, Sonos gets real-time alerts for bugs and performance issues, and the team has the information to pinpoint exactly what went wrong, where and how to fix it.

As Sonos built out its website architecture with iterative changes, Lumigo's monitoring service was invaluable, giving Sonos full control over its serverless environments. This led to them decreasing their error rate and reducing mean time to repair by 80%, while also lowering overall costs. Today, Sonos executes up to 30 million invocations a month with an error rate of 0.01% and plans to expand serverless beyond its software development team.

Innovative Technology Helps the Business Grow

Since launching its cloud-native app monitoring and debugging platform, Lumigo received more than \$37 million in funding. Led by Redline Capital, the Series A round also included United States-based investors like Wing Venture Capital and Vertex Ventures. During the last few years, the company's user base has grown significantly, and Lumigo utilizes the investment to scale up its marketing and product teams. With its user base evolving considerably to include hundreds of companies (such as Sonos, A Cloud Guru, and Medtronic), Lumigo continues to adapt as the market changes direction.

Enterprises and developers now build apps increasingly on a mix of serverless and non-serverless environments, including serverless and managed services, as well as containers, Kubernetes, or even

¹ <https://aws.amazon.com/partners/success/sonos-lumigo/> (Accessed on 4 April 2022)

virtual machines (VMs). Lumigo aims to support every modern cloud technology; therefore, it is expanding its Software-as-a-Service observability product to containers, Kubernetes, and VMs. Its goal is to give developers a complete end-to-end picture and shine a light on what is happening inside their apps, regardless of the technologies or specific cloud services they are using.

Another critical focus area for Lumigo is strengthening its ability to provide actionable insights to developers. It means going beyond errors, system metrics, and alerts to provide tools that make it easy to troubleshoot and debug an app to get to the origin of an issue and resolve it. Frost & Sullivan acknowledges that the company has added many capabilities lately, such as identifying rogue deployments or seeing a "Live tail" of the app logs, and is expecting more releases in this area soon.

Conclusion

Serverless computing is a fast-growing application (app) deployment architecture that enables businesses to rapidly create, deploy, and scale apps. However, despite the advantages associated with the auto-deployment of infrastructure, companies and developers often find that serverless platforms do not match complex business app architectures unreservedly. Lumigo's troubleshooting and monitoring platform enables complete visibility and traceability of serverless apps, including third-party services. Its visual debugging feature provides a precise breakdown of each component's execution duration to prevent performance bottlenecks. The platform also helps avoid service disruptions before they occur by providing actionable alerts based on user and entity behavioral analytics. As Lumigo adapts purposefully to any market change or direction, it convincingly positions itself as a technology leader and continues to grow its user base considerably.

With its visionary thought leadership, cutting-edge technology, and excellence in execution, Lumigo earns Frost & Sullivan's 2022 European and Israeli Technology Innovation Leadership Award in the serverless operations and artificial intelligence market.

What You Need to Know about the Technology Innovation Leadership Recognition

Frost & Sullivan's Technology Innovation Leadership Award recognizes the company that has introduced the best underlying technology for achieving remarkable product and customer success while driving future business value.

Best Practices Award Analysis

For the Technology Innovation 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

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

