

FROST & SULLIVAN

LIVEU

2022 PRODUCT LEADER

*GLOBAL 5G VIDEO
APPLICATIONS 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. LiveU excels in many of the criteria in the 5G video applications space.

AWARD CRITERIA	
<i>Product Portfolio Attributes</i>	<i>Business Impact</i>
Match to Needs	Financial Performance
Reliability and Quality	Customer Acquisition
Product/Service Value	Operational Efficiency
Positioning	Growth Potential
Design	Human Capital

5G Connectivity Manifests as a Game-changer in the Live Video Streaming Market

Fifth-generation (5G) network evolution brings many advantages over fourth-generation (4G) networks: the ability to handle data at speeds up to twenty times faster than current standard rates, higher bandwidth, more than 99% service reliability, and a tenfold decrease in end-to-end latency. Designed to use the radio frequency spectrum differently and more efficiently, 5G radically changes how organizations think about connectivity. In particular, 5G holds enormous benefits for live video production and broadcasting, including improved wireless capacity, faster upload and download speeds, increased cellular coverage that supports mobile-first applications, and richer viewer experiences.

Until now, the most reliable, secure, and high-quality connectivity options for high bandwidth remote applications depended on wired networks. High-definition video producers relied on optical network infrastructures or leveraged satellite transmission. Still, the rapid increase in video streaming drives demand for improved video quality across all devices (e.g., mobile and sports events), forcing service providers to transition to 5G by offering retrofitted multi-input encoder production units. However, this is unproductive because it involves adding a different modem and modules that affect the unit's latency, power driver, and overall processing. Moreover, physical distancing measures during the COVID-19 pandemic limited video creators, prompting new remote production methods. Instead of sending several camera professionals to an event, content producers had to take on new roles and remote production techniques, operating from home via alternative transmission solutions.

To deliver pre-COVID-19 content quality and reliability but with a limited budget, broadcasters need portable, multiple-input, and 5G-enabled solutions that provide flexible connectivity and ensure an enhanced viewer experience.

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**- Brent Iadarola,
Vice President, Research**

Network slicing is a concept that underlies 5G network infrastructure and is a potential game changer. Technological advancements (such as software-defined networking and network function virtualization) make networks programmable, agile, centrally managed, and programmatically configured. When implemented through open standards, it is also vendor neutral. In the case of network slicing, providers can now cater to specific connectivity-related requirements of enterprise customers, offering precise configurations and capabilities (such as guaranteed quality and reliability, specified latency, minimum data speed, and defined security) to create

new revenue streams. Despite limited examples of large-scale network slicing, Frost & Sullivan believes the 5G ecosystem, with its unprecedented connectivity capabilities, has the potential to revolutionize the live video streaming and remote production market.

Product Portfolio Attributes and Business Impact of LiveU

Founded in 2006 and headquartered in the US, LiveU is a provider of live broadcasting and streaming technology solutions. This spearhead in cellular bonding solutions has nearly two decades of research and development in algorithms and packet optimization. Over the years, the company collaborated extensively with cellular carriers across the globe to achieve in-depth market knowledge, turning the experience into a unique competitive advantage. For instance, the company designed its LU800 production unit from scratch for 5G connectivity to deliver unmatched portability and flexibility features, enabling any production (on-site or remote).

Previously owned by Francisco Partners Management LLC, LiveU was recently acquired by one of the world's largest private equity firms, The Carlyle Group. Serving global tier-one broadcasters in sports and news, LiveU continues to expand its increasingly diverse customer base, including online content producers, remote medicine and surgical settings, small videographers, and corporate and government organizations that produce live feeds and high-quality productions in more than 150 countries.

In 2021, Frost & Sullivan recognized LiveU for its product innovation performance, enabling a diverse range of broadcasters and content producers, and remains impressed with the company's continuing innovation and sustained leadership.

Purposeful Innovation

A pioneer and transformational leader, LiveU's corporate culture revolves around purpose-driven innovation. Its product roadmap, i.e., planning, development, and implementation strategies, incorporates customer feedback, ensuring its offerings align with customers' dynamic needs.

The company anticipates use cases to expand rapidly as more verticals and applications realize the potential of 5G connectivity. Backed by its 16-year industry-leading expertise, LiveU's solution suite takes live video streaming and broadcasting one step further than any competing solution. LiveU collaborated closely with leading module developers (such as Sierra Wireless, Fibocom, Telit, and Quectel) to create the supporting components for its LU800 unit, designed to leverage 5G transport natively for maximum reliability and the highest-quality video performance. By customizing its LiveU Reliable Transport (LRT™) protocol as a fully optimized transmission on 5G, the company ensures that its production units can adapt to network evolution and harness future spectrum and protocol advancements. To this end, LiveU recently partnered with Ericsson (a leading global provider of 5G network infrastructure) and Radiotelevisione italiana to test various network slicing scenarios for global media remote production in Germany. The company reported measurable results, emphasizing the critical role of its IP bonding "when it comes to resilient professional production in real-world conditions, including where and when dedicated slices for upload (UL) will be deployed."¹

The reliability of tailored 5G coverage makes streaming events with LiveU's production units as trustworthy as fiber and satellite connections. Hence, numerous tier-one customers already leverage LiveU's solutions for innovative coverage. For example, a leading South Korean television and radio network deployed LiveU's 5G-integrated high-end units for live coverage of the national election (including congested areas such as polling stations and major candidates' offices) during the COVID-19 pandemic. By streaming the live feeds to a single server, completely synched, LiveU showcased the reliability of its high-quality streams while validating the cost-efficiency of its remote at-home production model.²

Furthermore, LiveU recently introduced a more compact transmission solution (LU300S), which utilizes the latest bonded encoding technology. This portable unit transmits high-quality video content over 5G networks to deliver an outstanding viewing experience (i.e., matching the performance of satellite connections) while keeping production costs low. It offers flexibility (i.e., support for up to six internet protocol connections) and ease of operation, setup, and transportation. Notably, the unit weighs under a kilogram and comes with a camera mount, cross-shoulder and belt pack, allowing superior coverage from every angle. The durable design suits high-intensity environments, and the intuitive interface supports a cost-effective remote production workflow (i.e., no need for large field crews).

¹ <https://www.liveu.tv/company/press-releases/liveu-demonstrates-the-combined-power-of-5g-slices-and-bonding-for-remote-contribution>

² <https://www.liveu.tv/company/press-releases/sbs-korea-delivers-highest-quality-5g-live-streaming-of-south-koreas-historic-election-using-liveu-solutions>

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Customer-focused Growth Strategy

With its product-led customer-focused strategy, LiveU consistently brings to market end-in-end solutions that are reliable and cost-efficient, delivering holistic value and the complete ability to execute any production. At the same time, LiveU incorporates customer feedback into its product roadmap to maximize short-term growth opportunities while providing a path to future revenues. Initially aiming to

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

enable sports producers with a complete range of capabilities and to prepare them for 5G deployments, the company created multiple forums to gather feedback and uncover what users needed and desired. While evolving from a technology standpoint, LiveU never loses sight of its customers' perspective. Beyond its feature-rich units, LiveU adds wrap-around services (cloud-based management, distribution, and orchestration solutions and SmartData service) to deliver a comprehensive package. A monthly subscription (with no long-term contract), Live-as-a-Service includes around-the-clock support, platinum-level benefits when renting equipment worldwide,

and care through the network operations center.

Through market research and customer feedback, LiveU consistently enhances its solutions and services, ensuring it meets and exceeds customers' needs and performs optimally compared to competing products. As part of its strategy to expand its cloud video platform, the company recently acquired easylive.io, enabling customers to rapidly scale up through remote and collaborative tools for cloud-based productions. Through this acquisition, LiveU extends its capabilities by adding features (such as video switching and audio mixing) and allows customers to include graphics, localize content and bring on guests seamlessly while reducing production and equipment costs.

Its brand maintains LiveU's global presence while meeting customer-specific needs with its best-in-class solutions, global connectivity, and fully managed services. Given today's landscape, Frost & Sullivan believes the company is in a prime position to increase its market share in this highly competitive live video broadcasting and streaming industry.

Conclusion

To be a product leader, a company must understand evolving customer demands and market conditions to deliver a solution designed for high-quality and reliable performance. Frost & Sullivan finds that LiveU embodies this concept and exemplifies it with best practice implementation. LiveU collaborates closely with leading module developers to support the evolution of fifth-generation (5G) networks, taking its live video streaming and broadcasting capabilities further than any competitor. With in-depth market knowledge and expertise in cellular bonding, the company's solutions leverage 5G transport natively for maximum reliability and the highest-quality video performance. Extensive testing of network slicing scenarios attractively positions LiveU to capture new growth opportunities as 5G drives new applications, use cases, and revenue stream prospects. Furthermore, the company packages cloud-based management, distribution, ingest and orchestration capabilities in a comprehensive Live-as-a-Service offering, available at a single monthly rate. It also includes 24/7 support and superior customer care, coupled with advanced service levels through its network operations center, to attend to its diverse customer base purposefully.

With its strong overall performance, LiveU earns Frost & Sullivan's 2022 Global Product Leadership Award in the 5G video applications industry.

What You Need to Know about the Product Leadership Recognition

Frost & Sullivan's Product Leadership Award recognizes the company that offers a product or solution with attributes that deliver the best quality, reliability, and performance in the industry.

Best Practices Award Analysis

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

Product Portfolio Attributes

Match to Needs: Customer needs directly influence and inspire the product portfolio's design and positioning

Reliability and Quality: Products consistently meet or exceed customer expectations for performance and length of service

Product/Service Value: Products or services offer the best value for the price compared to similar market offerings

Positioning: Products serve a unique, unmet need that competitors cannot easily replicate

Design: Products feature innovative designs, enhancing both visual appeal and ease of use

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

