

InBroadcast

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KEEP COMMUNICATING AND CARRY ON

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**WIDEN YOUR AUDIENCE AND
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Complexity rises with streaming expectations



By Adrian Pennington.

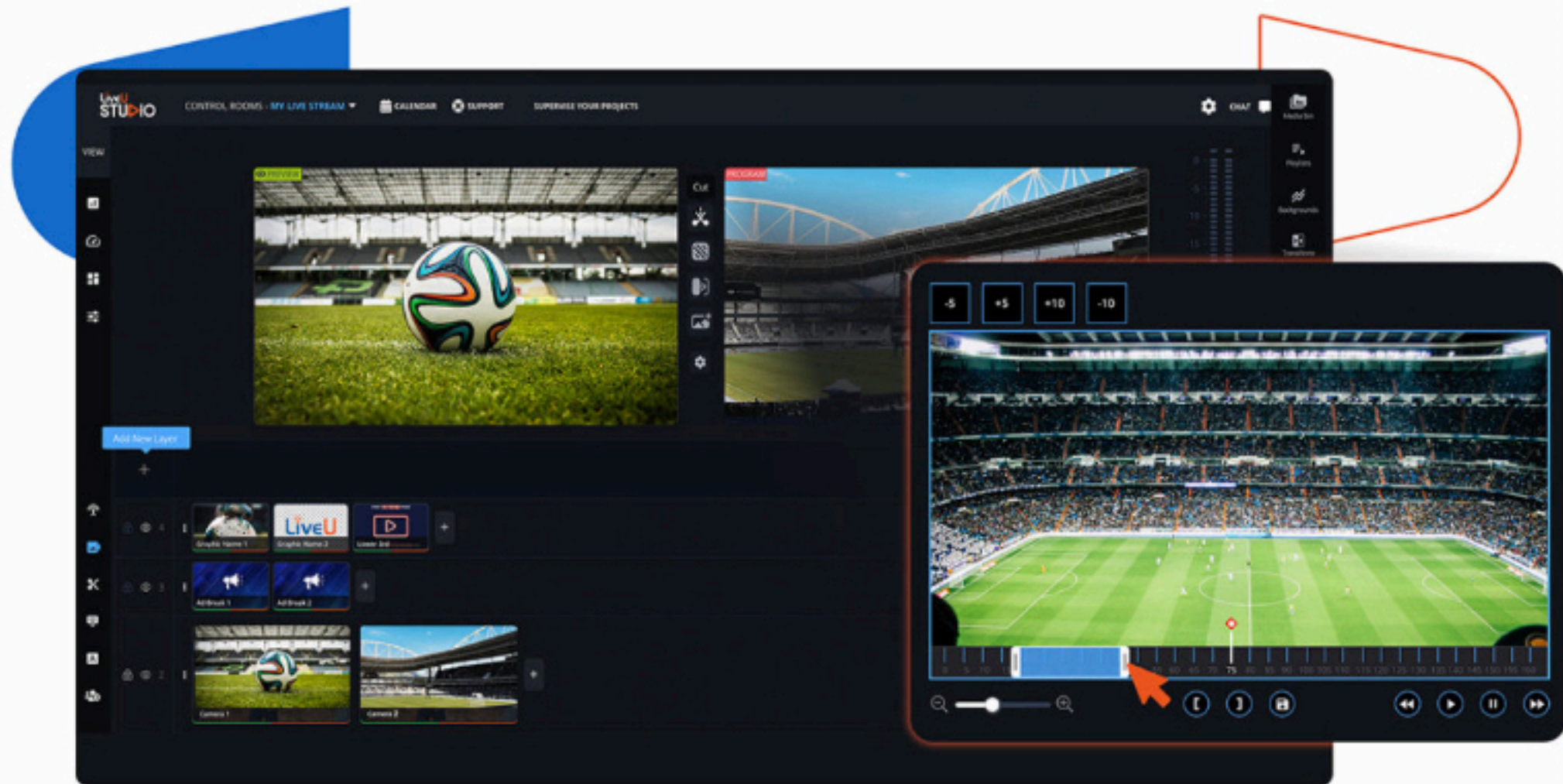
The biggest challenge for content service providers and broadcasters is reducing costs while improving efficiency in workflows and logistics. As the pressure to lower content production expenses intensifies, this trend is expected to remain a key industry driver in 2025.

Ronen Artman, VP of Marketing, LiveU says broadcasters are turning to his company to provide solutions that allow them to create and deliver high-quality content quickly and easily, in the most cost-efficient way. For example, sports broadcasters need to adapt their content to meet the needs of younger sports fans. A recently published Altman Solon 2024 Global Sports Survey shows, 'younger generations are less interested in live sports and prefer highlights, documentaries and short-form videos to watching live games.'

"To appeal to this demographic, broadcasters will likely collaborate more widely with influencers to increase social-media-friendly content," Artman says. "Crafting an authentic narrative in sports coverage demands thoughtful preparation, particularly in the dynamic realm of live broadcasts where spontaneity is essential. Broadcasters are placing growing importance on innovative technologies that offer the flexibility needed to deliver the genuine, personalized content Gen Z craves - all while adhering to budget constraints. Broadcasters will need to carefully consider the most effective content formats for each platform."

LiveU is also seeing a growing demand for diverse and niche sports for cost-effective content production solutions as they look to broaden their audience across different platforms.

"As part of a cost-effective lightweight production workflow with our encoders, our next-generation LiveU Studio gives content creators efficient and cost-effective tools to meet the needs of today's audiences. We unveiled the new features and sports-centric capabilities at IBC2024, opening new possibilities for sports, as well as other



LiveU Studio gives content creators efficient and cost-effective tools

professional storytellers, looking to produce more content at a lower cost. The solution includes instant replay, integrated graphics, ISO recording and SCTE-35 ad insertion. LiveU Studio also now includes a brand-new interface, enabling a single operator to produce a complete production from a single pane of glass. Using LiveU Studio, sports broadcasters can easily enhance and adapt their storytelling to appeal to all demographics with dynamic content to suit any platforms."

One major challenge facing content service providers and broadcasters is maintaining quality of service (QoS) in the face of increasing viewer demand for high-resolution streaming and low latency. This is a concern highlighted by John Henkel, Director of Product Marketing, NETGEAR AV. "As audiences shift towards consuming live and on-demand video content across various devices and platforms, the need for robust and scalable infrastructure becomes critical," he says. "Network congestion, bandwidth limitations, and the variability of internet connections can lead to buffering, reduced video quality, and unsatisfactory user experiences."

"In 2025, these technical challenges could significantly impact the industry by necessitating substantial investments in advanced compression technologies, edge computing, and enhanced CDN (Content Delivery Network) capabilities. Addressing these issues is essential for providers to remain competitive and meet the growing expectations of a global audience."

NETGEAR's AV switches and free Pro AV Design Team services are tackling the challenges of maintaining quality of service in streaming video through innovative solutions and expert support. Their AV line is designed to handle high-bandwidth, low-latency requirements essential for high-resolution streaming.

"With support for virtually every type of AV over IP, including SMPTE ST 2110 and a scalable infrastructure, these switches ensure robust and seamless video delivery across various devices and platforms. The Pro AV Design Team offers tailored consultation, ensuring each setup is optimized for peak performance. For these reasons, NETGEAR AV is poised to meet the increasing demands of the industry, providing reliable, high-quality video experiences that satisfy global audiences, now and into the future."

A clear growth area in streaming video is supporting live sports. Dr. Ciro A. Noronha, CTO, Cobalt Digital finds two prime challenges related to providing this service: latency and quality. Regarding latency, Noronha says the stream provided to the home viewer must not be too far from real time - "a few seconds at the most, to provide a competitive solution. If your neighbour is already cheering, and you haven't seen the play yet, that is a problem."

Regarding quality, the important aspect now is providing live HDR. "Most viewers already have the bandwidth to receive a decent resolution ▶



Ronen Artman
LiveU



John Henkel
NETGEAR AV



Dr. Ciro Noronha
Cobalt Digital



NETGEAR's M4350
Managed Switches

Complexity rises with streaming expectations *cont'd...*

▶ adding HDR gives you a boost in quality and doesn't 'cost' almost anything in bandwidth. Providing solutions to these issues will increase the application range for video streaming and open new business opportunities."

Live streaming acquires latency in both the contribution and the distribution link. Cobalt is in the contribution side and is introducing an Ultra-Low Latency REMI encode/decode solution for that segment.

"This solution, combined with the tuneable latency of the RIST protocol provides a very competitive contribution solution for live sports," says Noronha. "On the live HDR side, Cobalt has a comprehensive set of solutions that can tone-map SDR to HDR, convert between formats, and support a single-layer production workflow. These solutions are hardware-based, and thus introduce very negligible latency. Moreover, they are very power-efficient when compared to CPU-based solutions, which makes a difference both in OPEX, as well as being 'green'."

The continued rise of streaming video services is driving demand for more, and increasingly dynamic, contribution links, says Tony Jones, Principal Technologist at MediaKind. He identifies a major challenge in managing the sheer scale and complexity of operations.

"The push for multiple simultaneous live productions - which can now exceed 150 concurrent events for just for one sports league - requires systems that are optimised to support both the delivery of many streamed services, each with catchup, VoD and advertising, and the creation of the productions that feed those streams."

The transition to IP-based workflows introduces several technical challenges, such as synchronisation of sources, as well as connecting dynamically to remote and cloud-based production. Adding to the complexity is the need to manage devices that are behind firewalls at remote locations.

"These issues demand innovative solutions that enable automation to include those remote devices, to reduce manual operations. Additionally, configuration errors and connectivity issues could degrade service quality, negatively impacting consumer trust and advertising revenues, which are vital to the industry's financial health."

Looking ahead to 2025, Jones predicts an increase in cloud-based live production, meaning productions that are instantiated as needed, with endpoints that may be dynamic too. "Synchronisation of sources for cloud-based production typically cannot use the traditional sync methods of on-premises switchers, so dealing with inputs with potentially varying delays becomes a key issue," he says.

MediaKind's MK.IO Beam and Fleet Management solutions tackle the operational complexities of contribution for live-sports streaming, particularly in ensuring seamless connectivity for remote and cloud-based production.



MediaKind: tackling the operational complexities of contribution for live-sports streaming

Jones says that while some venues benefit from private fibre connectivity, enabling dedicated IP workflows, many locations may only offer high-bitrate broadband internet connections. For such scenarios, technologies like HEVC/H.264 over SRT enable reliable video transmission across unmanaged networks. However, devices in such environments are often behind firewalls, and connecting to them poses a challenge that Fleet Management solves by allowing consistent operations across devices on multiple remote sites.

"MK.IO Beam addresses these issues by functioning as an on-premises server with encoding, decoding, and other capabilities, securely connecting back to MediaKind's centralised Fleet Management system. This approach enables remote equipment to operate as though it were part of a unified, local infrastructure."

"As we move into 2025, we anticipate schedule-based automation of remote and cloud capability to become more sophisticated. Ultimately, the vision is to be able to create complete media chains, from ISO sources at venues through live production, into streaming and advertising, all created and connected dynamically as needed, with the minimum level of manual operations, resulting in the events being advertised to consumers via the streaming platform back office to an app."

David Isola, Director of Global Product Marketing at Black Box highlights scalability, latency, security and the complications involved in moving to the cloud as vital considerations that businesses must actively evaluate.

"To maintain a competitive edge in the distribution of streaming video, companies must invest continuously in technology and infrastructure. They must also plan tactically to meet changing viewer expectations," he says. "Broadcasters that ignore these challenges could potentially face loss in revenue, reduced audiences, a decrease in viewer loyalty and an increase in frustrated viewers."

To stay relevant in a fast-changing industry, content service platforms and broadcasters must constantly invest in low-latency streaming and control, strong security measures and a high-quality CDN.

Isola points to the near-zero latency of the Black Box Emerald IP KVM. "It provides real-time access to broadcast servers and production equipment for seamless workflows during live production. It supports high-quality 4K and full HD video, ensuring crystal-clear visuals for editing, monitoring, and playback without degradation."

The Emerald's IP-based architecture allows broadcasters to start small and scale their KVM networks as operations grow or new facilities are added. It also supports cloud-based and virtual systems, enabling modern workflows and hybrid setups. "Emerald seamlessly integrates with both physical and virtual servers, offering compatibility with VMware and Microsoft environments via protocols such as PCoIP, RDP 8.1 and RemoteFX. This flexibility facilitates a smooth transition to virtualised environments without disrupting existing operations," says Isola.

"Emerald DESKVIEW introduced groundbreaking features, allowing users to create personalised workspaces and simultaneously manage up to 16 physical, virtual and cloud-based systems. This innovation enhances operational flexibility, particularly in scalable environments."

Broadcasters have long relied on Emerald for its robust, scalable, and high-performance capabilities, boosting operational efficiency, elevating content delivery quality and maintaining their competitiveness in a rapidly evolving industry. Looking ahead, our commitment remains steadfast: to deliver the best user experience for broadcasters, CSPs and operators. ■



Toby Jones
MediaKind



David Isola
Black Box