Interactive experiences with Verizon and AWS

Solution brief

Combine the speed of 5G Ultra Wideband and the power of AWS Wavelength to create new and innovative experiences for audiences.

Powered by its high speed, low latency and massive capacity, Verizon 5G Ultra Wideband can help deliver a new generation of mobile entertainment that's better and more immersive than what consumers can experience at home.* The new capabilities it offers open up a broad range of potential applications and uses, especially when the advancements of 5G networks are combined with mobile edge computing (MEC) and cloud infrastructure.

The challenges of out-of-home entertainment

The mobile entertainment business has always been challenging, but perhaps never more so than today. Viewers have more options than ever, with streaming video and digital entertainment a tap away from a universe of channels. Competition is fierce and comes from everywhere, as platforms all look to grab the attention of new customers and cement their loyalty.

The challenge may be even greater for venue-based entertainment. Streams and broadcasts of venue-based events like concerts and sporting events have been improving for years, with better production values and second screens that bring viewers closer to the action. But the entertainment expectations of venue attendees continue to rise with people wanting more memorable and immersive experiences that bring them closer to the action.

Technology can help bring that vision to life. The speed and capacity of Verizon 5G Edge, with MEC powered by Amazon Web Services (AWS) Wavelength, gives you the foundation to create interactive experiences never before seen.

Bringing edge computing services to 5G networks

More and more computing happens in the cloud, but even with advances in radio technology and backhaul speeds, latency remains a problem for advanced applications. Moving computing to the network's edge—closer to the end user—speeds response, which is especially critical for interactive experiences for large audiences in concentrated spaces.

With the introduction of 5G connectivity to MEC, applications can now take advantage of increased bandwidth, enhanced mobility, and greater network access. Those enhanced capabilities could allow for permanent or temporary endpoint hardware like immersive screens to be deployed for an event and removed with minimal effort, possibly reducing the hardware footprint and expense. Edge computing can be used to create a simple content delivery network (CDN) to serve either preproduced or live high-resolution content. Lower latency made possible by the mobile edge improves response time so user interactions with digital content can feel more fluid and natural without disruptive lags.

Verizon 5G Edge with AWS Wavelength is building a foundation for interactive experiences that will create interest around in-person entertainment, offering new engagement between attendees and venues, and opening up a wide range of potential applications and use cases.

How 5G Edge with AWS Wavelength can enhance interactive experiences

Verizon and AWS have partnered to provide a MEC infrastructure—Verizon 5G with AWS Wavelength—colocated at the edge of Verizon 5G Ultra Wideband network sites. Verizon's 5G Ultra Wideband network is built right, with critical spectrum that includes millimeter-wave—which helps deliver gigabit-level data rates and low-latency performance—and will eventually incorporate C-Band spectrum that should enable wide geographic area coverage at gigabit-level data rates.

With AWS Wavelength, applications are deployed to AWS Wavelength Zones that embed AWS compute and storage services at the edge of the Verizon 5G network. This allows applications to seamlessly access the breadth of AWS services in the region. AWS Wavelength allows experience creators and administrators to use the well-known AWS tools to manage, secure and scale applications. You can start small and scale as your needs grow without worrying about managing physical hardware, and benefit from AWS features like elasticity, availability and low pay-as-you-go pricing.

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By bringing cloud infrastructure and cloud-based services closer to where content is generated and consumed, Verizon 5G Edge with AWS Wavelength significantly reduces application latency and improves performance, enabling innovative media companies and independent software vendors to bring new services and experiences to market—attracting, retaining and building the loyalty of attendees.

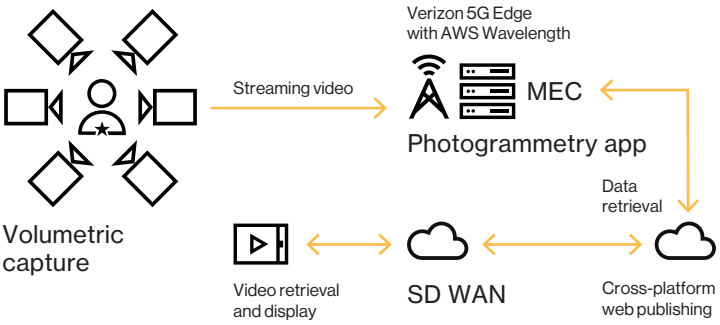
Here are some possible use cases:

Enriched video content

The mobile edge gives event venues a platform to acquire, process and distribute live, transformed and augmented content in near real time. Captured video (including video from attendees) could be sent to an edge server for augmented reality (AR) processing, and the enriched video could be sent back to audiences in near real time. Guests could see the current play from multiple angles in 4K as they happen and pull up statistics instantly from edge computing locations. Venues could provide more participatory experiences such as curated live feeds of social media posts from attendees commenting on the event as it unfolds, allowing interactive audience-driven outcomes.

Immersive volumetric sports content

Fans could gain new immersive and innovative ways to engage in sports-themed entertainment, boosting interest in the communal aspect of events. One potential idea involves creating AR environments at sporting events and allowing attendees to place themselves in the picture and move around inside it. Such an application could possibly enable guests to create near real-time renderings of themselves and upload them. With the help of 5G and edge computing, those guest images and others captured at the venue could possibly create a video mesh using the technique of photogrammetry, rendering it all into an immersive experience on any mobile device or connected display.



MEC: Mobile edge computing
SD WAN: Software-defined WAN

Low latency of mobile edge computing can help make immersive experiences possible, such as volumetric capture.

Communal interactive content consumption

MEC with significant embedded computing power has the possibility to enable interactive video viewing by groups in a specific region, which could possibly allow near-instantaneous interaction among content providers and viewers. Beyond pausing and playing, low latency should allow direct interaction and collaboration by a group of local participants who will be able to take control of the content, draw over it or take action with one another's live videos overlaid on the content. This may be an application for advanced gaming, test marketing and focus groups, or people watching something together while being physically apart. The potential for this application is in an early stage but should evolve as viewers experience this form of consumption.

Get started.

The next generation of interactive mobile apps, 4K and 8K video, and fully immersive entertainment experiences can come from this combination of edge bandwidth and computing power. Using AWS cloud services at the edge of Verizon's mobile network, your organization can unlock new services, offerings and revenue streams—all while utilizing the same AWS cloud services as are used in an AWS Region.

Learn more:
verizon.com/5gedgeawscloud

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