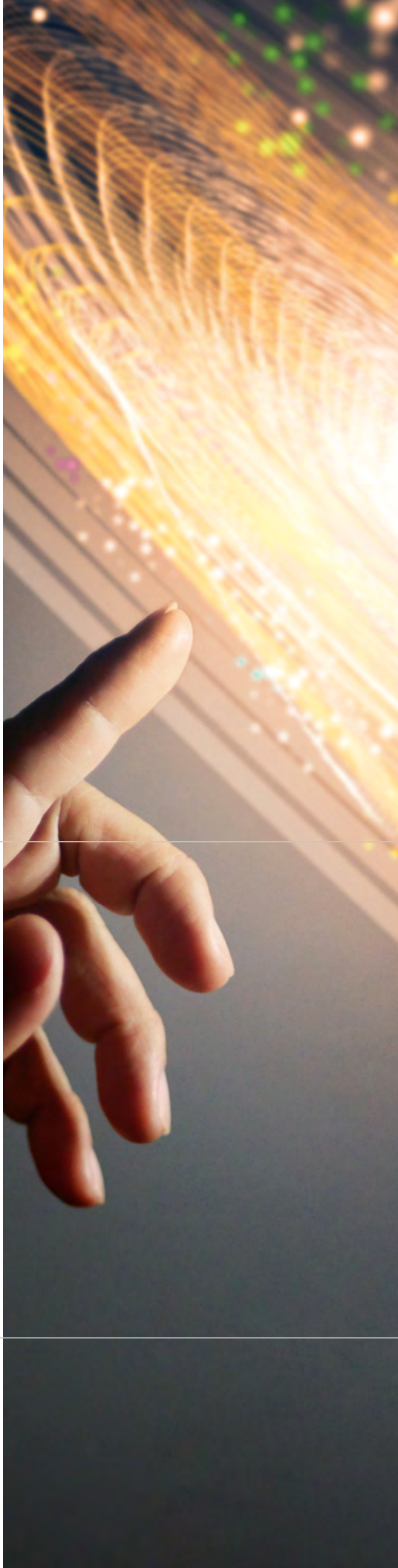
WOWZA

The Future of Video Technology



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Introduction

Here's an exercise: Try to count the number of ways video finds its way into your life each day. This is a typical day in many households.

The morning starts with a glance at the video-enabled baby monitor on a phone. From there, parents scroll through social media while waiting for the coffee to brew. If time allows, active parents stream an exercise class before work begins.

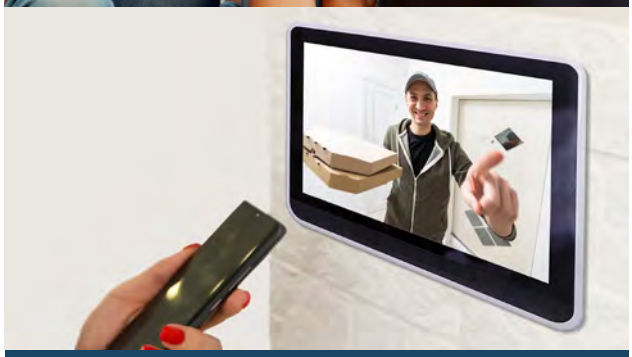
Like most knowledge workers, the bulk of the nine-to-five is made up of Zoom and phone calls. Our teams are in different timezones, but our workspaces unite us.

Once work ends, families huddle around Facetime and Whatsapp video to share the day's highlights. To wind down, our connected TVs provide easy access to Netflix or one of the leading FAST (free ad supported TV) services, like Pluto TV, Tubi or Samsung TV Plus.

Our lives are transformed by streaming video. The average adult consumes almost eight hours of media each day[1], spanning video on demand (VOD), gaming, social media, and more. Routine use of video technology can also take the form of smart home solutions like doorbell cameras and virtual services such as telehealth visits.

The takeaway? These days, video powers everything, for everyone, everywhere.

So, without further ado, here's a look at the biggest trends in video, critical technologies paving the way, and our predictions for the next few years ahead.



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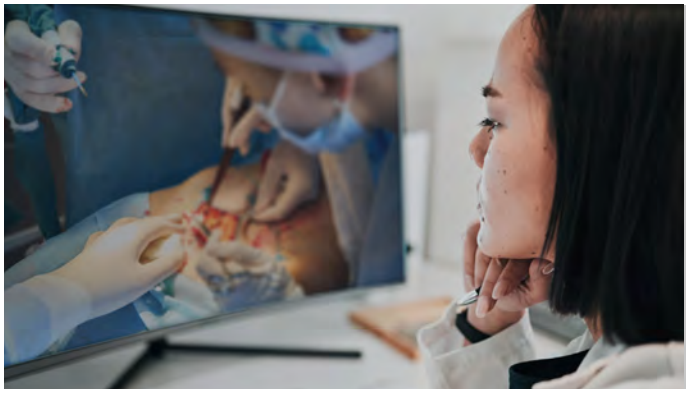
Big Trends

Video is an increasingly powerful tool in both business-to-business (B2B) and business-to-customer (B2C) settings. It streamlines operational efficiencies, boosts customer experience, and can transform an organization's product offering altogether. Ultimately, this all drives toward one goal: revenue growth.

In 2023, we made some predictions on the future of video. In this paper we are reflecting on the progress of these predictions and also contrasting with what we saw at NAB 2025.



1. EVERYTHING

Limitless Streaming Applications

No matter the industry or use case, video is fueling digital innovation. We conduct business meetings over Zoom, have 24/7 video security for our cars in the form of Sentry mode, and sweat to fitness routines on connected gym equipment. Even today's smart watches, robot vacuums, and medical devices have online streaming technology built in.

Video is continuing to revolutionize the healthcare sector. With video-connected wellness devices, Securely connected devices are enabling same day patient consultations. High-definition video and audio are making telesurgery on humans and animals, controlled across thousands of miles, a reality. In 2024, hundreds of telesurgeries went wireless with 5G replacing wired connections. Smart hospitals equipped with AI-powered video are gathering important business intelligence to make data-driven decisions and improve operational efficiency and health outcomes.

In the consumer world, shoppable video is getting people to the checkout. When store fronts added shoppable videos on popular platforms, like Amazon, Facebook, Instagram, and Tik Tok they saw visitors indicate a 9x increase in their purchase intent – with 41% of viewers actually making a purchase! Shoppers are unforgiving, so shoppable videos need to stream in the highest quality, with quick start times. To achieve this, platforms like Tik Tok use industry standard, real-time video processing and streaming with advanced video codecs (H.264, H.265) and streaming protocols (HLS - HTTP Live Streaming). This guarantees high-quality video playback and adaptive streaming, seamlessly adapting to varying network conditions.

Customer experience is now as important as an organization's core offering. Businesses have moved beyond the novelty of new tech to a focus on how tech can better serve their customers.

Another streaming video revolution comes from new consumer electronics categories, like drones and 360 degree cameras used for both consumer and industrial applications. These devices are capable of streaming to RTMP compatible platforms, like Facebook, YouTube, and Twitch. One of the best selling 360 degree cameras has a step-by-step tutorial on how to use Wowza Streaming Engine to customize your 4K live stream. For additional broadcasting options, professionals might use third-party live streaming software, like OBS Studio.

2. EVERYONE

Personalized & Relevant Content

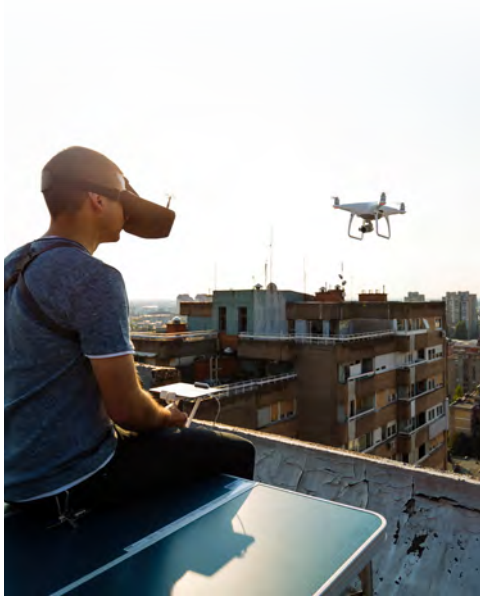
Viewers demand flawless video delivery in just a few clicks. What's more, they have become accustomed to deep content libraries and data-driven content personalization. The success of FAST services like Roku and Tubi show us viewers are willing to watch ads if they get their favorite content for free. And shoppable videos have a meaningful impact on conversion – one statistic says a 30% increase. Therefore, onus falls on businesses to deliver effortless, personalized end-user experiences — no matter the industry or product.

Online shoppers are now more confident purchasing online, thanks to video demonstrations. Some retailers even enable furniture to be placed in their living rooms, virtually, using their phone to see if it matches their home decor.

Luckily, today's data-rich ecosystems give content distributors unparalleled insight into customer audiences, viewing and purchasing habits, and location. Effectively utilizing this information to personalize the customer experience and using this information to promote products to particular consumer groups.

Accessibility and inclusion have also improved enormously across digital platforms. Venture-funded AI companies have transformed multi-language captioning and text-to-speech capabilities for content libraries. Today, these operate in a highly flexible SaaS (software-as-a-service) or managed service model.

Keeping your audiences and customers happy is the core to growing your business. Today's innovators are relying on data and personalization to provide accessible and targeted content.



3. EVERYWHERE

Video Anywhere and Anytime

Video has been unleashed. Content publishers and viewers are on the go. Today, we are carrying powerful video capable mobile phones that can stream Netflix episodes in 1080 high-definition quality with Dolby Atmos. And phone specs are getting close to DSLR cameras by capturing stunning 8K (Ultra HD) 10-bit HDR video. Another revolutionary gadget is the 360 degree camera. Enthralled consumers have bought over 5 million devices to record endless 360 degree experiences at 8K at 30fps. Social media and YouTube are filled with these amazing views.

The availability of 5G connectivity and 5G capable devices has supercharged vlogging on social media and online channels, like Tik Tok and YouTube, which just celebrated its 20th anniversary. 5G was also critical for capturing the 2022 Winter Olympics. Broadcasters benefited from next-generation networking on China's 5G Express Train. It was the first train to offer 5G coverage at 350 kilometers per hour. Even more impressive, it housed the first high-speed live streaming studio, which was used to broadcast coverage of the Games.

To provide unfettered access to the action, drones and internet of things (IoT) cameras mounted to snowmobiles captured outdoor events from every vantage point, while AR/VR studios made it appear as though remote commentators were broadcasting live from China's snowcapped mountains. The result? Global viewers enjoyed anywhere access to live Olympic footage — despite the numerous logistical challenges posed to capturing and distributing the content.

Remote video technologies are now standard because of the flexibility they offer. Other critical technologies, like cloud computing, are discussed below. Cloud-based workflows and wireless high-speed connectivity are powering the next generation of content broadcasting.

Critical Technologies

The demand for video applications knows no limits. On YouTube, 500 videos are uploaded EACH minute! No wonder it's estimated that YouTube has 5 billion videos. The innovation has only been possible thanks to the development of global industry standards across all parts of the ecosystem – from production, distribution, consumption to monetization and analytics and observability. These standards ensure interoperability and compatibility whilst protecting content owners' intellectual property. Combined with increasingly fast connectivity, flexible virtualization and infrastructure has led to huge efficiencies across the media value chain. Here are some of the most critical enabling technologies shaping the future of video technology.

> The demand for video applications knows no limits.

1. CLOUD COMPUTING

Video production, processing, delivery, and more have all moved to the cloud — delivering greater adaptability and scalability than ever before. With the cloud, organizations can innovate faster and expand further. Wowza is available to all major cloud vendors. For AWS, Azure and Google customers, Wowza is available in the respective marketplaces for easy procurement and configuration.

Migrating traditional video infrastructure to the cloud is a crucial step in any organization's digital transformation. It is also true that this transformation takes an evolutionary path. All media companies need to consider their business and technology requirements – the cloud is not a panacea. Some Wowza customers choose a hybrid deployment with a blend of on-premise and cloud infrastructure to gain the best mix of performance, cost and flexibility.

2. AI

Artificial Intelligence has quickly ranked #2 in our critical technologies. Insiders know that AI isn't new to Hollywood Studios, but it's moved from the back office to drive the innovation story at NAB 2025.

This year, exhibitors shifted towards practical AI use-cases that deliver tangible benefits in efficiency, cost reduction, enhanced creativity, and improved user experiences. AI innovation was seen across the value chain in the West and South Halls at the Las Vegas Convention Center.

- Content Production (editing, highlight reels, audio mixing, captioning and transcription, and AI-powered alternative audio/multi-lingual tracks.)
- Media Asset Management & Workflows Wowza partner, qibb, was recognized for its AI Copilot low-code workflow solution. Its powerful conversational prompt interface enables AI Copilot to quickly select the best nodes, write code, and integrate seamlessly.
- Content Delivery & Personalization (CDN load balancing, AI-assisted metadata enrichment, content recommendations, contextual advertising and personalized linear channels.)

3. 5G

As the next generation of mobile communications, 5G brings landline speeds to wireless devices. It also enables private networks that bring guaranteed bandwidth availability for critical applications. This translates to improvements, like more robust mobile connectivity, increased throughput and decreased latency. In some markets, 5G is a real alternative to traditional landline connections.

5G is a catalyst for media innovation. It leapfrogs the limitations of fixed and legacy mobile networks to unlock richer, more immersive experiences. 5G speed, low latency, and scale gives viewers enhanced video streaming of ultra-high-definition (UHD) video content, including 4K and even 8K resolutions. Live broadcasting and in-stadium fan experiences are now possible. Gaming players are wowed by new immersive virtual and augmented reality experiences powered by 5G's ultra-reliable low latency, high capacity and massive connectivity features.

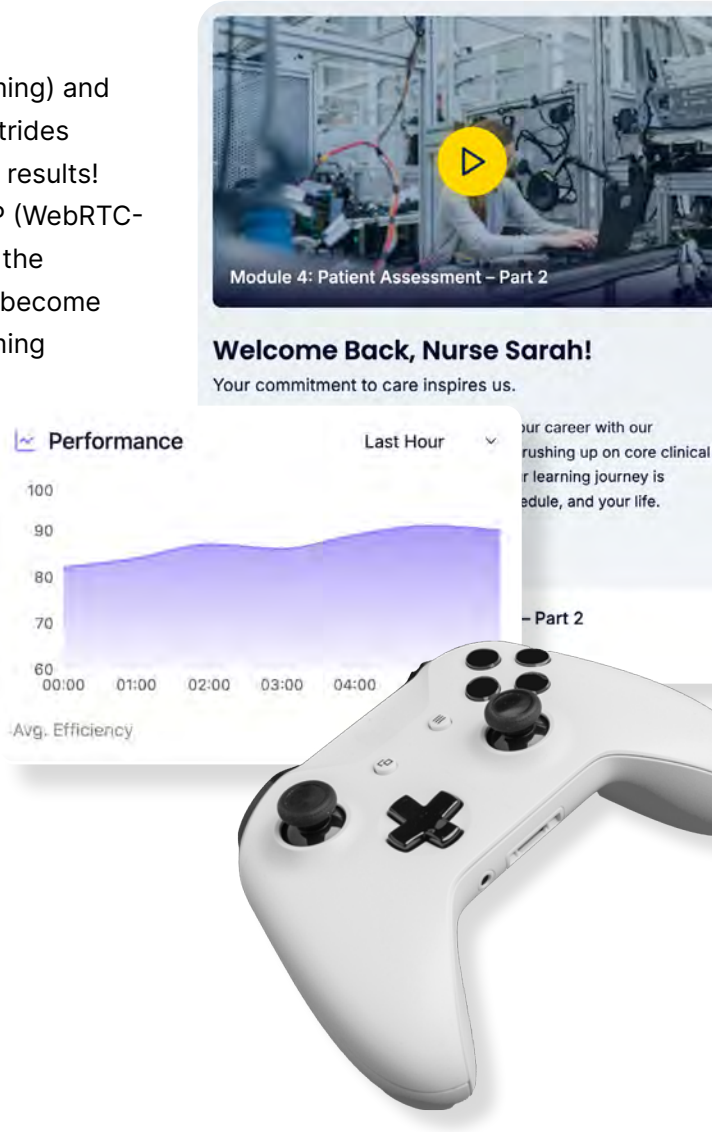
4. Streaming Technology

Streaming technology has gained a permanent place in our everyday lives. Aside from entertainment, streaming has had a huge positive impact on our lives through IoT (internet of things), smart cities, telehealth, public safety, and eLearning.

Here is our shortlist of the streaming technology advancements that will continue to make streaming media integral to our lives.

- Next-generation codecs: These are the lifeblood of content fidelity and delivery efficiency. Advanced codecs, like AV1 (AOmedia Video 1), promise greater visual improvements and optimized streaming workflows, potentially reducing CDN costs and bandwidth consumption, while improving video quality for high-resolution content. HEVC (High Efficiency Video Coding) also saw continued device and browser support. Another acronym making waves is LVEVC (Low Complexity Enhancement Video Coding) maximizes computational and hardware resources to improve video delivery and quality of existing codecs. No need for upgrades!
- AI-advancements: AI has had a big impact in video codecs delivering compression optimization, achieving up to 50% bitrate reduction compared to traditional codecs like AV1, HEVC, and VP9 and visual quality enhancements through AI techniques such as super-resolution, noise reduction, and artifact removal.

- Low-latency streaming: We have seen HLS (HTTP Live Streaming) and DASH (Dynamic Adaptive Streaming over HTTP) make huge strides in delivering high quality scalable streams with broadcast-like results! WebRTC WHIP (WebRTC-HTTP Ingestion Protocol) and WHEP (WebRTC-HTTP Egress Protocol) make it much simpler to implement. In the near future, new protocols like Media over QUIC (MoQ) could become a standard. With features like Fetch and Join Fetch live streaming experiences could be more stable and smoother, with DVR-like playback capabilities.
- Enhanced Quality of Experience analytics: Common Media Client Data (CMCD) version 2 introduces new modes for players to send metadata about server responses and playback events to analytics platforms, providing deeper insights into user experience. It is already being adopted by large MSOs, like Comcast, and tech giant, Apple.



5. Video Analytics & Observability

The digital video supply chain is a goldmine of data — telling a detailed story about quality of experience (QoE), content popularity, ad campaign reach, and more. It starts with a model to collect the data across disparate systems and the tools to analyze the signals. As mentioned earlier, Common Media Client Data (CMCD) version 2 is improving the communications between the server and players to better record server responses and playback events to analytics platforms. New observability platforms are tackling the challenge of data collection, storage, normalization and analysis in streaming media. In the past it was too costly to store and archive data. And the cost of data analysis outweighed the value. Today, powerful and cost-effective alternative platforms, like Hydrolix, are being applied by content distributors to manage and analyse the massive datasets generated by content delivery, streaming platforms, and user interactions. The goal is to improve user experience, optimize operations, enhance security, and drive revenue growth through data-driven insights.

That said, a prerequisite to video analytics is interoperability across the video workflow. That's because end-to-end visibility requires integration between the encoder, content delivery network (CDN), and player. For this, your best bet is a unified video platform that provides observability every step of the way.

Video Predictions

Our three predictions for the future of video center around hybrid/virtual environments, IoT streaming and AI experiences

Hybrid/Virtual Everything

Video will continue to be pervasive. The synergy of critical technologies described earlier will continue to integrate video into our daily lives. This, in turn, will drive positive societal change. Rather than create a digital divide, we believe that video-powered virtual interactions will build community and opportunity in suburban and rural areas. Increased communication will build a bridge between traditionally isolated groups, like seniors, and their loved ones. What was done in-person now has virtual alternatives: telehealth and telesurgery, safety and security, in-person test taking and more.

Extended Reality

Audiences of entertainment events, like live concerts and sports are in for a treat. Powerful edge computing and AI will combine with advances in hardware to deliver immersive Virtual Reality (VR) and Augmented Reality (AR) experiences. These Extended Reality (XR) events will be immersed in spatial audio and participants will experience Enhanced Interactivity. Real-time participation and interactivity will be integrated directly into the video stream, allowing for participants to engage in more meaningful ways and influence the narrative or change outcomes.

Internet of Streams

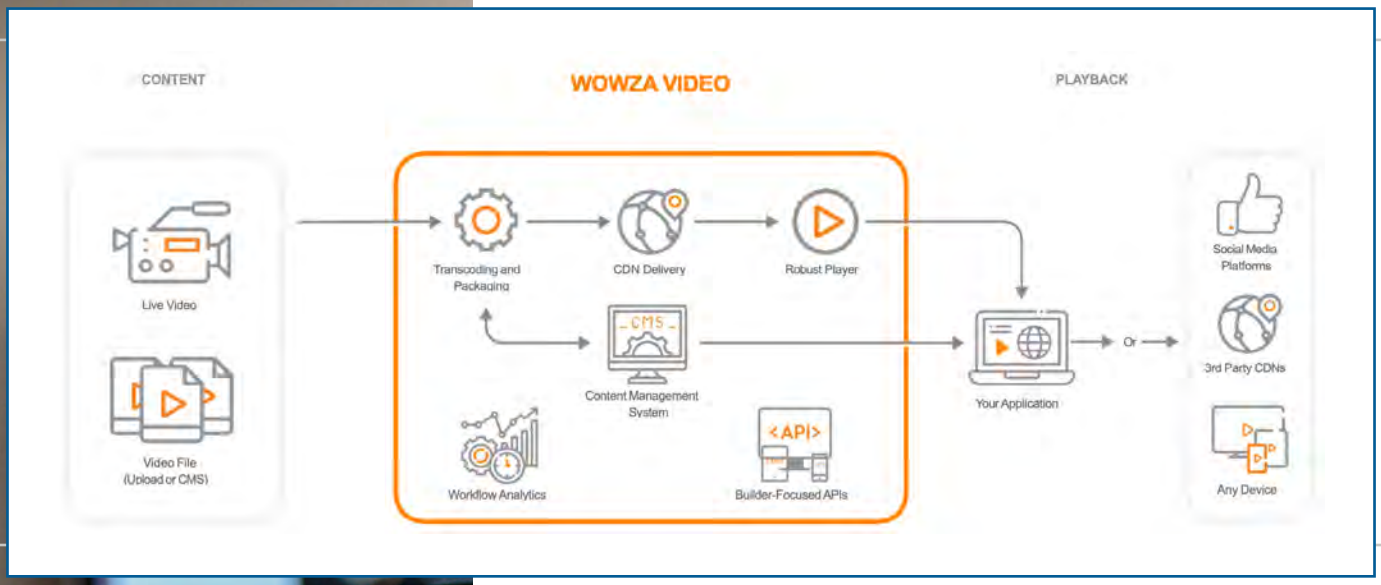
According to Cisco, the number of internet-connected devices will be more than three times the global population by 2023. And we predict, a large percentage of these will implement video technology — extending video's reach beyond today's consumer electronics, vehicles and smart cities. In this way, the internet of things will give way to an internet of video streams.

Just as the virtual world continues to grow, we can expect more video-enabled robots, wearables, and smart ecosystems to become standard in the physical world.

Conclusion

At Wowza, we pioneered streaming video and we're ready for the future. Today, our Wowza Streaming Engine and Video platforms give content owners all the necessary technology and capabilities to stream and monetize the highest quality, real-time video to all devices.

> **Wowza will continue to be developer friendly, enabling our global community to maximize the build, deploy, and operate experience of Streaming Engine. In 2025, Wowza is embracing Artificial Intelligence with a framework to integrate third party models and services to easily leverage AI across industry verticals and use cases. And Wowza is extending its partnerships with the leading cloud vendors our customers use.Let's go!**



About Wowza

Wowza is a video platform provider trusted by companies leveraging streaming technology to enhance their products and services. With more than 15 years of experience working with 35,000+ organizations, our video infrastructure technology has powered countless applications across industries — including media, enterprise, healthcare, government, and more.

We work with each customer to ensure their success while providing the reliability and security their business requires.

Learn more at **wowza.com**.

WOWZA

The solution you start with, the partner you scale with.