

Reimagining
Immersive Storytelling

Nexus Studios' Groundbreaking Sphere Experience

CASE STUDY

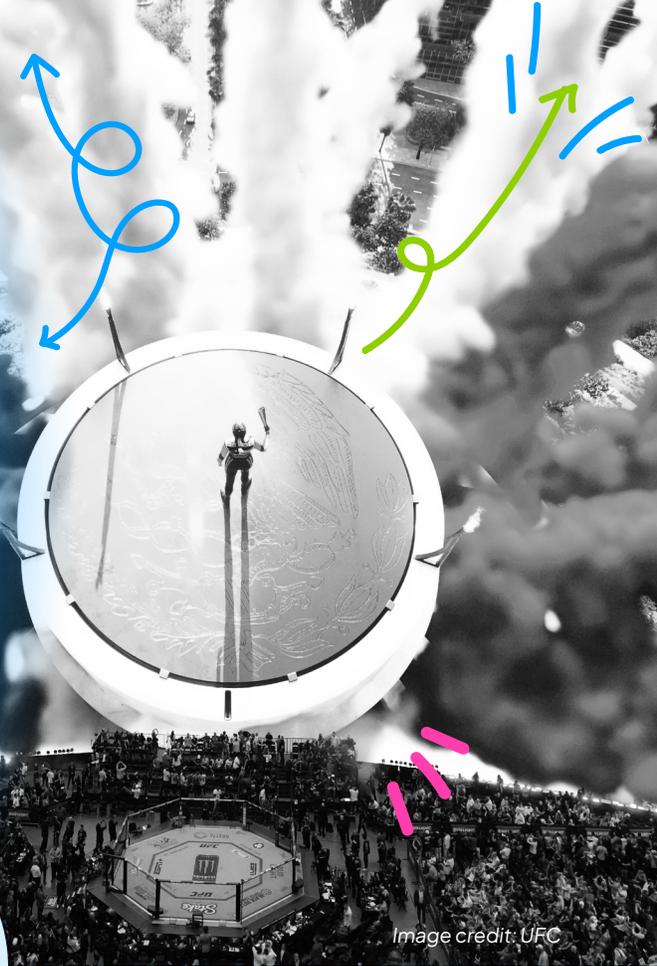


Image credit: UFC

Workflow Wins



Cost efficient
scalability



Real-time content
access, control,
and collaboration



Dynamic hybrid
storage environment



Production workflow
and pipeline
integration



High-performance,
burst cloud rendering

Overview

Tasked with creating a one-of-a-kind immersive experience for the Sphere in Las Vegas, Nexus Studios required a dynamic, scalable storage solution to efficiently manage the vast storage requirements that came with the Sphere's 16K wraparound screen. The studio chose to expand its existing storage solution from Pixitmedia by DataCore to implement a hybrid solution that would streamline the management of ultra-high-resolution workflows. The inclusion of Pixitmedia's solutions allows Nexus Studios to seamlessly handle the immense resource requirements and push the boundaries of multisensory storytelling.

Background

Nexus Studios is an award-winning creative studio known for its artistic and technical expertise spanning animation, VFX, and experience design. With a strong focus on emerging technologies, the studio collaborates on both creative and engineering levels to push the boundaries of visual storytelling.

In 2024, Nexus Studios collaborated with Antigravity Academy to create a groundbreaking experience that would seamlessly blend live sports with cinematic storytelling, designed specifically for the Las Vegas Sphere.

Harnessing the cutting-edge venue's full-screen visuals, immersive sound, and 4D elements required an intelligent approach to increase Nexus Studios' storage and computing requirements, as well as cost-effective data management to maximize the potential of the Sphere's immersive format.

The Challenge

As a leader in high-resolution content production, Nexus Studios is renowned for managing technically demanding projects. However, workflow complexity increased when the studio became the global production partner for an immersive short film series, *For Mexico, For All Time*, directed by Academy Award-nominated Carlos López Estrada. Due to premiere as part of Riyadh Season Noche UFC, the film was designed to be showcased on the world's largest high-definition immersive screen at the Sphere in Las Vegas.

Striving to deliver the most immersive experience ever showcased at the venue, the production team worked with a massive 12,000 x 12,000 pixel resolution, totalling an incredible 144 million pixels. Producing content for the Sphere's groundbreaking 16K screen required a huge expansion in resources. With soaring compute and storage demands, Nexus Studios had to engineer a unique production pipeline capable of handling the enormous scale, high-fidelity finishing, and technical precision required.

The Solution

As a trusted partner of Nexus Studios, Pixitmedia by DataCore were approached to support the dynamic requirements on the project. To overcome the challenges, a combination of Pixstor on-prem and cloud storage was implemented, along with Ngenea, Pixitmedia's data orchestration tool.

"We had to decode how to successfully bring narrative to a screen that is completely immersive, while also figuring out how to technically render images that are 70 times bigger than a traditional HD frame. We had five films to conceive and execute, in a new format and on a short timeline – but at Nexus Studios, this is our comfort zone!"



Mark Davies
CG Supervisor, Nexus Studios.

Although the majority of the studio's storage runs on-premises, Amazon S3 played a crucial role in optimizing the workflow. Crucially, AWS compute resources were leveraged for scalable rendering, offering the flexibility to handle high-resolution, data-intensive projects without compromising performance. The hybrid setup enabled efficient data management by keeping hot data accessible locally while archiving cold data to the cloud.

Ngenea was used to mirror the entire dataset in Amazon S3 for disaster recovery, ensuring redundancy and data protection. It also offloaded cold data to the cloud when system capacity was reached, preventing storage bottlenecks. Given the massive data volumes generated for the project, Ngenea's tight integration with AWS Thinkbox Deadline for burst render streamlined cloud-based rendering by optimizing data management and controlling costs. The solution:

- Eliminates data duplication and ensures a Single Source of Truth (SSoT) for all assets.
- Seamlessly integrates file transfers, reducing confusion and inefficiencies.

- Automates cloud instance scaling, enabling just-in-time resource allocation and minimizing unnecessary cloud compute expenses.
- Intelligently manages cloud storage, preventing unused render assets from accumulating, ensuring optimal cloud bucket utilization, and reducing overall cloud costs.

By integrating AWS with Pixitmedia's solutions, Nexus Studios was able to optimize storage costs and benefit from a highly efficient, scalable production pipeline.

As part of the creative vision, and to guarantee optimal impact from every seat, a custom VR app was also developed, which allowed the team and clients to preview the film from an audience perspective within the Sphere.

Successes

By leveraging a hybrid Pixstor and Ngenea solution from Pixitmedia, Nexus Studios successfully optimized its content management strategy and enhanced operational efficiency. The seamless integration allowed the studio to maintain high performance, streamline cloud rendering, and maximize storage utilization, making it a model for modern media production workflows.

With Pixitmedia, and the ongoing support of Daniel Marshall, solutions architect and owner of Konsistent, Nexus Studios was able to manage the ambitious project successfully through tight timescales and deliver to an agreed deadline. The solution delivered scalability, efficiency, and cost-effectiveness, allowing the studio to handle high-resolution, data-intensive projects like those designed for the Las Vegas Sphere.

"This solution enabled us to deliver our largest project to date in terms of data volume and resolution. We burst into the cloud and leveraged over 200 GPU instances giving us access to more than 30TB of VRAM. That level of GPU power is something we could never have accessed on-prem — and we achieved it at a fraction of the cost of building equivalent infrastructure. The setup also supported cost optimization, allowing us to scale compute independently of storage and spin resources up and down based on demand."



Ryan Cawthorne
Head of IT and Engineering, Nexus Studios.



Image credit: UFC

“Working with Pixitmedia was a fantastic experience. Their team was collaborative, responsive, and genuinely invested in helping us break new ground. The combination of Pixstor for high-performance storage and Ngenea for intelligent data management enabled seamless data movement between our on-prem infrastructure and AWS. Ngenea made the cloud feel like an extension of our studio’s pipeline — our artists could continue working without needing to worry about data location.”

Ryan Cawthorne,
Head of IT and Engineering, Nexus Studios.

The success of the ‘For Mexico, For All Time’ project means that Nexus Studios is poised to take on even larger and more complex projects, continuously optimizing its storage infrastructure to maintain its competitive edge in the world of high-resolution film production.

“We’re continuing to refine and expand the system to support other render engines, including CPU-based workflows, making it a highly flexible and renderer-agnostic approach.”

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Nexus Studios is an award-winning global studio in film and experience design. Our world-class directors, producers, artists, and technologists create groundbreaking works for entertainment, music, sports, and brands. With studios in LA, London, and Sydney, we specialise in creating film and experiences across all platforms, including cutting-edge work in spatial computing. Our in-house team of artists and engineers work side by side, delivering a prolific multi-platform output. Recent highlights include the groundbreaking films created for the Las Vegas Sphere, celebrating UFC 306 at Riyadh Season Noche UFC, and Pedigree’s AI-supercharged and Cannes Grand Prix-winning Adoptable campaign. Other notable projects include the Gold Cannes Lions winning project, ‘Gorillaz Presents’, an Emmy-award-winning special for Netflix, Emmy-nominated XR experiences for Google and Marvel, and sports activations for prestigious leagues such as NFL, NBA, MLB, and the 5G Dallas Cowboys and AT&T. Clients who trust us with their vision include Niantic, Disney, Amazon Studios, Gorillaz, Sony, Google, Billie Eilish, Apple, Headspace, and Meta.

nexusstudios.com

pixitmedia
by DataCore

Pixitmedia by DataCore, is a leading provider of intelligent content and metadata management solutions for the media and entertainment industry. We go beyond storage to deliver a smarter ecosystem for media workflows, with end-to-end solutions that combine high-performance file, nearline, and archive platforms with metadata enrichment, indexing, and search. Enabled by data orchestration tools, our multi-tier technology simplifies content management and migration to ensure media assets are always where our customers need them.

Pixitmedia’s innovative solutions integrate seamlessly into existing M&E workflows, optimizing efficiency and collaboration at every level – from ingest to archive to delivery. With Pixitmedia, content is always searchable, secure, and available whenever it’s required.

For further insights, visit:

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