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Amit Svarzenberg

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Azure empowers Hexa to create 3D content at scale – #StartupsOnAzure
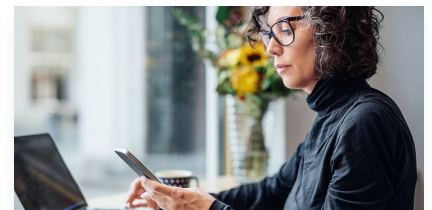

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According to [Shopify](#), online stores with 3D content see a 94% conversion lift, on average, compared to 2D videos or images. Traditional 3D modelling is time consuming, making it hard for retailers to keep up with thousands of styles, colors, and patterns. [Hexa](#) partnered with Azure to leverage the best of human design and workflow automation, radically streamlining model creation. This allows retailers to create and manage massive inventories of high-quality 3D assets. Azure's extensive support simplified the challenges of storage, application containerization, and content delivery at scale.

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The challenge of creating 3D content at scale

Always-on, immersive 3D digital worlds are at the core of the metaverse across its many realms—from gaming to education, manufacturing, and e-commerce. Powerful new chips, 5G networks, lidar sensors in smartphones, and advances in cloud infrastructures and platforms have laid the groundwork for the superfast download and streaming capabilities required for AR and 3D content delivery and consumption.

The biggest obstacle to fulfilling this vision is the difficulty of producing 3D models at scale. Two key 3D content creation methods—photogrammetry and 3D scanners—require the physical presence of the object to be modeled. Given this bottleneck, manual creation continues to be the most popular 3D content creation method. However, manual creation requires a professional 3D technical artist, specialized software, and a significant amount of hands-on effort. Manual 3D content creation is not the solution to the challenge of scalability.

Hexa's approach to 3D content modeling

Hexa was founded in 2017, with an initial focus on virtual dressing rooms. It wasn't long before they realized that the future of 3D e-commerce depends on full-stack 3D content creation that eliminates the process of managing 3D projects.

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Jonathan Clark, CTO, Yehiel Atias, CEO, and Ran Buchnik, CPO at Hexa

Hexa's unique and immersive 3D OS streamlines customer acquisition and boosts sales through:

- Lowering visualization costs

- Supporting diverse rendering solutions for different use cases

- Seamlessly distributing 3D content and AR experiences

Using automated workflows with human backup available as necessary, e-commerce retailers use the 3D Modeling and Digital Studio modules to create and manage their own dynamic inventory of high-quality 3D assets. Often one image is enough to initiate the modeling flow.

Hexa's centralized CMS module allows the e-commerce team to manage assets, optimize 3D models, and monitor quality. Hexa's 3D/360/AR Viewers can be easily embedded in any platform of the retailer's choosing to deliver remarkable e-commerce experiences.

Building on Azure

The compute-storage-network needs of Hexa's services are both huge and volatile. It needed to be easy to spin up resources to meet spikes in demand. On the other hand, it must be just as easy to optimize costs by

spinning down resources during quieter periods.

It was clear from the start, therefore, that Hexa would be cloud native. They chose to build a hypervisor on Azure for its superior DevOps services, its strong emphasis on uncompromising security, and the fact that it is retailer agnostic.

> Having Azure's support at all our different stages—from the initial migration to Azure through the continuous implementation of new services and features—has been amazing. It has been a key factor in ramping up and accelerating our platform development lifecycle." Jonathan Clark, Hexa Co-Founder & CTO.

In addition to the tremendous support that Azure and its partners have provided for Hexa at the infrastructure and platform levels, the two companies have also formed a productive strategic partnership to bring Hexa-powered 3D content creation to Azure customers of all sizes.

How Hexa leverages Azure services to scale 3D content

The following Azure platforms and services are particularly core to the success of Hexa:

- [Azure Content Delivery Network](): Azure CDN is a global solution for delivering large volumes of content rapidly and securely, at scale. It seamlessly handles global traffic spikes as well as high load demands to stream media with optimized performance.

- [Azure DevOps](): A range of services for agile planning and tracking; CI/CD building, testing, and deploying; cloud-hosted code repositories; manual and automated testing tools; and fully integrated package management.

- [Azure Kubernetes Service](): AKS is a fully managed service for deploying and managing containerized applications that integrates CI/CD, elastic provisioning, enterprise-grade security and governance —and delivered across more regions than any other cloud providers.

- Azure's full range of high-performance, secure, and tiered [storage products]() provide solutions for everything from the storage and archiving of disks and objects to data lakes and file shares.

Deploying Hexa on Azure

Azure DevOps and [Azure Container Registry]() are their CI/CD pipeline into AKS.

All Hexa's web services, business logic, and core IPs reside within one AKS-managed cluster, while the machine learning algorithms run in another cluster.

The Hexa content management system (CMS) is where e-commerce retailers create product requests, upload their imagery and product metadata, and track the 3D creation lifecycle. With one click, the end user can bring a 3D asset in the CMS live into their website.

While Hexa continues to automate as many tasks and workflows as possible, the Hexa Annotation module places tens of thousands

of vetted freelance 3D creation professionals at the disposal of the retailer, in order to provide manual intervention as necessary without sacrificing scalability.
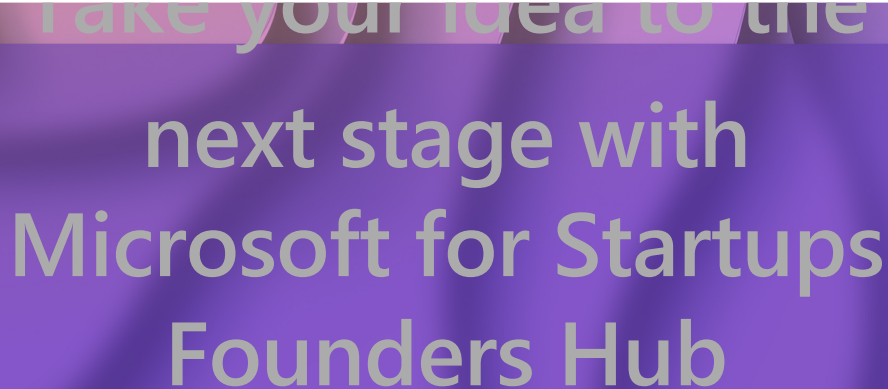
Hexa uses Azure's native CDN service to distribute the 3D content to the Hexa Viewers that can be embedded in any platform with a snippet of code.

Tens of terabytes of 3D Assets are stored in [Azure Blob Storage](#), while the platform also utilizes [Azure Cache for Redis](#) for web service caching and [Azure Database for PostgreSQL](#) as its main database.

Delivering a great 3D shopping experience for customers

Shopping in the metaverse is an amazing experience with Hexa. Their platform is secure and compliant, making it the perfect place to manage your AR and 3D content. With Azure's help, Hexa has accelerated its adoption and provided excellent support throughout the company's growth. Hexa has benefited greatly from deploying its platform on Azure with the team providing excellent technical and architectural support. The Azure DevOps platform helped Hexa accelerate its software development lifecycle. Finally, Azure's commitment to security and compliance is critical given the sensitive assets that are handled by the Hexa platform.

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