VIVE BUSINESS

The Future of Digital Content Development Is Here With Cloud-based VR

Masterpiece Studio, NVIDIA, and HTC VIVE have partnered on a cloud-based VR platform to make it faster and easier for digital creators to bring their visions to life.

Every day, computer animation wows billions of people all over the world. From blockbuster films and television shows to gaming and digital advertising, digitally generated content has become the backbone of media and entertainment.

However, for years creators have faced serious hurdles and limitations in bringing their vision to life. 3D digital content creation has become increasingly demanding and specialized as computer graphics and production platforms have grown in sophistication. For creators, the process of learning these state-of-the-art systems and leveraging them to their full potential has presented an ongoing challenge.

Moreover, creators' ability to interact with computers has not advanced as quickly as the technology itself. In a bottom-up analysis of the creative economy based on the 2019 census and related data sources, Masterpiece Studio identified that there are 152 million creators in the world working across various disciplines. Yet only one percent of them are capable of using 3D design tools. It is truly an injustice that it's not easier for them to turn their innovative concepts into reality, advance their careers, and move this important genre forward for all to be inspired.

Fortunately, the options for creators are expanding rapidly. Masterpiece Studio, a leader in developing intuitive and powerful 3D content creation platforms and software, uses virtual reality (VR) and machine learning to enable any creative professional to easily adapt their 2D skills to 3D.

Masterpiece Studio is known across the media and entertainment industry for building 3D creation solutions "for the indie creator." Their product suite enables creators of all types, without the need for the prohibitive technical knowledge that many platforms require. The platform is not only for beginners, however. Many leading studios have incorporated Masterpiece Studio Pro software into their modeling, rigging, and animating workflows to complement

their production process on traditional platforms like Maya and Blender.

Masterpiece Studio has collaborated with VIVE as a partner for VR head-mounted display (HMD) from the beginning, based on HTC's deep experience in the enterprise space and VIVE's precision tracking capabilities. With the VIVE Focus 3, users have the option to wirelessly stream VR content from a local computer connected to the internet, using VIVE Business Streaming (VBS). This transforms the all-in-one HMD into a top-flight PC VR headset, allowing the artist to interact with the full range of VR content, despite high processing requirements.

Sculpting animated characters in VR

For many 3D creators, digital character creation is a core skill. One of their preferred methods is digital sculpting, which enables the artist to create both organic and hard-surface shapes with great accuracy and control. Artists must also master the texturing, rigging, and posing of characters as part of the character creation pipeline. Achieving all these skills can be challenging, and technology often gets in the way. A creator working in multiple applications must switch among different workflows and contexts, which disrupts their creative process. The traditional user experience can also be awkward, forcing an artist to translate what they want to envision with their hands and head into mouse movements and keyboard presses.

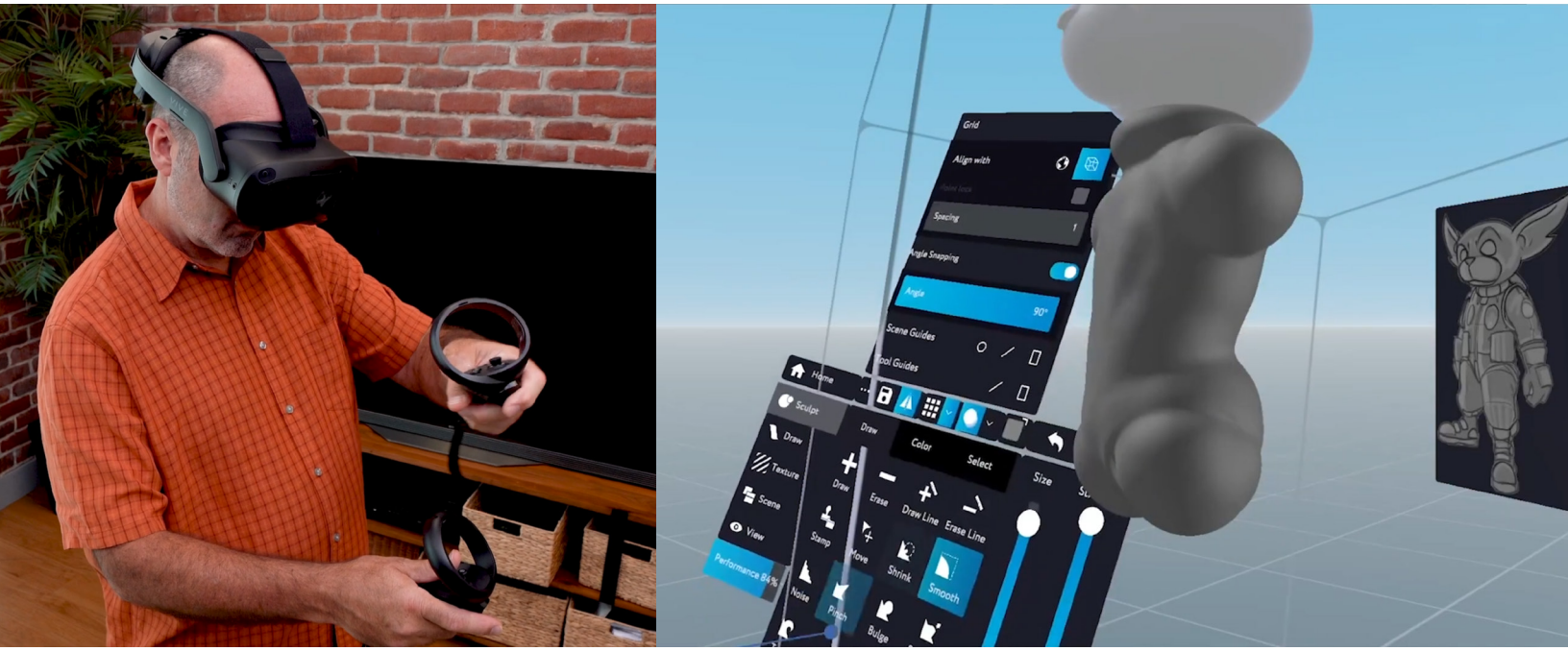
Masterpiece Studio Pro transforms this workflow by empowering artists with the first fully immersive 3D creation pipeline. An artist working in the VR environment experiences a more intuitive and seamless flow that allows them to develop a character or object at any scale, using common tools and hand gestures to sculpt a model – much as they would a clay figure. Performing other work such as skeleton creation is easy; the artist can work directly with the limbs of a character to place and adjust the joints.

Creators using this comprehensive solution are enjoying the more natural interface and ease-of-use benefits. "Anybody could jump in and start working right away," said Dylan Sisson, Digital Artist, Pixar Animation Studios. "You don't need any kind of 3D background. I could actually sculpt something in as little as 10 to 15 minutes that was relatively full and intact, and it came out just how I imagined it. I would say Masterpiece would accelerate my modeling by a factor of 10, if not more."

Cloud-based VR inspires breakthrough creations

Traditionally, digital content production in VR required a dedicated, high-end workstation and, depending on the type of HMD, a headset tethered to the workstation and wall-mounted sensors to track the artist in a dedicated physical space. However, as digital content has become more sophisticated, the complex creation process has pushed the limits of sensor reach, cable length, and spatial boundaries.

Fortunately, wireless all-in-one VR HMDs from manufacturers, such as HTC VIVE, have emerged that free



Sculpting in VR with the all-in-one VIVE Focus 3

creators from these restrictions, enabling a new opportunity to experience VR in almost any workspace. The enhanced portability and reduced cost of this technology are driving many new use cases for enterprise and revolutionizing digital content creation.

Digital artists have also needed increasing amounts of computing power to take full advantage of the VR/AR features offered by industry-leading software such as Masterpiece Studio Pro. Today they can enjoy this power in a wireless environment without a dedicated physical computer — or even a physical cable – thanks to NVIDIA CloudXR streaming.

NVIDIA CloudXR running on Google Cloud provides creators with the freedom to bring their work into high-quality immersive environments without purchasing a high-end workstation, or even physically plugging into one. This approach supports Masterpiece Studio's goal of democratizing 3D content creation.

"Creators should have the freedom of working from anywhere, without needing to be physically tethered to a workstation to work on characters or 3D models in VR," said Jonathan Gagne, CEO, Masterpiece Studio. "By removing complexity from their workflows, our mission is to help creative professionals focus on their craft. Creatives are the builders of our future. Creatives, not computers, should be at the center of our digital world."

NVIDIA CloudXR also solves immersive design challenges. Artists can rent an NVIDIA Graphics Processing Unit (GPU) on a Google Cloud Virtual Workstation, powered by NVIDIA RTX Virtual Workstation technology, to stream their work remotely. Heavy computations are performed in the cloud on a GPU-attached virtual machine, with the content streaming to any CloudXR compatible headset.

CloudXR enables the streaming of immersive VR, AR, or mixed reality experiences from anywhere with a reliable internet connection. The VIVE Focus 3 is the first commercially available VR headset with a custom CloudXR client and boasts 5K visuals with active cooling to support prolonged design sessions.

The blend of portability and power promises to unlock the unlimited potential of high-quality digital creativity. The combination of Google Cloud's private fiber-optic network — the same network built for global delivery of YouTube content, NVIDIA CloudXR is built to dynamically adjust to network conditions, this technology paired with the VIVE Focus 3 all-in-one, offers artists a quantum leap forward in democratization.

Results

In fact, this holistic solution melding Masterpiece Studio Pro, NVIDIA CloudXR, and the VIVE Focus 3 headsets is having a positive impact across the media and entertainment landscape. From global animation studios and design educators to independent game designers, new creators can learn the fundamentals of 3D development while their more experienced counterparts can take their art to a whole new level.

Painting textures in Masterpiece Studio Pro

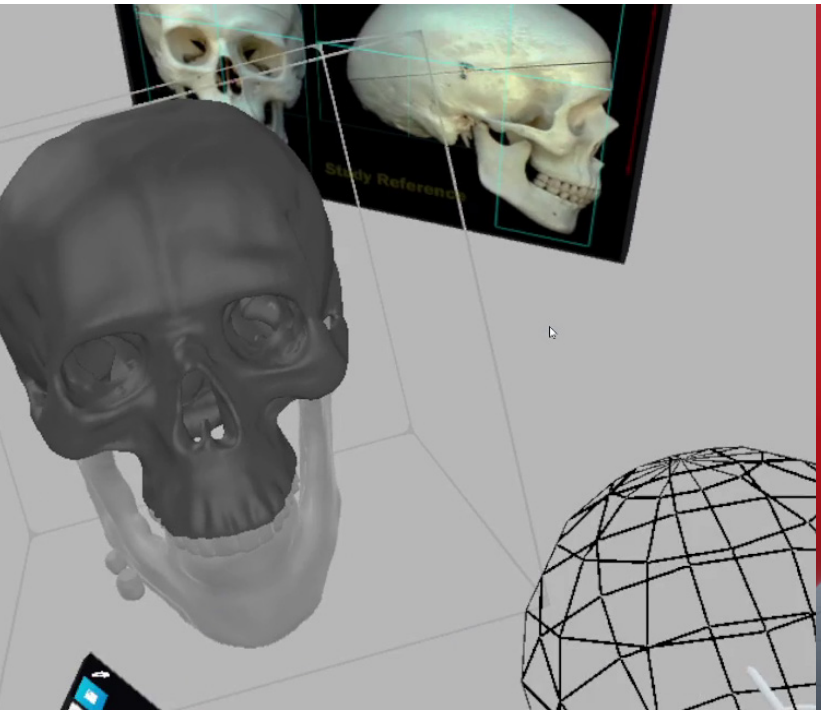
Final animation

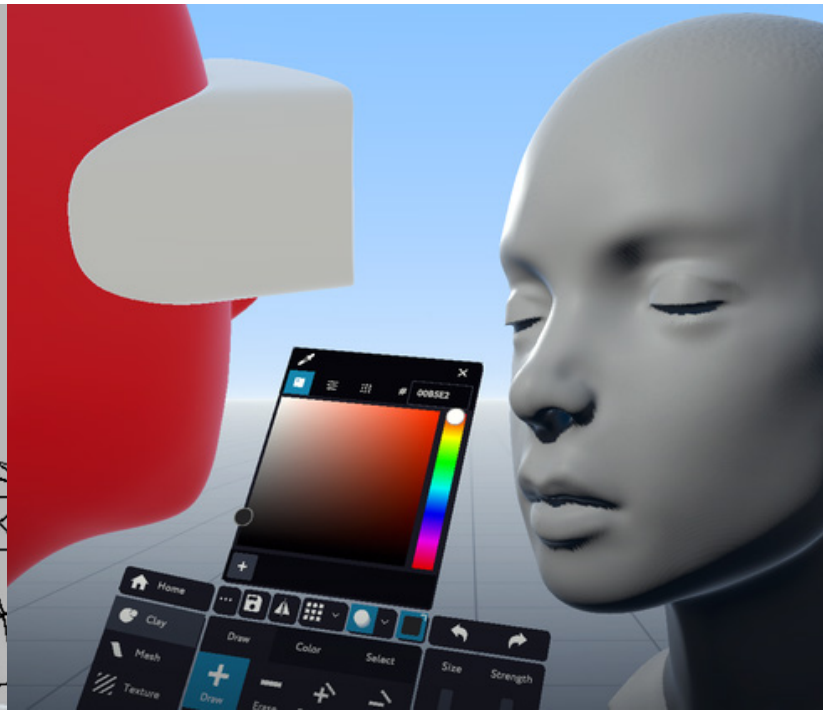
Relative to traditional 3D creation tools, Masterpiece Studio Pro's customers are benefiting from 10 times faster creation speed, from a tool that is 10 times less expensive and can be learned 100 times faster – in days, not years. Ron Martin, Creative & Technical Director at Unity Technologies adds, "By incorporating Masterpiece Studio into my workflow, my ability to iterate has increased tenfold. It will be how every content studio will need to work if they are to maintain competitive advantage."

Adrian Graham, Solutions Architect for Gaming at Google, noted that NVIDIA's CloudXR technology delivered via Google Cloud's fiber-optic network provides an optimized, high-quality user experience for remotely streamed VR experiences. "This unique combination unlocks the ability to easily stream work from anywhere using NVIDIA RTX Virtual Workstation technology," he added. "With NVIDIA CloudXR on Google Cloud, the future of VR workflows can be more collaborative, intuitive, accessible and productive."

Artists, designers, and developers have hailed these innovations for their ability to help them achieve breakthroughs in their work and level the playing field throughout the industry. No longer do creators need decades of experience and thousands of dollars in education to learn all the aspects of bringing a design to digital life. Instead, Masterpiece Studio Pro empowers them with tutorials on content creation and a unique, instinctive interface that enables them to "do what they do best" without technology becoming a roadblock.

"Masterpiece is the most exciting [solution] I have used," said Simeon Mahoney, an independent game developer. "Before, I was drafting…. then converting…then paying a rigger, then paying an animator. Now I can do all of it myself in one program." For every Simeon Mahoney, there are tens of millions of other creators like them who can benefit from a human-centric approach to 3D digital creation and VR. At the end of the day, these technologies are unlocking human potential by removing the levels of friction to creation – just as all technologies should.





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