Enduvo looks to turn heads with its AR and VR lesson-authoring platform

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By Ian Hughes

The company provides a suite of tools for educators and presenters to create and record lessons in a virtual classroom environment. These can then be played back and experienced by students at their own pace in virtual reality.

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Introduction

Enduvo is an immersive learning platform that enables the assembly of assets into a virtual 3-D space, where a presenter can then record a presentation in virtual reality (VR). The actions of the presenter, with head and hand movements, are captured along with audio. The presentations are shared on a content-distribution platform, and can then be viewed later with a VR headset, with the ability to look around, move, pause and replay them.

451 TAKE

Training is a key use case for VR. Scientific research and anecdotal experience show that more immersion provides better retention. Virtual presentations are not a new idea, but Enduvo's approach – simplify the authoring of an environment and then record expert narration, capturing elements of the presenter in a user-controllable VR replay – has a unique quality to it. Enduvo is currently focused on VR, but is also applicable to augmented reality (AR). Its medical lineage has seen it gain real users in that space, and now it is seeking to expand to other verticals. The medical industry has a lot of imagery and 3-D data to draw upon and make engaging presentations with, but more traditional enterprises may find it more difficult to find those. However, the platform works just as well with 2-D images presented in a 3-D space, and the experience is more memorable than watching 2-D slides and a narration on a webinar. VR and AR headsets are still not ubiquitous pieces of technology in the workplace, but the means to engage with the content is likely to be provided by the training organization in a company. One challenge is that there are a lot of creation tools and applications in the VR space – not targeted at this specific use case, but they could be applied to it for general use.

Context

Illinois-based Enduvo was formed in early 2018 as a commercial spinoff of the Advanced Imaging and Modeling Lab at Jump Simulation, a strategic medical research collaboration program between OSF HealthCare and University of Illinois College of Medicine at Peoria, as part of Jump ARCHES (Applied Research for Community Health through Engineering and Simulation). As an early stage startup, it had initial funds through private angels and grants, such as from the Air Force Small Business Innovation Research fund. In June it raised seed capital from UL Ventures and Caerus Institute. While its roots are in medical training, the company sees its approach as relevant to the creation and playback of any form of training.

Technology

Enduvo works across a number of VR platforms, utilizing Steam VR during authoring, but lessons can be deployed to other device types. Lesson creators first gather resources for a scene in a windows application outside of VR. This allows the import of 2-D images, such as photos and diagrams, and 3-D models in a variety of common formats. This application also allows for the definition and combination of multiple lesson segments, as well as the creation of text for questions and answers to test understanding, if needed. A number of preset 3-D rooms and environments act as the backdrop. Once the imports have been made, the scene can then be manipulated and laid out using a VR headset and hand-tracking controllers. Through gestures and buttons, objects can be placed, rotated and resized – the aim is to create an immersive collection that the presenter can talk through. Once the environment is complete, it can be saved. Using the same application, a presenter can then stand in

the virtual environment and record a live presentation. The presenter's voice, head movements and hand positions are recorded. Presenters have tools, such as a long-pointed stick, to direct attention to artifacts in the environment as they present. The recorded presentation can then be saved and made available for playback.

During playback, users see a set of glasses representing the head of the presenter, in addition to hands (along with the pointer, if it has been used). The user has control over play, pause and rewind of the presentation. Authors determine the amount of movement that the viewer can make from the initial focal spot of the presentation. This can be limited to only being able to look around and up and down, to keep the focus on the presenter, or full teleporting around the room. Viewers of content can explore and manipulate the objects in the environment, such as resizing to get a closer look, and a variety of visual tools for different verticals are in development. Video of a VR presentation can also be exported to allow a wider, although less immersive, distribution of the content.

Partners

The company cites HP Inc, Dell, Intel and HTC Vive as technology partners. Enduvo was part of the HP booth at HIMMS19 and part of Intel's Tech Learning Lab Tour in 2018.

Competition

VRTuoso is a UK startup bringing live VR presentations to enterprise use cases. RecRoom is primarily a cross-platform gaming and social virtual world, but is driven by user creation. Veteran virtual worlds such as Second Life and the newer Sansar from Linden Labs are also often used for education and presentation in dynamic environments. Minecraft Education Edition from Microsoft, while a specific visual style, allows creation of shared spaces and interactive lessons. Industrial companies PTC and Scope AR are focused on AR for the workforce, and both have ways to record and then instruct less experienced workers in the field, rather than a classroom with AR as the user interface for IoT. Masters of Pie works to bring 3-D CAD data into collaborative VR and AR spaces.

SWOT Analysis

STRENGTHS
Enduvo offers a relatively simple-to-use interface to quickly construct and present, with a different visual approach for the presenter's avatar.

WEAKNESSES
Objects are able to be manipulated, but are not interactive or animated, for simplicity of authoring; users may expect more.

OPPORTUNITIES
The rise of digital twins and digital thread in industrial IoT provides a way for the company to offer its software as part of that mix.

THREATS
Training is a core use case for VR, and will likely become a crowded market as the technology matures.

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ABOUT ENDUVO

Enduvo gives organizations a better, more cost-effective way to teach, learn, and collaborate. Our leading no-code, AR/VR content authoring and delivery platform enables people to quickly create and share visually stunning, immersive and interactive learning experiences. With just a few clicks, anyone can produce lessons using nothing more than their voice, gestures and digital files (3D models, video clips, image files). Completed lessons are published on the Enduvo platform allowing people to learn at their convenience. People feel as if they are receiving one-on-one instruction from an expert. Organizations that rely on 3D objects, complex procedures, or multi-step processes use Enduvo to decrease content development costs up to 60%, reduce content delivery time up to 70%, and increase learner competency by an average of 80%.

To experience Enduvo and explore how you can use it for your organization, visit www.enduvo.com, and follow us on Twitter, LinkedIn and YouTube.