Immersive Technology Merges Virtual and Physical Worlds

BY DIJAM PANIGRAHI

Across the United States, contractors have deployed business continuity response teams to build coordinated efforts that bring together technology, operations, communications and human resources to build a set of policies, processes and procedures to keep everyone safe during the COVID-19 pandemic.

Many contractors have taken workplace safety to significant new heights by fast-tracking the use of technologies that keep the lights on safely.

One technology in particular is getting a closer look by many builders: immersive mixed reality (MR), which is either a fully immersive experience that brings virtual objects into the real world or one that blends the physical world with the digital one.

MR technologies, including augmented reality (AR), are poised to grow considerably over the next few years. In fact, the AR market forecast is expected to reach $70-$75 billion in revenue by 2023, according to vXchange.

What Is Mixed Reality?

MR allows those in the industry the ability to conduct real-time, 3D visualization and CAD for design; faster training cycles; and the ability to work at drastically higher levels. Some manufacturers report minimized errors using MR through remote assistance, as well as better planning and visualization. This has resulted in a more than 40% increase in productivity in some instances.

MR technology offers a three-dimensional, computer-generated environment that allows designers and engineers to interact with product builds by a person. That person then becomes a central part of this virtually created world in the form of a hologram, or is "immersed" within the production with the capability to manipulate objects or perform a series of actions in real time.

Overcoming the Challenges

However, many builders are also finding challenges when employing these newer MR technologies. Enterprise-grade, high-quality MR platforms require both performance and scale. Organizations that deploy these gain a rich repository of existing complex 3D CAD/CAM models created over time.

As these virtual environments become richer and larger, the repository continues to increase. This cycle is repeated for each of the different MR hardware platforms, making it difficult for contractors to move forward from experiments, virtual design blueprints and pilots to full-scale deployable projects, thus stunting the speed of innovation and effectiveness.

Many contractors are overcoming this issue by leveraging new solutions offered through cloud-based (or remote server-based) MR platforms powered by distributed cloud architecture and 3D vision-based AI. These MR cloud platforms provide the desired performance and scalability to drive innovation in the industry at speed and scale.

Industrial enterprises and contractors today are experiencing the next wave of technology innovation that will fundamentally alter the ways in which they operate. Immersive technologies are playing a pivotal role in this transformation. The organizations that take a leadership role will be the ones that not only leverage these technologies, but scale appropriately without having to stunt technological growth.

Dijam Panigrahi is co-founder and COO of Grid Raster Inc. For more information, visit www.gridraster.com.

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