



WHAT'S NEXT IN VR, AR & MIXED REALITY

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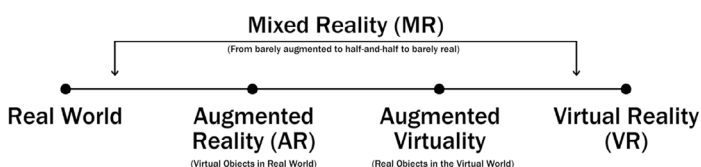
Virtual Reality, Augmented Reality and now Mixed Reality have evolved. Now, not only can they recreate alternate versions of reality, they can immerse and encourage movement through physical spaces to enhance what's already there. This white paper offers insights into this new landscape: where the VR, AR and Mixed Reality technologies are today, where they're going and how event marketers will be using them in events.

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THE NEW ERA OF MIXED REALITY HAS ARRIVED

If you haven't yet experienced Mixed Reality, chances are you will very soon. Mixed Reality, a cutting-edge technology that blurs the boundaries between the real and the virtual world, is the new frontier in arts, entertainment, business, education and science. Forward-thinking marketers are leveraging Mixed Reality into immersive, meaningful and personalized engagements with their brands, and attendees are looking for it at trade shows, conferences and events.



On one end of the Mixed Reality spectrum is the Real World, where the distinction between man and machine is finite and very clearly defined. On the other end is Virtual Reality, a technology-enabled world that completely immerses you in the virtual—worlds entirely fabricated by machine in which everything you see is a simulation.

In between these two points lies Mixed Reality, which can be comprised of an Augmented Reality experience, an Augmented Virtuality experience, or anything in between. Mixed Reality immerses users in an experience and encourages movement through physical spaces to enhance what's already there.

One type of Mixed Reality experience is Augmented Reality. In this case, you see the real world enhanced by virtual items that are superimposed on your view. You may see the real world through a tablet with a pass-through camera or you may see it through a transparent display you wear on your head. In any case, you can navigate around the real world with relative ease while seeing an additional layer, or objects, on top.

Augmented Virtuality, on the other hand, places real objects in a virtual world, the opposite of AR. In this case, you are most likely wearing a Virtual Reality headset that immerses you in a virtual world, but real world objects like a person or a chair are streamed into your physical environment. In Augmented Virtuality, you see a virtual world all around you, but can still interact with real-world objects—perhaps you can shake the hand of someone in your actual room, or sit down in a real-world chair. The Intel Alloy headset prototype uses a Realsense camera to stream a 3D view of the real world into your VR experience.

As the technology advances, Mixed Reality presents a great marketing opportunity as well. Mixed Reality has seen a huge boom in the last three years, and it is now more affordable and more widely available. Mixed Reality has also become more comfortable and appealing to use at events as a way for marketers to tell their brand stories and connect with attendees. And attendees, who are lining up for it at trade shows, festivals and conferences.

Mixed Reality is a way to attract the curious who want to give it a whirl. As the technology proliferates, attendees who have already experienced Mixed Reality engagements now expect them at events. Indeed, the old spin-the-wheel and enter-to-win raffle tactics just don't cut it with them anymore. "They may not be interested once they have seen these really big build-outs," says Mike Schaiman, managing director at Helios Interactive. "So it becomes a rising tide, where brands have to keep up in order to stand out."

LEADING THE WAY: THREE PROGRAMS AT THE FOREFRONT OF VR, AR AND MIXED REALITY

As Virtual and Augmented Reality technology evolves, so do the unique content needs required to make each tool a successful part of an event program. VR is highly immersive and requires a compelling storyline and beautifully rendered filmmaking techniques to bring the technology to life. It's not an "add-on" technology to trot out just for its "wow" factor—that wow factor is very much dependent on the content created for it.

Here are two experiential case studies that illustrate expectation in augmented and virtual reality, and how brands are successfully using these technologies to tell their stories.

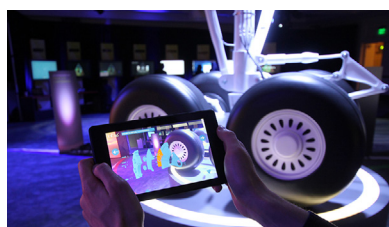
The U.S. Navy

The U.S. Navy in October launched a five-year recruitment tour that leverages virtual reality to put attendees in the shoes of a naval officer or naval recruit. Built around the theme "There is no tech Like Navy Tech," the experience simulates what it feels like to be part of today's Navy, which is increasingly operating the most advanced technology and weapons systems in the world.

Participants go through a video briefing before strapping on an Oculus Rift VR headset and piloting a high-speed assault craft while on a mission to extract a Navy SEAL team pinned down under enemy fire. They experience the actions involved and what their role could be—all from the safety of virtual reality. Participants also wear "rumble vests," which give them the sensation of engines roaring to life as the boat revs up and heads down the river. Live fire simulations add to the reality of the experience. At the end, participants move to a debriefing station where they receive feedback and are graded on their performance. They wear custom RFID-enabled dog tags throughout the experience, which track their performance and help match them with the right Naval careers.

Ten virtual reality pods are built into two trucks that travel separately on the tour, which kicked off at Navy Week Sacramento and Fleet Week San Francisco on Oct. 1.

"This display offers users the most realistic Navy experience possible," says Navy Recruiting Command Deputy Commander Rear Admiral Doug Beal. "We've spent significant time and resources developing this state-of-the-art virtual reality experience to transform and elevate the way people think about the Navy." Mission accomplished, thanks to Helios and experiential marketing agency Wunderman.



Infosys

IT consulting firm Infosys had an interesting data story to tell at Confluence 2016, its annual user conference, and they used Augmented Reality and 3D motion tracking with

Tango tablets to tell it. The story was how a world-class airline could streamline its aircraft maintenance systems by using Infosys' data infrastructure series. Helios Interactive, in partnership with Sparks, created an interactive demonstration of the complex workings of a 747 landing gear. Through the experience, hundreds of VIPs were able to envision the power of Infosys's consulting services while getting a glimpse of the future.

Every time an aircraft lands, it generates one terabyte of data. Infosys' job is to process that data and make it relevant and actionable for an airline company. Augmented Reality enabled Infosys to demonstrate this concept in a realistic way, which created an intuitive and easy visual that allowed people to quickly understand its system.

In the experience, attendees held Tango-enabled devices that relayed valuable information as they walked around a scale model of the landing gear. AR Visuals conveyed the story of how all the data—from the stress on the landing gear to the tire pressure—is processed, managed and sent up to the cloud to Infosys' servers.

"Essentially, Augmented Reality told them an awesome data story," says Schaiman. "Technology is really the bridge between that esoteric concept and the ability to communicate the message of what Infosys does simply and intuitively. That's the power of the technology."

Salesforce.com

Salesforce this year has made a huge push into Artificial Intelligence with Einstein, its new AI platform. To demonstrate Einstein's application in customer service, it utilized Microsoft's futuristic HoloLens headsets. The content leveraged the technology's "holographic" capabilities to preview what service could look like in the future. Helios Interactive handled the activation in partnership with George P. Johnson.

In the demo, attendees wearing HoloLens headsets viewed a robot arm working an assembly line. The story starts with the robot happily working away but it quickly breaks down. The "Einstein integration" analyzes the situation and proposes a simple fix that the user can perform with a hand gesture, which brings the robot back on-line. The demonstration, which was set up on a circular table, took advantage of HoloLens' ability to attach virtual objects to the real world. Users could walk around and look under and over them, and provided an impressive example of how Einstein integrates with the Service Cloud to benefit a customer service organization.

"The HoloLens is a powerful tool not just because it is futuristic and a cool experience for users, but it is also a powerful tool for storytelling because it allows users to go through an experience in a never-before encountered way," Schaiman says. "The resonance of that messaging and the ability for people to remember that experience is significantly greater than if it were done on a screen or in a more traditional way."



TECHNOLOGY CHEAT SHEET: WHAT YOU NEED TO KNOW

A number of new technologies on the market today enable Mixed Reality and Virtual Reality experiences. Here's a brief rundown, in layman's terms, on what they are, what they cost and how marketers are using them.

HoloLens costs \$3,000 for the "developer version" or \$5,000 for the "commercial version," which brings enterprise features and support. It's a headset with a clear screen that enables you to see the world around you overlaid with virtual objects and scenes that appear properly fixed in space. It performs continuous mapping of the environment, which enables virtual items to be attached to the space and obscured by real world items. For example, if you placed a virtual hammer under a real table and stood above the table looking down, you would not be able to see the hammer through the table. If you then left the room and played a game in the kitchen, you could return to the original room at any time to find that hammer under the table where you left it. The headset works by projecting images onto a layered screen in front of your eyes, powered by a mobile phone-like computer built into the headband, continuously scanning the room with infrared projectors and cameras. The user can interact with the software via two built-in gestures as well as gaze mechanics.

Tango is available on the \$500 Lenovo Phab 2 Pro. It is a phablet with infrared projectors and cameras along with a set of sensors that can perform continuous mapping of your environment in much the same way as the Microsoft HoloLens. Like the HoloLens, it can also detect where you are in your environment to "stick" virtual items to your real world, albeit through a tablet screen instead of a heads-up display. You can interact with the device through the touchscreen using the standard tap and gesture actions, as well as through gaze mechanics by pointing the tablet at virtual objects.

Google Cardboard costs about \$30 for a headset and \$200-\$400 for a mobile device to go in the headset. It is the most affordable VR option and offers a bare-minimum VR experience. Google Cardboard can immerse viewers in virtual environments and real-world photo/video captures, and they can interact by looking around and pressing a single button. Many Android mobile devices and cardboard headsets can be used interchangeably. This is also the only VR experience that works with an Apple device.



Google Daydream costs \$70 for a headset and \$650 for a mobile device at the time of this writing, though additional manufacturers will likely bring those prices down as they release their Daydream-Ready devices. The user sees a Virtual Reality scene on the mobile device through the headset's lenses, and interacts by using a special Bluetooth controller with several buttons and some motion-sensing technology. This controller can be pointed at objects in the world to interact with them, or swung about to move a virtual representation of the controller.

HTC Vive costs \$800 for the equipment and another \$1,500 or so for a gaming computer to run it. It consists of a headset for the user to wear, two controllers for interaction and two laser boxes that enable the headset and controllers to understand where they are in a space. It pioneered mainstream "room scale" VR, where the user can physically walk around a real room to move in Virtual Reality, which was a great step in reducing and eliminating simulator sickness. Users can move and rotate the controllers in any direction while keeping very precise tracking so they can freely interact with their environment.

Oculus Rift costs \$600 for the headset, another \$1,500 or so for a gaming computer, an additional \$200 for the optional 'Touch' controllers and another \$80 for a third camera to enable room-scale experiences (\$880 for a room-scale set-up minus the computer). It consists of a headset for the user to wear, an Xbox controller for interaction and an infrared camera for tracking head position. With the optional touch controllers and additional cameras, users can walk around their space and interact with items in a more natural way, similar to the Vive system. The headset has built-in headphones. But marketers should be aware that the mandatory Health and Safety warning cannot be turned off, and it will appear for each user if the headset has been sitting idle for a while.

Gear VR costs \$100 for the headset and around \$600 for the mobile device that is used inside of it. It is similar to Google Daydream in quality, but forgoes the motion controller for a touchpad on the side of the device. It offers a variety of adjustments in the headset itself. Development is a little trickier as you must jump through a variety of hoops to get your software running on each device and some parts of the phone are locked down when using Gear VR applications.



WHAT'S NEXT: EXPERT PREDICTIONS FOR WHERE THIS NEW 'REALITY' IS GOING

Mixed Reality is only to get bigger and better when it comes to experiential marketing. As Helios Interactive's Schaiman says, "There's no going back. Mixed Reality is the new normal and is about to become the standard across every event."

Here's a look at where we're headed with Mixed Reality in the real world of events:

Mobile Engagements: While Gear and Cardboard have paved the way, Google Daydream will enable more powerful Virtual Reality mobile engagements in which users can make decisions and interact with the environment for a more personalized experience at about 25 percent of the cost of a full-on VR set-up. Furthermore, utilizing attendees' own devices enables marketers to take the experience beyond the event space. You'll also see Google Daydream out on the road with sales teams and in small meeting spaces, perhaps even at a 10-foot by 10-foot trade show booth, or in people's homes.

Virtual Events, Meetings and Conferences: Imagine viewing the keynote at Oracle Open World and attending the educational sessions while wearing your workout clothes and a Virtual Reality headset from the comfort of your couch. While that may seem a little wild, virtualization of entire events and remote attendance are coming, and requests for it are already happening.

Virtual Collaboration: Multiple people working together in a Virtual Reality or Mixed Reality is not that far off either. They can work together to design a car, with one person installing the tires, for example, while others view the process at the same time in the same universe.

Product and Service Presentations: Hospitality companies like Marriott are already using Virtual Reality to promote their venues and destinations. While it may not be exactly the same as sifting the warm sand through your toes in Aruba, it does a pretty good job of simulating that experience. By the same token, airlines that want to demo the roominess and comfort of their business-class seats can have travelers strap on VR headsets for an engagement that replicates the real thing. They save the cost of shipping the actual seats to an event as a bonus.



Magic Leap: We're still three to five years away from Mixed Reality's next frontier—your eyes. Magic Leap is purportedly working with retinal projection technology to add AR directly onto your field of view. That's about all we know of the secretive start-up at this point, so stay tuned, and keep your eyes peeled for the next big leap in the world of Mixed Reality.

ABOUT HELIOS INTERACTIVE

Helios specializes in building engaging, interactive experiences for consumers in the events and retail channels. We use a variety of technologies to achieve our goals, including touch, gesture, augmented reality, and virtual reality. Our pursuit to create better brand interactions results in thoughtful design, effective social sharing, and meaningful data collection. This focus helps us meet our clients goals, both now and in the future.