

# CAN VR GIVE YOUR TEAMS AN EDGE?

WHY VR IS THE NEW WAY TO CREATE,  
CONNECT, AND COLLABORATE.



For a nearly century-old concept with roots in science fiction, virtual reality (VR) has certainly come a long way. The once-fanciful idea of donning goggles to immerse yourself in an alternate environment is now not only a part of mainstream culture—it's a part of modern business.

In fact, studies show that enterprises are adopting VR twice as fast as consumers,<sup>1</sup> with 77 percent of surveyed organizations reporting that they're currently engaged in augmented reality/virtual reality initiatives.<sup>2</sup>

No longer labeled merely as a consumer accessory for gaming and entertainment<sup>3</sup>, VR has made the leap into commercial use cases. For example, when the global workforce had to adopt remote working due to the COVID-19 pandemic, VR emerged as an indispensable tool for employees to design, collaborate, and communicate.

With IDC estimating that spending for immersive technology products will reach nearly \$215 million by 2021,<sup>4</sup> it's clear that VR is here to stay. For IT leaders, VR can give your business a competitive edge, creating better products and experiences for both customers and employees.

## THE APPEAL OF VR

Enterprises have discovered VR's ability to drive productivity and innovation, and they're finding ways to apply it across multiple industries. While business leaders in retail, manufacturing, construction, and media/entertainment have been early adopters, education and healthcare are catching up.

Part of VR's appeal is that it can overcome physical limitations such as geography, cultural differences, prototyping costs, and the challenges of communicating complex concepts. VR also offers a safer way to experiment with dangerous or expensive test scenarios—if the real-life scenario is risky, it's wise to run it as a simulation first.<sup>3</sup>

"We use XR to remove the barrier of distance and provide access to situations and scenarios that are physically impossible or prohibitively expensive to build in real life," explains Tim Fleming, Chief Executive Officer and co-founder of Future Visual.<sup>5</sup>



## THE THREE Rs OF IMMERSIVE TECHNOLOGY

Here's a quick refresher on today's types of altered reality:

### VIRTUAL REALITY (VR)

creates a digital environment that totally immerses the user, replacing the existing surroundings and taking the place of reality. For example, shoppers can walk through a virtual version of a vacation destination to decide whether to book it, and students can explore conditions on other planets. Doctors can watch how a new surgical tool works before they ever enter the operating room.

### AUGMENTED REALITY (AR)

overlays virtual objects into a real-world view, allowing the user to experience digital content combined with a real-life context. For example, customers can see how a piece of furniture would look in their homes by uploading a real image of a room, then superimposing the product image over their room image. Architects can spot remodeling design clashes early by overlaying blueprints onto real photo images of the site.

### MIXED REALITY (MR)

is the newest of the three technologies, integrating virtual objects with the real world so that both environments can coexist and interact with one another as if they were real. For example, manufacturers can improve processes by using holograms that workers can interact with or speed design and development with virtual prototyping. Golfers can learn a new course by interacting with 3D renderings. Location-based-entertainment (LBE) venues create experiences by mixing digital worlds with real-life haptics to generate the ultimate immersion.

All these environments fall under the general umbrella term of extended reality (XR).





## A SURVEY SHOWS THE TOP FIVE WAYS ORGANIZATIONS ARE USING VR:<sup>2</sup>

### TRAINING/TEACHING

More than eight in 10 companies are either currently relying on virtual environments or planning to do so within a year to support employee training initiatives, ranging from task-specific modules to general HR training.<sup>2</sup> With 87 percent of the global student population out of school for the pandemic, online learning has become the new norm.<sup>6</sup>

### VIRTUAL MEETINGS

With 25-30 percent of the workforce expected to be working from home multiple days a week by the end of 2021,<sup>7</sup> collaborative work environments and social hang-outs are important for fostering camaraderie in lieu of “water-cooler moments” for hybrid and remote teams, says Joanna Popper, HP Global Head of Virtual Reality for Location-Based Entertainment.

### DESIGN AND VISUALIZATION

Nearly half of survey respondents are using VR-based design and data-visualization applications.<sup>2</sup> “Doing design reviews in VR lets our clients skip multiple rounds of physical prototyping, saving both time and substantial cost,” says Stephen Phillips, co-founder and Chief Technology Officer of Theia Interactive.<sup>8</sup>

### CUSTOMER ENGAGEMENT

Learning what customers want and taking care of their needs quickly is a key VR initiative for businesses, from try-before-you-buy capabilities to remote tech support.

### SALES

From optimizing store layouts to creating pre-release product buzz, companies are using VR to help boost sales.

### BENEFITS OF VR

Companies that have implemented VR applications say they are reaping definite benefits: higher productivity (32%), greater creativity (28%), and more sales (27%), as well as improvements in customer satisfaction (29%) and training (30%).<sup>2</sup>







## HARDWARE CONSIDERATIONS

In an effective VR implementation, all the hardware, firmware, OS, software, and applications work together to create the best user experience. But how do you achieve that harmony? Here are the most important questions you should ask before you start buying VR equipment.

The perfect hardware setup includes a PC with high-end graphics and a VR head-mounted display (HMD) that has high-end resolution, comfort, and cross-industry compatibility.

### HEADSETS

Do your teams need a tethered headset that connects to a PC, a stand-alone wireless headset, or a smart phone headset for mobile viewing? Not every team works the same way, and VR applications come in varying levels of immersiveness and complexity—different headsets are designed for different uses.

Forbes notes that headsets are trending “smaller, more mobile, and more powerful,” now able to meet the challenge of needing powerful graphics processing within the headset itself.<sup>3</sup>

Thanks to processors that can handle higher-resolution image construction, headsets are also increasingly capable of generating more realistic worlds.<sup>3</sup> The HP Reverb G2 is expected to be the highest-resolution headset among major vendors.<sup>9</sup>

**“Giving employees a workstation, keyboard, mouse, and screen but not a virtual reality headset prevents teams from achieving their full productivity and is essentially hobbling your work force.”**

Richard Ward, Global Lead for Enterprise VR at McKinsey & Company

## PCs

Beyond headsets, is your staff equipped with PCs that are VR-ready to develop and consume VR apps and content? Are they compatible with any headset and application?

Major online gaming host Steam is one of the largest platforms for VR content delivery, offering an expansive internet library of educational content from within the familiar Steam environment. In April 2020, SteamVR saw nearly 1 million additional monthly connected headsets, tripling its previous largest monthly gain.<sup>10</sup> The HP Reverb G2 headset is compatible with both the SteamVR platform and the Windows Mixed Reality Platform, which offers more than 2,500 games and VR experiences.

Unfortunately, not every device is capable of supporting the unique demands of virtual reality. It can take a lot of

technological heft to support fully immersive simulated environments. Trying to run virtual reality programs on the wrong desktop or laptop—such as one that can't support high enough frames-per-second (FPS) rates—can result in crashes and other frustrations that don't provide users with the full VR experience.<sup>11</sup>

Laptop and desktop workstations like Z by HP's, are powerful enough to provide the intense number-crunching and graphics horsepower needed to enable VR use cases such as training, customer experience, learning and training, and product development. They're also part of a larger HP VR product ecosystem that's designed to work together.

## SOFTWARE CONSIDERATIONS

To create the most realistic, immersive experience, VR is best experienced in high resolution that enables users to make the most of their creativity. But how will you develop your VR applications and content—off-the-shelf, in-house, or with a third-party partner?<sup>22</sup> Will you use an existing content experience or software, or will you build a bespoke experience? How will you store, deliver, and maintain your VR content after it's created?<sup>212</sup>

One rapidly growing content-creation tool for VR is Gravity Sketch—an immersive 3D design platform that allows cross-disciplinary teams to create, collaborate, and review in an entirely new way. The application uses a very simplified user interface with gestural interaction to create professional-grade 3D models, scenes, and artwork in a natural sketching experience. Gravity Sketch is also working toward a 3D design ecosystem for users, integrating with other applications like Rhino® 3D CAD.

## CHOOSING THE RIGHT VENDOR

With 58 percent of AR/VR projects relying on third-party software developers, it's important to choose one who knows how to work within your existing technology base, understands your use case, and can provide ongoing technical support for the applications they develop for you.<sup>12</sup>

When it comes to choosing a hardware vendor, it's a good idea to select a partner who has a holistic ecosystem approach to VR, rather than just a headset supplier and a separate computer supplier. Thinking about this now will

help you avoid compatibility, integration, and security issues down the road.

HP is driving end-to-end VR adoption, from content creation to consumption. In addition to our VR-ready device portfolio, the HP VR ISV (independent software vendor) Program addresses the needs of VR content development and deployment, pairing industry-leading VR software solutions with VR-ready hardware.





## PERCEPTION IS REALITY — AND THE REALITY IS ROI

Companies across industries are feeling a tangible return on their investments in virtual reality, from cost savings to improved customer engagement.

Every company has a reason to use VR—and HP is ready to help you explore yours. See our VR-ready portfolio of immersive, ergonomically designed HP Reverb G2

headsets and powerful HP Z desktop and laptop workstations—a convenient, one-stop shop of reliable, replicable VR solutions at [hp.com/go/VR](https://hp.com/go/VR).

Z equips IT professionals with the powerful tools their creative and technical pros need to accelerate their workflow. Check out more at [hp.com/IT-professionals](https://hp.com/IT-professionals)

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4AA7-7933ENW, July 2020

