

VIRTUAL REALITY MEETS THE BUSINESS WORLD

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Immersive technologies such as virtual reality (VR) and augmented reality (AR) have long held the promise of moving beyond gaming and into the workplace. That promise is finally beginning to be realized: A recent report by Goldman Sachs predicts that virtual reality hardware will be an \$80 billion industry by 2026.¹

VR is a computer-generated simulation of a three-dimensional environment or image where a person can interact in what seems like a real or physical way by using special electronic equipment, such as a head-mounted display (HMD) helmet or sensor gloves. A space flight simulator is an example of VR.

While VR places a person in an artificial, computer-generated world, AR technology combines the real world with images, video and information that enhance or supplement the person's experience.² In one example of AR, Google Glass could be programmed to enable a factory worker to provide on-site data to a distant coworker or obtain live direction for equipment repairs via live video feed.

When his company acquired VR technology firm Oculus VR in 2014, Facebook Chairman and CEO Mark Zuckerberg noted that gaming was just the starting point for user interface technology. He envisions VR as a new communication platform that will enable immersive, augmented reality experiences in a wide range of applications for business, medicine, manufacturing and education.³

Just as the Internet and the personal computer changed how business is conducted, immersive technologies will look to transform business and industry education. The ways we communicate, collaborate, learn and create potentially will be transformed as workers use immersive technologies to perform tasks and collaborate in more meaningful, multi-sensory experiences.

Here are some examples of commercial VR applications that show promise:

- 1. Training** — NASA astronauts have used VR for years to prepare for space walks, and the armed forces employ immersive technology for flight and drone simulation training. Industrial training applications are beginning to appear, such as Lincoln Electric's VRTEX® Welding Training Simulator that enables students to try welding and acquire skills in a classroom setting.⁴
- 2. Real estate and construction** — Sage Realty Corporation offers prospective tenants VR tours of its commercial real estate properties.⁵ Meanwhile, McCarthy Building Companies has replaced scale models and mock-ups of construction projects with VR-rendered models that allow clients to experience the planned interior of buildings.⁶
- 3. Auto industry** — High-tech manufacturers of spacecraft, airplanes and cars often use VR as part of their industrial design process to create prototypes and test product designs. What's new for the auto industry is the consumer VR application: Volvo recently piloted its XC90 virtual test drive as a way for potential buyers to experience a new car model before it arrives in the showroom.



4. Meetings — From virtual job interviews to board meetings and global “all hands” events, VR is already changing how companies define “face to face” meetings. Interactive technology enables co-workers to gather in a virtual conference room and experience the same presentations simultaneously, engage in shared or private discussions, and view enhanced 3-D data visualizations.⁷

BUSINESS NEEDS DRIVE VR APPLICATIONS

It’s easy to get caught up in the promise of immersive technologies, but their broader commercial applications are only in first generation development. Companies are wise to plan for iterations and refinements. Brian Blau, personal technology research director at Gartner, notes that while VR is exciting in terms of its potential to create a dramatically new and compelling experience, VR is simply a tool that should serve as part of a larger business solution.⁸

Blau believes companies should focus first on what business needs may be addressed by immersive technologies, and then identify which projects and tasks can be redesigned to take advantage of them. He recommends undertaking pilot projects first to allow for proper mapping of tasks and refinements in user interface, as well as using analytics to measure and improve results.⁹

To discuss these topics in more detail, please contact your PNC Relationship Manager.

¹ “The Real Deal with Virtual and Augmented Reality,” a study and video by Heather Bellini of Goldman Sachs, February 2016. Available at: <http://www.goldmansachs.com/our-thinking/pages/virtual-and-augmented-reality.html>

² Definition of augmented reality found at McMillan Dictionary online, available at: <http://www.macmillandictionary.com/buzzword/entries/augmented-reality.html>

³ Mark Zuckerberg Facebook post announcing Facebook’s acquisition of Oculus VR, March 25, 2014. Available at: <https://www.facebook.com/zuck/posts/101101319050523971>

⁴ “Why use VR?” posting on Lincoln Electric web page. Available at: <http://www.lincolnelectric.com/en-us/equipment/training-equipment/Pages/why-use-virtual-reality.aspx>

⁵ “Is virtual reality finally ready for business use?” by John Brandon, CIO.com, Sept. 16, 2015. Available at: <http://www.cio.com/article/2983679/it-industry/is-virtual-reality-finally-ready-for-business-use.html>

⁶ “Is virtual reality finally ready for business use?” by John Brandon, CIO.com, Sept. 16, 2015. Available at: <http://www.cio.com/article/2983679/it-industry/is-virtual-reality-finally-ready-for-business-use.html>

⁷ “6 amazing uses for virtual reality in business,” by John Brandon, Computer World, June 4, 2015. Available at: <http://www.computerworld.com/article/2931551/emerging-technology/6-amazing-uses-for-virtual-reality-in-business.html>

⁸ “Virtual reality and augmented reality in the workplace: A primer for CIOs,” by Erin Carson, Tech Republic, Oct. 7, 2015. Available at: <http://www.techrepublic.com/article/virtual-reality-and-augmented-reality-in-the-workplace-a-primer-for-cios/>

⁹ “Virtual reality and augmented reality in the workplace: A primer for CIOs,” by Erin Carson, Tech Republic, Oct. 7, 2015. Available at: <http://www.techrepublic.com/article/virtual-reality-and-augmented-reality-in-the-workplace-a-primer-for-cios/>

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