

Virtual Reality Isn't Just About Games

Nongaming applications sneak up on an unsuspecting public

Virtual reality offers strong potential for performing 'mundane' tasks. ENLARGE

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Aug. 2, 2015 7:32 p.m. ET

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Picture this: You walk into a coffee shop or an office, and half the people around you have their eyes hidden behind opaque goggles. Their heads pivot from one made-up thing to the next as they peer into a world invisible to you. They're in virtual reality.

This might sound like the far future, but I'm here to tell you that it could be our world within five years.

The reasons are simple: Many of us already have a VR-ready device in our pockets. All that's left is a compelling reason to slip it into the appropriate holder, something that puts it inches from our face, like Google Cardboard or Samsung's Gear VR.

Granted, VR on your smartphone isn't as compelling as what you can achieve with dedicated, consumer-ready headsets from HTC, Facebook and Sony, which arrive late this year and early next. But the engineers I spoke to—the ones actually building this future—assured me it is only a matter of time before phones catch up.

Meanwhile, all the coverage of the birth of VR is about its applications for games and entertainment. This makes sense, because almost all the early demos are games. But VR is going to be much bigger, much more compelling, and much less trivial than what its earliest adopters have so far envisioned.

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“I think what’s going to sneak up on people is all of the nongaming, very conventional uses for VR,” says Adam Levin, head of the nonprofit group Virtual Reality Los Angeles.

I believe Mr. Levin because I’ve tried a number of those “mundane” applications for VR, on some of the most advanced consumer hardware available, and the experience was anything but mundane.

I’ll spare you the rapturous account of the time I sculpted in three dimensions with light, fire, leaves and rainbows inside what felt like a real-life version of a holodeck from “Star Trek.” Writing about VR is like fiction about sex—seldom believable and never up to the task.

If you really want to understand how compelling VR is, you just have to try it. And I guarantee you will. At some point in the next couple of years, one of your already-converted friends will insist you experience it, the same way someone gave you your first turn at a keyboard or with a touch screen. And it will be no less a transformative experience.

We could soon be using VR in place of videoconferencing, not because it’s an adequate replacement for meeting someone face to face, but because it’s actually better. “At some point, VR will get good enough that you’ll feel like you’re there,” says Jeremy Bailenson, head of the Virtual Human Interaction Lab at Stanford University. “The goal is ending unnecessary travel that you feel like you had to do for some implicit cultural reason,” he adds.

Dr. Bailenson’s work on “transformed social interaction” promises a future in which our avatars always show up to (virtual) work perfectly attired, even when we’re stuck at home in our jammies. To increase engagement, everyone in our meetings will feel like the speaker is making direct eye contact with him or her. Our avatars will also automatically mimic one another, to increase accord, and any accidental or inappropriate gestures will be automatically filtered out.

The thing that’s especially difficult to convey about “room-scale” VR—the kind enabled by the HTC Vive, where you can actually walk around with a headset on, exploring a virtual environment in exactly the same way you would experience a real one—is just how compelling it is. “Any VR experience is so much more engrossing than any you’d have on a flat screen,” says Patrick Hackett, senior user interface designer at Google for the Google Cardboard VR headset.

HTC is among the companies that offer dedicated virtual-reality headsets. ENLARGE

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That has potentially huge implications for education.

Amir Rubin, head of VR software company Sixense, is working with a client on a system to train thousands of technicians to decommission nuclear-power plants. “Any application that has high liability, where teaching students has a high cost of insurance, and is high risk, we’re seeing people ask for VR training,” says Mr. Rubin. At Stanford, Dr. Bailenson is taking students on virtual tours of the world’s great works of art—letting them clamber over and deeply experience, for example, Michelangelo’s “David.”

Companies like Matterport are making it possible to rapidly and cheaply digitize the interior of any building and then walk through it in virtual reality. But the ultimate goal is much bigger than that, says CEO Bill Brown. “Two-dimensional photography and video is going to cease to exist,” says Mr. Brown, adding that they will be replaced by immersive captures of entire spaces and events, gathered by conventional and 3-D cameras.

Imagine a version of Google Maps that doesn’t end at the front door of buildings, or an Instagram consisting of immersive experiences rather than snapshots.

“Immersive 3-D content is the obvious next thing after video,” Facebook CEO Mark Zuckerberg said during a recent earnings call.

All of this is possible because, like the PC and the smartphone, virtual reality isn’t so much a single technology as the happy coincidence of a bunch of related ones. Motion tracking, 3-D capture, ultra-high-resolution displays, fast graphics chips and a deep library of 3-D software developed for games and other applications are coming together at just the right time. Google, Facebook, Sony, HTC, Microsoft and countless smaller competitors have already made public their plans for VR, and given its hiring and patents in the area, it’s likely Apple is working on it too.

VR is a technology that is truly in its infancy, despite decades of work in academia, industry and the military. Rapid progress in frame rates, displays, interfaces and more realistic rendering are already in everyone’s development pipeline.

“Keep in mind, this is just the Atari 2600 of VR,” says Cymatic Bruce, head of developer relations at AltSpace VR, as he helps me take off a bulky headset I wore to experiment inside the company’s VR play space.

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