Virtual and Augmented Reality – reshaping business futures

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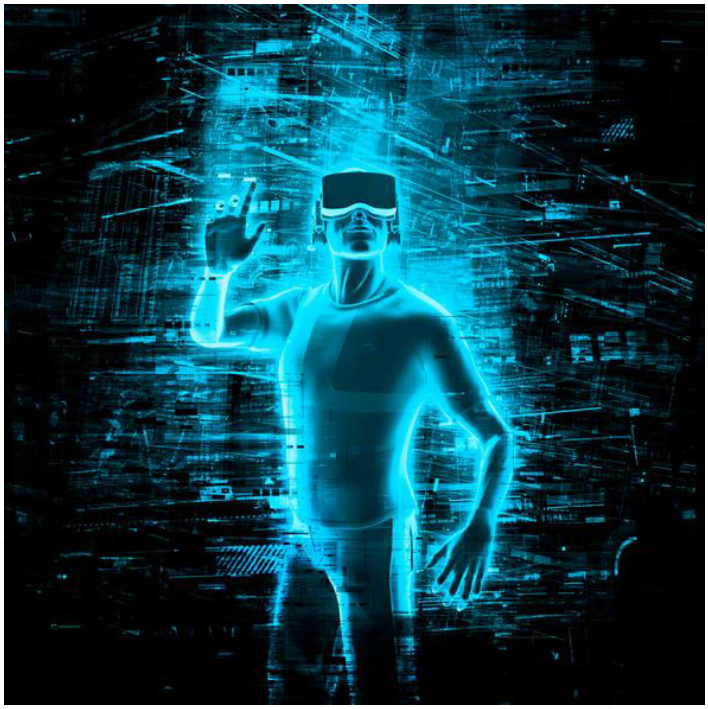
Much has been written about the increasing use of augmented reality (AR) and virtual reality (VR). These technologies, which until quite recently were the stuff of Hollywood films, are now shifting into the mainstream as they become more sophisticated and immersive. Indeed, Digi-Capital, a top global AR/VR consulting firm, released a report earlier this year noting that these two technologies will represent a $150 billion (Rs. 10.03 lakh crore approx) market by 2020, spanning both business and consumer applications, with Asia identified as the global hub for both technologies. While the focus to date has mostly been on consumer AR and VR usage, with apps and games the biggest areas of attention, there is considerable scope for business application of the technologies. Juniper Research suggests enterprise AR revenues will surpass that of consumer AR through to 2021.

The business case

Early experience has already shown that business, brands and VR and AR are made for each other, so we can expect the greatest level of adoption in the corporate world to flow from ideas around collaboration.



Retail and online shopping companies in particular are quickly realizing the possible impact of these technologies to enable customers to have an ‘anywhere experience’. Ikea has made early strides in this area by enabling customers to add virtual furnishings to their bedrooms or kitchens by snapping a photo and getting a sense for what the items will look like in their homes. By engaging customers’ visual sense in the shopping experience, this AR approach is fostering greater customer attachment and trust in products, increasing the likelihood of a purchase.

On the marketing front, we can also expect to see an increasing number of brands create AR apps to provide customers with more immersive and personalized experiences. Bringing static print ads to life, allowing consumers to watch movie trailers by pointing their smartphone camera at a poster, or seeing how they might look in a new outfit. The applications will be limited by marketers’ imaginations.

Meanwhile inside the business walls of larger enterprises, employees will be able to have more engaging interactions with the HR department and experience better on-the-job learning experiences. In design departments, staff will use AR and VR to make product changes quicker and decrease production costs. Ford Motor Company is one of the early movers on this front, having used VR for some years to mock up vehicle designs at the company's Immersion Lab.

Sectors such as entertainment, real estate and the health and fitness industry are also set to be transformed by VR and AR technology with some

extraordinary and innovative deployments. Most recently attendees at an International Dementia Conference held in Australia learned how the use of 3D VR goggles at different stages of dementia had significantly improved the patient's quality of life and offered an alternative to medication in treatment programs. In the US, healthcare company EyeDecide uses AR to help educate its patients by simulating the impact specific conditions such as cataracts or Age-related Macular Degeneration (AMD) could have on their vision.

Instructional AR is also showing real promise commercially, with multi-sensory learning shown to be valuable in transmitting information. There's no doubt that a variety of industries will adopt AR instructional methods for better-informed and safer workforces in the coming years.

Impact on networks and storage

All these VR and AR usage cases will undoubtedly offer business and enterprises a competitive edge, and indeed could be a reputation changer for businesses – but only if everything in the background is seamless. VR and AR will require levels of computing power, connectivity and data storage that are unprecedented in today's networks. As these technologies move toward the mainstream, they will drive major changes in IT infrastructure, which means CIOs can expect some sleepless nights as they work to transition their organizations to the new infrastructure components that will support their ambitions. IDC is reporting that by 2020, in several verticals, one in six IT hardware purchases will be tied to an AR use case. That's a massive shift.

Take for example a data hungry 360-degree video application. Even a low resolution 360-degree experience – which is already on offer with most VR head-mounted displays – requires at least 25Mbit/s for streaming. For resolutions, comparable to HDTV the requirement jumps to 80-100Mbit/s.

This suggests that unprecedented levels of data will need to move at great speed across the network to support these kinds of AR and VR applications -- in some cases data will need to be cached locally to ensure low latency. Networks will need more storage at their datacentre hubs, as well as more edge datacentres to distribute content. The imperative to manage the massive deluge of data they face, to keep the right data warm and move critical data where it's needed fast, will become a new part of an IT manager's role.

Today there may well be more questions than answers about the extent of the impact AR and VR will have on IT and IT spending, but one thing is clear. As more and more data is produced and consumed, being able to humanize the data and having the right storage infrastructure to handle the exponential growth of data will be critical.